Need And Economic Impact Specific Empirical Assessment Of Foreign Capital Inflows To Less Developed Countries (A Case Of Pakistan: 1981-2012)

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This Study is an attempt to analyze the need and economic impact specific empirical assessment of foreign capital inflow and the other macroeconomic variables including gross national product, inflation, domestic saving, investment, export, import, interest rate and foreign exchange rate. The study utilizes ADF unit root test for stationarrity, Johansen's cointegration test for long run relationship, and VECM and Granger causality test for short run relationship for the data period of 1980-2012. In results, all the variables are detected stationary at first difference via ADF unit root test. Moreover cointegration is also found by Johansen cointegration approach among the variables in the model. The long run coefficient reveal that GNP; interest rate, foreign exchange; growth rate have significantly non decreasing effects on FCI however inflation, and imports impede it. Based on these results, the study recommends both fiscal and monetary policies to take initiative steps for financial liberalization by increasing interest rate; boosting international trade; stabilization of exchange rate, and alleviation of inflation rate and imports.

Key Words: Foreign capital inflow, inflation, interest rate, gross national product

Foreign capital inflows (FCI) measures the transformation of all possible resources such as financial capital asset; Human skills; technological and managerial capabilities, foreign workers-remittances, grants, loan, Foreign Direct Investments (FDI), official development assistance (ODA), public-private foreign portfolio investments (FPI) etc. FCI augment scanty foreign exchange reserves in less development countries to pay import bill and strengthen exchange rate. Moreover, saving potential is the key to capital formation, employment creation to escalate per capita income and upgrading standard living. Developing countries have fragile GNP growth rate, low saving potential, capital formation and scarce foreign exchange reserves due to lesser exports, heavy import bill, wide technology gap, deficit in budget and capital accounts (Mottaleb *et al.* 2007). LDCs strives to divert the channels of favorable forms of FCI in financial globalization to sustain economic growth by desired investment; buying advanced technological implements; innovate agricultural and industrial base (Fatima, 2012). The Role of FCI is ambiguous and debatable in empirical Studies (Mohey-ud-Din, 2006). Endogenous and Neo-Classical Growth Theories emphasizes FCI as main promoter of modernization hypothesis and can be a tool to fill gap in domestic savings and investment and create competitive environment (Raza, 2011). Indispensable FCI inflow has created stiff competition in LDCs with emerging economies to enhance macro-economic indicators. They adopted attractive promotional policies established liberal trade zones, provided cheap/skilled labor, tax free regime, kept GNP growth rates above 6% and saving/investment rate[1] 18% to 20%. The largest recipients of FDI were East-Asian countries and Africa because of their high absorptive capacity. Turkey received 7.09 % of its total GNP, South Africa 6.96 %, 7.02 % Brazil, 3.96 % Indonesia and 2.29 % in South Korea (World Bank, 2013). Unfortunately from the last eight years, Pakistan is facing some problems like terrorist activities, instability in political environment and inadequate institutional governance etc. that resulted in loss of confidence and interest of both domestic as well as international investors[2]. This study examined nature of foreign capital inflow which includes financial direct inflow (FDI), ODA, Aid, Grants, FPI of Public/Private authorities, purchase of shares, securities, bonds by private firms, corporate-sectors and individuals transfer of funds. These selected determinants of FDI includes gross national product, general price level, interest rate, foreign exchange rate, investment, relative prices of domestic export and trade balances in Pakistan (during 1981-2012). In literature, the existing studies restricted FDI to include only saving and investment variables i.e. "Two-Gap Model". This study fills the gape to measure FCI by incorporating investment, TOT, BOP, technology, export and foreign exchange reserves stabilized currency. Growth in these indicators lead to long-term self-sustainability by basic players (workers

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[1] (See Abid *et al.,* 2012; Raza *et al.,* 2011; Jiang, *et al.,* 2012, Salma and Sehti 2013 for details)

[2] (See Harrod-Domar Model, 1936-1946 for details)

remittances, export earning's, FDI) of growth and development. Most literature review concluded FCI can enhance economic growth in under developed countries (Ayanwale, *et al.* 2007). Eventually financial technical assistance, high skilled human resources can fill Labor-Gap [3] accompanied by saving-investment and technology gape. FCI completely depends upon the absorptive capacity of host economies size and conditional-ties offered. In April, 2014 FDI stood at US$59.6 million (29.7% increases) with FPI share of 80.4% affected growth rate of foreign reserves, fragile (4.17%) GDP, Per-Capita-Income ($1386), domestic savings (7.54%), investment (8.94% of GNP), 4.2 % GNP growth rate, inflation (10.1%), external debts 33.8% of GNP (US$ 48.7 billion), internal debt 69.7% of GNP and Workers remittances stood-at US$12,894.61 million (Yasmin, 2013).

