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Impact of Foreign Aid and IMF Programme on Economic Growth in Pakistan

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Abstract

Foreign aid has been recognized as an important source of external financing in developing countries. Considering the significance of foreign aid in Pakistan, present study has attempted to empirically analyse the impact of foreign aid and IMF programme on economic growth in Pakistan. The Autoregressive Distributed Lags (ARDL) technique has been employed to estimate the model using time series data from 1975 to 2020. The study finds that foreign aid exhibits a negative impact on economic growth both in the short run as well in the long run. The study further reveals that loans have a negative, while the grants portray significantly positive impact on economic growth. Similarly, in long run role of IMF is positive for economic growth of the country, however, in the short run, its impact is negative. The major policy implications for the government of Pakistan is to avoid foreign economic assistance and rely on, internal resource generation by increasing its revenue. Foreign aid requires an efficient external debt management and its payment obligations at the lowest possible cost consistent with a prudent degree of risk.

Keywords: ARDL, Foreign Aid, Pakistan, Economic Growth

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1. Introduction

Since the implementation of the Marshall Plan in 1948, foreign aid has become a crucial source of external financing for developing countries. The OECD describes foreign aid as government assistance intended to promote economic development and welfare in recipient countries. In addition, the definition considered in this study emphasises concessional assistance and a grant element of at least 25 percent. Aid has helped recipient countries improve social indicators, bring structural change, stimulate economic growth, and reduce the incidence of poverty (Arndt et al., 2015). In developing countries with scarce resources, it helps to transform the economy structurally and enables low-income developing countries to realise self-sustaining economic growth. Evidence shows that foreign aid played a vital role in the economic development of Israel, South Korea and Taiwan.

However, in many other developing countries, donors used aid to interfere in recipient countries' domestic and foreign policies. Excessive lending makes them dependent, to the point that the economy cannot function without further support and financial aid. Hence, they are unable to protect themselves from interference in their internal affairs. Bird and Rowlands (2007) summarised that foreign aid up to a certain extent is essential for economic development but excessive reliance on foreign aid is harmful for developing countries. IMF is recognised as the world's "financial crisis firefighter"; it tries to help countries deal with debt crises and prevent the global financial system from the consequences of a country's default. However, the country has to adopt reforms suggested by the IMF to restore foreign exchange reserves and improve the balance of payments.

However, evaluating the performance of IMF programmes across countries over several decades is complex because countries usually approach the IMF during economic crises. Therefore, identifying what would have happened without IMF support is difficult. Some interventions during financial crises have been regarded as successful, whereas others have generated mixed outcomes. Similarly, differences in domestic economic conditions, the design of adjustment measures, and the implementation of reforms make cross-country comparisons challenging (Balima & Sokolova, 2021; Fidrmuc & Kostagianni, 2015). Since its inception, Pakistan has been a significant recipient of foreign aid. During the 1960s and 1970s, it was among Asia's largest aid recipients. Likewise, Pakistan received substantial aid due to its pivotal role in the American-Soviet conflict in Afghanistan. The 9/11 attacks marked a turning point in Pakistan's history, as the influx of aid increased more than sevenfold due to its involvement in the "War on Terror." (Khan & Ahmed, 2007). Pakistan is one of Asia's largest aid recipients and a frequent user of IMF facilities. Since 1947, Pakistan has entered into 22 agreements with the IMF.

Given Pakistan's continuing reliance on foreign aid and IMF programmes, analysing the relationships between different forms of external financing and economic development is particularly important. Although previous studies have examined foreign aid and IMF assistance in Pakistan, their findings are not uniform (Anwar, 2002; Hakro & Ahmed, 2006; Khan & Ahmed, 2007). Therefore, this study examines foreign assistance, disaggregates loans and grants, and considers IMF programme participation within a common time-series framework. In addition, its distinction between short-run and long-run associations helps clarify the policy relevance of the composition of external financing rather than treating all assistance as equivalent.

2. Literature Review

2.1 Empirical Literature

Over the years, numerous studies have analysed the effect of foreign aid on economic growth. Although aid may help growth, its impacts may differ across countries because of variations in economic conditions. Alvi et al. (2008) found that policies play a crucial role in a country's economic growth. It tends to enhance growth activities in a conducive policy environment. Asterious (2009) found that aid has a significant impact on long-run growth. However, the magnitude depends on macroeconomic policies. In the absence of sound macroeconomic policies, foreign aid fails to yield positive effects on growth (Burnside & Dollar, 2000). Clemens et al. (2012) is of the view that good governance and favourable geography are pre prerequisites for positive impacts of aid on economic growth. Jena and Sethi (2019) also concluded that suitable policy measures are necessary to generate growth momentum with the help of foreign aid inflows. Similarly, Yahyaoui and Bouchoucha (2020) and Abate (2022) argued that aid performs better under good institutions. However, Adusei (2020) argued that institutional quality plays an insignificant role in the aid-economic growth relationship.

