FISCAL DECENTRALIZATION AND ECONOMIC GROWTH IN PAKISTAN: AN ARDL APPROACH

By

ARSHAD, Muhammad

THESIS

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

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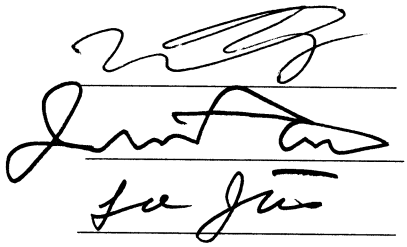

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ABSTRACT

The relationship between fiscal decentralization and economic growth is widely debated in the literature. However, there has been not much attempts to verify this relationship systematically. By using the autoregressive distributed lag model framework, an attempt is made for identifying the relationship using the Pakistan's case. This study finds that, at least for Pakistan, fiscal decentralization is positively related with economic growth. Such findings may imply that fiscal decentralization could be used as a vehicle for achieving long-term economic growth in Pakistan's case. However, it is also suggested that factors such as over-dependence of provincial governments on centre, undefined functional and tax responsibilities, limited and unaffected tax base for provincial and local governments may undermine the full benefits of fiscal decentralization.

Dedicated to my Parents, Wife, Sisters and Beloved Son

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Chapter 1

Introduction

More than past two decades, process of decentralization is debated widely in literature. Most countries are making attempts for challenging monopoly power of central governments in decision-making process that motivates central governments to transfer the authority of performing certain functions by lower level.

Fiscal decentralization (FD), transfers of fiscal assignments from central government to lower level of governments[1], is heart of any devolutionary exercise. Without appropriate degree of FD no authority can be devolved. The basic concept involves transferring of funds to sub-national governments according to their due share along with authority and flexibility to spend the funds as per local priorities.

The main economic argument for FD may be that it increases economic efficiency as sub-national governments have more information about the preferences and tastes of their constituents. Oates (1993) argued that when goods and services are provided to local constituents in accordance with their tastes and preferences as compared to centrally determined uniform levels, it increases the social welfare. The process of FD also leads to an improvement in governance, as giving more authority and flexibility for spending funds makes local governments fully responsible for the judicious and cost effective utilization of funds. It also makes local government accountable for their performance especially in relation to service delivery. Thus adequate degree of FD is a necessary pre-requisite for the success of local government system.

[1] As defined by Xie et. al (1999), p. 228

Contrary to that some researchers disagree with this proposition[2]. For example, Tanzi (1995) pointed out that generally taxpayers do not have sufficient political power or information for putting pressure on local policymakers for efficient decision making. He further pointed out that particularly in developing countries, state or local politicians are generally more corrupt than national ones. As a result of these situations or circumstances, the policy decision of FD may have less than optimal result.

In Pakistan, prior to independence[3] the devolutionary reforms have been started by non- representative regimes of British. Later, these reforms were carried out by three military regimes[4]. However, it has been learned that the devolutionary reforms implemented by military regimes involve transferring of certain powers and functions from provinces[5] to local governments but often they strengthen the central government.

Decentralization process involves transferring of a large number of functions and powers[6] from central to provincial and from provincial to local governments. However, in case of Pakistan, before promulgation of Local Government Ordinance, 2001 and introduction of Legal Framework Order, 2002 the functions and powers are generally allocated in the Constitution of Islamic Republic of Pakistan, 1973 to only two tiers of governments – the Federal and Provincial. There is a need to decentralize some functions and powers to sub-national level. The last military regime, following the norms of other two military regimes, in early 2000 started devolutionary exercise wherein inter-alia, local governments have been recognized as a third or lower tier. This reform transfers sufficient fiscal powers to lower tiers of government.

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[2] see Tanzi, (1995); Hemming and Spahn (1997); Leterlier (2003) etc. for detail.
[3] Pakistan got independence from British in August, 1947.
[4] i.e. General Ayub Khan regime (1958~1969), General Zia ul Haq regime (1978~1988) and General Pervez Musharaf's regime (Oct. 1999~Nov. 2007)
[5] Pakistan has four provinces - Sindh, Punjab, Khyber-Pakhtunkhwa(former NWFP) and Baluchistan.
[6] such as political, administrative and financial powers

Although theoretical models of FD provide arguments for its relationship with economic growth but its direction is less clear-cut. On the one hand, theory argued that FD is positively related with economic growth through improved supply of public goods by considering diverse local preferences and inter-jurisdictional competition among sub-national governments which provides incentives for product innovation that enhance consumers as well as producers efficiency. On the other hand, theory also argued that it is negatively related with economic growth as inter-jurisdictional tax competition leads to higher regional disparities and corruption that leads to undersupply of public goods. In addition to that empirical validations for theoretical foundations are also ambiguous. For example, Xie et. al. (1999), Thieβen (2000) and Desai, et. al (2003) found positive association while Davoodi and Zou (1998) and Zhang and Zou (1998) found negative relationship between FD and economic growth. Thus, empirical analysis provides an opportunity not only to determine direction of this relationship for Pakistan but also encourage to estimate its impact on economic growth.

Present study is unique in the sense that previous studies generally used simple OLS technique for evaluation of relationship; however, present study uses a recently developed technique of Autoregressive Distributed Lag Model (ARDL) for determining long-run association between FD and economic growth. Further, a very few studies have so far been made for Pakistan's context. For example, Cheema and Mohmand (2003), Chema et. al (2004) and Zaidi (2005) examined the process of decentralization in historical context; Pasha and Pasha (2000) identified major issues of FD in relation with devolution plan of 2000. Whereas, Malik et. al (2006) empirically examined this impact for Pakistan by using simple OLS technique.

The reason for determining relationship between FD and economic growth is three fold: First, the objective of any devolution exercise particularly devolution of fiscal powers to lower level is to improve efficiency in public sector's resource allocation that leads to economic growth. Second, it is one of the objectives of government to implement policies that augment income of the masses and last, measuring economic growth is easier than other indicators [Zhang and Zou (2001)].

The present study has certain limitations. Ideally, long-run relationship should be examined by using the fiscal data of three tiers of government i.e. federal, provincial and local governments. But unfortunately, there is not sufficient data available for public finance at local government level. Therefore, the analysis is limited to two tiers of government i.e. federal and provincial governments. Further, national GDP is used instead of provincial GDP as data for the later is not available. Furthermore, there was an intention to use panel data for analyzing impact of FD on economic growth. But due to lack of panel data particularly growth data at provincial level, it forced to use time series for analysis.

Besides determining the long-run relationship between two variables of interest, present study also reviews socio-economics condition of Pakistan; examines inter-governmental fiscal relation in the context of Constitution (1973); analyzes the fiscal position of Pakistan Economy since 1972[7]; reviews theoretical linkages of FD and economic growth; determines the long-run relationship between two variables of interest; estimates long-run impact and short-run dynamics of FD; and provides policy implications.

The study progresses as follows: Chapter 2 briefly examines the decentralization process in Pakistan. Theoretical links and empirical literatures are reviewed in Chapter 3. Methodology, data descriptions and empirical results are explained in Chapter 4. Last chapter is devoted for conclusion and policy implications.

[7] The main reason for starting analysis from 1972 is that after 1971's war, East Pakistan (now Bangladesh) was separated from West Pakistan (now Pakistan). So time series data after 1971 relates to Pakistan.

Chapter 2

Fiscal Decentralization in Pakistan*

Devolution is a gradual process of transferring powers and resources from federal government to its lower level like provinces, districts and tehsils/towns. Decentralization of administrative and political powers alone will not be effective unless the financial powers from central to provinces are transferred.

Pakistan became an independent state in August, 1947; since then no vigorous efforts had been made to distribute administrative, political and financial powers amongst federal, provincial and local governments except the three military regimes who used decentralization as a strategy to strengthen their governments. The last military regime started the devolutionary reforms in the early 2000 by following the principle of subsidiary, whereby all functions that can effectively be performed at the local level are gradually transferred to them. This meant that functions which were previously handled by provincial governments are devolved to local governments.

In this chapter FD process adopted by Pakistan is reviewed in the following context: institutional arrangement; inter-governmental fiscal relation in the context of Constitution (1973); functional responsibility assigned by the Constitution (1973) to federal and provincial governments; funds transfer mechanism; overall fiscal position of Pakistan's economy during the period under review along-with composition of revenue and expenditure at provincial and federal level; and extent of present FD reforms.

The institutional factors like legal and political system, socio-economic

* The discussion on this chapter is generally based on articles of Zaidi (2005); Cheema et. at (2004) and World Bank (2000).

conditions etc. are very important for analyzing FD effectively. The institutional background decides the shape of inter-governmental fiscal relation and outcome of reform process. Pakistan's institutional arrangements are explained in the following paragraphs in two broad perspectives – overall economic and social development and prevailing legal system.

