

Economic Growth-Political Instability-Foreign Aid Nexus: Empirical Evidence from Pakistan

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Introduction

- ▶ purpose of this article is to present a snapshot of political economy of aid and growth
- ▶ Some articles in argument that democracy enhances economic growth whereas others find either negative or no relationship between the two variables
- ▶ many studies present contradictory findings about the relationships between aid and economic growth.
- ▶ some studies subject the impact of aid on economic growth to economic and political policies.
- ▶ According to Burnside and Dollar (2000), aid impacts economic growth positively in presence of good policies
- ▶ Rajan and Subramanian (2007) findings of no impact of aid on economic growth in the presence of good policies in any economy.

Introduction

- ▶ Unlike Burnside and Dollar (2000), and Rajan and Subramanian (2007), this article analyzes aid's impact on growth in the presence of political instabilities.
- ▶ Using a time-series data for years 1984 to 2014, OLS and ARIMA techniques are used to study impact of aid on growth given the political instability

Literature

Name of Author	Date of publication	Findings
Helliwell	1994	relationship between economic growth and democracy and found the impact of economic growth on democracy to be positive and robust. Furthermore, democracy through its impact on education and investment had an indirect positive effect on economic growth
Feng	1997	Using three-stage least-squares estimation technique, he finds a positive indirect impact of democracy on economic growth through its impact on the probabilities of both regime change and constitutional government change.
Burnside and Dollar	2000	Aid does impact economic growth of a developing country given that that country has good economic policies. Good monetary policies, fiscal policies, and trade openness promotes the impact of aid on growth

Literature

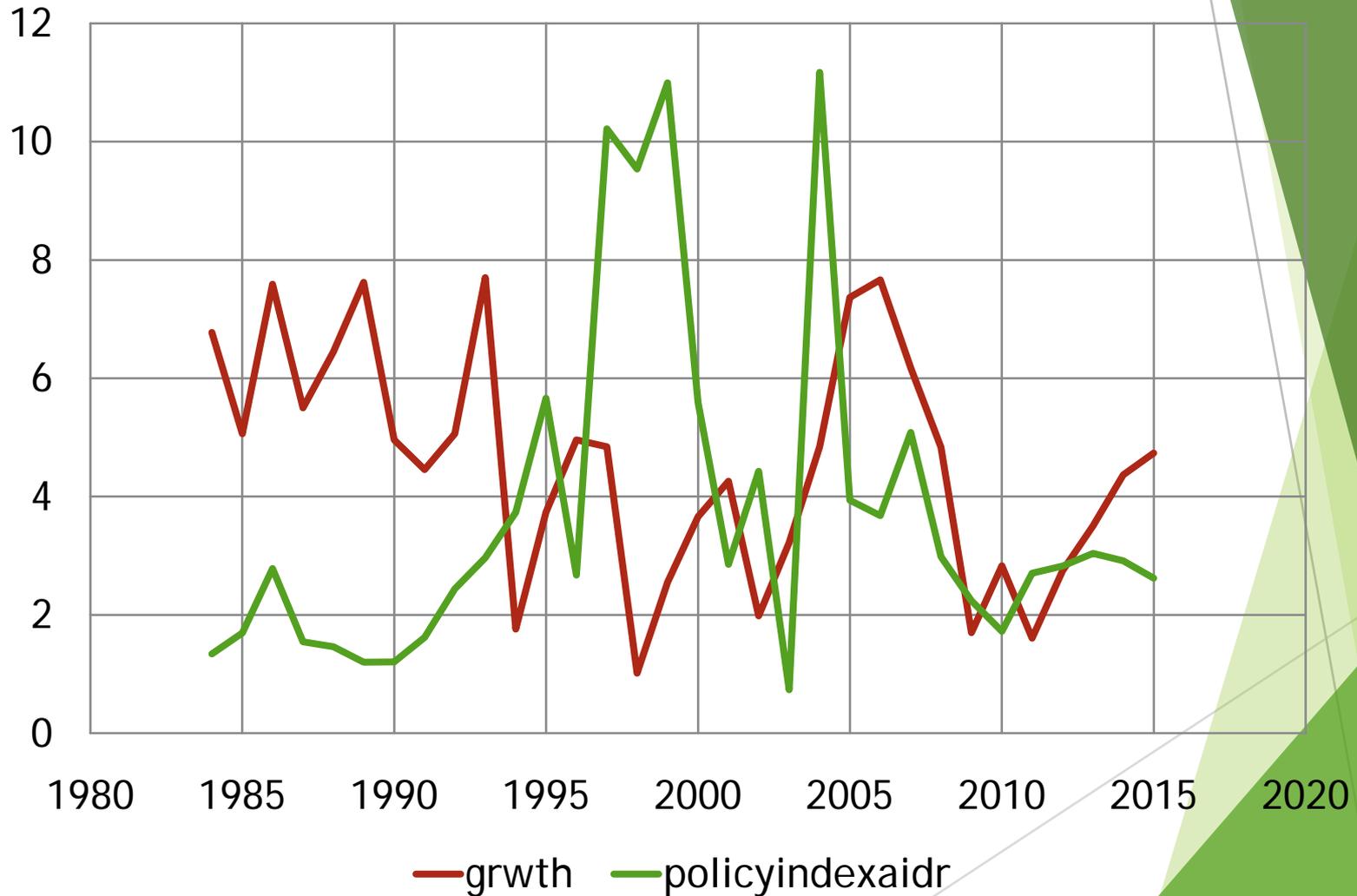
Rajan and Subramanian	2007	Find no impact of aid on economic growth even in the presence of good economic policies. While presenting empirical evidence on the impact of foreign aid on political instability
Oechslin	2006	Argues that the failure of aid to push recipient countries on a steeper growth path is due to lack of the economy's capacity to finance and build institutions capable of long-run technology adoption Further argues that providing aid money to poor countries would not result in better institutions