Niyonkuru (2016) and Galiani et al. (2017) argued that aid, by supplementing recipient countries' available resources, enhances investment, leading to higher growth, and that its effectiveness does not depend on a good policy environment. Easterly et al. (2006) also supported this view. Harbab and Hall (2019) emphasised that, to promote economic growth, aid to middle- and low-income countries should be increased. Wagner (2014) and Yiew and Lau (2018) argued that foreign aid enhances growth up to a certain threshold, after which its impact turns negative. Sethi et al. (2019) found that in India, aid has a significantly positive effect on economic growth, but in Sri Lanka, the impact is insignificant. Nchofoung et al. (2022) found that aid fosters economic growth in developing countries by providing resources for physical and human capital development. Younsi (2021) found that foreign aid positively impacts economic growth in African Economies. Golder et al. (2021) also concluded that foreign aid has significantly helped Bangladesh's economic development.

However, Mitra and Hossain (2013) concluded that foreign aid hurts growth by expanding the public sector, leading to poor governance. An increase in government size, accompanied by foreign aid, results in higher rent-seeking activities. Foreign aid also enriches the elites in developing countries and stimulates corruption (Arellano et al., 2009). Edward and Karamuriro (2020) found that foreign aid has a negative effect on economic growth in Ghana. This is also supported by Rao et al. (2023) for East Asian countries and Babalola and Shittu (2020) for West African countries. Kamguia et al. (2022) argued that aid hinders the economic growth of developing countries by making them 'aid dependent'. Alesina and Dollar (2000) argued that instead of using aid for productive work, self-interested people in aid-recipient countries manoeuvre it for their personal gains. As a result, aid has a detrimental relationship with economic growth (Feeny & Desilva, 2012). Nemlioglu and Mallick (2020) found that borrowing from multilateral donors benefits a country if it uses these funds for innovative purposes, and concluded that borrowing should be directed toward achieving long-term development goals. However, Liew et al. (2012) and Dreher and Langlotz (2020) also conclude that foreign aid has no significant effect on economic growth.

(2011)(2015)(2010)Previous research suggests that the relationship between IMF programmes and the economies of developing countries varies across settings. Biglaiser and DeRouen (2011) questioned whether IMF-supported reforms adequately reflect domestic circumstances. Similarly, Ahmed and Sukar (2018) criticised applying standardised policy prescriptions to economies with different institutional and structural characteristics. However, Balima and Sokolova (2021) and Fidrmuc and Kostagianni (2015) identified circumstances in which IMF assistance is associated with improved economic performance. In addition, Papi et al. (2015) and Dreher and Walter (2010) examined links between IMF lending and financial or currency crises. Conversely, Muhumed and Gaas (2016) associated IMF interventions with weaker growth and greater inequality. These differing findings underline the importance of examining the economic context and the timing of programme effects.

Mullick (2004) finds a positive result of US aid on economic growth in Pakistan. Ishfaq and Ahmad (2005) find no significant influence of foreign aid on economic development. Anwar (2002) maintained that IMF programmes in Pakistan during the 1990s have crowded out development expenditure, resulting in lower economic growth rates and increased debt burden. Hakro and Ahmed (2006) found that most macroeconomic indicators, such as the current account, unemployment, and inflation, deteriorated despite the fiscal management imposed by the IMF programmes. Poor implementation of reforms dampened the economy. The empirical literature therefore provides mixed evidence on the association between foreign aid and economic growth. On the one hand, assistance may support investment, productive capacity, and development projects by supplementing domestic resources (Arndt et al., 2015; Galiani et al., 2017). On the other hand, poorly allocated assistance and debt-financed expenditure may increase repayment obligations or weaken incentives for domestic resource mobilisation (Mitra & Hossain, 2013; Kamguia et al., 2022). Accordingly, distinguishing grants from loans and separating short-run from long-run effects is important for interpreting the results of the present study.

The existing literature also suggests that variation in estimated aid effects may reflect differences in institutional quality, policy environments, aid volatility, and empirical identification strategies. For example, Burnside and Dollar (2000) emphasised policy conditions, while Adusei (2020) reported a different assessment of the institutional channel. In addition, Wagner (2014) and Yiew and Lau (2018) examined nonlinear relationships, whereas Dreher and Langlotz (2020) addressed identification challenges. These competing explanations provide the basis for comparing the present estimates with findings from other developing economies without assuming that all types of assistance have identical effects.