2.1 Pakistan's Socio-Economic Situation and Legal System:

Pakistan economy has witnessed continues growth over more than 4.5%. The real GDP increased by an average growth rate of 6.8% during 1960s, it declined to 4.6% in 1990s and then picked up momentum by increasing at an average rate of 5.0% in 2000s (see Table 2.1). Interestingly, in 2005, Pakistan economy with a growth rate of 9.0% was recognized as 2nd fastest growing economy of Asia after China.

It is obvious from the Table 2.1 that the growth rate in three military regimes (i.e. 1960s, 1980s and 2000s) are much higher than politically democratic regimes. Under military regimes, continuation of policies might be reason for this higher growth. In this context Zaidi (2005) argued that since growth rates are higher under military regimes this implies that achieving high growth rates for the economy would be to maintain military regime.

Table 2.1: Decade-Wise Selected Economic Indicators

Year	Real GDP Growth (%)	Fiscal Deficit (% of GDP)	Tax to GDP Ratio (%)	FDI (% of GDP)
1960s	6.8	2.1	-	0.30
1970s	4.8	5.3	-	0.11
1980s	6.5	7.1	13.8	0.36
1990s	4.6	6.9	13.4	0.86
2000s	5.0	4.3	11.9	1.91
2009	2.0	4.3	10.5	2.23

Source: Pakistan Economic Survey and SBP Annual Reports various issues

A sound fiscal position is vital for achieving macroeconomic stability that has been recognized as critical factor for sustainable economic growth. For Pakistan, fiscal deficit remains one of the problems for its economy since its inception (see Table 2.1). The highest

fiscal deficit was recorded in 1980s. If we compare political regimes with military regimes, we may observe that fiscal deficit was higher in former except 1980s (i.e. in General Zia regime). Tax to GDP ratio remains almost stagnant during 1980s and 1990s, thereafter, it showed a declining trend. The shrinking tax base for Pakistan's economy is mainly due to either tax evasion or loopholes in taxation policies/system.

Foreign investment has played an important role in developing countries like Pakistan for providing required macroeconomic stability. For Pakistan, the private external flows are mainly come from Foreign Direct Investment. It has shown an increasing trend particularly in last three decades. In absolute terms, it increased from $3.0 million in 1960 to more than $5.41 billion in 2008 whereas in percentage term it is as high as 1.91% in 2000s as compared to other decades.

One of the widely used indicators for economic development is per capita income. Meier defines economic development as "*the process whereby the real per capita income of a country increases over a longer period of time*"[8]. In Pakistan, it shows an increasing trend from 1985 to 2009. The average Pakistani in 1985 had US$370 (see Table 2.2); however, by 2009 this estimate has increased to US$1,046 which implies that in terms of per capita Pakistan's economy has shown improvement.

Pakistan with a population of 163.8 million in mid-2009 is the 7th most populous country in the World[9]. More than 128 million people have been added since 1951. However, with accelerated efforts [10] of government and changing in socio-economic conditions, a decline in fertility and birth rate have been observed during 1990s that reduces the population growth to 2.5% in 1995 and further to 1.87% in 2009 (see Table 2.2).

[8] cited in Sharma and Bhandari (2005), p. 16.
[9] This ranking is made on the basis of data provided in CIA World Factbook (for further details see "http://www.infoplease.com/world/statistics/most-populous-countries.html").
[10] like initiation of National Population Planning Programs

Education is vital for socio-economic development of a country. It builds human capital and accelerates economic growth through imparting knowledge, developing skills and establishing a creative strength for a society. In 1980s, about one-third of Pakistanis were literate; however, due to devoted efforts of government this rate has reached to 56% by 2009.

Table 2.2: Selected Development Indicators

Year	Per Capita Income (US $)	Population		Literacy Rate (%)	Un-employ-ment Rate (%)	Poverty (Headcount)	Life Expectancy at Birth (years)	Infant Mortality Rate (per 000)
		(Million)	Growth (%)					
1985	370	95.0	3.1	28.8	3.7	-	57	126.7
1995	490	121.5	2.5	39.6	5.4	-	61	-
2000	526	136.7	2.6	47.1	6.0	34.5	63	85.0
2005	733	151.1	1.9	53.0	7.7	23.9	65	82.0
2009	1,046	163.8	-	56.0	5.2	36.1	65	70.2

Source: Pakistan Economic Survey and SBP Annual Reports various issues

Employment is more of a social issue than an economic one as it directly affects the lives of every individual in a society. Proper employment is a necessity for all. However, in Pakistan, un-employment remains a problem and in 1985, about 4% of total labor force did not find a job (see Table 2.2). This rate has shown persistent increase up to 7.7% in 2005. Thereafter, due to government's employment generation programs this rate reduced to 5.2%.

Inadequate income, health and education, low standard of livings and lack of opportunities and choices for human development are the different aspects of poverty. Last military government's vigorous efforts to improve standard of livings and reduce poverty have shown positive result of the policies made during 2000-2005 (see Table 2.2). However global economic recession, lower economic growth, reduction in subsidies and high inflation are the main reasons for increase in Poverty in 2009.

Improved life expectancy at birth is also one of the important factors for socio-economic development. In this front, through vigorous policy efforts Pakistan has improved life expectancy for its people from 57 years to 65 years (see Table 2.2). On the other hand, the infant mortality rate has declined from 126 per thousand persons to 72.2 per thousand persons in 2009.

Federation of Pakistan is governed under the Constitution (1973) and all amendments to it since then. The Constitution (1973) specifies functions of the federal government and of the provincial governments. While the provinces had Constitutional status, the existence of local government was not formally part of the Constitution (1973) till 17th amendments made in 2003 wherein existence of local government is partially protected. Before amendments, an interim arrangement was made by last two military regimes for recognition of local governments as third tier of government through promulgation of Local Government Ordinances of 1979, 1980 and 2001 wherein some of the powers and responsibilities were delegated from provincial governments to local governments.

2.2 Inter Governmental Fiscal Relations:

Inter-governmental fiscal relation has been debated widely in the area of public finance. It determines effectiveness of provincial and federal finances and specifies functional (i.e. expenditure) responsibilities for them. It also identifies the taxation authority, describes degree of control over resources and provides revenue transfers arrangement from one level of government to another [World Bank (2000)].

How the Constitution (1973) and subsequent Ordinances fix the functional responsibility and taxation powers among various level of governments and mechanism to share revenue between federal and provincial governments are discussed in the following paragraphs.

The Fourth Schedule to the amended Constitution (1973) broadly allocates functional responsibilities among different levels of governments. It defines areas of functional responsibility and taxation powers for the federal, provincial and local governments. In general, the Constitutional distribution of functions is in line with broad principles of fiscal assignments such as efficiency, cost effectiveness etc. (see Annex – I for details).

The Fourth Schedule basically consists of Federal Legislative List and Concurrent List. The former describes exclusive responsibilities of federal government to undertake functions mostly relating to service delivery and regulatory in nature, while the latter outlines the functions that can be performed either level of government jointly or separately. The functions relating to service delivery includes defense, external affairs, communications and transportation like postage, telephone, TV, railways, ports and shipping etc (see Table 2.3). The functions contains in Concurrent List are mostly relating to population planning, tourism, curriculum development etc. The remaining functions which are not exclusively assigned to either government are assumed to be delivered by provincial government.

The legislative responsibility of either level of government with actual allocation of functions is compared in Table 2.3. From the Table 2.3, it is observed that most of the functions which are placed on Concurrent List and functional reasonability of both federal and provincial governments are actually performed by federal government. The reason for undertaken these assignments by federal government might be weak financial and technical base of provincial governments. On the same ground, it is also observed that a large number of legislative functions assigned to local government are actually performed by provincial governments.

Table 2.3: Legislative Responsibilities and Actual Allocation of Functions among Federal, Provincial & Local Governments Prior to 2001

Legislative Responsibilities	Services	Actual Allocations of Functions
Federal Government	Defense External affairs and foreign aid Post, telegraph, telephone, radio and TV Currency and foreign exchange Institutes for research Nuclear energy Parts and aerodromes Shipping, air service, railways, and national highways Stock exchanges Geographical and meteorological survey Censuses Mineral oil and natural gas Industries	Federal Government
Federal/Provincial Government	Population planning Electricity (except KESC) Curriculum development, syllabus planning, and centres of excellence Tourism	
	Social welfare and employment exchanges Vocational/Technical training Historical sites and monuments	Federal/Provincial Government
Provincial Governments	Law and order, justice Highways and urban transport Agricultural extension and distribution of inputs Irrigation and land reclamation Secondary and higher education	Provincial Governments
Local Governments	Curative health Land development Primary education	
	Preventive health Farm-to-market roads Water supply, drainage, and sewerage	Provincial/Local Governments
	Link roads Intra-urban roads Street lighting Solid waste management Fire fighting Parks, playgrounds	Local Governments

Source: Zaidi (2005), p. 201.