Foreign Portfolio Investment (FPI)

Effective utilization of FPI significantly rely on the performance of domestic financial system and its policy regulation to continue flow to host entrepreneurs if financial asymmetries arise. Funds comprises corporate own retained profits or it generates in external security markets by selling bonds, equities, securities, debts or borrowing from banks. It is urged that no financial policy— universally applicable—has been designed so for the global economies (See Levine, 1997 and Yasmin, 2013 for details). The Pakistan Security market is not well organized, and FPI has no effective role in socio/economic up-left. GOP shares in Stock Market (1980-90) were only 5% to 6%. Private investments and new issues raised amount to Rs.7 to 9 billion, in comparison of Rs.75 to 80 billion from commercial banks by financial/capital markets (Khan, 1999). After liberalization policies of 1990s, Pakistan's Stock-Exchanges induced FPI fetched flow of Commonwealth Equity Fund and Pakistan Credit Lyonnais Growth Fund. However soon FPI had been taken out from Stock-market which shacked financial system. Lack of liquidity in security market discouraged investment in Stock-Exchanges and then household preferred to save. GOP institutional measures increased external financing from International Financial Institutions (IFIs), because of which investment in the Securities & Shares of private sectors rose to Rs.8.6 billion till May 2014.

Foreign Direct Investment Position

FDI and FPI flow fluctuated due to various external and internal reasons during this study period. FPI from public and private sources in bricks, mortar, factories and in stock markets appeared as a source of major foreign exchange earnings to replace ODA as government's strategy and diverted FDI rather than aid by improving law & order situation, combatting terrorism, early end to war-on-terror and no fear of militancy as fresh incentives. In 1960s to 1980s, external ODA played vital role in economic development. Pakistan was big receiver of ODA because of its strategic part in Afghan-war, issues of 'Super-Powers' (America and Russia), Middle-East and Bosnia. Grants & aid rose to US $2.00 billion per annum till 1985, filled domestic savings/remittances gap from abroad and escalated foreign reserves. In past twenty years, FDI to Pakistan remained low as compared to LDC's of East and Central Asia (See Ayanwale, 2007). World Bank ranked Pakistan at 60th position, India at 56th and China 31st position. Such low rank is accredited to the low business reforms and slow response to the terms/conditions and suggestions made by ADB, IADB, AB, WB and IMF. Because no consensus developed through local stack-holders to reformed economy and avoid external debt during this study period. The need arises to conduct more empirical studies and analyze situation across the countries.

External Debt Flow to Pakistan

External Debt is augmented by the recent contract of Extended Fund Facility (EFF) with IMF; Pakistan Sovereign bonds with the worth of $2.0 billion; international Sukuk bonds and most recently 3G/4G licenses auction in 2013-14 have strengthened financial position of foreign-reserves & reduced short term default-risk. Whereas the foreign currency debt stood as US$ 48.7 billion and US$ 47.8 in the years of 2013 and 2014 respectively. The Government of Pakistan has approved regulatory framework to develop Government Debt Securities (GDS), Debt Capital & Securities Market and secondary trading at Stock-Exchanges. Stock-brokers fulfill eligibility criteria allowed to trade in GDS subject to their profiles pre-checking. Trades executed at KSE through Real Time Gross Settlement (RTGS) system of SBP and Central Depository Company (CDC) acts for their clients in Stock-Exchanges provided an efficient liquid secondary market to sell-off GDS and realized investments before maturity. Now, Capital-Markets provides benchmark for pricing Debt-Securities expected to increase transaction in Debt-Markets and utilize Stock-Exchanges as a medium for direct government borrowings from general public to continue flows.

Impact of External Debt on Currency Exchange Rate

Exchange rates fluctuation in external currency market affect Pakistani rupee as it is not internationally traded stable currency. Foreign loans are contracted in foreign currencies and converted into local for disbursement. Pakistan buys and sells foreign currency via US Dollar. Receipt and repayment of foreign debt necessitates other currencies exposure in two ways; US Dollar/other foreign currencies and Pak Rupee/US Dollar. This two dimensional exchange rate augments stock of External Debt Liabilities (EDL) during this study period in contrast to actual inflows of debts. In March, 2014 total 95% external debt contracted in major currencies and US Dollar depreciate against that currencies augmented foreign currency component (of public debt) by US$ 275 million. A comprehensive foreign exchange risk management requires to implement prudent foreign exchange policy with controlled procedures of public and private stake-holders. Currency movements analyzed for the last 32 years revealed rise in services cost of foreign debt 1.7% higher than average domestic interest rates. It would lower if government

[3] See (Azem, 2013, Mottaleb, 2007; The Economist, 2001 and World Development Indicator, 2010-13)

adopted alternative policies such as currency hedging framework, controlled deficit in BOP and curtailed non-developmental expenditures by austerity measures.

Good Governances as Pre-Determinant to attract FDI

GOP has to chalk-out Social-Protection framework to increase living standard of the citizens via education, training health facilities transportation etc.[4] As confidence building measures organizational reforms and democratic governance also required like transparency in rules, operation of law, provision of life and property security to the foreign investors. Government has to focus on motivation, skills, civil servants accountability at government level, smoothen infrastructure, restructuring of the economy, liberalization and privatization of Public-Sector-Organization. Other universal best practices and missionary aims are to focus on facilitation of e-government, reforms in Judiciary, Police-Department, the establishment of Economic and Business Council to build investor's confidence and to attract more FDI in a friendly environment.