Growth and Aid: Evidence on Pakistan

Birdsall et al.	2011	Pakistan remains one of the major recipients of bilateral and multilateral foreign aid. Since its independence in 1947, the non-military aid from the United States alone has exceeded \$66 billion out of which \$13 billion was received in the previous decade
Khan and Rahim	1993	According to their findings negative relationship between foreign aid and domestic savings was found with no significant impact on economic growth
Ishfaq and Eatjaz	2005	According to them foreign aid and economic growth argued that failure of aid to translate into economic growth is a result of bad macroeconomic policies of the country, and foreign aid could impact economic growth positively given that the country has suitable macroeconomic policies

Growth and Aid: Evidence on Pakistan

GDP/PC Growth and Policy index Aid ration



Theoretical Framework And Methodology

- ▶ The theoretical foundation for this research is based on Chen and Feng (1996).
- ▶ According to him regime change encourage uncertainty in the economy whereas government change may or may create political instability.
- ▶ uncertainty is assumed before the regime change that might discourage investors from making investments and thus impeding economic growth
- ▶ Feng and Chen (1996) expected negative impact of the three political variables on economic growth and their empirical results validated their assumptions.
- ▶ Building on Feng and Chen (1996) theoretical specifications, this article further expands the research by including aid variable into the equation.
- ▶ We expect that political variables would provide the justification for aid's ineffectiveness.

Methodology

- ▶ This article tests a single OLS and ARIMA (autoregressive integrated moving average) technique to estimate impact of aid and political variables on economic growth for Pakistan using a time-series cross-sectional data from 1984 to 2015.

- ▶ The basic multivariate statistical model to test the implications is

$$g = \alpha + \alpha_1 + \alpha_2 + \dots + \mu$$

- ▶ Where g denotes the growth rate in GDP per capita over the years 1984 to 2015; α_1 represents the aid variable and is measured as aid as percent of gross national income of the country. The aid variable includes all the official development assistance and official aid received by Pakistan both from bilateral and multilateral donors for years 1984 to 2015.
- ▶ The data is taken from The Quality of Government Institute (QOG 2017).

Methodology

- ▶ In the statistical model, α_2 represent cluster of political variables, “Political Stability” combines several indicators which measure perceptions of the likelihood that the government in power will be destabilized or overthrown by possibly unconstitutional and/or violent means, including domestic violence and terrorism. GS government stability and Corp is corruption index.
- ▶ The interpretation of these indices is the value close to zero shows stability and otherwise instability.
- ▶ Policy index is a constructed through principle component analysis PCA of four political variables, namely; bureaucratic quality, military in politics, corruption, and religious tension. Filmer and Pritchett (2001) use the principle component analysis for the construction of the political index.
- ▶ In addition to the political variables, α_3 in the model represents cluster of economic variables that include trade as percent of GDP in Pakistan, annual real inflation rate, primary school enrollment rate, annual remittances as percentage of DP and investment as percent of GDP in Pakistan.

Construction of policy index

- ▶ Rather than all four political variables include in regression model separately, we try to construct one variable namely; policy index, for this purpose we use principle component analysis. Thus, the key feature of our policy variable is

$$PI = \beta MP + \beta_1 RT + \beta_2 CU + \beta_3 BQ$$

- ▶ Where (β , β_1 , β_2 , and β_3) are the weights, and MP, military in politics, RT religious tensions, CU corruption and BQ bureaucratic quality.
- ▶ To address the issue we considered the possibility that the policy variables should be treated as endogenous.
- ▶ The policy index is described as it is the weighted average of the military in politics, religious tensions, corruption, and the bureaucratic quality, where the weights are given by the corresponding
- ▶ The index is measured in terms of percentage points of GDP growth, and can be interpreted as predicted GDP growth holding all variables in that regression, except policy, constant.
- ▶ We argued that the effectiveness of aid would likely depend on policy. To address this issue we entered interactive term, aid/GDP X policy index into our regression.

