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The Impact of Foreign Capital Inflow (CPI) on Pakistan's Economic Development

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Abstract

The influence of the component of the foreign capital inflow (FCI) on GDP growth has always been a contentious issue among the academics and still the magnitudes of the elements of foreign capital inflow (FCI) was not confirmed. Therefore, this study was accomplished to check the effect of the component of the foreign capital on Pakistan's GDP growth to used ARDL and granger-causality methods for estimation from 1975 to 2020. Results indicated that foreign aid, personal remittances, and FDI has beneficial and important effect on GDP growth. There is short-period equilibrium is converged to long-period equilibrium with 53% adjustment level and exist long-period co-integration among the variables. This study also found that there is a two-way causality among remittances and GDP growth, while there is unidirectional causality running from FDI to GDP growth. However, there are no causality found between aid and GDP growth. Therefore, this study confirmed that the FCI has helpful consequences on GDP growth of Pakistan. This study recommended that the government should attract FDI inflow, more remittances, and aid to enhance economic growth.

Keywords: *Remittances, Aid, FDI, ARDL, Pakistan*

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Background of the Study

FCI are an important component of the world economy's drive toward economic globalization and integration. In the context of a lack of internal resources to fund long-term development, most developing nations continue to rely heavily on external funding sources. The demand for foreign capital (FC) to supplement native resources has been appreciated as a growth and development stimulant, since it is regarded as an essential component of the process of economic expansion in emerging nations. (Chorn & Siek, 2017).

Foreign capital inflows are a strategy for emerging nations to achieve economic integration and globalization. In terms of internal resources, financing long-period development initiatives in many less developed nations is dependent on foreign sources for implementation. However, the need for additional FCI to support local resources is a driver of development since it is interpreted as a critical component of the GDP growth process in most emerging countries. FCI also boost local investment, improve management skills, facilitate technological transfer, and raise employment (Alfaro & Johnson, 2013). The financial impacts of FCI are critical in transitioning controls from the depression era to the prosperity phase. Furthermore, most emerging nations' investment has been hampered by a lack of investment capital (Onyeiwu, 2015).

It is commonly established in economic literature that FCI boosts GDP growth in emerging countries (Lipsey, 2000) and (Nwaogu & Ryan, 2015). FDI, remittances, official development aid, and foreign portfolio investment are the many types of FCI. In this case, FDI may be a huge source of external money for a developing country, leading to economic progress (Mowlaei, 2018). Remittances are mostly sent by non-residents to their home country's household (Majumder & Donghui, 2016). Personal remittance is one of the leading sources of exterior funding for emerging countries. Official development assistance refers to foreign aid, or the transfer of financial resources from donor nations' central or local governments and international bodies to poor countries. The goal of official development aid is to promote GDP and enhance the quality of life in underdeveloped nations (Mowlaei, 2018). Following a significant dip in the 1980s, foreign money began to pour into Asian countries at an increasing rate in the 1990s (Baharumshah & Thanoon, 2006).

FCI and GDP growth have been a source of contention in the finance literature. While several studies have found a beneficial connection between FCI and GDP growth (Osinubi & Amaghionyeodiwe, 2010), (Odhiambo, 2011), (Khadraoui, 2012), and (Saibu, 2014). However, several other research have

shown either a negative or uncertain association between capital inflows and GDP growth (Burke & Ahmadi-Esfahani, 2006) and (Shahbaz & Rahman, 2010). According to Sahoo and Sethi (2020), trade and globalization have a promising and substantial effect on GDP growth. Similarly, Rao et al. (2020) investigated the link between FDI, foreign aid, and GDP growth in Asia from 1980-2016 and observed that foreign aid is adversely related with GDP and FDI, while, FDI has beneficial effect on GDP growth.

Jena and Sethi (2019) observed that Foreign aid, GDP growth, investment, inflation, financial development, and trade have long- and short-run correlations. Similarly, Jena and Sethi (2021) found the positive connection between foreign aid and GDP. Likewise, Rakhmatillo et al. (2021), acknowledged that FDI has favorable consequences on GDP. However, methodological techniques used in these research exposes that the lack of agreement in the infrencial findings from previous studies stems from how FCI is quantified and included in model. More particular, it was discovered that when FCI combines with additional growth characteristics such as trade, human and physical capital provide greater and more substantial assessments of favorable cosequences on GDP (Daniel, 2011) and (Saibu, 2014).