Foreign Workers' Remittances (FWR)

Foreign Workers remitted money is an important flow for LDCs augmented during this Study period (1981-2012) exceeded to ODA in Pakistan. It is more stable than private investment flow in total components of FCI. According to World Bank's Migration and Remittances report 2014, Pakistan is officially 'ranked 7$^{th'}$ world largest remittances recipient. In South Asia, Pakistan is second largest recipient after India in FWR out of 20 LDCs. Foreign Worker's Remittances paid above 20% total imports bill of Pakistan equal to 30% exports receipts provided significant support to BOP, foreign exchange reserves, ease in debt repayment, reduced unemployment and upraised living standard of the masses.

In 2009, GOP launched 'Remittances Initiative of Pakistan' (PRI) best effort to encourage inflow free of cost, documented, secured and efficient than private 'Hyundai' (money-transfer). According to World Bank's Migration and Remittances report 2014, PRI was regarded the best effort by SBP to encourage inflow of financial capital assets through improved payment networking. To find new jobs abroad for the citizens measures required to export surplus human capital by Creation of middle class vibrant Pakistani, breed professional/skilled labor force and create soft image of the masses enabling them to find good jobs abroad and increase remittances by exporting human capital. It will reduce poverty, hunger, disease, will enhance life expectancy, greater survival prospects for mothers/infants would arises. Better education, equal opportunities for women empowerment, healthy environment and accelerating growth momentum in 'Youth-Leadership' to achieve hi-productivity with minimized cost tactics on local and international front may be the core of every strategic plane.

Restructuring of the Economy

To bring shadow economy under 'tax net', measures required to eradicate SRO, nepotism, favoritism in tax rebates, compete in export to augment foreign exchange reserves and establish capital intensive industries by improved trade facilitation, logistics provision to gain economic momentum. Restructuring of Pakistan's economy targeting Millennium Development Goals (2000) of UNO member countries[5]. According to statistics, eight MDGs with 48 indicators in a specific time frame-work's constraint to be achieved by 2015 like; a) Eradicating hunger/extreme poverty b) Basic-Education for all c) Equality in Gender & women's empowerment d) Control child's death rate e) Infant/mother health f) AIDS/HIV, tuberculosis, hepatitis, polio and malaria g) control natural calamities & disaster management h) Globalized partner. Pakistan's achieved 16 targets and 41 indicators left unaddressed. To achieve MDGs, time series data available only on 11 indicators & 33 more (indicators) required resources. Budget constraints hampered progress on 22 indicators of MDGs 'off-the-track' from its destination. Most unachieved MDGs are related to population

Capital Market Performances and FPI

Foreign Portfolio investment has been increasing for the last few years. Stock Market 100 index of Pakistan arises over 17,769 points (156%) during January, 2013 and April, 2014. Where, aggregate market capitalization has augmented from Rs. 2,978 billion in January, 2013 to Rs. 7,116 billion in April, 2014 (141%) but crash hundreds points (8,653 points) due to terrorism and political instability. Listed capital at KSE has marked from Rs. 1,156.44 billion in December, 2013 to Rs.1, 213.18 billion in July, 2014. GDP growth was 4.14 % for FY 2014 due to high FPI in motor tires, paper, iron, steel, construction, energy and POL industries. Circular debt reduced due to fall in load shedding. "Generalized Scheme of Preferences (GSP)" by European Union granted favored-Plus status to Pakistan in December, 2013 and granted duty free imports of textile and non-textile products that have widely increased export access to the EU markets.

Literature Review

Mosely (1987) study explained the impact of some external factors responsible for the insignificant relation in growth in under developing countries. Effective aid is linked with the hypothesis of 'good policies'.

Aslam (1999) analyzed Public and Private Foreign Capital form of investment and concluded that domestic investment insignificantly related with Public Foreign Capital Inflow and Private Foreign Capital Inflow. Significant relationship found covering the gap of domestic saving and investment.

Ali *et al.* (1999) analyzed the determinants of FDI in China, and tried to locate advantages in the process of

[4] See (Pakistan Economic Survey 2013-2014 for details)

[5] See (Raza, 2011 for detail)

foreign investment. Large size potential markets, population, fast growing economy, World Trade Organization's membership, prudent policies, cheap skilled labor force, high rate of returns, Global world integration founded most favorable determinants of FCI flow to China. Thus China has competing reasons and became an effective hub for investment. In conclusion, foreign investors lead by "global strategy firms" diverted flows to China.

Moosa and Cardack (2006) carried out an extreme bound analysis examined main factors involved in determining 'FDI' for 136 countries and finding concluded open boundaries, high level trade liberalization and low risk management have primary role in determining of FDI.