The Constitution (1973) also specifies taxation powers of federal and provincial governments. The details of how taxation powers have been assigned to federal and provincial governments under the Constitution (1973) are given at Annex-II. The striking

feature of allocation of taxation powers is that all broad and buoyant bases are assigned to federal government and residuals are left for provincial governments. For example, federal government can generate tax revenue proceeds for financing its expenditure from income tax, corporate tax, sales tax, and custom duties etc. which are more broad and buoyant source. Surprisingly, the federal government is assuming more and more taxation authority either directly or indirectly[11] that gradually limits the provincial revenue base. This situation is further deteriorated as some of the buoyant sources of provincial revenue were abolished either for religious reasons[12] or on policy grounds[13].

The Local Government Ordinances defines the areas where local government can assume its taxation powers that generally include taxation powers of local government on entertainment activity such as cinemas, dramatic and theatrical shows, tolls on roads and bridges, school fee and advertisement etc. (see Annex – III for details).

Public finances in Pakistan are characterized by large vertical fiscal imbalances between the federation and provincial governments mainly due to highly skewed taxation powers towards federal government and related slow growth of the provinces' own revenue. As it is obvious from the Table 2.4 that more or less two third of total resources are generated by federal government because all major and productive tax bases are in their domain. As a result, provinces are relied heavily on revenue transfers from federal government for meeting their expenditures. It hinders provincial autonomy in fiscal decision-making and makes policy makers unaccountability towards their constituents [World Bank (2000)].

[11] by imposing federal taxes on provincial tax bases
[12] like excise duty on opium /liquor.
[13] such as capital gain tax.

Table 2.4: Vertical Fiscal Imbalances (in %)

	1979-80		1985-86		1997-98		2005-06		2008-09	
	Exp.	**Rev.**	**Exp.**	**Rev.**	**Exp.**	**Rev.**	**Exp.**	**Rev.**	**Exp.**	**Rev.**
Federal	79.6	72.8	77.0	69.3	74.6	66.6	68.3	61.6	70.0	62.8
Provincial	20.4	27.2	23.0	30.7	25.4	33.4	31.7	38.4	30.0	37.2
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Author's calculation

Pakistan has a federal structure. It collects resources through fiscal instruments and shares these resources with its federating units according to a pre-defined formula. International best practices suggest that countries are used to share its resources on multiple bases such as population, poverty, backwardness, revenue generation etc. For Pakistan, population and location of natural resources form the main basis of fiscal transfers.

Being a federal type of government, major resources are generated by federal government which later has to be apportioned between federation and provinces and further amongst the provinces. For this purpose, the Constitution (1973) allows President of Pakistan to form a Commission called National Finance Commission (NFC) with a mandate to examine and review resource generation pattern, needs of federation and its federating units and recommend methodology for fair distribution of resources generated by the federal government. The Constitution (1973) also specifies compositions of 'Divisible Pool' which includes:

i) Income taxes and corporation taxes but it does not include taxes on remuneration given from Federal Consolidated Fund;

ii) Taxes imposed on sales and purchases of domestic and imported goods;

iii) Export duties on cotton and others that the President may specify from time to time; and

iv) Such other taxes as the President may specify from time to time.

The NFC is supposed to announce an Award every five years. However, Table 2.5 reveals that this was not the case. A gap of seventeen years has been observed between

1974 and 1990 Award. Although, attempts were made to form the NFC but all such initiatives failed due to some political reasons. Table 2.5 also highlights changing composition of divisible pool over the time. For example, the Award of 1974 distributes the resources placed in divisible pool at a ratio of 80 **:** 20 between federation and provinces respectively. For 1996 NFC Award, it was fixed as 62.5 **:** 37.5.

Table 2.5: Historical Arrangements of Revenue Sharing between Federal and Provincial Governments (in % age)

	Raisman Award 1951	NFC Award 1962	NFC Award 1964	NFC Award 1970	NFC Award 1974	NFC Award 1991	NFC Award 1996
Income Tax	50	50	65	80	80	80	37.5
Wealth Tax	0	0	0	0	0	0	37.5
Capital Value Tax	0	0	0	0	0	0	37.5
Sales Tax	50	60	65	80	80	80	37.5
Central Excise Duty On:							
Tea	50	60	65	80	--	--	--
Tobacco	50	60	65	80	0	80	37.5
Jute and Cotton	62.5	100	65	80	80	80	37.5
Sugar	0	0	0	0	0	80	37.5
Natural Gas	0	0	0	0	100	100	100
Others	0	0	0	0	0	0	37.5
Export Duty on Cotton	0	0	0	0	80	80	--
Import Duties	0	0	0	0	0	0	37.5
Estate and Succession Duty on Agri.	--	100	100	100	--	--	--
Duties on Capital Value of Immovable	--	100	100	100	--	--	--
Surcharge on Natural Gas	--	--	0	0	100	100	100
Royalty on Natural Gas	--	--	0	0	100	100	100
Royalty on Crude Oil	--	--	0	0	100	0	100

Source: Zaidi (2005)

The 6th NFC constituted by the President first in 2000 and then re-constituted in 2003. However, consensus on distribution of Award was not made and it was decided that the President may announce a just and equitable Award. The President passed Distribution of Revenues and Grants-in-Aid (Amendment) Order, 2006 which fixes the yearly provinces shares in the net proceeds of taxes and duties. The details of share of provinces in the divisible pool are given in Table 2.6.

Table 2.6: Share of Provinces in the Divisible Pool

Financial Year	% Share
2006 – 07	41.50
2007 – 08	42.50
2008 – 09	43.75
2009 – 10	45.00
2010 – 11 and onward	46.25

Source: Ministry of Finance, Government of Pakistan, Islamabad

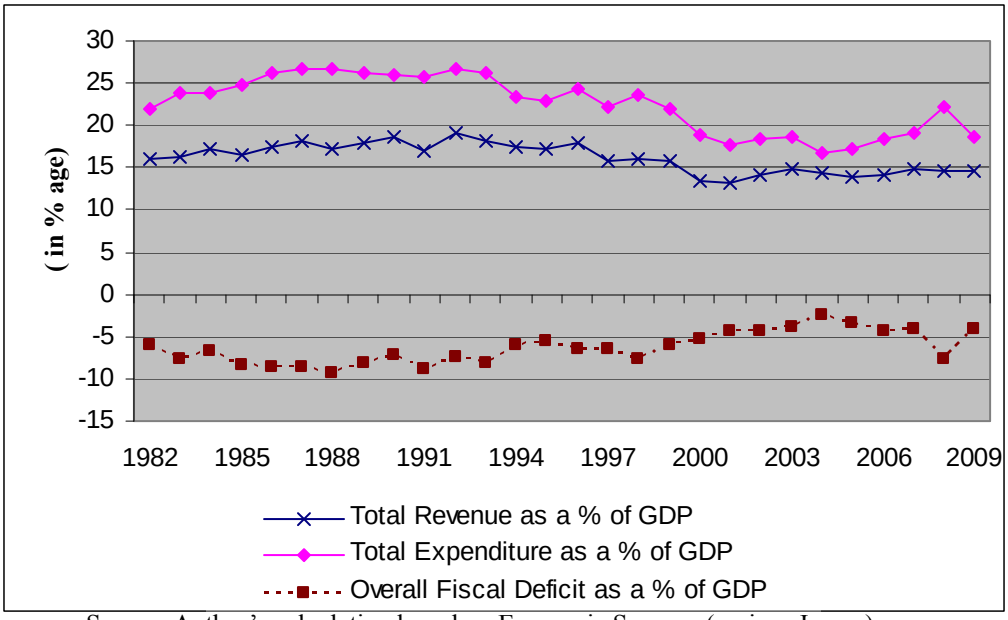
There are different perspectives of provinces and federal government about the vertical distribution of revenues. Provinces are demanding 50% of the divisible pool whereas federal government is emphasizing for sharing of revenues on the basis of President's Order of 2006. There is also difference of opinion about the horizontal distribution amongst the provinces like Punjab [14] is advocating population based distribution, Sindh wants the distribution on the basis of population, backwardness and revenue collection in the ratio of 77.5%, 12.0% and 10.5% respectively. Baluchistan pleads that revenues may be distributed as 80%, 10% and 5% for population, inverse population density and revenue collection basis respectively. Whereas Khyber-Pakhtunkhwa (formally NWFP) wants revenues to be distributed like 80%, 19% and 1% on the basis of population, backwardness and inverse population density respectively.