In the case of Pakistan, FDI is regarded as a primary source of capital, human resources, and achievement of goals, and it has had a substantial influence on the country's GDP growth. However, during the last decade, Pakistan's FDI has declined due to a quantity of aspects, involving a lack of regulations to assist international investors. One of the key causes is a lack of law and order, which is a critical concern in reducing the ratio of FDI. Political instability persists, causing economic circumstances to deteriorate over time. The tax rules in Pakistan are unrealistic, which harm FDI (Zaheer & Kiramat, 2019).

Pakistan's economy is centered on development, with an annual growth-rate of 4.240% in 2014-15, and 4.71 percent in 2015-2016, and a minimum growth rate of 7% is required to attain the goal of development. As a result, at the time, FDI inflows serve as a primary driver of GDP, and the government has implemented liberalization measures to achieve steady levels of FDI inflows. Furthermore, policymakers are always attempting to provide a stable environment for international investors; yet terrorism remains the primary source of discouragement for foreign investors. Terrorism appears to be a key cause of disruption in FDI that leads to GDP development in UDCs such as Pakistan. Because of the increased number of terrorist attacks, there is political instability and economic uncertainty, which are discouraged investors from investing due to the danger of losing their assets and gains (Serfraz, 2017). Amir

Ullah Khan & Et al stated: “The failure of civilian government and other political forces to address the issues of terrorism, extremism, and militancy in the country led to adopt this short-term policy.” (Khan, Jaspal and Yasmin; 2017: 27)

Pakistan takes benefits from several development projects. Like, CPEC worth US\$46.00 billion in projects, recommending Pakistan a tremendous opportunity for expanded FDI and for management a portion of the primary barriers impeding its growth: limited attractiveness, shortage of energy, and a lack of effective laws for foreign investors. The effective completion of the aforementioned projects must have a substantial impact on Pakistan's commerce and GNP (Ashraf et al., 2021). FDI is a notable characteristic in the acceleration of GDP, particularly in UDCs. FDI inflows increase the ability to invest outside in the local money that achieve a higher GDP growth. (Samimi et al., 2011).

Earlier scholars examined the growing trend of capital inflows and found varied outcomes. For example, Kentor (1998) realized that FCI harm GDP in the long period but a favorable short-Period. The negative effect of the FCI on GDP growth was confirmed by Chowdhury et al. (2001), Pattillo et al. (2002), and Ekanayake and Chatrna (2010). Capital inflows have also been shown to have a promising influence on economic-growth by previous studies such as Ndambendia and Njoupouognigni (2010), Tan (2009) and Karamelikli and Bayar (2015).

Most of the research looked at inflow factors separately and found a variety of findings. In terms of FDI, Frimpong and Oteng-Abayie (2006), Dogan (2014) and Akbas et al. (2013) discovered that FDI had a beneficial impression on GDP. Ekanayake and Chatrna (2010) examined foreign aid from 1980-2007 and utilized GMM and OLS methodologies and discovered negative effect on GDP. Tan (2009), conversely, discovered a helpful consequence of FA on GDP using a PMG estimating approach for forty-six (46) emerging countries. In terms of remittances, which are a crucial instrument for fostering GDP, favorable effects on economic growth have been documented in current research such as Paul et al. (2011), Karamelikli and Bayar (2015) and Bayar (2015). External debt is a strategy used to close the gap between public spending and receipts. It is utilized not just for fiscal help, but also to encourage FDI inflow (Rehman & Ahmad, 2016). External debt is highly indicated in the literature to have a unfavorable impact on GDP. Chowdhury et al. (2001), and Pattillo et al. (2002) as a result of inadequate resource allocation and government mismanagement.