Collins and Reinhart (2009) study focused on sample size of less-developing countries to examine effective forms of FCI and found direct correlation of FDI with local saving. Moreover they found that "foreign borrowings" has negative impact on domestic savings and investment.

Yasmin, B. (2009) studied developing countries saving/investment low-ratio mainly depending on FCI to have enough savings to increase economic growth. Her studies, direct relation found in rate of economic growth with FCI. Beside that FDI considered highly important and significant positive effect on developing economies. Policy regarding composition of FCI's components (ODA/Debt) should be changed and FDI/FWR be focused more because of its long term affect.

Chukwuemeka (2008) examined long run determinants of FPI in Nigeria taken quarter period data from 1986 to 2006. Results showed long run relationship of FPI with real rate-of-return on investment, interest rate on deposits, currency external value and trade openness, found real rate of return, real interest rate and investment positively correlated with FPI. In contrast, FPI negatively related to real exchange rate, capital market and trade liberalization.

Mohey-ud-din (2007) study concluded 'FCIs' conducive for development, positively correlated, tested empirical analysis of 'Time-Series-Data' for twenty 20 years. "Two-Gap Model" suggested great dependency in Poor countries on FCI because of low foreign-exchange-reserves. FCI bridged Gaps between export/import and investment/saving in various components of FCI like FDI, foreign debts, technological aid, tied & untied assistance etc. All under developing countries depends on financial & technical assistance. The study analyzed relationship in FCI and GDP growth and its impact from 1975to 2004.

Mottaleb (2007) studied FDI to cover gap arise in saving and investment capacity by transferring latest modern technology and managerial skills enhancing know-how from developed to under developing countries and found more vital for steady economic growth. Some literature review showed FDI flows towards developed countries higher than under-developed economies. Their low potential level undermined to change direction of FCI. The study collected data from the panel of sixty (60) some middle and low income countries to analyze imminent determining factors of FCI in that economies aimed to have empirical analysis showed significant direct relation of FDI with growth rate because of their large size of GDP, friendly business environment, profound modern infrastructure in all sectors like broad-band internet successfully induced FDI significantly affected growth.

Rashid *et al.* (2010) study investigated FCI effect on inflation during 1990 to 2007 on the basis of equilibrium prices to test empirical evidences of (classical) quantity theory demand for money conditional to FCI. The results showed (based on non-linear test) positive significant relationship, as total quantity of money supply increases with rise in FCI in that period applied non-linear causality test and change existence-causal-links in price and variables of the model. While rate of interest and currency exchange rate has no cause to inflation. From 1990 to 2000 no causal relationship revealed in host economy's general price level and flows of FCI. During 2001 to 2007, confirmed linear and nonlinear causality brought changes in price level of recipient country by FCI. Recommendations are the matter of great concern for Perspective-Plan Maker's, State Bank and GOP. Since flows of foreign assets have played significant role to pull domestic prices, suggested measures to absorb FCI as neither should create surge in prices nor depreciate external value of domestic currency. The limits by SBP to arbitrate in foreign exchange market and allow private sector to use FCI productively rather than just to add government foreign exchange reserves. Study is useful base for future empirical work and suggested non-linearity in modeling.

Shah, H. Jiang (2012) emphasized FCI flow in new emerging scenario. FCI in Pakistan got concentration in empirical studies, but reviewing literature on FCI flow exhibited that most Studies used in empirical analysis, 'customary-econometric-tools' like "Ordinary Least-Square" estimate, "Forecasting-Identification-Maximum-Likely-Hood" (FIML), "Two-Stage-Least-Square" (2SLS), and "Three-Stage-Least-square" (3SLS). However, "non-stationary factor" involved in most of macro-economic variables. It is mandatory to re-examine previous ascertains applying "Co-Integration" and "Error-Correction-Model" (ECM). This attempt presented re-evaluation in relationship among macro-economic variables and foreign assets flows towards Pakistan by using "Vector-Error-Correction-Model" on "Time-Series-Data" from 1972 to 2006, found no significant effect evidence of FCI on growth of domestically produced goods and capital accumulation through investment. A complementary positive relationship of host economy savings and components of FCI revealed and suggested supplementary direct effect of FCI on GDP by enhancing quality of its own means. Contradiction found in results directly affect host economy savings, indirectly related with country's investment and growth. The interpretation of FCI

as supplementary factor for growing domestic resources is more correct inducement for FCI in Pakistan because of meager savings. No indication of macro-economic variables boost found, because of no proper utilization of FCI, as some forms are not used for investment (non FDI) and focused capital-intensive and labor-extensive industries. FCI causes exchange rate depreciation and creates deficit in current accounts recommended to: (i) target potential sectors, nature of composite factors of present forms of FCI (ii) diverting FCI to tradable areas (export-oriented) in agro-based industries (iii) decreasing dependency on foreign aid, domestic resources mobilization (v) control of current accounts deficits in BOP to stabilize domestic currency & foreign reserves. 2SLSM and 3SLSM applied for investigations ignored non-stationary variables, the matter of concern for investigators to re-examine previous studies by co integration technique and Error Correction Model to re-analyze its role.