2.2 Trend of Foreign Economic Assistance

Pakistan receives foreign aid in grants, concessional loans and technical assistance from different bilateral (China, Japan, USA, etc.) and multilateral donors (ADB, World Bank and UN, etc.). Figure 1 shows the foreign aid trend. The continuous line represents foreign aid over the years, and the broken line represents its trend. It suggests that, over the years, Pakistan received a sizeable amount of foreign aid during the war periods, as a participant and frontline ally of the international community. During the period of 1985-1996 (the Afghan War), Pakistan obtained a total of US$ 18 billion. During the period of the 'US War on Terror' 2001-09, the aid kept on increasing until 2018. The total aid obtained in this period was US$ 26 billion.

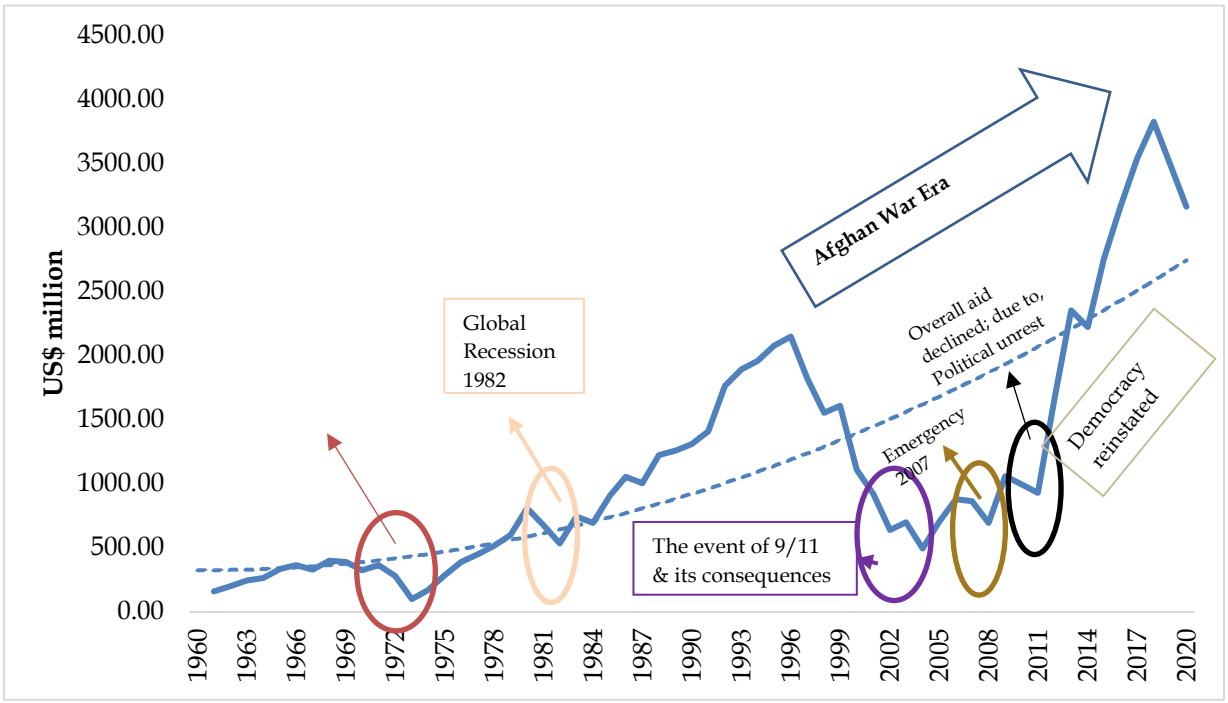


Figure 1: Trend of Foreign Aid

Source: Handbook of Statistics on Pakistan Economy 2020, SBP

Figure 2 demonstrates the sectoral composition of aid for the period 2001-20. It suggests that the infrastructure sector received the largest share, followed by the social and production sectors. It indicates that both donors and the Government of Pakistan jointly agreed to prioritise infrastructure projects.

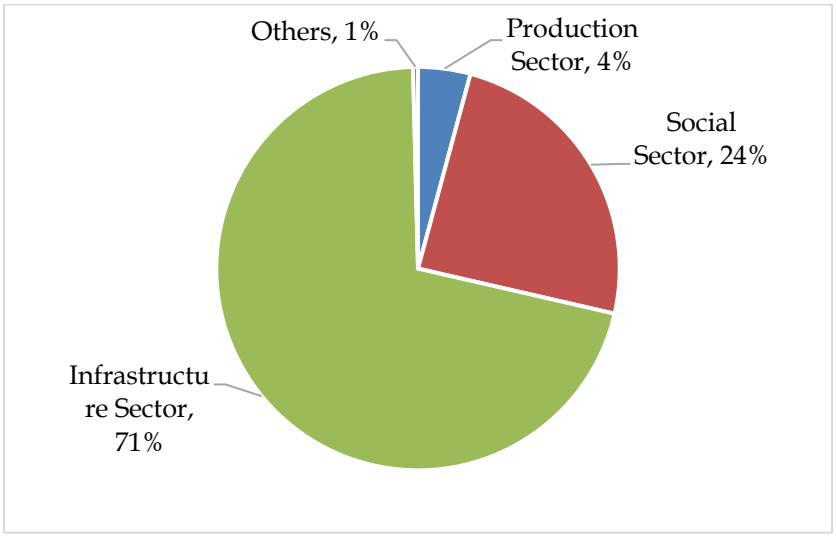


Figure 2: Composition of Project Aid (2001 to 2020)