2.3 Overall Fiscal Position:

The public finances in Pakistan were not properly managed prior to 1999 as total expenditures held beyond the available resources. Though after 1999, it was above the revenue but the revenue-expenditure gap was showing a declining trend. The overall fiscal deficit remains within the range of 5% to 10% of GDP. However in late 1990s it shows a squeezing trend (see Figure 2.1). The underlying issue is that Pakistan should increase sufficient revenue for meeting expenditure requirements of all levels of government.

[14] Largest province of Pakistan in terms of population

Figure 2.1: Overall Pakistan's Fiscal Position



Source: Author's calculation based on Economic Surveys (various Issues)

The total revenue to GDP ratio generally showed a declining trend. Initially it increased gradually from 16% in 1982 to 19.2% in 1992. Thereafter, it continuously declined up to 13.3% in 2001, except 1996 and 1998 wherein it increased slightly. During 2002 to 2009, it fluctuated from 13.7% to 14.6%. The reasons for continuous fiscal imbalances may be weak tax effort coupled with overdependence on indirect taxes which creates excess burden of taxation, narrow tax base, inefficient tax administration, complex tax laws and procedures, and widespread culture of corruption and tax evasion.

Since 1980s and mid 1990s, share of current expenditure is rising mainly because of extraordinary rise in debt servicing. Further, Pakistan economy is also characterized by a defence economy as a large chunk of resources has been spent on defense or defence related activities. On average, the share of defence expenditure on total expenditure is 23% and interest payment share is 21.8%. Resultantly, total expenditure relative to GDP grew on average by 20% per annum.

Table 2.7 provides an overview that how the government of Pakistan present its consolidated provincial and federal public finances which consists of government

expenditure and revenues, figures on development expenditure and amount of fiscal deficit along with its financing sources. It may be noted that in 25 years, there were many structural reform programs adopted by various political and non-political governments but very small change have been observed in the composition of resources. Even in some cases the position is much deteriorated as before. For instance, in case of tax revenue as a percentage of GDP declined from 13.3% in 1981-82 to 10.1% in 2008-09.

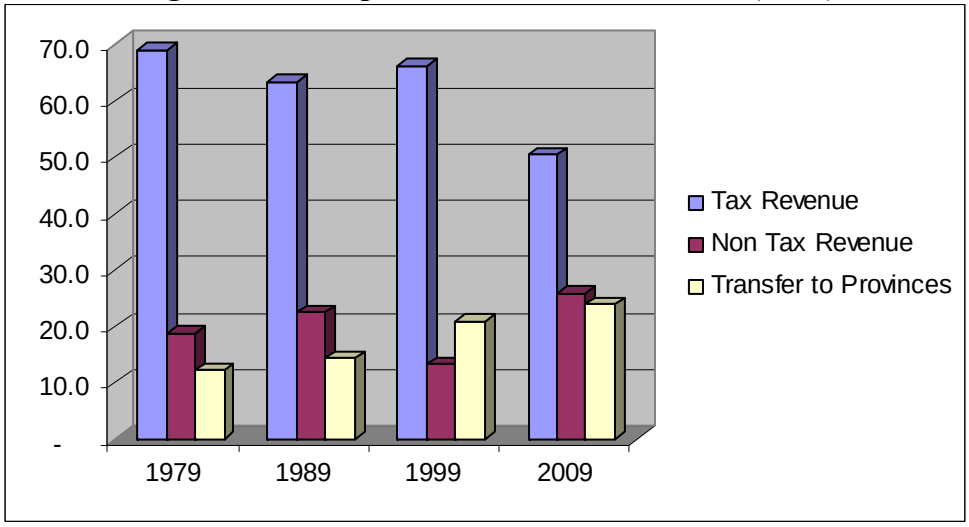
Table 2.7: Summary of Public Finance, 1981/82 and 2008/09

Major Heads	1981/82		2008/09	
	Rs. (Million)	% of GDP	Rs. (Million)	% of GDP
Total Revenue (i+ii)	**51,930**	**16.0**	**1,809,240**	**13.8**
Federal	48,537		1,66,238	
Provincial	3,393		147,002	
i) Tax Revenue	**43,003**	**13.3**	**1,317,857**	**10.1**
Federal	40,368		1,251,462	
Provincial	2,635		66,395	
ii) Non Tax Revenue	**8,927**	**2.6**	**491,383**	**3.8**
Federal	8,169		410,776	
Provincial	758		80,607	
Total Expenditure (a+b+c)	**71,013**	**21.9**	**2,391,491**	**18.3**
a) Current Expenditure	**44,544**	**13.7**	**1,875,832**	**14.3**
Federal	34,245		1,358,832	
Provincial	10,299		517,000	
b) Development Expenditure	**26,459**	**8.2**	**516,629**	**3.9**
c) Net lending to Public Sector Enterprises	1,909		-970	
Statistical Discrepancy	0		0	
Overall deficit	**-17,174**	**5.3**	**-582,251**	**4.3**
Financing (net)	**17,174**		**582,251**	
External (net)	5,345		165,216	
Domestic	6,313		417,035	

Source: Government of Pakistan, Economic Survey 1981/82 and 2008/09 issue, Islamabad

The composition of federal tax revenue till 1999 is almost stagnant (see Figure 2.2). In 1979, federal government generated 88% revenue from own resources (69% from tax and 19% from non-tax revenue) and transferred remaining 12% to provinces. This composition has changed in 1999 and further in 2009 wherein one fifth and one fourth of total federal revenues were transferred to provinces respectively.

Figure 2.2: Composition of Federal Revenue (in %)

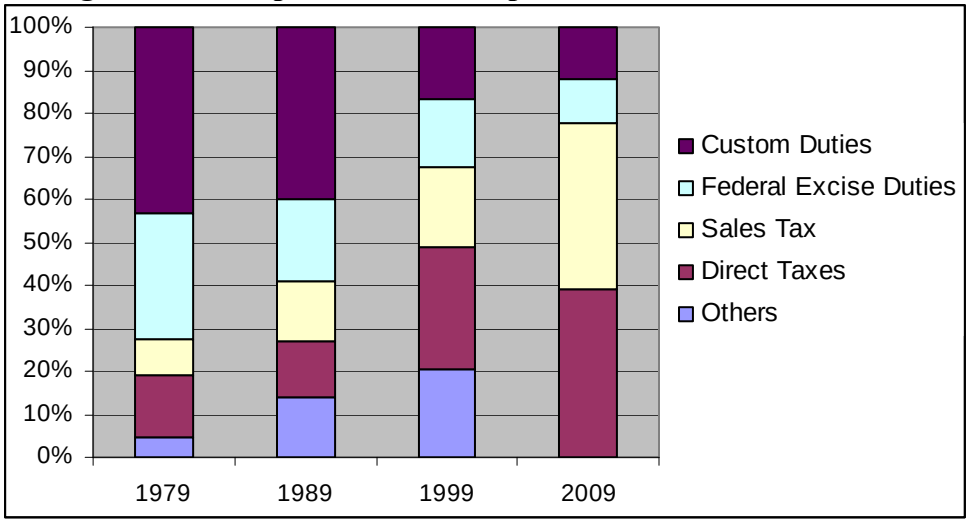


Source: Author's calculations based on SBP Annual Reports various issue

An interesting feature of federal revenue is that the tax revenue is far greater than from non-tax revenue and that indirect taxes are many times larger than direct taxes (see Figure 2.3). Within the category of indirect taxes, custom and federal excise duties have been dominated and provided the largest sources of income to federal government till 1989. Revenue from custom and federal excise duties together constitutes 73% and 59% of total tax revenue in 1979 and 1989 respectively. However, at present sales tax becomes the largest source of revenue for the government (39% of total revenue in 2009). Revenue generated from sales tax alone is equal to the total revenue generated by federal government from direct taxes.