Javed (2012) examined relationship among three variables FDI, trade and economic growth in four Asian countries (India, Sri Lanka Pakistan and Bangladesh) analyzed annual data for 1973 to 2010. "Generalized Method of Moments" (GMM) used for computation of regression's result showed FDI mix impacts on development of economic growth in that economies, positive relation of growth, trade and FDI.

Shumaila, N. (2013) investigated influence of FCI on general price level of host country (inflation). Selected macro-economic variables in model are foreign remittances, domestic inflation, domestic export, FDI during 1980-2010 used 'unit root test' to check stationary of variables, techniques of "Co-integration" along with "Error Correction Mechanism" (ECM) formulated for examination of short and long term relationship with FDI, remittances (REM), export (EXP) and general price level of goods and services (inflation). Conclusions revealed stationary in relationship of selected variables at 1st stage significant direct correspondence among FDI, REM, EXP and inflation. "Co-Integrating-Equation" showed significant relationship in long run. Consumption replacing investment oriented strategy to control surge in inflation followed utilizing (the FCI component) foreign remittances flows for investment purposes to promote growth not consumptions.

Salma (2012) analyzed effect of FCI on host economy saving with other selected variables of "Time-Series-Data used "Co-integration" and "Error Correction Mechanism" ECM during 1980 to 2010. The results identified positive relationship between saving, FDI and variables; Trade openness and GDP per capita found positively related with GDS. Negative relationship of remittances with GDS was due to utilization of some part of remittances for consumption. Recommendations: focus on proper policies, as FDI enhance saving potential if suitable policies follows to regulate money, taxation and trade. Key savings based on micro foundations could play a prominent role in curbing inflation, generating jobs if seen with reference to LDC's but Pakistan performance to mobilize its own resources was non-satisfactory. Strong support of 'good-governance-mechanism' monitoring whole process of FCI is highly imperative and urgently required to formulate and implement effectively to boost foreigners' confidence. Study concluded proper utilization of remittances for expanding domestic saving/investment in certain fields to accelerate development and growth.

Sethi (2012) analyzed FPI effect on growth using pair wise "Granger-Causality-Test" and suggested a short run equilibrium and long relationship among variables of economic growth and FDI side by side with economic growth and 'portfolio foreign investment' and vice-versa. However, the empirical findings strongly identified dynamic relationship in short and long equilibrium in variables during the study-period (1995 to 2011) concluded 'private foreign capital' inflow significant positive relation and direct impact on growth. Thus, sound economic growth of a country required additional foreign capital inflows.

Fatima *et al.* (2012) study revealed low potential savings and investments in LDC's resulting deficit in budget and BOP urge dependency on FCI to create additional savings and stimulate growth. Growth rate and FCI proposed "Simultaneous Equation-Model" by using aggregate "Time-Series-Data" of 1970–1971 to 2000–2001, took variables (FCI, GNP and Savings) concluded positive relationship. Study found significant positive response of FDI with economic development.

Purpose of the Study

The present attempt focused "non-stationary factor", involved in macro-economic variables when re-viewed previous ascertains applied "Johansen-Co-Integration" and "Vector-Error-Correction-Model" (VECM) to re-evaluate relationship in macro-economic-variables and foreign assets flows towards Pakistan used "Time-Series-Data" found significant effect of total flows of foreign financial assets on growth of goods and services, capital accumulation through investment, complementary positive relationship with trade balances, supplementary direct effect of Foreign-Portfolios by enhancing the quality of its own means. The table in the appendix shows clear picture about the finding of the existing literature review.

Hypothesis

This study answer the given hypothesis:

H_0: FCI is not affected by Growth rate of gross national product, inflation, interest rate, exchange rate, investment and trade balances.

Data Sources

The study is based on secondary data that covers the period of 1981-2012. All the data are collected from different sources like Economic Surveys of Pakistan, International

Financial Statistics, World Development Indicators and Federal Bureau of Statistics Pakistan.

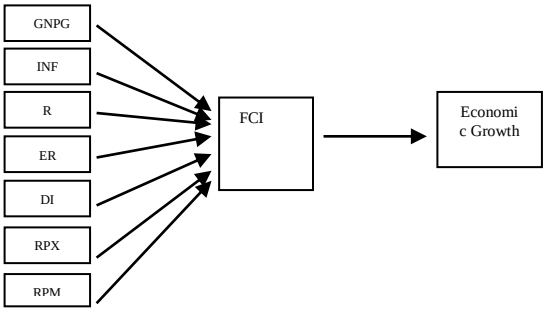
Data Analytical Techniques

The aim of this Study is to examine the determinants of foreign financial capital inflows and relationship of exogenous variables with endogenous variables. Model is specified to analyze selected factors affecting the volume of FCI. To avoid spurious results associated with the non-stationary data, Augmented Ducky Fuller test used to check stationary data of the variables (See Granger *et al*., 1974 and Ruffin, 2003). Once the data series are transformed into stationary, then we employ the Johansen cointegration technique (1988) to find long run relationship among the variables, as it is considered best to the solution for the variables with different order of integration. Once cointegration is found then the long run and short run parameters are determined by VAR and VECM approaches respectively (Din *et al.* 2011). In last Granger Causality test is also used to find the causal link among the variables and to investigate the lags effect caused by both deterministic and non-deterministic factors.

