Aid-Growth Nexus for Pakistan: Role of Macroeconomic Policies

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Outline of Presentation

- Introduction
- Objectives of the study
- Analytical framework and data
- Empirical results
- Conclusions

Introduction

Foreign Aid is considered as one of the major source of external finance for developing countries like Pakistan. It comes in the form of ODA, grant, and loans

The Link between foreign aid and economic growth can be traced back to two gap-model of Chenry and Strout (1966).

internal resource gap (S-I)
 external resource gap (X-M)

Introduction cont.

> Foreign aid stimulates economic growth through:

building infrastructure,

Supporting productive sectors such as agriculture and manufacturing, and

>bringing new ideas and technologies.

it also strengthens education, health, environment and political systems and stabilize the economy following economic shocks.

> Aid is used to support subsistence consumption of food.

Impact of Foreign Aid on Economic growth: three strands in the literature.

1. Positive effect of aid on economic growth

Dalgaard and Hansen 2000, Hansen and Tarp, 2001; Asterious, 2009 and Lensink and White 2000; Clemens et al, 2004).

- 2. Aid has no effect on growth, it may even hurts growth (Griffen and Enos, 1970; Radelet, 2006; Mosley, 1980; Dowling and Hiemenz, 1982; Singh, 1985; Boone, 1994 and Rajan and Subramanian, 2005, 2008)
- 3. Aid has positive effect on economic growth conditional on sound economic policies.

(Burnside and Dollar, 1997 2000; Collier and Dehn, 2001; Alvi et. al., 2008; World Bank, 1998; Durbarry et al. 1998)

- Pakistan's Case
- Foreign aid has negative impact on economic growth in case of Pakistan. (Ishfaq and Eatzaz, 2005; Khan and Ahmed, 2007; Khan, 1997; among others)
- Khan and Rahim ,1993) study suggests positive but statistically insignificant impact of different form of aid on growth
- Foreign aid may affects economic growth positively only if the macroeconomic policies are right (Husain, 1999; Ishfaq and Eatzaz, 2005; Khan and Ahmed, 2007).
- Burnside and Dollar(1997,2000) and Hudson and Mosley (2001), World Bank (1998) argued that effectiveness of foreign aid depends on good macroeconomic policies.

Disbursement of Foreign Aid to Pakistan

	Aid Inflow (Millions				Net Transfer as % of
	US\$)	Aid % of GDP	Service Payments	Net Aid Inflow	Total Aid
1960s*	541.4	9.08	72.78	468.6	87.2
1970s*	722.9	5.95	244.2	478.7	65
1980s*	1464.7	4.58	807.6	657.1	43.8
1990s*	2465.2	4.57	1762.7	702.5	28.7
2000	2241	3.03	1401	840	37.5
2001	2085	2.89	1557	528	25.3
2002	2756	3.8	1207	1549	56.2
2003	1921	2.3	1339	582	30.3
2004	1329	1.36	2995	-1666	
2005	2709	2.47	1471	1238	45.7
2006	3166	2.5	1581	1585	50.1
2007	3297	2.3	1612	1685	51.1
2008	3580	2.79	1766	1814	50.7
2009	3297		1320	1977	60.0

Objective of the Study

- The main objective of this study is to examine the impact of foreign aid on economic growth in the context of macroeconomic policies.
- We also analyze the impact of total aid, bilateral and multilateral aid on economic growth.
- Data cover the period from 1961 to 2008

Model and Methodology

 Following Burnside and Dollar (2000, 1997), Collier and Dollar (2003), Hansen and Tarp (2001), Dalgaard, Hansen and Tarp (2004), and Rajan and Subramanian (2008) we specify the following aid –growth model.