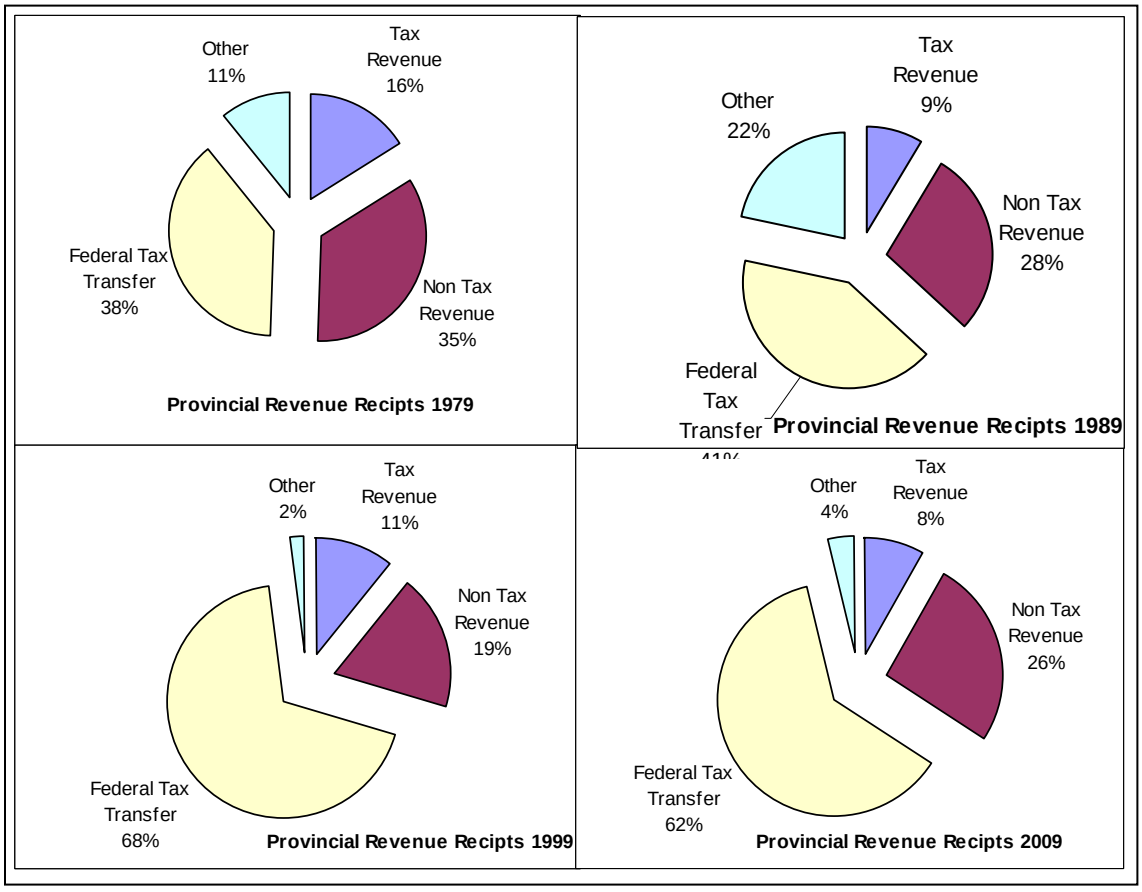
Another interesting feature is that reliance of provincial revenue on federal government has substantially increased. This reliance was as high as 68% of total revenue in 1999 (see Figure 2.4). The composition of 1979 provincial revenue receipts consisted of 51% of revenue generated from their own resources (16% from tax and 35% in non-tax revenue), whereas remaining 49% came from federal tax transfers that consisted of federal shared taxes (38%) and federal grants and development receipts (11%). In 1989, revenue composition showed that only 9% of total revenues were generated from taxes and 28% from non-tax heads, whereas share of federal transfers increased to 41%. By 1999, provincial reliance on

Figure 2.3: Composition of Principal Source of Federal Revenue



Source: Author's calculations based on SBP Annual Reports various issues

Figure 2.4: Composition of Provincial Revenue



Source: Author's calculation based on SBP Annual Reports various issues

federal resources substantial increased and share of federal transfers touches to 68% of total revenue. This may imply that over-dependence of provincial resources on federal grants and shared taxes destroyed the fiscal autonomy of provinces. In 2001, the government adopted devolution policies that give some fiscal autonomy to provinces. Resultantly, the composition of provincial revenue slightly improved. In 2009, provinces have generated 34% (1999: 30%) of revenue from their own resources (08% from tax and 26% from non-tax revenue).

Total consolidated expenditures (i.e. federal and provinces) are divided into current and development expenditures. The current expenditures include expenditures on defense, interest payments, general administration etc while development expenditures included expenditures on provision and expansion of basic infrastructure such as roads, bridges, dams etc., improving health and education facilities and investment in human capital.

Table 2.8 shows that development expenditures are far less than current expenditures which undermine the economic development. In 1978, in terms of GDP the development expenditure was 9.9% which is considered as highest figure during the period under review. However during 1980s, 1990s and early 2000s, it showed a declining trend and touches as low as 2.2% of GDP in 2003. Thereafter, it showed an increasing trend and reached to 3.9% of GDP in 2009.

Table 2.8: Composition of Consolidated Expenditure (As a % age of GDP)

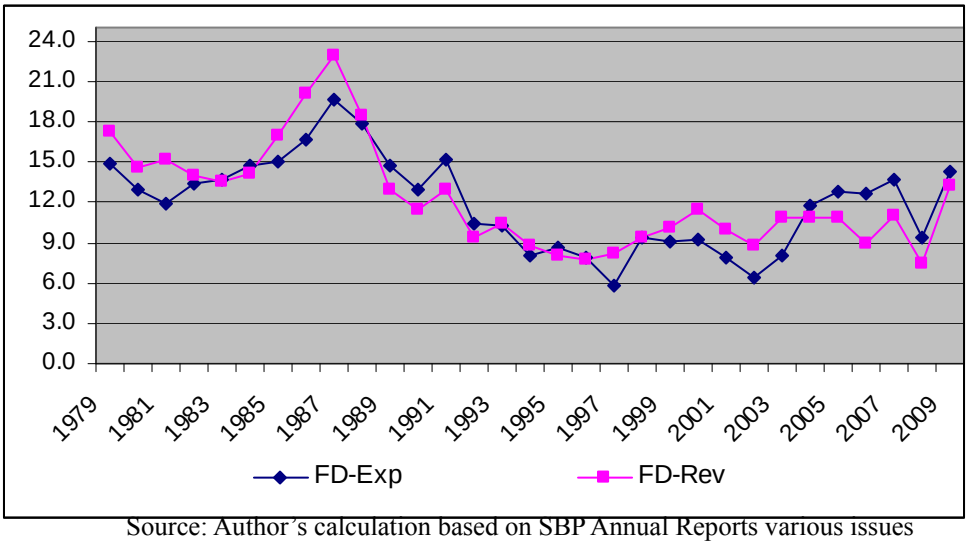
Expenditure Heads	1972	1978	1981	1991	1999	2003	2009
Development Expenditure	4.9	9.9	9.3	6.4	3.4	2.2	3.9
Current Expenditure	10.4	10.8	13.6	19.2	18.6	16.4	14.3
Defence Expenditure	6.8	5.5	5	6.3	4.9	3.3	2.3
Interest Payment	1.8	1.7	2.1	4.9	7.5	4.9	4.3
Current Subsidies	0.2	1.0	0.9	1.0	0.5	1.2	2.3
General Administration	1.4	1.1	1.2	1.3	2.3	2.1	2.8
Others	0.5	2.1	4.4	5.4	4.1	5.0	2.7

Source: Government of Pakistan, Pakistan Economic Survey, various issues, Islamabad

Defense and interest payments together, in absolute values, constituted more or less half of total expenditure. It means that about 50% of resources were for country's protection from any aggressor and to finance fiscal deficit. General administrations form another significant head of spending (see Table 2.7). Under this head, the spending fluctuated within the range of 1.1% to 3.5% of GDP during the period under review.

The literature measures FD in its relative size. Figure 2.5 plots these relative shares where FD-Exp is a measure of FD in terms of expenditure which is defined as ratio of consolidated provincial expenditure in total expenditure net of intergovernmental transfers where total expenditure is sum of federal and consolidated provincial expenditures. Similarly, FD-Rev is a revenue approach measure and defined as ratio of consolidated provincial revenue to total revenue, net of inter-governmental transfers.

Figure 2.5: Relative Fiscal Status of Provincial Governments (in %)



Source: Author's calculation based on SBP Annual Reports various issues

The share of provincial spending in total spending initially declined from 14.9% in 1979 to 11.9% in 1981. General Zia, in 1980, promulgated the Local Government Ordinance which delegated some fiscal power of federal government to provincial government. Because of change in policy, the relative share of provinces increased from 11.9% to 19.6% in 1987. In 1988, political government took charge and reversed the policy of

General Zia. As a result, the relative share of provinces substantially decreased and touches the lowest share of 5.7% in 1997. General Musharaf again started devolution exercise in 2000 and promulgated the Local Government Ordinance, 2001. By the promulgation of the Ordinance, as explained above certain functions which were earlier performed by the provinces such as primary and secondary education, water supply, drainage and sewerage etc. have been transferred to local government. The series of FD-Rev showed almost the same pattern as FD-Exp.

2.4 Extent of Fiscal Decentralization:

As explained, the Devolution Plan of 2001 delegates administrative and expenditure responsibilities to local level. This changes the level of administrative decisions making authority and made them more accountable to their constituents. Table 2.9 shows extent of FD.

