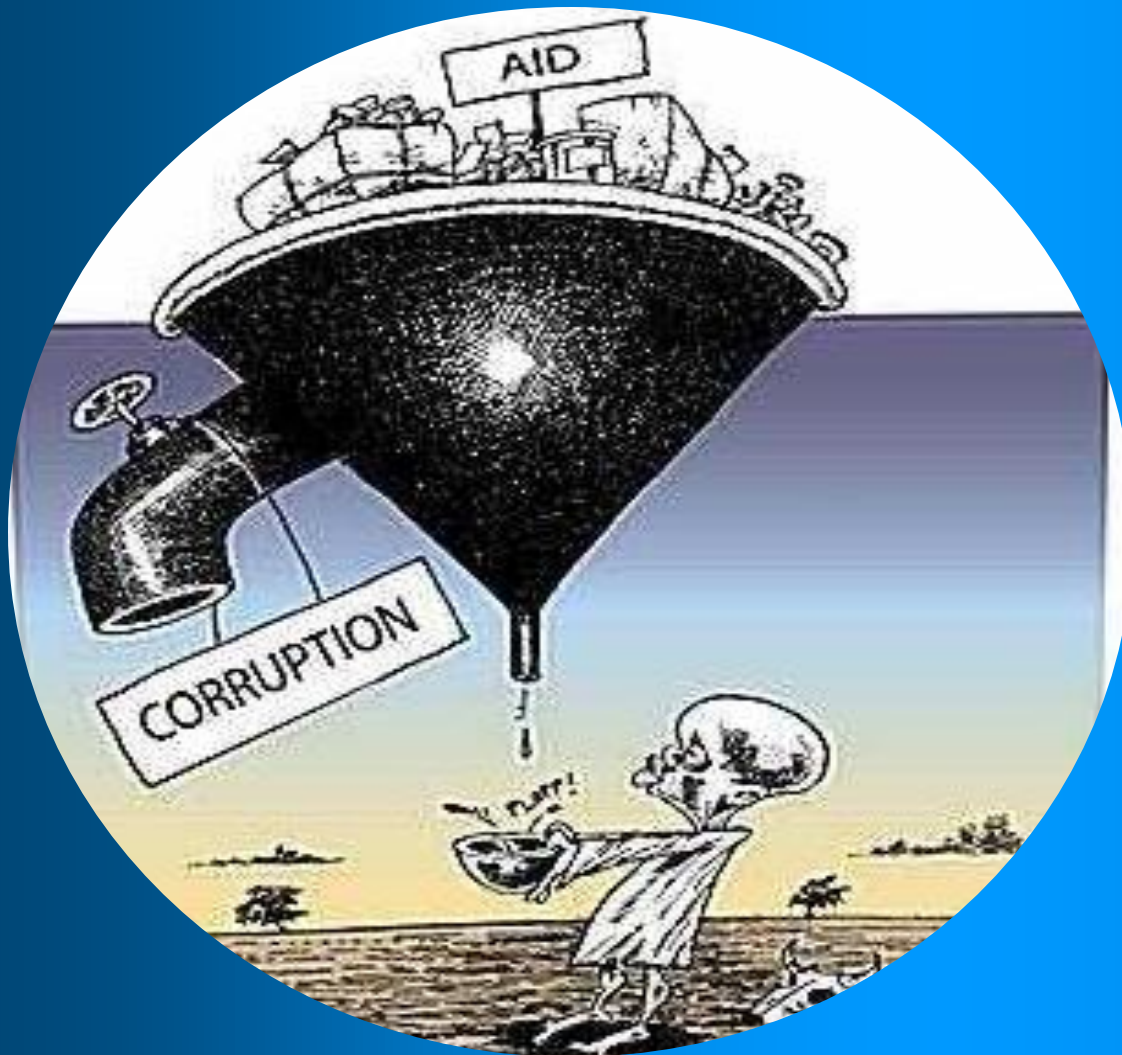


## Abstract

The study examines the effect of foreign aid on the fiscal behavior of the Government of Pakistan by applying Autoregressive Distributed Lag model allowing for an analysis of the relationships between grant aid, domestic borrowing, domestic revenue and development expenditure allocations for the period 1960 to 2010. Results reveal that foreign grants have made the Government of Pakistan to be less fiscally responsible, in fact it has reduced domestic revenue collection and amass higher levels of foreign debt. In the period of fiscal imbalances rather than cutting expenditures, actually the development and general expenditure categories increased. The results also suggest that these effects vary considerably according to how aid is delivered, comparing budget support vis-à-vis project and program aid delivery. The policy implications emerge that there is much scope for foreign financial resources to be managed more

# *Foreign Aid And Fiscal Behavior of Government of Pakistan*



*Rabia Butt &  
Dr. Atiya Javed*



# Outline

- Introduction
- Literature Review
- Problem Statement
- Objectives
- Methodology
- Estimations and Results
- Conclusion
- Work Effectiveness
- References