OLS Regression Results

Dependent Variables: GDP per capita growth rate (1984-2015)

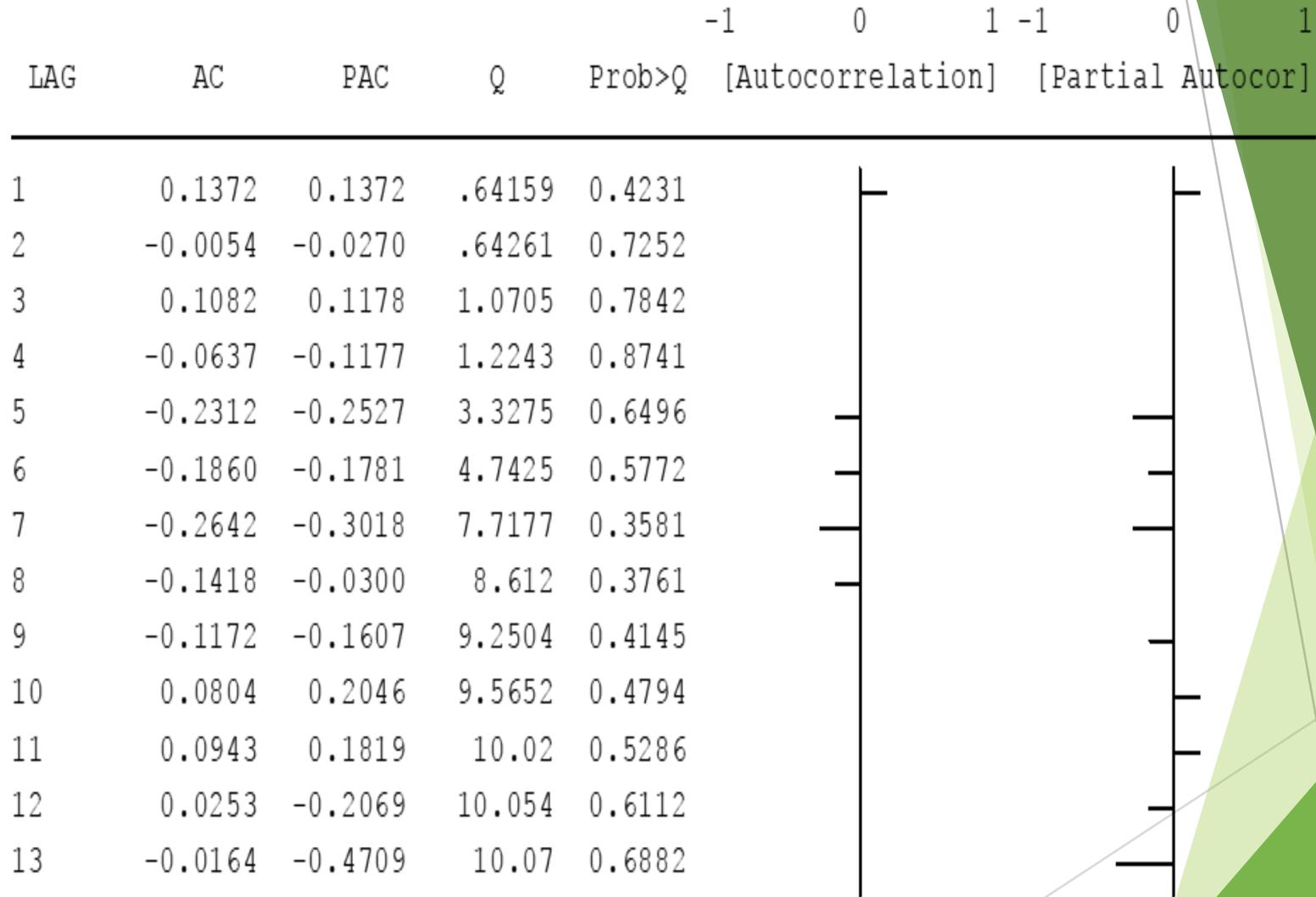
	Model-1 GDP/PC Growth	Model-2 GDP/PC Growth	Model-3 GDP/PC Growth	Model-4 GDP/PC Growth
Aid % GDP	-4.104 (1.15)	-5.339 (8.927)	-6.723 (9.299)	-14.303* (6.867)
Net Primary Enrol		2.179* (0.097)	6.895603 (3.691157)	10.30* (4.144)
Inflation		3.324** (1.073)	3.892* (1.412)	3.892469* (1.411863)
FDI Inflow		53.79** (16.40)	59.87** (19.20)	54.08** (15.53)
Trade % GDP		18.13*** (4.573)	18.71*** (4.720)	.693995*** (.094273)
Remittance		0.00516 (0.00438)	0.00394 (0.00485)	.032639*** (.004333)
Political Stability			54.89 (87.08)	30.74 (70.80)
Govt Stability				-73.93** (22.78)
Corruption Index				-.281047*** (.037143)
Policy Index				205.4 (124.2)
Policy Aid Ratio				9.35249* (3.96322)
Constant	2163.8*** (73.55)	1122.8*** (211.4)	1012.8** (276.1)	1588.5*** (271.4)
No of Observation	32	32	32	32
R-Sq	0.001	0.946	0.947	0.973
RMSE	211.2	53.70	54.36	42.42
Standard errors in parentheses				
* p<0.05, ** p<0.01, *** p<0.001				