Table 2.9: Expenditure by Different Levels of Government

(Rs. Billion)

	2000-01	**Share (%)**	**2005-06**	**Share (%)**	**2008-09**	**Share (%)**
Federal	563.2	71.9	1006.7	63.8	2101.4	64.9
Provincial	180.0	23.0	371.7	23.6	897.5	27.7
Local	40.0	5.1	198.9	12.6	240.9	7.4
Total	**783.2**	**100.0**	**1577.3**	**100.0**	**3239.8**	**100.0**
As % of GDP						
Federal	13.4		13.0		16.0	
Provincial	4.3		4.8		6.9	
Local	1.0		2.6		1.8	
Total	**18.7**		**20.4**		**24.7**	

Source: Federal and Provincial Budget Estimates

During last military regime most of fiscal powers have been transferred from federal to local governments that are evident from an increasing share of expenditure of local government. In 2001, share of local governments was 5.1%. By 2006, it increased to 12.6%.

However, subsequent democratic government[15] changes the policy and strengthens the provincial governments' fiscal autonomy by reversing fiscal powers that were earlier delegated to local governments. As a result, provincial governments' share increases from 23.6% to 27.7%. Although, share of local governments has reduced from 12.6% to 7.4% by 2009, the present share is even higher than the share they had in 2001. From Table 2.9 we may conclude that military regimes used decentralization as a strategy for strengthen their governments.

[15] General Musharaf resigned from Presidency on November, 2007 and democratic government took the charge after election on February, 2008.

Chapter 3

Literature Review: Linking Fiscal Decentralization to Economic Growth*

Analyzing theoretical links between FD and economic growth is important as it provides a base to researchers and policy analysts for validating these theoretical links empirically. Theory suggests that interdependence between FD and economic growth is multi-directional. Thus, literature emphasizes that while doing empirical analysis these links should be examined in that way. Although empirical and theoretical analysis have been improved and extended over the years but still a formalized theory is to be developed [Thießen (2000)]. Following paragraphs briefly reviews possible links between FD and economic growth in multi-directions such as communities' heterogeneous preferences, inter-jurisdictional competition among local governments and economies of scales and external effects associated with decentralization policy.

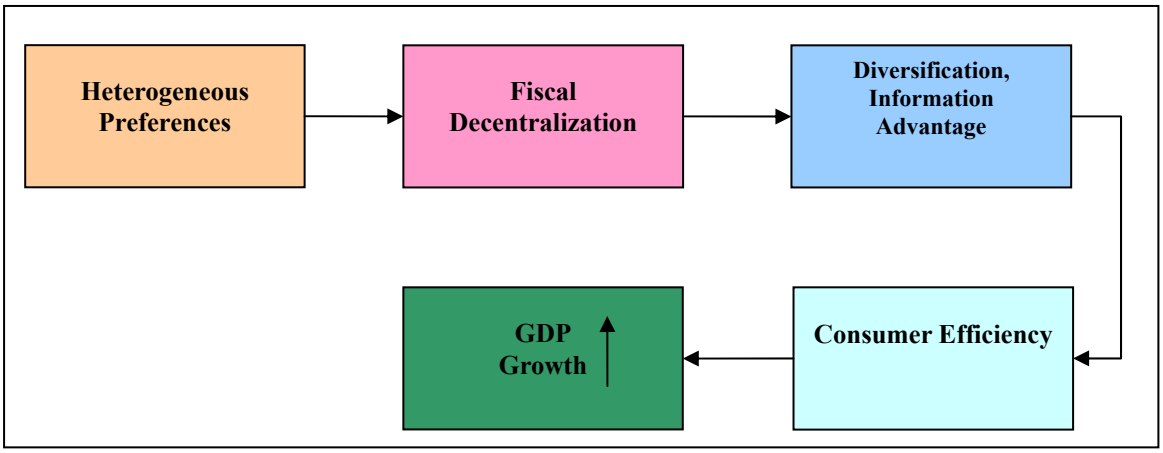
People in a society have heterogeneous preferences. Though it is possible but knowing the preference of each household is costly and time consuming effort. It is relatively difficult to have complete knowledge of citizens' taste. The "Preference Revelation Problem" may be headache for society. One possible solution is to divide society into smaller groups as in a small group demand of a randomly selected household will be closer to average household's demand. Economic welfare of the society will improve as the services provided to each group will be in accordance with their preferences and tastes. Thus, FD can raise the Pareto efficiency [Theiβen (2000) hypothesis].

Although public goods can efficiently be provided through central government but this provision is generally far from community preferences. Higher transaction,

* The idea for discussion on theoretical part is mainly derived from Markus (2004)

information and frustration costs are the consequences. These costs can be minimized by decentralizing provision of public services. If decentralization attempts are able to satisfy consumers' demand that enhances the consumer efficiency, positive economic growth may be the result. The Figure 3.1 illustrates potential link between FD and economic growth.

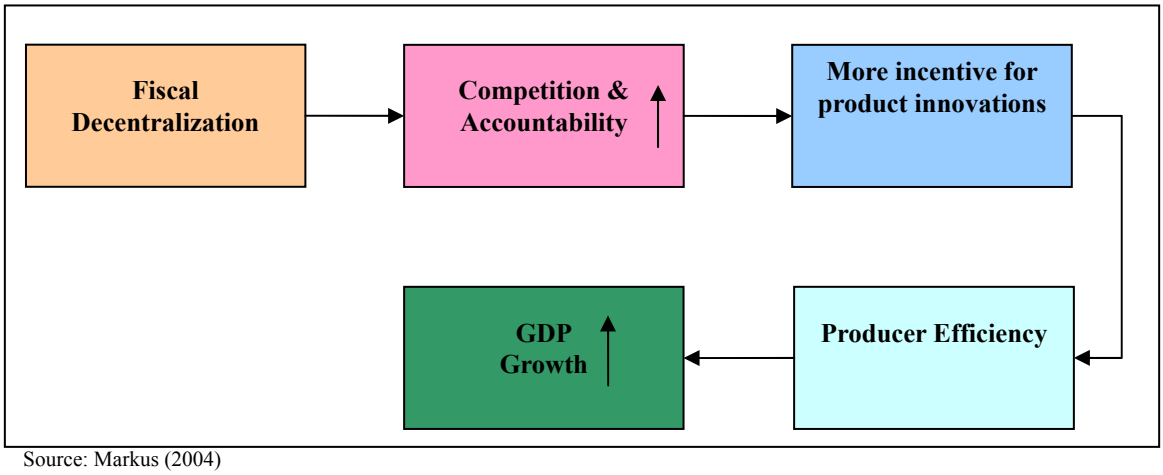
Figure 3.1: Decentralization Theorem



Source: Markus (2004)

Decentralized system may promote political and organizational innovations and may enforce competition among various authorities. Efficiency gains can be realized by utilizing comparative advantages and by divisions of labor that promotes economic growth. The productivity enhancement hypothesis can be demonstrated with the help of Figure 3.2. It may be noted that FD not only enforces inter-jurisdictional competition but also makes local governments accountable to their constituents; which gives incentive to government to innovate products. Producer efficiency in the supply of public goods increases which in turn enhances the economic growth.

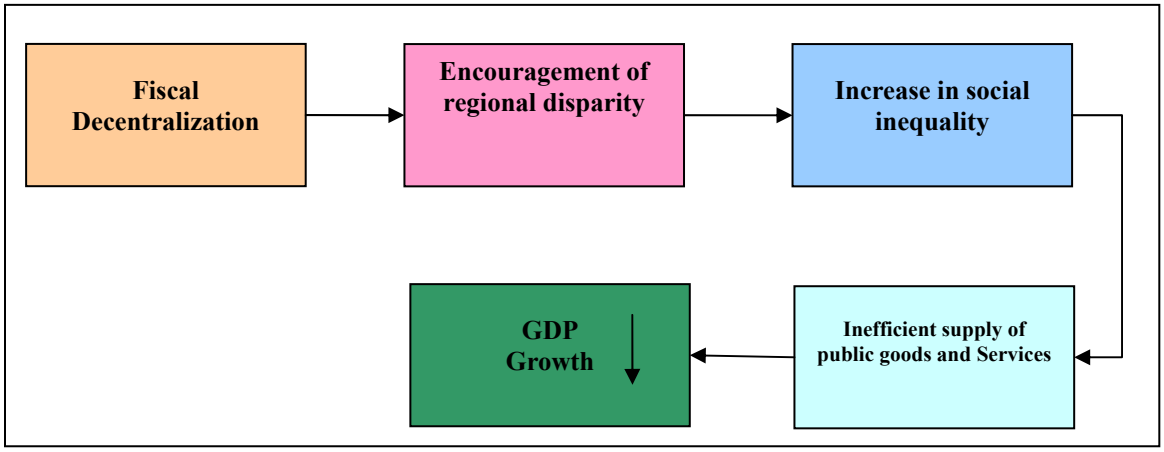
Figure 3.2: Productivity Enhancement Hypothesis



Source: Markus (2004)

On the other hand, inter-jurisdictional competition may lead to tax competitions that encourage mobility; sub-optimal allocation of resources may be results. Further, it may also encourage regional disparity through mobility of resources that may reduce the provision of public goods and services. The negative economic growth may be consequences (see Figure 3.3).