# INTRODUCTION

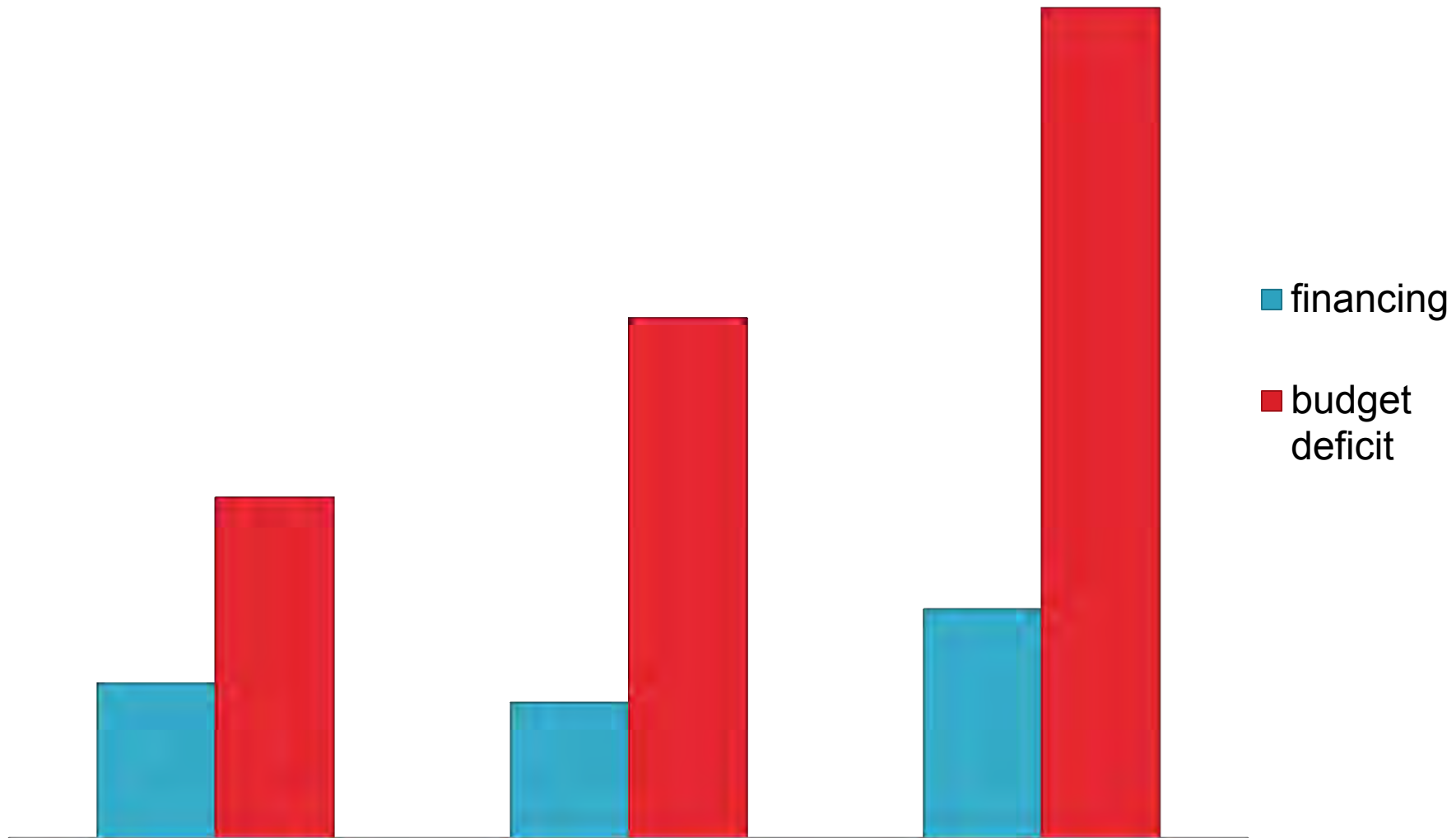


# Introduction

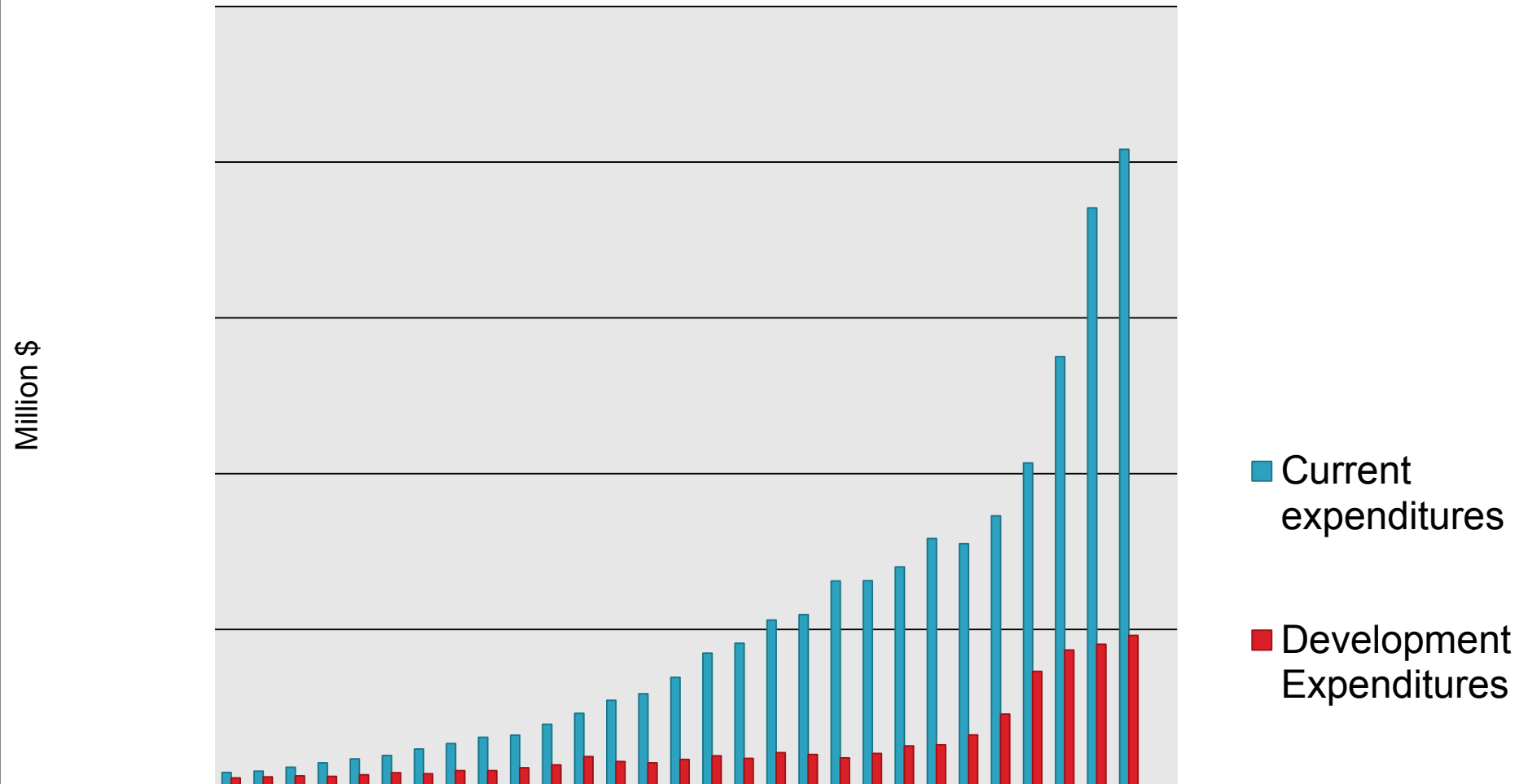
- Since independence, Pakistan is heavily relying on Foreign Aid (*Hassan, 1998*).
- The optimal use of these financial resources may help in raising the living standards of the nation (*Hassan, 1998*).
- It is important to use aid wisely because it is received in limited quantity (Qureshi, 1948-1968) .
- In 1978, the nature of Aid flows changed from Grant type aid to Loan and credits (*Hassan., 1998*).

# Introduction

Million \$



# Introduction



Source: Ministry of finance

- There is no remarkable impact of foreign aid on the economic performance (*Boone, 1994*).
- High public debt and large external debt are the consequences of :-
  - *Fiscal and balance of payments deficits*
  - *Imprudent use of borrowed resources*
  - *Rising real cost of government borrowing*
  - *Weak debt carrying capacity* (Debt committee report , 2001)