Results of ARIMA

Augmented Dickey-Fuller Test Summary for testing of data stationary

AUGMENTED DICKEY-FULLER (ADF) TEST RESULTS FOR UNIT ROOTS						
Level			At 1st Difference			
	Test Statistics	5% Critical Value	P-value	Test Statistics	5% Critical Value	P-value
Variables						
Net Enroll	-0.315	-2.983	0.9234	-6.62	-2.986	0.0000
Infilation	-0.031	-2.983	0.9559	-5.226	-2.986	0.0000
FDI Inflow	-1.849	-2.983	0.3562	-3.342	-2.986	0.0131
Pol Stabili	-0.459	-2.983	0.8998	-5.007	-2.986	0.0000
Trade%GDP	-2.527	-2.983	0.1091	-7.769	-2.986	0.0000
GDP Growth	-3.593	-2.983	0.0059			
RGDP/PC	-0.832	-2.983	0.8094	-4.647	-2.986	0.0001
Remittance	5.823	-2.983	1.0000	-2.408	-2.986	0.1394
Govt Satabil	-1.612	-2.983	0.4770	-4.782	-2.986	0.0001
Corrupt indx	-2.574	-2.983	0.0985	-8.3	-2.986	0.0000
Policy indx	-1.809	-2.983	0.3761	-5.072	-2.986	0.0000
Aid ratio/GDP	-4.416	-2.983	0.0003			
policy/Aid ratio	-3.554	-2.983	0.0067			

Correlogram for ACF and PACF Values



ARIMA Regression analysis

Dependent Variables: GDP per capita growth rate (1984-2015)

GDP/PC Growth	ARIMA (1,0,0) GDP/PC Growth	ARIMA (0,0,1) GDP/PC Growth	ARIMA (1,0,1) GDP/PC Growth
Aid % GDP	-189.9*** (-4.22)	-216.8*** (-4.19)	-225.7*** (-4.54)
Net Primary Enrol	11.23** (3.11)	9.700** (2.67)	9.379* (2.41)
Inflation	2.172* (2.10)	1.885 (1.86)	1.658 (1.39)
FDI Inflow	55.39** (2.71)	52.66*** (4.47)	51.22*** (4.95)
Trade % GDP	5.944 (1.22)	5.885 (0.95)	5.438 (0.79)
Remittance	-0.00166 (-0.41)	-0.000534 (-0.12)	0.000443 (0.09)
Political Stability	39.12 (0.51)	8.437 (0.12)	-5.650 (-0.07)
Govt Stability	-79.52*** (2.82)	-81.73*** (-5.20)	-81.68*** (-5.42)
Corruption Index	-8.291** (-2.92)	-8.292 (-1.87)	-9.315* (-2.01)
Policy Index	188.3** (2.82)	170.2* (2.25)	160.9* (2.33)
Policy Aid Ratio	92.28*** (4.36)	107.4*** (4.80)	112.4*** (5.52)
Intercept	1669.0*** (6.52)	1776.5*** (5.58)	1839.8*** (5.17)
ARIMA			
L.ar	-0.547** (-2.75)		-0.256 (-1.02)
L2.ar		-0.445 (-1.22)	
L.ma		-1.000** (-3.11)	-1.000** (-2.75)
Sigma			
Intercept	29.46*** (5.51)	23.32 .	22.61 .
R-squared	0.90	0.91	0.93
D.W test	2.37	2.39	2.36

t statistics in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Conclusion

- ▶ Unlike the existing literature suggesting either negative or positive impact on economic growth, this research argues that the impact is conditional on political stability in the country.
- ▶ Political Stability is an index of four different policy variables.