 $Y_t = f(INF_t, BD_t, TO_t, M2_t, AID_t, AP_t, \varepsilon_t)$

 $Y_t = f(INF_t, BD_t, TO_t, M2_t, MAID_t, BAID_tAP_t, \varepsilon_t)$

The ARDL specification in the form of ECM is given below

$$\Delta y_{t=} \alpha_{0} + \sum_{i=1}^{q} \gamma_{i} \Delta INF_{t-i} + \sum_{j=1}^{q} \varphi_{j} \Delta BD_{t-j} + \sum_{k=1}^{q} \omega_{k} \Delta TO_{t-k} + \sum_{l=1}^{q} \pi_{l} \Delta M2_{t-i} + \sum_{m=1}^{q} \theta_{m} \Delta AID_{t-m} + \sum_{n=1}^{q} \rho_{n} \Delta AP_{t-n} + \sum_{l=1}^{p} \vartheta_{l} \Delta y_{t-l} + \beta_{1}y_{t-1} + \beta_{2}INF_{t-1} + \beta_{3}BD_{t-1} + \beta_{4}TO_{t-1} + \beta_{5}M2_{t-1} + \beta_{6}AID_{t-1} + \beta_{7}AP_{t-1} + \varepsilon_{t}$$

Construction of Policy Index

The principal component methodology is used to find the weight of the INF, BD and TO. Then used these weights to construct policy index.

Policy Index = -0.4856* INF -0.1475* BD + 0.3669* TO



Table 1: Unit Root Test

Variables	Constant/ Trend	Level	First Difference	Order of Integration
Y	C,T	-1.7599	-6.988***	I(1)
INF	С	-3.48**		I(0)
BD	С	-3.87**		I(0)
ТО	C,T	-3.02	-7.4348***	I(1)
M2	C,T	-1.44	-5.898***	I(1)
AID	C,T	-3.18	-7.66***	I(1)
AP	C,T	-2.8039*	-7.973***	I(1)
BAID	C,T	-2.4024	-7.7013***	I(1)
MAID	C,T	-1.938	-10.049***	I(1)

Table 2: Results of Cointegration Test

Dependent Var.	F- stat	I(0)	l(1)	
F _y (y/INF, BD, TO, M, AID)	4.49	2.27	3.28	Aid W- O policy
F _y (y/INF, BD, TO, M2, AID, AP)	5.85	2.86	4.01	Aid with Policy
F _y (y/INF, BD, TO, M2y, MAID, BAID)	4.18	2.32	3.5	MAID & BAID W-O policy
F _y (y/inf, BD, TO, M2, MAID _y , BAID _, AP)	6.05	2.22	3.39	MAID & BAID with Policy

 Long Run Normalized Parameters With out Aid Policy Interactive Term

 $y_t = 7.61 - 0.09INF_t - 0.03BD_t + 0.15TO_t + .007M2_t + 0.05AID$ (2.06) (-3.65) (-0.75) (4.10) (0.30) (0.72) (1) $Y_t = 7.70 - 0.05INF_t + 0.09TO_t + 0.03M2_t + 0.09MAID_t - 0.06BAID_t$ (3.18) (-3.15) (3.92) (1.73) (0.78) (-1.38) (2)

Long Run Normalized Parameters With Aid Policy
Interactive Term

 $y_t = 7.86 - 0.11INF_t + 0.03BD_t + 0.16TO_t - .008M2_t + 0.12AID_t + 0.034AP_t$

(2.73) (-2.93) (0.74) (4.02) (-0.38) (1.33) (2.10) (3) $Y_t = 7.37 - 0.09INF_t + 0.15TO_t + 0.07MAID_t + 0.06BAID_t + 0.02AP_t$

• (5.47) (-5.60) (6.51) (1.35) (2.59) (3.98) (4)

Table3 : Dynamic Model of Aid Growth W-O Policy

Variables	Coefficient	t-Statistic
ΔY_{t-2}	-0.280909	-2.055654
ΔINF	-0.595714	-6.831970
ΔINF_{t-2}	-0.243461	-2.798014
ΔBD _{t-2}	0.214608	1.287760
ΔΤΟ	0.256342	1.905448
ΔM2	-0.778617	-3.475492
∆AID _{t-1}	-0.570368	-1.723309
Y _{t-1}	-0.041584	-2.315034
INF _{t-1}	-0.380505	-3.654771
BD _{t-1}	-0.160735	-0.757583
TO _{t-1}	0.610052	4.104881
M2 _{t-1}	0.033148	0.302615
AID _{t-1}	0.224490	0.720677
С	0.316382	2.066718