Source: Debt Reporting and Recording Centre, EAD

Notably, since 2011, Pakistan has faced increasingly high debt servicing costs and continued fiscal and current account deficits. Pakistan's external debt servicing payments were US$3 billion in 2011, rising rapidly to more than triple to US$14.8 billion in 2019 and reaching US$15.5 billion in 2023[1]. This is mainly because, in addition to using aid for development purposes, current expenditure (including debt servicing) was also financed through loans. Consequently, primary and revenue balances remained negative over the years, and different loans were utilised to finance current expenditures and non-revenue-generating social projects. This created recurrent liabilities and a debt burden while revenue generation remained limited. After 2013, Pakistan obtained considerable loans from commercial banks and issued bonds. The heavy reliance on commercial financing and bond issuance has significant implications for the cost of borrowing. The country is required to pay high interest rates on bonds (7.2%) and Commercial borrowing (5.6%), whereas multilateral borrowing remains the cheapest form of loan, with an interest rate of only 1.9%. Table 1 summarises the terms and conditions of different loans.

Table 1: Loan's Term and Conditions

Sources of loans	Nature of loans	Average Interest Rate (%)	Average Maturity (Years)
Bilateral Donors	Foreign aid	2.3	18-22
Multilateral (ADB, World Bank etc.) Donors	Foreign aid	1.9	15-18
IMF	Balance of payment support	2.4	04-10
Commercial Banks	Market based loans	5.6	01-03
Eurobond / Sukuk	Market based loans	7.2	05-10

Source: Authors' calculations based on the Economic Survey of Pakistan.

Pakistan has frequently used IMF facilities. Since 1947, it has signed 22 agreements with the IMF on different occasions. In 1958, for the first time, Pakistanthe we,nt to IMF and some minor financial assistance was acquithe red from IMF till the 1980's (IMF Evaluation Report, 2002). However, after 1988 excessive reliance on borrowing and use of IMF programmes started. Pakistan's relationship with the IMF was not very productive, and the programme completion rate has been low, as only two programmes have met their targets (Ahmad and Mohammed 2012). The two successful programmes were the Stand-By Arrangement (2000 and the Poverty Reduction and Growth Facility (2001. IMF programmes primarily attempt to fix balance of payment issues (Polak, 1957). The Polk model suggests achieving the balance of payments by targeting monetary aggregates. Killick (1995) argues that, because of the focus on monetary targeting, the programmes cannot pay adequate attention to qualitative aspects of the reform agenda. Although the IMF has tried to overcome this criticism and broaden its scope, it has remained unable to move away from neo-classical/monetarist assumptions; therefore, it still cannot achieve the targets of institutional reforms (Groenewegen et al. 2010).

IMF resources are also available even when programmes are incomplete. Incumbent governments try to follow programme conditions in the early phases to receive the first few financial instalments, then abandon the programme and, after a few years, start another programme (Javed, 2015). This phenomenon hinders governments from executing hard economic reforms. Furthermore, due to weak institutions in recipient countries, expecting high implementation of the programme conditionalities is an overambitious target of the IMF. Design flaws within IMF programmes and weak political governments are two main factors that cause the failure of the IMF programmes in Pakistan (IMF, 2002). The design flaws include ambitious targets for exports, growth and savings. These targets can be achieved in the long run, but the IMF gives very little time to meet them. Furthermore, there is no mechanism to deal with external shocks such as security issues or natural disasters. Above all, political governments in Pakistan have always tried to avoid decisions that would cost them their voter base, such as imposing taxes to raise revenue or abolishing subsidies (Hussain, 2005).

[1] IMF (2022a), Pakistan Seventh and Eighth Reviews under EFF Country Report No. 22/288, Washington D.C.

3. Theoretical Framework and Estimation Methodology

The Harrod (1939) and Domar (1946) growth framework provides a foundation for considering the contribution of saving and investment to economic development. Within this framework, higher domestic saving can finance additional investment and, subject to the capital-output relationship, support economic growth. However, where domestic resources are insufficient, foreign assistance can help address the resulting financing gap. Equation (1) represents this relationship.

$g = sk$ -------(1)

In Equation (1, g represents economic growth, s represents saving as a percentage of GDP, and k represents the capital-output ratio. It asserts that developing countries can achieve economic development by increasing savings and using them for investment. However, as developing countries face various socio-economic issues like low income, poverty, unemployment and a rising population, saving is low. As a result, investment remains low, which slows economic growth. Hence there is a sho,rtfall of savings to meet the desired level of investment, this shortfal; is referred to as the saving-investment gap.