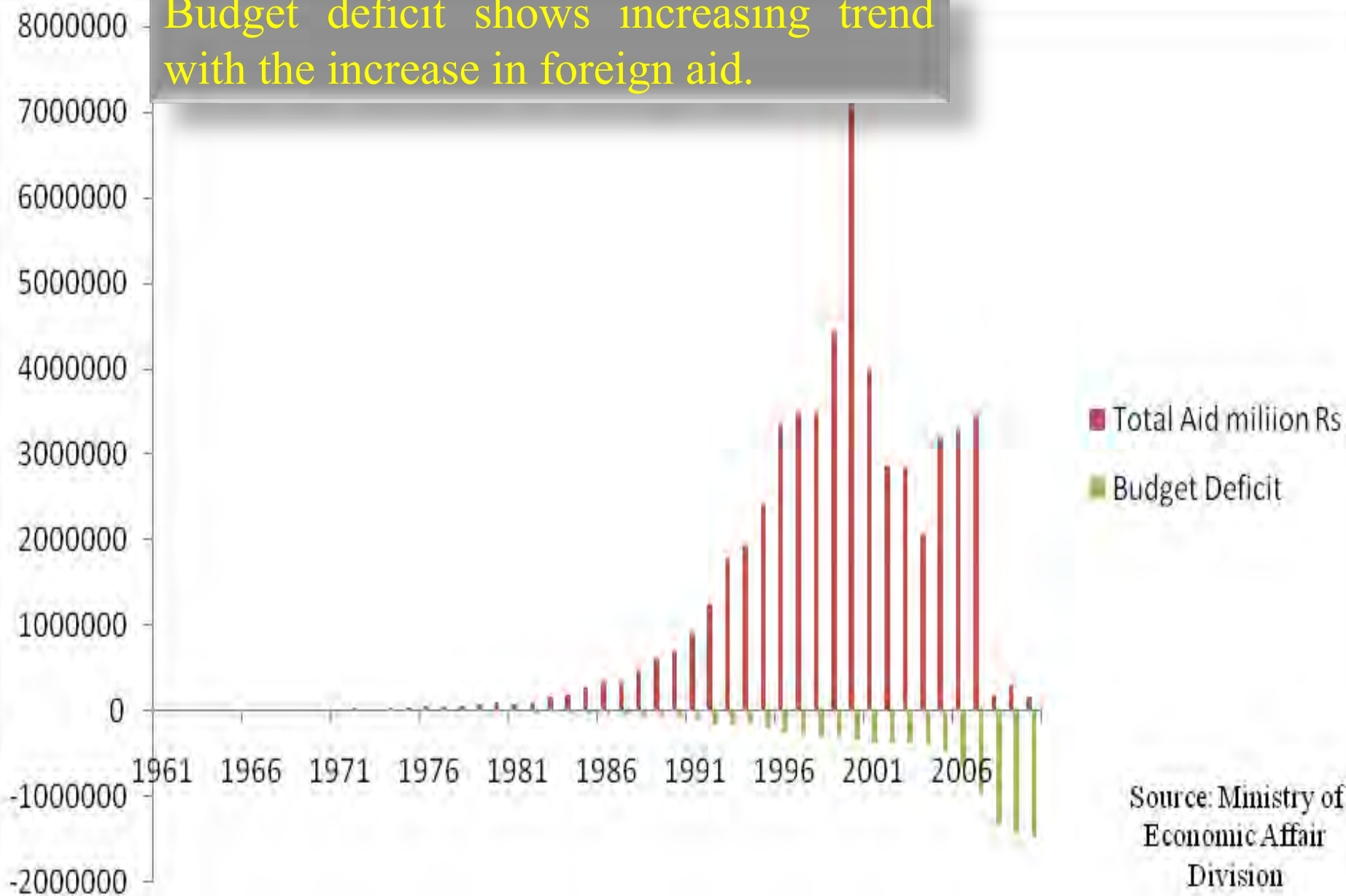


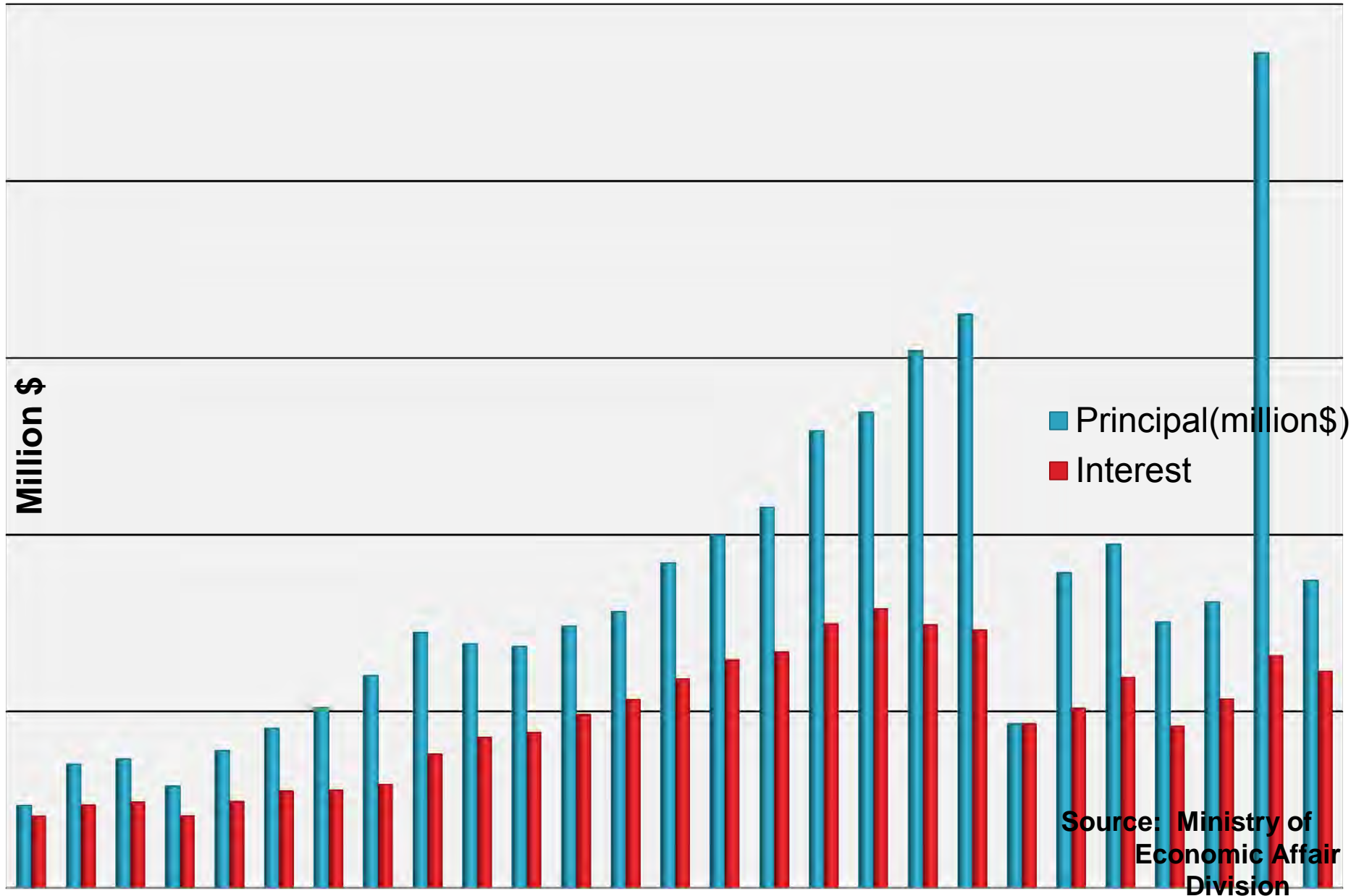
The budget deficit has persisted at a permanent high level whereas debt taken from public has increased progressively.