Figure 3.3: Inter-Jurisdictional Tax Competition



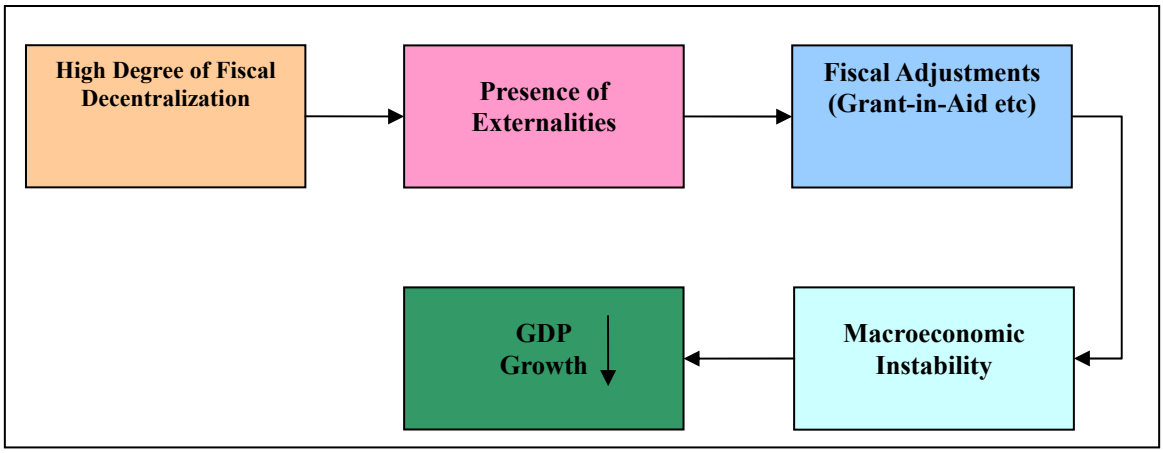
Source: Markus (2004)

The arguments that support the assignment of functional responsibilities to central governments are economies of scale and external effects. The economies of scale mean average cost decreases as output level increases. Generally central government is in a

better position to enjoy the economies of scale by producing output at bulk quantities as it may have more access to resources as compared to local government. However, provision of additional public goods or services may change the average cost function. In case of decreasing cost function, it is not cleared whether the provision of public goods and services through central production are feasible or not, if information, frustration and transaction costs occurred at central level are taken into account. It implies that argument for centralization should be examined after consideration of all interregional spillover effects.

Natural monopolies [16] and inter-jurisdictional externalities [17] are generally regulated and dealt by central governments whereas local governments generally manage the activities[18] that have limited regional impact [Hemming and Spahn (1997)]. Co-operation and collaboration among local governments, fiscal transfers or grand-in-aid may be significant means for internalizing the effects of these externalities. However, this may affect macroeconomic stability. A higher degree of FD together with presence of external effects, ceteris paribus, may reduce the economic growth as supply of public goods and services may be inefficient (see Figure 3.4).

Figure 3.4: Macroeconomic Stability and Economic Growth



Source: Markus (2004)

[16] like Railways, Telecommunications etc.
[17] like pollution abatements
[18] such as sewerage, water supply, in-city-transportation etc.

Keeping the above theoretical arguments, it may be concluded that it is very difficult a prior to say whether FD affect economic growth positively or negatively.

Tiebout (1956), Musgrave (1959) and Oates (1972) are considered as pioneer in examining theoretical role of FD in economic growth while empirical work started by Oates (1995). Probably the main reason for not finding many empirical studies before 1995 is the lack of data at the local government level. Since then, a number of studies attempted to quantify the impact by relating some measure of FD to economic growth.

Researchers and policy analysts have tried different approaches for linking FD to economic growth. For example, in a sample of seventeen studies, nine studies have used cross-country data for this purpose. Oates (1995) used 40 countries panel data; Davoodi and Zou (1998) investigated 46 developing and OECD countries; Woller and Phillips (1998) analyzed 23 LDCs; Yilmaz (1999) examined 30 cross-countries by dividing them into federal (13) and unitary (17) countries; De Mello (2000) analyzed 17 OECD and 13 Non-OECD countries; Thieβen (2000 and 2003) studied all high-income OECD countries; Rodríguez-Pose and Krøijer (2008) studied 16 Central and Eastern Europe countries and Baskaran and Feld (2009) analyzed 23 OECD countries panel data. Country specific analysis has also been made by some researchers. For instance, Zhang and Zou (1998) and Lin and Liu (2000) made the analysis for China; Xie et. al (1999) and Hammond and Tosun (2009) for United States; Behnisch et. al (2001) for Germany; Zhang and Zou (2001) for China and India (in a same paper); Desi et. al (2003) for Russia; and Malik et. al (2006) for Pakistan.

While determining the empirical relationship, probably the most important methodological problem is finding of an accurate measure for prevailing degree of FD. This issue has been resolved in the literature by defining the term ‘fiscal decentralization’ in

various ways. Most researchers defined this term as share of sub-national government expenditure (or revenue) in total government expenditure (or revenue), net of inter-governmental transfers [see Oates (1995), Davoodi and Zou (1998), Woller and Phillips (1998), Xie et. al (1999), Yilmaz (1999), Thieβen (2000 and 2003) and Malik et. al (2006) for details]. There are some studies which purify the term further either by subtracting defence and social securities/interest payments from consolidated expenditure as these are exclusively under the domain of federal/central government [see Woller and Phillips (1998) and Malik et. al (2006) for details] or by analyzing various spending categories at the central level such as education and science as one category and transport and communication other [see Behnisch et. al (2001) for detail]. However, Zhang and Zou (1998 and 2001) defined this term as a ratio of consolidated provincial budgetary spending to central budgetary spending.

The other proxies for FD that have been used in the empirical research are share of central government expenditures in total public expenditures [Behnisch et. al (2001)]; tax revenue retention and marginal retention rate of government revenue of sub-national governments [Desai et. al (2003) and Lin and Liu (2000) respectively]; and self-reliance ratio defined as own revenues of sub-national governments as a share of their total revenue [Oates (1995) and Thieβen (2000 and 2003)].

It is worth mentioning that although researchers and policy analysts have paid many efforts for determining impact of FD on economic growth but direction of this impact is still unclear as for some countries it is positive for others it is negative. In a sample of seventeen studies, nine have found positive impact; three have negative while others either has mixed or inconclusive results. Interestingly, one study has concluded that FD is unrelated with economic growth[19]. The details of findings of sample studies are as follows.

[19] i.e. Baskaran and Feld (2009)

Oates (1995) found a significant and robust positive association between FD and per capita economic growth. Thieβen (2000) found some empirical evidence that suggest positive relation of capital formation to increasing self-reliance. For high-income countries, he suggested a hump-shaped relation between per capita economic growth and FD. Whereas in his 2003 study, he found convergence among high-income OECD countries towards a medium degree of FD that tend to promote economic growth. Lin and Liu (2000) argued that overall economic growth of China positively depends on FD as it improves resource allocation efficiency rather than brings more investment opportunities. Desi, et. al (2003) found a positive effect of tax retention on growing output of 80 Russian regions. Behnisch et. al (2001) examined long-term German's experience of productivity growth and public sector centralization. By defining their theoretical model, they showed that federal government activities may have substantial effects on productivity growth because of spillover effects of provision of public services through sub-national governments. They analyzed various categories of central spending like education and science, transport and communication etc and found a consistent overall development with a motivating role of federal government. However, when they empirically analyzed post World War II period, they have some doubts in the efficiency of public sector with respect to productivity growth.

Davoodi and Zou (1998) studied a panel of developed and developing countries and found insignificant negative correlation between FD and economic growth for developing countries. However for developed countries, they failed to find any systematic relationship. They noted that this relationship seems to be more significant when they used whole sample. Zhang and Zou (1998) found negative but significant impact of FD on provincial economic growth of China. They interpreted their negative result as *"current stage of economic development in China, where the central government is constantly constrained by the limited resources for public investment in national priorities such as highways,*

railways, power stations, telecommunications, and energy. Such key infrastructure projects may have a far more significant impact on growth across provinces than their counterparts in each province."[20] Rodríguez-Pose and Krøijer (2008) studied 16 Eastern and Central Europe countries and used different economic indicators in their analysis. Two out of three indicators showed negative relationship. When they used different time lags in their analysis it nuance the negative impact and shows that variation in long term effects depend on the type of decentralization system adopted by given country.