Table 4: Dynamic Model of Aid Growth With Policy

Variables	Coefficient	t-Statistic
ΔINF	-0.797604	-4.181153
ΔBD	0.296897	1.334780
ΔΤΟ	0.432065	2.195539
ΔTO _{t-1}	-0.378136	-1.887530
ΔTO _{t-2}	-0.476695	-2.729746
ΔM2	-0.651507	-2.632195
ΔAID	1.050133	1.805333
∆AID _{t-2}	-0.622013	-1.585436
ΔΑΡ	-0.186590	-1.816736
ΔAP _{t-2}	0.123886	3.243547
Y _{t-1}	-0.061006	-2.849553
INF _{t-1}	-0.699143	-2.935574
BD _{t-1}	0.210988	0.741307
To _{t-1}	1.003019	4.028781
M2 _{t-1}	-0.050498	-0.385615
AID _{t-1}	0.777884	1.334630
ΔAP _{t-1}	0.209079	2.107160
С	0.480074	2.729100

Dynamic model of Bilateral & Multilateral Aid Growth W-O

Policy

Variables	Coefficient	t-Statistic
Δy _{t-2}	-0.221999	-1.627330
ΔINF	-0.645092	-6.454440
ΔINF_{t-2}	-0.290853	-3.385994
ΔΤΟ	0.303702	2.100153
ΔM2	-0.642738	-2.870233
∆MAID _{t-1}	1.130842	1.157209
ΔBAID _{t-2}	0.719233	2.103113
Y _{t-1}	-0.073720	-3.017044
INF _{t-1}	-0.353005	-3.156108
TO _{t-1}	0.631571	3.916707
M2 _{t-1}	0.248135	1.736674
MAID _{t-1}	0.698297	0.782373
BAID _{t-1}	-0.454722	-1.367156
С	0.568178	3.189008

Dynamic model of Bilateral & Multilateral Aid Growth With Policy

Variables	Coefficient	t-Statistic
Δy _{t-2}	-0.342108	-2.887724
ΔINF	-0.433587	-4.960405
ΔΤΟ	0.334228	2.871965
ΔTO _{t-1}	-0.642679	-3.842679
ΔTO _{t-2}	0.549600	3.995189
ΔM2	-0.918494	-5.299651
ΔMAID _{t-2}	-2.205275	-2.883633
∆BAID _{t-1}	-0.507854	-1.724165
ΔAP _{t-2}	0.148065	5.293645
Y _{t-1}	-0.105357	-5.665835
INF _{t-1}	-0.939883	-5.604070
TO _{t-1}	1.579224	6.515143
MAID _{t-1}	0.817769	1.351582
BAID _{t-1}	0.677542	2.593782
AP _{t-1}	0.241560	3.983866
С	0.776277	5.478971

Conclusions and Recommendation

- Empirical findings suggest that foreign aid has positive effects on economic growth in Pakistan subject to the good macroeconomic policies .i.e. low inflation, low level of budget deficit and outward orientation of the external sector of the economy.
- In the absence of good macroeconomic policies aid has no impact on growth in Pakistan.
- Our results suggest that aid and real GDP has negatively correlated while aid-policy interactive term exerts positive and significant impact on growth.

• Therefore the policy makers should aware that of low inflation, more trade openness and low budget deficit is crucial for aid effectiveness in the case of Pakistan.

• Aid inflow is a highly unstable and unpredictable source of external financing and it is always depend on donor's strategic interest. Policy makers take into account the stable and sustainable sources of external financing like exports, Remittances, FDI and portfolio investment for stimulating growth of economy.

Thank

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