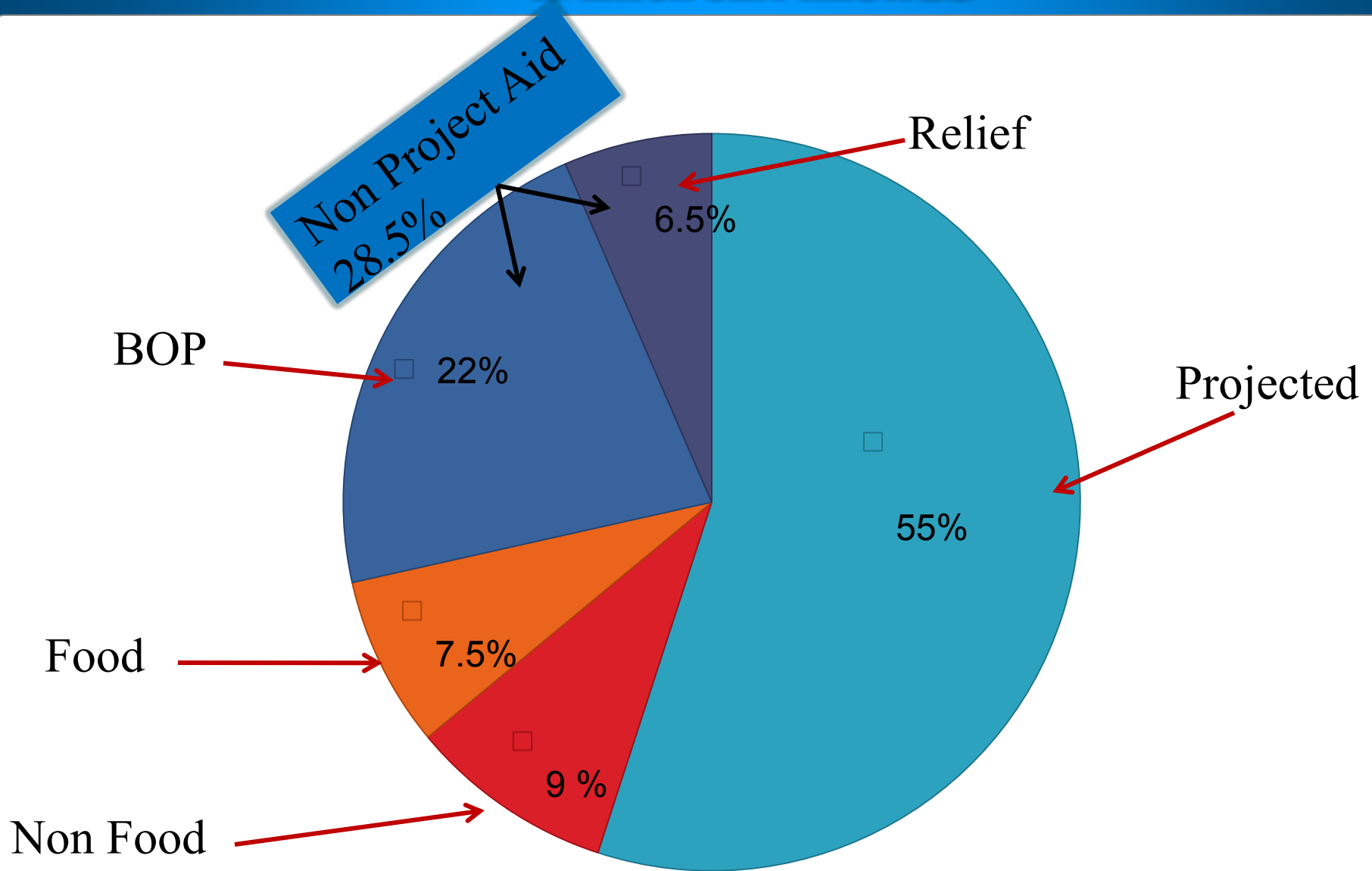
# Aid and Budget Deficit Situation in Pakistan

Budget deficit shows increasing trend with the increase in foreign aid.





# Allocation Of External Aid Among Different Heads



# LITERATURE REVIEW



# Literature Review

Chenery & Strout,  
1966

Due to insufficient level of domestic savings, UDC's could not finance their investment project so they

Griffen, 1970  
Heller, 1975

The recipient country reduces its domestic borrowings and revenue generating the government consumption

Gupta

Three-stage non-linear-least-squares estimator results revealed that non developmental expenditures have increased foreign aid

Swaro  
,1999

The OLS procedure results showed that foreign aid led to increased development expenditures. Also it has negligible effects on non development expenditures.