The majority of the studies had one thing in common: they did not incorporate all of the inflow components in a regression model, which may have resulted in omitted variable bias and parameter inconsistency. Fambon (2013)

used ARDL technique to examine foreign aid and FDI and their influence on Cameroon's GDP. He discovered that FDI had a considerable impact on Cameroon's GDP growth, but foreign aid (FA) had a favorable but minor consequences. Nwaogu and Ryan (2015) examined the association between economic development and a mix of inflow factors such as FDI, PR, and FA from fifty-three (53) African and thirty-three (34) Latin American and Caribbean nations using the GMM approach. Waheed (2004) discovered that remittances had no substantial consequences on GDP, but FDI and foreign aid had a favorable and considerable impact. According to the literature, there is no one research that has included all of the inflow factors to determine their influence on GDP growth. To reach their goals, researchers used various study designs, time periods, and methodologies to examine the influence of FCI on GDP, but there were still flaws such as heterogeneity, spurious regression, variables, and trustworthy data.

In short, the consequence of the component of FCI on GDP has continuously been a debatable issue among scholars and still the magnitudes of the components of foreign capital were not confirmed. Therefore, the main aim of the study to check the effect of the component of the foreign capital inflow on Pakistan's economic growth. This study significantly contributes to the existing literature. Similarly, this study used the updated data set for Pakistan and ARDL technique for estimation because no study is available in case of Pakistan which used the updated data set and all components of foreign capital like remittances, foreign aid, and FDI.

Literature Review

The two-gap model provided the theoretical groundwork for the intention that FA can influence GDP. This model postulates that economic development in developing countries may be hindered by the presence of two-gaps, the exports imports gap, and the saving investment gap. The saving gap arose because of domestic saving being too low in emerging nations for a variety of reasons. Thus, domestic savings will almost likely be lacking for the necessary investment, such as the goal of required investment required to accomplish the desired development. FCI help was crucial to bridge the savings-investment gap and permit emerging countries to invest more than local savings (McKinnon, 1964). Similarly, a balance of payment deficit or an import surplus creates a foreign exchange gap, which is compensated in practice by foreign aid. The reasoning is that even if domestic savings are sufficient, they cannot be used to acquire the necessary FCI. Thus, the foreign-exchange (FE) gap exists, and the

saving gap may exist without the exchange gap, or both gaps may occur. Many scholars suggest that if capital imports are subsidized by foreign aid, the pace of capital formation in nature will accelerate (Iyoha, 2004). This two-gap model is comparable to the Harod-Domar (H-D) model, which shows that national saving is insufficient to import GKF (Adamu, 2013).

Chenery and Strout (1968), and Chenery and Bruno (1962) used the two-gap model, and Bacha (1990) discovered a three-gap model, adding fiscal gap when public tax revenue is insufficient to finance government needs, and the government requires foreign aid to fill this gap. Aid may have an effect on GDP through influencing capital growth. As a result, increasing investment leads to increased economic development, and foreign aid can replace the budgetary shortfall (Hansen & Tarp, 2000). Foreign aid boost the investment by improving infrastructure (Adamu, 2013). There are numerous reasons why foreign aid may be ineffective in influencing GDP growth, including underprivileged economic policies, incompetent government, a deterioration in saving, Dutch disease, corruption and mismanagement, and so on (Radelet et al., 2004).

Baharumshah and Thanoon (2006) found that FDI is growth enhancing, capital inflow has adverse effect growth, debt has positive effect on growth. Similarly, Mohey-ud-Din (2007) shows a certain impact of FCI on the Pakistan's GDP growth. Hye et al. (2010) found that that FDI and ODA effects GDP positively. Saibu (2014) found that FCI has important effect on GDP growth. Okafor et al. (2016) found that there is bi-causality between GDP and FDI. Chorn and Siek (2017) found that both FDI and FA have significant encouraging consequence on GDP. Mowlaei (2018) noticed that that all three-forms of FCI have significant positive effects on GDP. Musibau et al. (2019) found that irresistible evidence that FCI and human skills improvement have a meaningful consequence on GDP in ECOWAS. Dinga et al. (2020) found a harmful effect of ODA and external debt on GDP.

Emam et al. (2021) used an ARDL approach for estimation and confirmed that FDI and ODA as supplementary drivers of GDP. Raza et al. (2021) used the data for OECD countries from 1996-2013 and GMM and Fixed effect model estimator for estimation. They found that FDI have a substantial encouraging association with GDP growth. Azam and Feng (2022) used robust and fixed-effects least squares estimators for estimation and for 37 developing countries data from 1985-2018. They discovered that FA tends to boost development in the aggregate sample, but they get mixed results when we disaggregate the sample into different socioeconomic categories. The empirical findings also imply that in low-income nations, exports contribute to GDP

growth, whereas FA and FDI have a little contribution. FA and FDI help lower-middle-income nations thrive economically. FDI adds to GDP growth in higher middle-income nations, whereas foreign aid has no beneficial influence on GDP growth.