Theoretical Framework

The Theoretical framework is based on the work done by (Bordo et al., 2007) as given in Figure 1:

Figure 1: Theoretical Framework



The above figure describes the determinants of FCI and its effects on economic growth. The determinants of FCI are GNP, Inflation, Interest rate, Domestic investment, Exports and Imports. The VAR model is constructed for Foreign Capital inflows as:

$$FCI_t = f\left(GNPG, INF, R, ER, DI, RPX.RPM\right) \text{ or}$$

$$FCI = c + \sum_{i=1}^{p} \beta_1 GNPG + \sum_{i=1}^{q} \beta_2 INF + \sum_{i=1}^{q1} \beta_3 R +$$

$$\sum_{i=1}^{q2} \beta_4 ER + \sum_{i=1}^{q3} \beta_5 DI + \sum_{i=1}^{q4} \beta_6 RPX + \sum_{i=1}^{q5} \beta_7 RPM + u_i$$

Where c = Constant

β_i = Slopes with respect to corresponding variable

FCI = Foreign Capital Inflow. This includes the net capital inflows of *FDI, FPI, ODA* and *FWR*.

GNPG = Gross National Product Growth Rate

INF = Inflation

R = Interest rate

ER = Exchange rate of rupee against per unit of US dollar

DI = Domestic Investment

DS = Domestic Saving

RPX = Relative Price of Exports

RPM = Relative Price of Imports

u = is white noise random error term

p and q_i are the optimal lag length

Trend Analysis of FCI

Trend analysis of FCI to the country for the last 30 years given in the Figure 2 below:

Figure 2

Trend Analysis of FCI

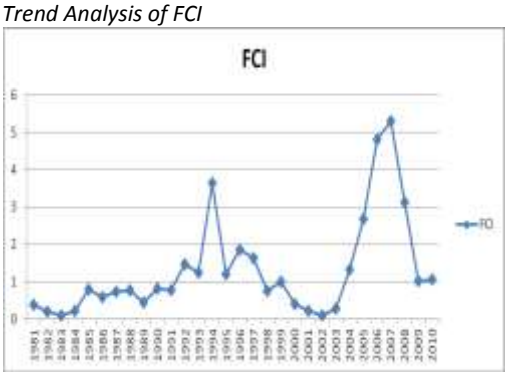


Figure 2 describes more variation more variations in FCI after 1990. The reason behind this can be political instability and the lack of peace in the region.In 1993, there was notable rise in FCI. Where during the period of 2002-2007, FCI accorded at the high level (Coalition-Support-Fund, leading role in war-on-terror)[6] because of the political interest of super-powers and policies of President Pervez Musharraf. However, after 2007 there is a continuous downfall in FCI due to terrorism, and extremism inside Pakistan badly affected investment environment and impeded FDI, FPI and ODA.

Results

ADF Unit Root Test

To examine either data on selected macroeconomic variables are stationary or of non-stationary at level or any difference in the Model, Augmented Ducky Fuller test used. Results of the variables in Model are given in table 1below:

[6] See (Pakistan Economic Survey, 2013-2014 for details)

Table 1
ADF test unit root test

Variables	p-value at level	p
ER	0.6346	.0494
FCI	0.1260	.0000
GNP	0.1213	.0000
INF	0.3288	.0000
R	0.6943	.0000
RPM	0.9991	.0402
RPX	0.9997	.0147

It concluded from the above table that all variables in Model are non-stationary at the level because the probability is greater than 5% significance level. While considering variables at the first difference, variables become stationary as (shown in last column) probability is less than 5% significance level.

Factor affecting FCI

Before applying short and long run analysis, VAR lag selection criteria is adopted for choosing the optimal lag length. The given Table 2 followed AIC, SC, and HQ lag selection criteria which select the optimal lag length to 2. Because the value of AIC, SC and FPE are at minimum at 2nd lag.

Table 2
Lag Selection Criteria

Lag	LogL	LR	FPE	AIC	SC
0	-497.633	NA	669264.6	36.116	36.49734
1	-328.099	230.08	430.294	28.578	32.00418
2	-201.629	99.36*	19.476*	24.116*	30.587*

* shows lag order chosen by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SIC: Schwarz information criteria

Johansen Co-Integration Test

To examine cointegration analyze variation in these selected variables and find their long-run relationship, JCT is used. The results so obtained are given in the Table 3.