However, if foreign aid (b percent of GDP) is received from a donor, then equation 1 will take the following form:

$g = (s + b)k$ -------(2)

We assume that a country attempts to achieve the growth target of g* with a certain level of investment (k). To achieve growth of g*, the rate of capital accumulation (c) will be g*/k. So the saving gap, i.e. the difference between capital accumulation (c) and actual saving (s), may be financed by foreign aid (b). Chenery and Strout (1966) pointed out that, besides the saving gap, most developing countries face another issue called the foreign exchange gap. It is the difference between the foreign currency received from exports (primary goods with low prices) and the foreign currency paid for imports (machinery, etc., with high prices). Foreign aid also covers foreign exchange shortfall.

3.1 Data and Estimation Methodology

The present study uses time series data covering the period 1975-2020. A brief overview of the variables is summarised in Table 2:

Table 2: Details of Variables and Data

1.	**Per Capita GDP (Y)**	**SBP**	**Per capita GDP as an indicator of economic growth.**
2.	**Investment (K)**	SBP	Gross capital formation as % of GDP has been defined as proxy for investment.
3.	**Population growth rate (pop)**	SBP	The growth rate of population has been defined as proxy for labour.
4.	**Openness (OP)**	SBP	Trade as % of GDP has been defined as proxy for openness.
5.	**School Enrolment (SE)**	Economic Survey	Scholl enrolment up to Secondary level is adopted as a proxy for human capital.
6.	**Foreign Assistance (FA)**	SBP+EAD	Disbursement of foreign economic assistance and loans and grants as the percentage to GDP has been used as the main independent variables of the analysis.
7.	**Loans (LN)**		
8.	**Grants (GR)**		
9	**IMF**	Ministry of Finance	The IMF loans are not aid but emergency measures, so role of IMF is analysed by using a dummy variable of the presence of the IMF. In this regard, the years in which Pakistan undertook an IMF program are given the value of 1 for the rest of years the value 0 is assigned.

Source: Authors' compilation from SBP, Economic Survey of Pakistan, and EAD.

The estimation considers the transformations applied to the individual variables. Coefficients for variables expressed in natural logarithms may be interpreted as elasticities when both the dependent and explanatory variables are logged; however, this interpretation does not apply automatically to the IMF programme dummy or to variables expressed as rates or percentages. Therefore, each coefficient should be interpreted according to its measurement and model specification. The time-series analysis begins by

examining stationarity using the augmented Dickey–Fuller unit-root test, with the results reported in Table 3.

Table 3: Unit Root Test Results

Name of Variable	Level			1st Difference		
	Intercept	**Trend and Intercept**	**None**	**Intercept**	**Trend and Intercept**	**None**
Y	0.88511	-1.15782	1.79922	-6.64506*	……	……
OP	0.20162	-1.68221	1.72164	-7.27403*	……	……
POP	-4.92553*	……	……	……	……	……
K	3.76947	2.36999	3.56651	-2.77147*	……	……
ED	2.57052	-0.64697	4.75897	-5.76364*	……	……
FA	2.14249	-0.86197	0.11156	-1.50536	-6.39039*	-3.02405*
GR	-7.30821*	……	……	……	……	……
LN	-8.62714*	……	……	……	……	……

Source: Authors' calculations. Null Hypothesis: Unit root exists; * denotes the rejection of the null at 5% level

Table 3 indicates that the model contains a combination of variables integrated of order zero, I(0), and order one, I(1). Provided that no variable is integrated of order two, I(2), the autoregressive distributed lag (ARDL) bounds-testing framework can accommodate this combination of integration orders. Therefore, the ARDL approach is employed to estimate short-run dynamics and assess the presence of a long-run relationship. The basic conditional error-correction representation is presented below.

$$\Delta y_t = \alpha + \beta_1 y_{t-1} + \beta_2 pop_{t-1} + \beta_3 k_{t-1} + \beta_4 op_{t-1} + \beta_5 ed_{t-1} + \beta_6 fa_{t-1} + \beta_7 imf_{t-1} + \sum_{i=1}^{\rho} \omega_i \Delta y_{t-i} + \sum_{i=0}^{\rho} \tau_i \Delta pop_{t-i} + \sum_{i=0}^{\rho} \sigma_i \Delta k_{t-i} + \sum_{i=0}^{\rho} \pi_i \Delta op_{t-i} + \sum_{i=0}^{\rho} \emptyset_i \Delta ed_{t-i} + \sum_{i=0}^{\rho} \gamma_i \Delta fa_{t-i} + \sum_{i=0}^{\rho} \delta_i \Delta imf_{t-i} + \mu_t \text{-------A}$$

In the equation, α denotes the intercept and ut is the error term. The β_1…… β_7 are long-run coefficients; similarly, ω,τ, σ, φ, and θ represent short-run coefficients. The variables y, op, pop, ed, fa, and k represent per capita GDP, openness, population growth rate, school enrolment, foreign economic assistance, and investment, respectively.