Foreign aid plays a major role in maintaining the of development in Pakistan.

regression

model, he found that GDP of Pakistan is optimistically related with foreign aid but it increased at a decreasing level.

Khan,

G.Mohey-ud-din,  
2005



# Literature Review

Salim Chishti and  
M. Aynul Hasan,  
1992

By using Iterative three stages least squares technique they found that 28% of public sector non development expenditures were financed by aid.

Ouattara, 2006

Aid has constructive effects on public investment level and it is not increased by aid and with aid.

Osei et al., 2006

Foreign aid in Ghana was used to assist fiscal adjustments rather than for financing non development expenditure.

McGillivray &  
Feeny, 2010

Aid was usually used for fulfilling the budget deficit.

Dowling.J, 1998 and  
Tendulkar, 1971

Aid has contributed to growth in SSA.  
Effect on the recipient country.

T. Addison et al., 2005

# Significance





# Significance

- Over last 5 - 6 decades, Pakistan is receiving foreign aid but its socio economic performance is not satisfactory.
- On one side, it helps the country to overcome the budget deficit situation , but on other side, it has made the government fiscally less responsible.
- Some studies examined the different impacts of aid without focusing fiscal behavior at an extensive level.

# Significance

- Effect of public debt on fiscal behavior was not considered .
- Used traditional techniques were not much efficient in determining appropriate target variables.
- The literature has treated aid as a homogenous good which is its limitation.

# OBJECTIVES



# Objectives

- To analyze the impacts of aid on
  - Expenditure's level in Pakistan.
  - Efforts of domestic revenues collection.
  - The fiscal behavior of Government of Pakistan.

# Objectives

- Whether foreign assistance is responsible for accumulation of higher level of debt in Pakistan?
- Whether disaggregated foreign assistance has different effects on expenditure level, revenue collection efforts, and on debt level in Pakistan?

# METHODOLOGY



# Utility Model

- Fiscal system of a recipient government can be represented by Utility maximization government.
- Funds are preferred to be allocated between
  - *Development activities* ( $E_{D,t}$ )
  - *General government spending* ( $E_{G,t}$ )
- Suppose government spending can be represented by Cobb Douglas production fn as:
  - $$U(E_{D,t}, E_{G,t}) = E_{D,t}^{\alpha} E_{G,t}^{1-\alpha} \quad (1)$$

- Budget constraint faced by the recipient government can be determined by
  - *Domestic resource collection (T)*
  - *Foreign aid*
- Foreign aid is disaggregated between projected and non projected aid.
- Difference between the expenditure and revenue can be adjusted through government borrowings.



➤ Budget constraint can be shown as:

- $P_{D,t} \cdot E_{D,t} + P_{G,t} \cdot E_{G,t} - (T_t + BS_t + \phi PR_t) = D_t \quad (2)$

➤ Government utility maximization problem can be presented as

- $\underset{(E_D, E_G) \in T(G)}{MAX} U(E_{D,t}, E_{G,t}) \quad s.t. \quad (T_t + BS_t + \phi PR_t) + D_t - P_{D,t} \cdot E_{D,t} + P_{G,t} \cdot E_{G,t} = 0$

(3)

➤ System of interdependent fiscal equations

- $E_D = \omega(DR, BS, PR, PD)$
- $E_G = t(DR, BS, PR, PD)$
- $T = \eta(E_D, E_G, BS, PR, PD)$
- $DR = \kappa(E_D, E_G, DR, BS, PR)$
- $A = \pi(E_D, E_G, DR, PD)$

**E** = Total Expenditures  
**E<sub>D</sub>** = Total Development  
 Expenditure of government

**E<sub>G</sub>** = Total General  
 Expenditure of government

**GR** = Grant revenue  
 received by government

**BS** = Grant revenue budget  
 support

**PR** = Grant revenue program  
 support

**Pd** = Public debt

**DR** = Domestic revenue  
 collection

**DB** = Domestic financing of  
 budget deficit

**A** = Projected and Non  
 Projected Aid

# Vector Error Correction Model

- Next step is application of the model on the statistical data.
- Vector error correction model is used for this purpose.
- VECM simultaneously estimates short run and long run relationship.
- It has the capability to tackle the problem posed by non stationarity in the data.
- Preferred over an unconstrained model.

# Data Source

➤ Period: Annual Statistical data has been used from 1960 - 2010.

➤ Sources:

- Economic surveys of Pakistan.
- Ministry of Economic Affairs division Islamabad.
- Ministry of Finance Islamabad
- A hand book of statistics 2010 issued by State bank of Pakistan.
- State bank of Pakistan.