Conceptual Framework

The conceptual framework shows the different channels between the froing capital inflow and economic growth. But this study considers only the main channels of the framework like C₂, and C₁ only due to time constraint.

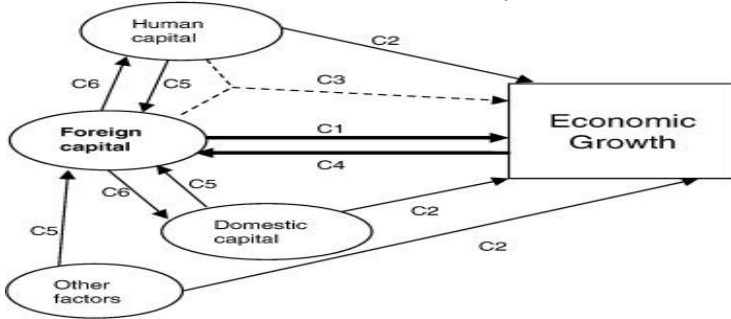


Figure 1: Conceptual Framework

Methodology This study used data from 1975-2020 and collected from (World Development Indicators (WDI), 2022).

Model The same model also used by Yaseen (2012), Meyer and Shera (2017) Musibau et al.(2019), Dinga et al. (2020) and Jena and Sethi (2021).

$$GDPpc_t = \beta_0 + \beta_1GKF_t + \beta_2SSE_t + \beta_3LF_t + \beta_4Rem_t + \beta_5FDI_t + \beta_6FA_t + \mu_t \dots(1)$$

Variables Explanations

Table 1: Explanation of Variables

S#	Variables	Extent	Symbol
1	GDP growth	Annual %	EG _t
2	Gross capital formation	As %age of GDP	GKF _t
3	Secondary School enrollment	As % of gross enrollment	SSE _t
4	Personal remittances	As %age of GDP	REM _t
5	FDI, net inflows	As %age of GDP	FDI _t
6	Net official development assistance	Log (current US\$)	FA _t
7	Labor force participation	As %age of total population ages 15+	LF _t

Econometrics Techniques

The ARDL techniques was developed by Pesaran and Shin (1998). The ARDL tecniques is more benifical in the mixed order of variables, tackle the problem of endogeneity and give reliable results.

$$\begin{aligned}
 EG_t = & \beta_0 + \sum_{i=1}^n \beta_{1i}EG_{t-i} + \sum_{i=0}^n \beta_{2i}SSE_{t-i} + + \sum_{i=0}^n \beta_{3i}GKF_{t-i} \\
 & + \sum_{i=0}^n \beta_{4i}LFP_{t-i} + \sum_{i=0}^n \beta_{5i}REM_{t-i} + \sum_{i=0}^n \beta_{6i}FDI_{t-i} \\
 & + \sum_{i=0}^n \beta_{7i}FA_{t-i} + \mu_t
 \end{aligned}
 \tag{2}$$

$$\begin{aligned}
 \Delta EG_t = & \beta_0 + \sum_{i=1}^n \beta_{1i}EG_{t-i} + \sum_{i=0}^n \beta_{2i}\Delta SSE_{t-i} + \\
 & + \sum_{i=0}^n \beta_{3i}\Delta GKF_{t-i} + \sum_{i=0}^n \beta_{4i}\Delta LFP_{t-i} + \sum_{i=0}^n \beta_{5i}\Delta REM_{t-i} + \\
 & \sum_{i=0}^n \beta_{6i}\Delta FDI_{t-i} + \sum_{i=0}^n \beta_{7i}\Delta FA_{t-i} + \gamma_1SSE_t + \gamma_2GKF_t + \gamma_3LFP_t + \\
 & \gamma_4REM_t + \gamma_5FDI_t + \gamma_6FA_t + \mu_t
 \end{aligned}
 \tag{3}$$

Analysis

Unit Root test Results

Table 2 presents the A.D.F test findings revealed that the series EG, GKF, FDI and LFP are stationary at level. However, the series secondary school enrollment, foreign aid and personal remittances are not stationary at level but stationary at first difference. However, the series foreign direct investment is station at level. The ADF test gives mix results, therefore, the ADF test results endorsed the utilization of ARDL techniques for estimations.