Table 3
Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	5% Critical Value	p
None	.879189	179.21	103.8473*	0000
At most 1	.790692	120.03	76.97277*	0000
At most 2	.698540	76.247	54.07904*	0002
At most 3	.561337	42.672	35.19275*	0065
At most 4	.331373	19.599	20.26184	0615
At most 5	.257291	8.3286	9.164546	0719

Trace test indicates 4 co-integrating eqn(s) at the 0.05 level
* shows significance at 5% critical value
**Prob. Values are MacKinnon-Haug-Michelis (1999)

Table 4
Unrestricted Co-integration Rank Test (Max Eigenvalue)

Null Hypothesis	Eigenvalue	Trace Statistic	5% Critical Value	p-value**
None *	0.879	59.178	40.95680	0.0002
At most 1 *	0.790	43.790	34.80587	0.0033
At most 2 *	0.698	33.575	28.58808	0.0105
At most 3 *	0.561	23.072	22.29962	0.0390
At most 4	0.331	11.270	15.89210	0.2324
At most 5	0.257	8.3286	9.164546	0.0719

Max-eigenvalue test indicates 4 co-integrating eqn.(s) at the 0.05 level
* denotes shows significance at 0.05 critical value
**MacKinnon-Haug-Michelis (1999) p-values

According to the trace statistics and maximum Eigenvalue, the number of co-integrating vector are selected to at most 3 because the p-value up to "at most 3" hypothesis are statistically significant. Thus cointegration exists in the model.

Vector Error Correction Model

To find impacts of FCI on the selected variables in the model, VECM is applied. The results are given in Table 5:

Table 5
Results of VECM Estimates

Equations	CointEq1	CointEq2	CointEq3
FCI(-1)	1.000000	0.000000	0.000000
GNP(-1)	0.000000	1.000000	0.000000
INF(-1)	0.000000	0.000000	1.000000
R(-1)	-6.518126	0.985091	7.011329
	(0.72975)	(0.13492)	(0.84987)
	[-8.93198]	[7.30108]	[8.24990]
ER(-1)	0.002133	-0.001337	-0.040098
	(0.07186)	(0.01329)	(0.08369)
	[0.02969]	[-0.10060]	[-0.47911]
I(-1)	7.227885	-1.167250	-9.728712
	(1.17228)	(0.21674)	(1.36524)
	[6.16566]	[-5.38540]	[-7.12602]
X(-1)	-2.067154	0.568460	1.456532
	(0.56652)	(0.10474)	(0.65977)
	[-3.64886]	[5.42713]	[2.20764]
M(-1)	-2.938984	0.128418	2.779614
	(0.90616)	(0.16754)	(1.05531)
	[-3.24334]	[0.76649]	[2.63392]
C	-10.13098	-0.091179	61.15055
	(15.1497)	(2.80104)	(17.6434)
	[-0.66872]	[-0.03255]	[3.46592]

The overall result in the above table shows that error correction terms (ECT) are negative and statistically insignificant which concludes that the model will converge to its mean value. This also reveals the existence of long run relationship among the variables. The first box of the table shows long run elasticity, which are significant because the probability is less than 5% critical level, interest rate have a significant and negative impact on FCI, while it has positive impact on inflation and GNP in the long run. In short run at one year lag Investment and X have significant impact on FCI,

GNP and INF in the short-run, while M have insignificant impact on GNP in the short run at 5% significance level.

Long run coefficients of FCI model

The long run coefficients for the variables in the FCI model are calculated through normalizing method as presented in Table 7.

Table 6
Long run coefficients of FCI model

Variable	Coefficient	t-test	p-value
Constant	-13.761	-5.646	0.000*
GNP Growth Rate	0.147	1.740	0.096***
Inflation Rate	-0.303	-5.716	0.038**
Interest Rate	0.195	2.321	0.072***
Exchange Rate	0.027	2.818	0.010*
Domestic Investment	0.545	4.578	0.000*
Exports (% of GNP)	0.159	1.780	0.089***
Imports (% of GNP)	-0.012	-0.117	0.908
R Square	0.754	S.E	0.75837
Adjusted R Square	0.676	D-W test	2.235
F-Statistics	9.659	RSS	12.653
p-value	0.000	RMS	

Note:*,** and *** show significant at 1%, 5% and 10% critical values respectively

(1) D-W test, RSS and RMS show Durbin Watson test, residual sum of square and residual mean of square respectively.

The FCI model with the long run coefficients is written as under:

FCI = -13.761 + 0.147GNPG - 0.303INF + 0.195R + 0.027ER + 0.545DI + 0.159XD + -0.012MD

In the Table 7, the long run elasticity of economic variables in the FCI model are calculated. The results shows that both inflation and import rate have non-increasing and statically significant effect on FCI. This shows that the higher the values of these variables, lesser will be FCI inflows to Pakistan. Whereas all the remaining variables, namely GNP growth; interest rate and exchange rate; domestic investment, and exports as share of GNP have positive and significant impact on FCI to Pakistan (See Khan *et al.,* 2007; Ali, 2014 and Cheema and Rehman, 2013 for similar finding). This interprets that the more values of these variables, the higher will be the confidence level of foreign investors and hence there will be greater FCI inflows. Comparatively domestic investment is considered more important variable for FCI to Pakistan in this model because the coefficient of domestic investment is accompanied with the highest coefficient values. This suggests that the Government of Pakistan should focus on enhancing more domestic investment opportunity that will have direct effect on economic growth rate and ultimately on the FCI. The value of R^2 is 0.75 which shows about 75% of the variations are explained by the deterministic variables in the model Moreover the diagnostic tests reveals that the model satisfies all the underlying assumptions of OLS estimates.