4. Estimation Results

The first step is to conduct a bound test and set the null hypothesis of no co-integration-- i.e.

H0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = 0$ against the alternative hypothesis of

H1: $\beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq \beta_7 \neq 0$

The maximum lag length is an important consideration in bounds testing, particularly with the 46 annual observations available for the period under study. Therefore, we considered a maximum lag of two for model estimation. The reported bounds-test F-statistics are 4.15 for Specification 1 and 3.89 for Specification 2. Both exceed the reported 5% upper critical bound of 3.50, thereby supporting the existence of a long-run relationship under the stated test assumptions. We then obtained the long-run estimates using the Schwarz Bayesian Criterion for lag selection. Table 4 reports the estimated results for both specifications.

Table 4: Long-Run Estimation Results

Variables	Specification 1 (1,0,0,1,0,1,1)		Specification 2 (1,0,0,1,1,0,0)	
	Coefficient	P-Value	Coefficient	P-Value
Y(-1)	0.1689	0.4933	0.4598	0.1085
POP	-0.7546**	0.0796	-1.2365*	0.0098
K	1.1756**	0.0917	0.1083*	0.0374
ED	0.9975*	0.0116	----	----
FA	-0.3871*	0.0028	----	----
IMF	0.1901*	0.0352	0.1788	0.7842
OP	0.6312	0.1336	-0.3258	0.8154
GR	----	----	0.8796*	0.0146
LN	----	----	-0.7456*	0.0339
Constant	3.5481	0.0654	-1.9195	0.4434
R-squared	0.9788		0.9871	
Adjusted R-squared	0.9648		0.9683	
F-statistic	107.4581		115.0241	
Prob(F-statistic)	0.00000		0.00000	
Serial correlation LM test	1.1447		0.9547	
[value in () is p value]	(0.3981)		(0.4637)	

Source: Authors' calculations.

* and ** denote significance at 5% and 10 % level respectively

4.1. Long-run relationships

The results reported in Table 4 indicate a statistically significant negative association between foreign aid and economic growth in the long run in Specification 1. The disaggregated results in Specification 2 similarly indicate a negative coefficient for loans and a positive coefficient for grants. However, the IMF programme indicator is positive and statistically significant only in Specification 1 (p = .0352); in Specification 2, its coefficient is not statistically significant (p = .7842). Therefore, the estimated long-run association with IMF participation should be interpreted as specification-dependent rather than as a uniform finding across both models. Furthermore, the results indicate that population growth has a significantly negative relationship with economic growth. Investment, however, positively affects economic growth. Contrary to expectations, openness has a negative, although insignificant, association with economic growth. The estimated results indicate that education portrays a positive and significant association with economic growth. The reported R-squared values indicate high in-sample explanatory power, while the serial-correlation LM-test p-values provide no evidence of serial correlation at the conventional 5% level. In addition, the model F-statistics indicate that the included regressors are jointly statistically significant. However, these diagnostics alone do not establish causal effects or rule out endogeneity, structural breaks, and other specification concerns. Therefore, interpretations of the estimated relationships should remain appropriately cautious.

4.2. Short-run relationships

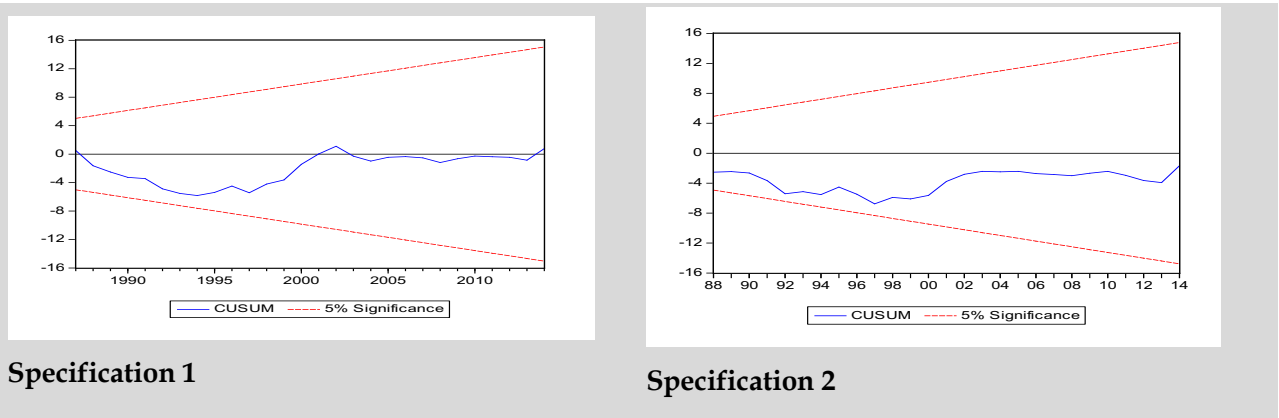
After estimating the long-run coefficients, the final step in ARDL analysis is estimating the Error Correction Model. The results are presented in Table 5.