Table 2: ADF Test Results

Variables	1(0)		1(1)	
	t-stat	p-value	t-stat	p-value
EG _t	-3.692330*	0.0075	----	----
GKF _t	-5.418863*	0.0000	----	----
LFP _t	-5.739001*	0.0000	----	----
SSE _t	1.119463	0.9971	-4.539616*	0.0007
FA _t	-2.067655	0.2583	-4.023809*	0.0030
FDI _t	-3.106835**	0.0333	----	---
PR _t	-0.927567	0.7703	-5.299994*	0.0001

Note: *, ** and *** signifies the significance level 1%, 5%, and 10%.

Regression Results

Table 3 shows the regression results estimated through ARDL techniques displays that in the long-period, the GKF has momentous and helpful consequence on GDP growth. A % rise in the GKF lead to an improvement in GDP by 0.16%. This results same with the results of Adhikary (2011), and Oketch (2006), while, The opposing consequences was described by (Blomström et al. (1996)). Similarly, the labor force participation has encouraging and substantial effect on EG. A % rise in the labor force participation will bring a rise in the GDP growth of 0.10%. The similar outcome was given by Rehman et al. (2020) and Paudel and Perera (2009). Furthermore, the SSE has beneficial and substantial consequences on EG. A % rise in the SSE will bring a boost in the EG by 0.12%. The same results was given by Rehman et al. (2020), Rehman et al. (2018), and Cooray (2009). Likewise, foreign aid has helpful and important consequences on GDP. A % increase in FA will bring a rise in the GDP growth by 0.38%. Same with Mullick (2004), and Ibrahim and Dahie (2016) that FA has positive effect on GDP. However, the outcome is contradict with Khan and Ahmed (2007), Muhammad and Qayyum (2011), and Ali (2013) that FA have harmful and substantial effect on EG.

FDI has a beneficial and remarkable effect on GDP growth. A % rise in foreign direct investment will boost the GDP growth by 0.75%. The identical consequence was given by Nyoni and Bonga (2017) and Faruk and Abdullahi (2019), while, contradictory consequence was given by Sebikabu et al. (2020) and Abdullah et al. (2015). Personal remittances have an helping and considerable effect on GDP growth. A % rise in the personal remittances will bring boost in the GDP growth by 0.30 percent. The consistent conclusions were given by Cazachevici et al. (2020), Cooray (2012) and Meyer and Shera (2017), while Feeny et al. (2014) and Chami et al. (2005) gives opposite results.

In the short run, the GKF has hopeful and substantial consequences on EG. A % rise in the GKF will bring a boost in the EG of 0.09%. Likewise, the LFP has fruitful and important consequence on EG. A % rise in the LFP will bring a boost in the EG of 0.05%. Furthermore, the SSE has optimistic and considerable consequence on EG. A % rise in the SSE will boost the EG by 0.35%. Correspondingly, the FA has encouraging and important consequences on GDP. A % rise in foreign aid will bring a boost in the EG by 0.53%. FDI has constructive and important effect on EG. A % rise in FDI will boost the GDP growth by 0.55%. Personal remittances have encouraging and but unimportant effect on GDP growth.

As the negative and substantial value indicated that short-period equilibrium is convergent to long-period equilibrium with 53% adjustment level. The ARDL test revealed that the variables had long-period cointegration.