Granger Causality Test

Granger causality test is applied to check the direction of casuality if any among the variables under consideration. The results of Granger causality test is given in table 3:

Table 7
Granger Causality Tests

Null Hypothesis:	F-Statistic	Probability	Decision
GNP does not Cause FCI	1.46295	0.2523	Do not reject null hypothesis
FCI does not Cause GNP	1.81436	0.1855	Do not reject null hypothesis
INF does not Cause FCI	0.10072	0.9046	Do not reject null hypothesis
FCI does not Cause INF	4.38324	0.0244	Reject null hypothesis
R does not Cause FCI	8.25594	0.0020	Reject null hypothesis
FCI does not Cause R	6.19431	0.0070	Reject null hypothesis
ER does not Cause FCI	1.66452	0.2113	Do not reject null hypothesis
FCI does not Cause ER	10.2914	0.0006	Reject null hypothesis
X does not Cause FCI	1.08534	0.3545	Do not reject null hypothesis
FCI does not Cause X	1.38526	0.2704	Do not reject null hypothesis

In Table 3, the p-value are compared with the 5% critical value. In this case it is concluded that, GNP, INF, ER and X do not granger cause FCI in short run. However, there is bidirectional causal between R and FCI; one way causality from FCI to ER; FCI to INF and from R to ER. This shows that FCI interact in the economy by effecting INF and ER which can influence the overall economic transmission system.

Conclusions

This study have made an attempt to analysis the need and economic impact specific assessment of the augmented FCI which incorporate FDI, FPI, FWR and ODA flows with reference to Pakistan— a developing country—for the period of 1981 to 2012. Various components embodied in FCI are FDI, FPI, FWR and ODA reduces the gap between demand and supply—resulted due to the lack of domestic resources—to increase exports by higher productivity, modernize industrial structure and ultimately improve TOT and BOP. Empirically, ADF test for unit root shows that all data are stationary at first difference, and cointegration is found via JCT. The long run coefficients of FCI model shows that both inflation and import rate have non-increasing and statically significant effect on FCI. VECM and granger causality tests conforms both the long and short run relationship among the variables in the FCI model. While in the long run, GNP growth; interest rate and exchange rate; domestic investment, and exports have positive and significant impact on FCI to Pakistan.

Recommendations

Based on the finding of this empirical study, we provide the following recommendation. Firstly, incentives should be given to local and foreign investors by the Government to attract more assets. Secondly, due to the negative impact of inflation and import rate, it is recommended to the Government to control inflation through monetary and fiscal policy tools and increase import duty on unnecessary and luxuries products. *Thirdly,* the study is in favor of financial liberalization to attract foreign investors by providing higher interest rate. *Fourthly,* Rationalized labor laws should be designed to encourage skills personal to work both domestically as well as internationally to earn remittances that would augment foreign exchange reserves and ultimately would have effect on economic growth rate.

Major Contribution

This research contribute to the empirical assessment of the safe components of foreign capital inflows (FCI in a broad sense including FDI,FPI, FWR and ODA) in relation with macro-economic indicators (i.e. gross national product, general price level, interest rate, foreign exchange rate, investment, relative prices of domestic export and trade balances which the existing studies ignore. The Study found export earnings, foreign workers remittances and export earnings from the services of human capital abroad have direct positive impact on macroeconomic indicators. This attempt presented re-evaluation in relationship among macro-economic variables and foreign assets flows towards Pakistan by using "Vector-Error-Correction-Model" on "Time-Series-Data" found significant effect evidence of FCI on growth of domestically produced goods and capital accumulation through investment. Empirical findings strongly identified dynamic relationship in short and long run in variables during the study-period concluded 'private foreign capital' inflow significant positive relation and direct impact on growth. A complementary positive relationship of host economy savings and components of FCI revealed and suggested supplementary direct effect of FCI on GDP by enhancing quality of its own means. On the basis of these finding, we emphasize that current accounts deficits must be reduced. For this purpose, we recommend to: (i) target potential sectors to increase exports by diverting FCI to tradable areas (export-oriented) in agro-based industries (ii) decreasing dependency on foreign aid, domestic resources mobilization (iii) control on current accounts deficits in BOP to stabilize domestic currency & foreign reserves. Study can serve as a valuable base for future empirical work perspective-Plan Maker's, stack-holders of State Bank and GOP to reformed economy and avoid external debt. Still there is a need to conduct more empirical studies and analyze the impact of harmony in four core policies (Monetary, Fiscal, Commercial & Foreign Policies) on FCI in Pakistan.

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