Table 5: Error Correction Description of the Selected ARDL Model

Variables	Specification 1 (1,0,0,1,0,1,1)		Specification 2 (1,0,0,1,1,0,0)	
	Coefficient	P-Value	Coefficient	P-Value
Constant	-0.4569	0.2817	-0.5611*	0.0092
D(Y(-1))	0.0978**	0.0905	0.2356*	0.0423
D(POP)	-0.6785	0.1956	-0.1236	0.9759
D(K)	2.1258*	0.0000	2.0215*	0.0000
D(ED)	0.8796	0.7977	----	----
D(ED(-1))	0.6148	0.8633	----	----
D(FA)	-0.6280*	0.0001	----	----
D(IMF)	-0.7852*	0.0075	-0.4581**	0.0572
D(IMF(-1))	-0.4019	0.6382	-0.3128	0.2961
D(OP)	-0.3412	0.1446	-0.0874	0.6628
D(OP(-1))	-0.7451	0.3744	-0.5596	0.1123
D(GR)	----	----	0.3158*	0.0263
D(LN)	----	----	-0.1245*	0.0057
ECT (-1)	-0.3678*	0.0337	-0.5085*	0.0117
R-squared	0.8721		0.7958	
Adjusted R-squared	0.759		0. 7152	
F-statistic	4.9852		3.4256	
Prob(F-statistic)	0.0061		0.0042	

Source: Authors' calculations. * and ** denote significance at the 5% and 10% levels respectively

The error correction terms emerged as negative and statistically significant. This confirms that a stable long-run relationship exists among the variables. It also indicates that, one year after a shock, approximately 37% in specification 1 and around 51% in specification 2 of the adjustment to long-run equilibrium is complete. In the short run, population growth, trade openness, and school enrolment do not exhibit statistically significant associations with economic growth in the reported specifications. However, foreign economic assistance as a percentage of GDP has a negative and statistically significant coefficient in Specification 1. Similarly, Specification 2 indicates a positive short-run coefficient for grants and a negative coefficient for loans. In addition, IMF programme participation has a negative coefficient in both specifications; the evidence is significant at 5% in Specification 1 and at 10% in Specification 2. These results suggest differences across financing instruments and adjustment horizons. The cumulative sum CUSUM) graphs (see Figure 3) indicate that the short-run coefficient falls within the critical limits, confirming coefficient stability in the sample period.



Specification 1 **Specification 2**

Figure 3: CUSUM Test Results

Source: Authors' calculations.

5. Discussions

In line with Mitra and Hossain (2013), the study concludes that foreign aid, in both the short and long run, has a negative relationship with economic growth. The cause seems to be the accumulation of debt burden on future generations. Various theories conclude that crowding out and debt overhang create negative effects of debt on economic growth. On the other hand, foreign grants have a positive and significant impact on economic growth. The long-run coefficient on the IMF programme indicator is positive and statistically significant in Specification 1. However, the corresponding estimate is not statistically significant in Specification 2, suggesting that the long-run finding is sensitive to the way external financing is represented. In contrast, the reported short-run IMF coefficients are negative, with statistical significance at the 5% level in Specification 1 and the 10% level in Specification 2. One possible interpretation is that fiscal consolidation, expenditure adjustment, and other policy measures associated with IMF programmes may coincide with short-run economic pressures, whereas stabilisation can support subsequent recovery. Nevertheless, countries typically enter IMF programmes during periods of distress, which creates a selection and reverse-causality problem. Therefore, the estimates should not be interpreted as proving that IMF participation itself causes either the initial slowdown or subsequent growth. The varying results are consistent with the broader literature emphasising programme design, economic conditions, and adjustment timing (Balima & Sokolova, 2021; Fidrmuc & Kostagianni, 2015; Gupta et al., 2016).

In line with the Malthusian theorem, in the long run, population growth impedes economic development. Similarly, consistent with Acemoglu et al. (2016), openness has a negative relationship with economic growth. This may be because limited openness to the world, coupled with inconsistent economic policies, does not improve an economy's competitiveness and productivity. Consistent with Barro (2001), education has a positive and significant association with economic growth. In the short run, population growth, openness, and school enrolments have insignificant relationships with economic growth. This indicates that these variables affect economic growth in the long run, while their short-run effects are marginal. This has also been supported by Akram (2015).