# ESTIMATION & RESULTS



Phillips Perron Test			
	Level	First Difference	Result
AC	-0.39	-15.00*	I(1)
DB	-0.07	-5.14*	I(1)
BS	-0.94	-19.99*	I(1)
DR	0.89	-5.76*	I(1)
DE	0.19	-4.97*	I(1)
GE	0.45	-5.30*	I(1)
GR	-1-61	-8.43*	I(1)
PD	0.65	-4.78*	I(1)
PR	-1.41	-8.03*	I(1)

# Model I Fiscal Aggregates

➤ 
$$\Delta \ln DB_t = \alpha_0 + \sum_{i=1}^3 \alpha_{1t} \Delta \ln DB_{t-i} + \sum_{i=0}^3 \alpha_{2t} \Delta \ln GR_{t-i} + \sum_{i=0}^3 \alpha_{3t} \Delta \ln DR_{t-i} + \sum_{i=0}^3 \alpha_{4t} \Delta \ln EX_{t-i} + \gamma_1 \Delta \ln DB_{t-1} + \gamma_2 \Delta \ln GR_{t-2} + \gamma_3 \Delta \ln DR_{t-3} + \gamma_4 \Delta \ln EX_{t-4} + \varepsilon_t$$

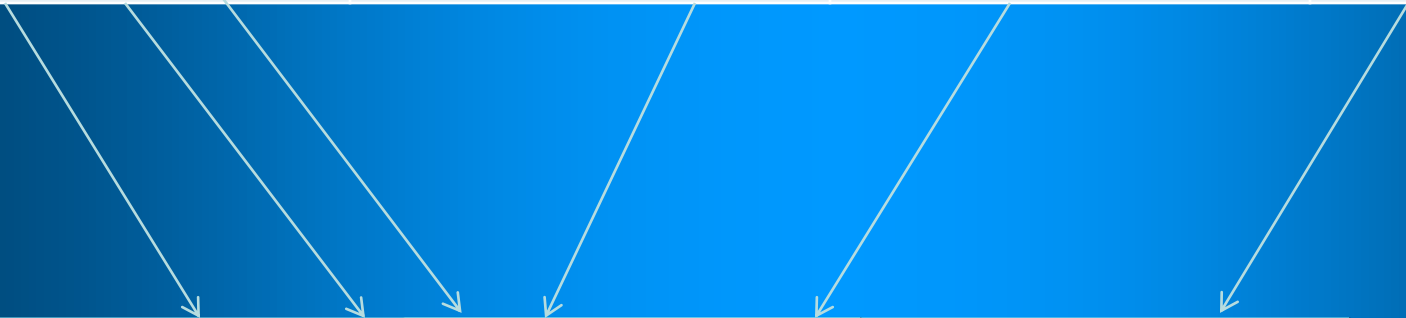
## F-statistics for Co integration Relationship

F-Value	I(0)	I(1)
6.75	1.99	2.94

# Model I Fiscal Aggregates

## Normalized Domestic Borrowing supported by domestic borrowing

DB	GR	DR	EX
1	0.06*	0.14	-1.52
	(2.28)	(2.92)	(-3.97)



Grant revenue are used as a substitute for domestic borrowings  
Government borrowings increases  
Government expenditures



# Model I Fiscal Aggregates

## Short Run Relationship For Model I

Lag Order	$\Delta DB$	$\Delta GR$	$\Delta DR$	$\Delta EX$
0		0.03* (3.85)	-1.51* (-3.21)	-0.07 (-0.46)
1	-0.38* (-2.04)	0.02* (2.02)	-0.64 (-1.42)	1.06* (4.94)
$ECT2_{t-1}$	-0.44* (-5.39)			

# Model II of Fiscal Aggregates and Expenditure Composition

$$\begin{aligned} \triangleright \Delta \ln DB_t = & \alpha_0 + \sum_{i=1}^3 \alpha_{1t} \Delta \ln DB_{t-i} + \sum_{i=0}^3 \alpha_{2t} \Delta \ln GR_{t-i} \\ & + \sum_{i=0}^3 \alpha_{3t} \Delta \ln DR_{t-i} + \sum_{i=0}^3 \alpha_{4t} \Delta \ln DE_{t-i} + \sum \Delta \ln GE_{t-1} \\ & \gamma_1 \Delta \ln DB_{t-1} + \gamma_2 \Delta \ln GR_{t-2} + \gamma_3 \Delta \ln DR_{t-1} + \gamma_4 \Delta \ln DE_{t-1} \\ & + \gamma_5 \Delta \ln GE_{t-1} + \varepsilon_t \end{aligned}$$

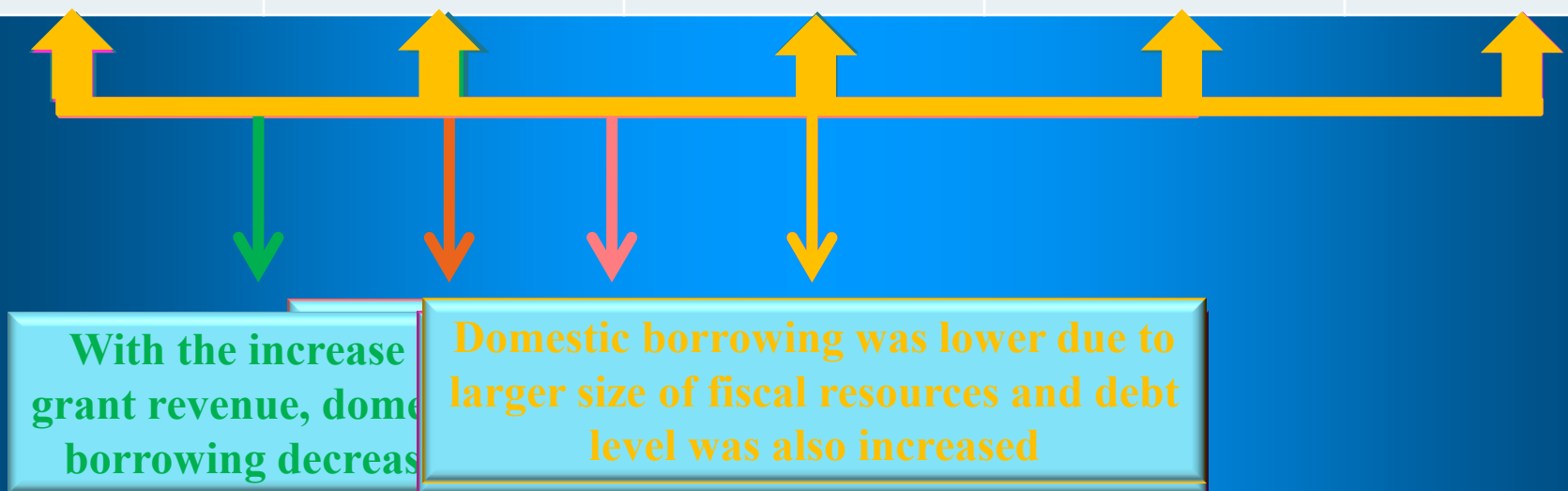
## F-statistics for Co integration Relationship