Table 3: ARDL Results

Variable	Coefficient	Std. Error	t-Statistic	P-value
GKF _t	0.156558*	0.029961	5.225345	0.0000
LFP _t	0.101590*	0.031502	3.224906	0.0030
SSE _t	0.121274*	0.035593	3.407278	0.0018
FA _t	0.381873*	0.120701	3.163804	0.0035
FDI _t	0.751332*			
	*	0.298193	2.519613	0.0171
	0.297403*			
PR _t	**	0.151934	1.957444	0.0594
C	-1.380172	2.633538	-0.524075	0.6040
D(GKF _t)	0.091634*	0.020582	4.452121	0.0001
	0.049397*			
D(LFP _t)	**	0.025314	1.951388	0.0588
	0.351074*			
D(SSE _t)	*	0.136219	2.577278	0.0142
D(FA _t)	0.532686*	0.046833	11.37420	0.0000
	0.552534*			
D(FDI _t)	*	0.232533	2.376146	0.0229
D(PR _t)	0.238260	0.171093	1.392574	0.1723
D(ECM _{t-1})	0.529768*	0.022725	23.31183	0.0000

ARDL-Bound Test Results

Statistics	Value	Critical Values		
		Significance level	1(0)	1(1)
F-statistic	10.90603*	10%	1.99	2.94
		5%	2.27	3.28
		1%	2.88	3.99

Note: *, ** and *** signifies the significance level 1%, 5%, and 10%.

Diagnostic tests Results

The diagnostic test results show that the residuals are normally-distributed, no serial correlation in the data, no heteroskedasticity problem in the data, no specification error in the model and the model is stable.

Figure 2: Jarque-Bera Test

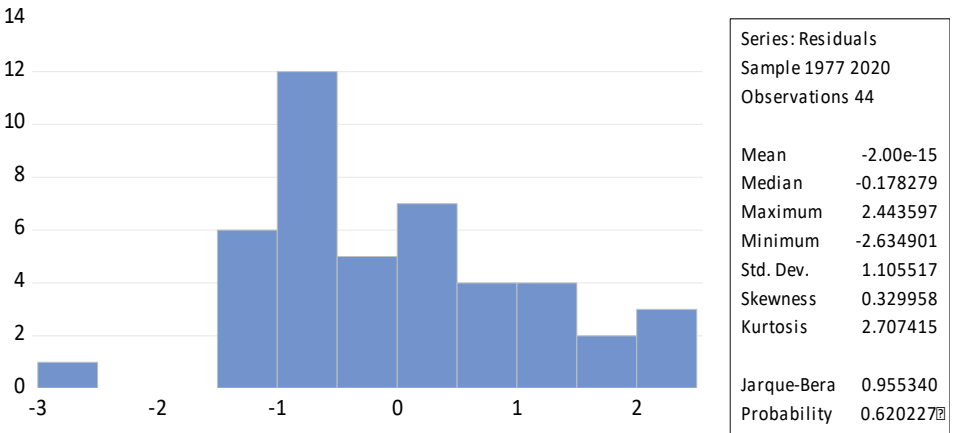


Table 4: Diagnostic Tests Results

Test	Statistic	p-value	Decision
Breusch-Godfrey (B-G) Serial Correlation LM	0.164443	0.8492	Sustain H ₀
Ramsey RESET Test	0.997175	0.3267	-do-
	0.994359	0.3267	
Breusch-Pagan-Godfrey for Heteroskedasticity	0.642121	0.7902	-do-

Figure 3: CUSUM Test Outcome

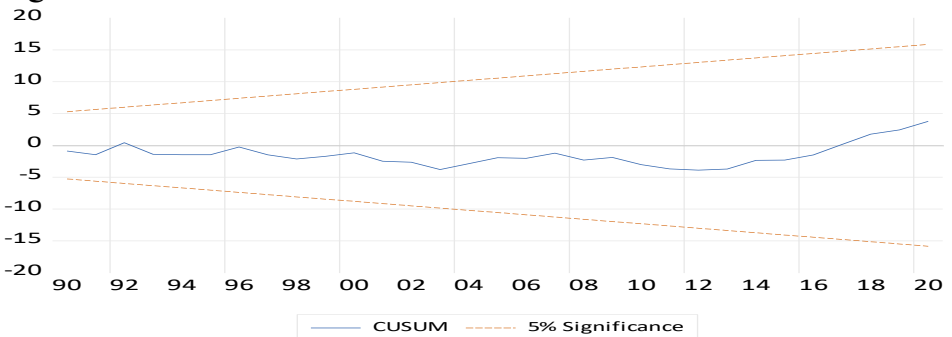
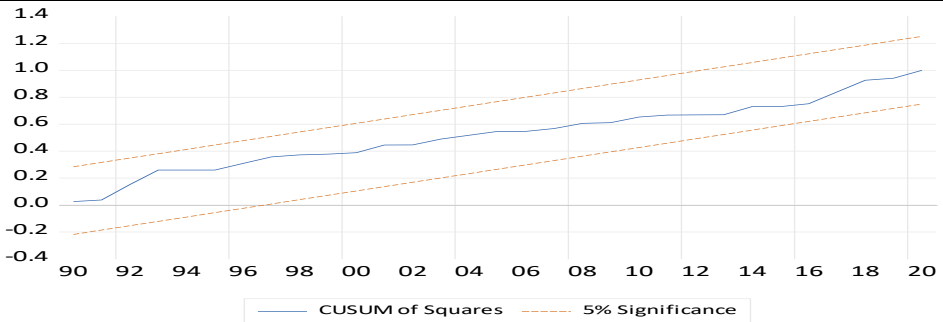