5.1 Theoretical and Comparative Implications

The comparison between foreign aid, loans, and grants contributes to the literature on external financing by showing why the composition of financial inflows matters for interpretation. Whereas aid can relax domestic resource constraints and finance investment, debt-creating inflows also entail future repayment obligations. Similarly, grants can support expenditure without generating equivalent contractual repayment pressures. These mechanisms are relevant to the contrasting findings reported for developing economies (Arndt et al., 2015; Babalola & Shittu, 2020; Rao et al., 2023). However, differences in governance, utilisation, and macroeconomic conditions can limit direct comparison across countries (Adusei, 2020; Yahyaoui & Bouchoucha, 2020). Therefore, the evidence from Pakistan provides a useful country-specific contribution to a wider debate rather than a universally applicable estimate of aid effectiveness.

In addition, the differences between the short-run and long-run IMF coefficients reinforce the need to distinguish stabilisation objectives from growth outcomes. Existing research has reported heterogeneous effects of IMF programmes across countries and episodes (Balima & Sokolova, 2021; Fidrmuc & Kostagianni, 2015). The Pakistan estimates are consistent with short-run adjustment pressures, but they do not identify the separate causal contributions of conditionality, lending, crisis severity, or domestic reform implementation. Consequently, future comparative studies would benefit from more detailed programme measures, alternative identification approaches, and analyses of the timing of economic responses. Similarly, in line with conventional wisdom, investment positively influences economic growth both in the short and long run. Akram (2011) reaches a similar conclusion: in Pakistan, investment positively affects economic growth.

6. Conclusions and Policy Implications

Over the years, Pakistan has been heavily relying on external sources to finance its development. It has been recognised as one of Asia's largest aid recipients. This study analyses the impact of foreign aid and IMF programmes in economic development of Pakistan during 1975-2020. The estimates indicate that foreign economic assistance as a percentage of GDP is negatively and significantly associated with economic growth in Pakistan in both the short run and the long run. However, disaggregating external financing provides a more nuanced account: loans exhibit negative estimated coefficients, whereas grants exhibit positive and statistically significant coefficients. Similarly, IMF programme participation is

negatively associated with short-run growth, while its positive long-run coefficient is statistically significant only in Specification 1. Therefore, the findings should be interpreted with attention to the financing instrument, estimation horizon, and model specification.

The principal policy implication is to reduce excessive dependence on debt-creating foreign assistance while strengthening domestic revenue mobilisation. Therefore, policies promoting entrepreneurship, exports, productive investment, and foreign direct investment may help expand the domestic resource base and foreign exchange earnings. However, the findings do not imply that every form of external support should be rejected: grants and concessional finance for carefully appraised projects may remain valuable. In addition, IMF-supported reform programmes should be assessed in relation to domestic conditions, the feasibility of agreed targets, and their potential short-run adjustment costs. Effective implementation and prudent debt management are important to support more sustainable economic development in Pakistan. However, there is a likelihood that, despite all efforts, Pakistan may have to look for foreign assistance to start mega projects like dams, energy sector projects, and develop infrastructure, etc. However, before acceptance of a loan, its implications on macroeconomic stability should be carefully examined. The decision to take foreign loans should be considered as follows:

6.1 Data Transparency and Future Research

For replication, document the data series using the definitions and source institutions reported in Table 2, including the State Bank of Pakistan, the Economic Survey of Pakistan, the Economic Affairs Division, and the Ministry of Finance. Researchers should record units of measurement, any logarithmic transformations, the coding of the IMF programme dummy, and the lag-selection decisions. Moreover, future extensions could compare results across alternative sample periods, structural-break specifications, and appropriate robustness tests. The present manuscript reports only the original estimates; these additional analyses are proposed for future research and are not presented as completed tests.

a. Social sector projects based on foreign loans should be discouraged. For social sector development, only grants may be accepted.

b. Infrastructure projects with a high internal rate of return (IRR) should be encouraged and financed through foreign aid.

c. The programmes and projects related to promoting exports, such as export processing zones and FDI, should be prioritised to enhance Pakistan's foreign exchange-earning capabilities.

The present study is limited to Pakistan and examines annual observations for 1975–2020. Therefore, the estimated associations should not automatically be generalised to other recipient countries, nor treated as conclusive causal effects. In addition, the IMF indicator captures programme participation rather than differences in lending amounts, conditionality, implementation, or programme completion. Future research could estimate the sector-specific returns on aid, distinguish loans by maturity and concessionality, and examine structural breaks and potential endogeneity. Similarly, comparative research across emerging and developing economies could assess whether the contrasting relationships observed for loans and grants persist under different institutional and macroeconomic conditions. Such investigations would help policymakers prioritise financing arrangements and sectors based on expected developmental benefits and fiscal risks.

6.2 Ethical Statement

This study examines aggregate secondary macroeconomic data and does not report any direct involvement of human participants, identifiable personal information, or animal subjects.

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