F-Value	I(0)	I(1)
6.74	2.08	3.00

# Model II Fiscal Aggregates And Expenditure Composition

**Normalized Domestic Borrowing supported by domestic borrowing**

DB	GR	DR	DE	GE
1	0.17** (1.81)	1.90* (3.73)	-1.57* (-2.99)	-0.69* (-2.72)



# Model II Fiscal Aggregates And Expenditure Composition

## Short Run Relationship

Lag Order	$\Delta DB$	$\Delta GR$	$\Delta DR$	$\Delta GE$	$\Delta DE$
0		0.003* (0.69)	1.06* (2.88)	0.37* (3.04)	-1.07 (-4.48)
1	0.46* (4.42)	0.002* (0.37)	0.27* (0.80)	0.21* (1.29)	0.26* (0.76)
$ECT2_{t-1}$	-0.59* (-4.33)				

# Model III of Fiscal Aggregates, Expenditure Composition and Aid Modalities

$$\begin{aligned}
 \triangleright \Delta \ln DB_t = & \alpha_0 + \sum_{i=1}^3 \alpha_{1t} \Delta \ln DB_{t-i} + \sum_{i=0}^3 \alpha_{2t} \Delta \ln GBS_{t-i} \\
 & + \sum_{i=0}^3 \alpha_{3t} \Delta \ln GPS_{t-i} + \sum_{i=0}^3 \alpha_{4t} \Delta \ln DR_{t-i} + \sum \Delta \ln ED_{t-1} \\
 & \sum \Delta \ln EG_{t-1} + \gamma_1 \ln DB_{t-1} + \gamma_2 \ln GBS_{t-2} + \\
 & \gamma_3 \ln GPS_{t-1} + \gamma_4 \ln DR_{t-1} + \gamma_5 \ln ED_{t-1} + \gamma_5 \ln EG_{t-1} \\
 & + \varepsilon_t
 \end{aligned}$$

## F-statistics for Co integration Relationship

F-Value	I(0)	I(1)
7.08	2.26	3.35

# Model III of Fiscal Aggregates, Expenditure Composition and Aid Modalities

**Normalized Domestic Borrowing supported by domestic borrowing**

DB	Gr_BS	Gr_PR	DR	DE	GE
1	0.89*	-0.31*	1.34*	-1.27*	-0.79*
	(1.21)	(-1.02)	(2.61)	(-2.23)	(-3.33)



I Inc Higher level of domestic resources not only contributed to increase in government expenditure level, but also reduced government's domestic borrowing levels

# Model III of Fiscal Aggregates, Expenditure Composition and Aid Modalities

## Short Run Relationship

Lag Order	$\Delta DB$	$\Delta BS$	$\Delta PR$	$\Delta DR$	$\Delta DE$	$\Delta GE$
0		0.46** (1.94)	0.50 (1.54)	-0.19* (-0.55)	-0.57* (-2.23)	0.61* (5.78)
1	0.08* (0.72)	0.67* (3.00)	0.80* (1.85)	2.51* (6.20)	-1.45 (-3.91)	0.19* (1.41)
$ECT_{t-1}$	-0.37* (-3.05)					

# CONCLUSION





# Conclusion

- From this analysis it can be concluded that:
- In time of aid contraction period, the government gave more priority to general expenditures .
  - The relationship between aid and domestic debt is unambiguously negative.
  - The overall effect on total expenditure levels is about to be zero.
  - The results were different when the aggregate level of grant aid was disaggregated.

# Conclusion

- This disaggregated type of aid has a positive effect on the level of revenues collection and on domestic debt.
- The result is supported by the findings of FRM literature and also by the findings of Feeny and McGillivray (2009), which also found that usually aid inflows are used as an alternate of domestic tax collection.

# Implications



# Implications

- The Government of Pakistan should manage the foreign grants in an effective manner.
- The Government may also focus on expanding its tax base.
- The level of general expenditures category may also be minimized.
- These foreign resources should be used to lower the level of spending, instead of lowering the domestic resource mobilization activities.