Figure 4: CUSUMOS Test Outcome



Granger Causality Outcomes

Table 5 shows the granger-causality outcomes, which demonstrates that there are bidirectional causality among EG and GKF, remittances and EG, while, there are uni-directional causality running from secondary school enrollment and FDI to economic growth, GKF to FA, FDI to GKF, foreign aid to remittances. However, there are no causality found between labor force participation and EG, FA and EG, labor force participation and GKF, GKF and SSE, GKF and remittances, secondary school enrollment and LFP, foreign aid and LFP, FDI and LFP, remittances and LFP, foreign aid and secondary school enrollment, FDI and SSE, remittances and SSE, FDI and foreign aid, FDI and remittances.

Table 5: Granger Causality Results

Variables	EG _t	GKF _t	LFP _t	SSE _t	FA _t	FDI _t	PR _t
EG _t	---	6.3563* (0.0041)	1.2200 (0.3063)	1.0889 (0.3466)	1.6171 (0.2115)	1.1374 (0.3311)	4.0976* (0.0083)
GKF _t	2.5276* ** (0.0959)	---	0.3969 (0.6751)	1.4453 (0.2480)	5.1639* * (0.0102)	1.5934 (0.2162)	0.1000 (0.9051)
LFP _t	0.0427 (0.9582)	0.0020 (0.9980)	---	0.0333 (0.9673)	0.0597 (0.9421)	0.2034 (0.8168)	1.7584 (0.1857)
SSE _t	3.2880* * (0.0479)	1.1325 (0.3326)	1.7969 (0.1793)	---	1.6394 (0.2072)	1.9432 (0.1569)	0.7393 (0.4840)
FA _t	1.2942 (0.2856)	0.1476 (0.8632)	0.5472 (0.5830)	0.1041 (0.9014)	---	0.6183 (0.5441)	3.5269* * (0.0391)
FDI _t	2.6527* ** (0.0832)	4.6097* * (0.0160)	0.3875 (0.6813)	0.2852 (0.7534)	0.6508 (0.5272)	---	0.0782 (0.9249)
PR _t	3.0402* * (0.0307)	1.3064 (0.2824)	1.6040 (0.2141)	0.3008 (0.9697)	1.4236 (0.2531)	0.9414 (0.3988)	---

Note: *, ** and *** signifies the significance level 1%, 5%, and 10% and p-value inside the parenthesis.

Conclusion

The main aim of the study to examine the effect of the component of the foreign capital inflow on Pakistan's economic growth. This study utilized the data period from 1975-2020 and used ARDL techniques for estimation. Results indicated that the GKF, LFP, secondary school enrollment, foreign aid, personal remittances and FDI has encouraging and important effect on GDP growth There is short-period equilibrium is converged to long-period balance with adjustment speed 53% and exist long-period cointegration among the variables. This study also found that there is bi-manuevering causality among remittances and GDP growth, while there is uni-manuevering causality running from FDI to economic growth. However, there are no causality found between foreign aid and GDP growth. Therefore, this study concluded that the foreign capital inflow has positive effect on Pakistan's GDP growth and suggest to government should make easy policies regarding the FDI inflow, for oversees Pakistani nationals to send more remittances, and for foreign donors to send more aid to enhance the economic growth.

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