Yilmaz (1999) analyzed 30 cross-countries data and divide them into federal and unitary countries. For latter countries he found positive impact of FD on per capita growth while for former countries he has inconclusive result. Xie et. al (1999) by examining United States (US) economy estimated positive impact for state spending and negative impact for local spending. However, their coefficients are insignificant. They concluded that *"existing spending shares for state and local governments are consistent with the growth maximization. In this sense further decentralization in public spending may be harmful for growth."*[21] Hammond and Tosun (2009) analyzed the impact for US county population, employment and real income growth. Their results differ for non-metropolitan and metropolitan counties. They suggested that for local economic growth, type of government organization matters but the varying impacts depend on use of economic indicator and type of government unit.

Zhang and Zou (2001) computed the impact of FD on economic growth for China and India in same paper. For India, they found a positive but mostly insignificant relationship between the per capita FD-shares and state economic growth. For China, they found negative but statistically significant association between FD and provincial economic

[20] Zhang and Zou (1998), p. 237.
[21] Xie et. al (1999), p. 228.

growth. In their study, they concluded that *"the state allocation of public spending in various sectors is broadly consistent with 'growth maximizing' whereas increases in the central allocation of its budget among development projects, non-development projects, and social and community services by cutting the center's spending on all other functions can promote regional growth."*[22] Vazquez and McNab (2001) deeply reviewed current knowledge in the economic literature of casual relationship between FD and economic growth. They concluded that current theoretical knowledge of how decentralization effect economic growth is too limited and empirical finding is also mixed. They examined direct and indirect effects of decentralization that has potential impact on economic growth. They reported that direct effect of decentralization leads to higher economic growth while there are some other forces such as corruption, capture by elite group, regional inequalities and macroeconomic instability (if decentralization is not properly implemented) lower the economic growth.

Woller and Phillips (1998) did not find any systematic and strong relationship between FD and LDC's economic growth. They observed weak negative relationship between FD and economic growth when they used five years average. De Mello (2000) while studying impact of FD on budget balance argued that especially in developing countries, coordination failures in decentralized policy-making and in intergovernmental fiscal relations lead to deficit bias. Baskaran and Feld (2009) analyzed 23 OECD countries and found that robustness of the result mainly depend on how the model is specified. Their initial findings suggest that FD causes lower growth rate. They conclude that FD is unrelated with economic growth.

For Pakistan, a very few studies have been made so far on FD. Chema et. al (2004) analyzed the recent decentralization reforms in a historical context. Their study pointed out that *"each of the reform experiments is a complementary change to a wider*

[22] Zhang and Zou (2001), p. 58.

constitutional reengineering strategy devised to further centralization of political power in the hands of the non-representative centre."[23] Zaidi (2005) examined decentralization and devolution debate in a political economy framework and context. Pasha and Pasha (2000) in their study identified major issues associated with devolution plan announced recently by Pakistan. This study recommended that fiscal transfers, to the extent possible, should be general, unconditional and formula-driven. Further, it should give an opportunity to newly formed local governments for proving their ability in the provision of cost effective local goods and services in accordance with local needs and preferences. Malik et. al (2006) examines empirical relationship between FD and economic growth. They found positive association between them and argued that at the early stage of development in Pakistan, federal government is in a better position to tackle the fiscal responsibilities as it has limited resources and has to invest in key infrastructure projects like telecommunications, railways, highways etc. in accordance with national priorities that may have a far more significant impact on growth. They further conclude that if the shares of provincial government revenues and expenditures rise continuously then it can slow the pace of economic growth.

[23] Chema et. al (2004), p. 01.

Chapter 4

Empirical Analysis

As discussed in chapter 3 a formalized theory for evaluating direct impact of FD on economic growth is to be developed and its absence weekend the soundness of the empirical work on this subject [Vezquez and McNab (2001)]. However, the empirical investigations on direct impact of FD will provide various aspects of insights relationships.

In the literature, three types of traditional growth regressions have been used: panel data regressions based on several period averages; pure cross-country regressions; and country specific regression. These analyses generally used OLS techniques and found static relationship. Present study is based on country specific regression methodology and investigates dynamic relationship between the two variables of interest.

4.1 Theoretical Model:

There are generally two ways to measure the degree of FD: expenditure approach and revenue approach. In first approach, the degree of FD has conventionally been measured as a share of sub-national government expenditures in total government expenditures net of intergovernmental transfers[24] . In revenue approach, FD is the ratio of sub-national government revenues to total government revenues[25]. Following Davoodi and Zou (1998); Zhong and Zou (1998); and Xie et. al (1999), this study uses expenditure approach as a measure of FD. Under this approach, FD has been defined as share of consolidated provincial expenditure to total expenditure. Where consolidated expenditure is sum of all four provinces expenditures, net of inter-governmental transfers and total expenditure is sum of consolidated expenditure and federal expenditure. A ceteris paribus

[24] see Oates (1995); Davoodi and Zou (1998); Zhong and Zou (1998); Xie, et. al (1999) etc. for details.
[25] see Woller and Phillips (1998) etc. for details

condition may exist in the following form: higher the share of consolidated provincial governments' expenditure relative to total expenditure, higher the degree of FD.

Following Barro (1990) and Zhang and Zou (2001) an endogenous growth model consisting of a production function with several inputs is assumed: labour, physical capital, human capital, openness of economy and FD.

Output = f (Labour, Capital, Education, Openness, Fiscal Decentralization, ……..)

(+) (+) (+) (+) (+/-)

Using Cobb-Douglas production function the above function in term of explicit form can be written as:

$$(Y)_t = A_t\,(FD)_t^{\Psi_1}\,(POP)_t^{\Psi_2}\,(GFC)_t^{\Psi_3}\,(MIDDLE)_t^{\Psi_4}\,(OPEN)_t^{\Psi_5} \qquad \ldots\ldots. (4.1)$$

Where Y is real Gross Domestic Product at time 't'; A is the total factor productivity at time 't'; and FD is a measure of fiscal decentralization as defined above. The remaining variables are defined in the following paragraphs. For estimation purpose, equation (4.1) can be specified as follows:

$$\ln(Y)_t = \psi_0 + \psi_1 \ln(FD)_t + \psi_2 \ln(POP)_t + \psi_3 \ln(GFC)_t + \psi_4 \ln(MIDDLE)_t + \psi_5 \ln(OPEN)_t + \varepsilon_t \qquad \ldots\ldots\ldots\ldots (4.2)$$

Where:

POP = Population at time 't' (a proxy is used for labour);

GFC = Gross Fixed Capital Formulation at time 't' (a proxy is used for capital);

MIDDLE = Gross Enrollment in School at Middle level at time 't' (a proxy is used for human capital);

OPEN = Openness (a measure of trade liberalization) at time 't';

ψ_i = Coefficients are to be estimated; and

ε_t = Error term assumed to be white noise.

Labour and capital are one of the essential drivers for economic growth. They

play a vital role in boosting economic activity. Proper amount of these two inputs make economy vibrant and stable. Investment in capital goods such as machinery and equipments, and technology not only enhances the efficiency and output of the economy but also increases employment opportunity, capacity and productivity of inputs that leads to economic growth. Population (POP) and Gross Fixed Capital Formulation (GFC) are used respectively as a proxy for labour and capital inputs.

Human capital is also very important determinant of economic growth. It determines potential for future growth. Higher investment in human capital leads to larger economic growth. Investment in education is one of the indicators of human capital. Following Barro and Sala-i-Martin (1995) and Woller and Phillips (1998), gross enrolment in school at middle level (MIDDLE) is used as a proxy for human capital.

Theoretical and empirical research suggests that trade liberalization has a strong and positive correlation with economic growth over longer period of time. Jin (2000) argued that trade liberalization or openness is used to be an important and critical factor for economic activity. Whereas, Sachs and Warner (1995) are of the view that *"open economies has grown about 2.5% faster than closed economies and the difference is even larger among developing countries."*[26] Thus, a rise in openness (OPEN) is expected to have a positive impact on economic growth.

4.2 Empirical Model:

Depending upon the order of integration, the present study adopts a recently new framework called Autoregressive Distributed Lag Model (ARDL) framework developed by Pesaran and Shin (1999); Pesaran et. al (2001) for determination of long-run relationship between two variables of interest. This approach has advantages over the previous conventional techniques of Johensan (1998). The conventional technique requires that all the

[26] cited in Mohammad (2010), p. 422.

system's variables are integrated of order 1. Whilst, this new technique is applicable for testing the co-integration at levels irrespective whether the underlying regressors are purely I(0) or I(1) or mixture of both. It is worth mentioning that in case of having I(2) variables in the model, the ARDL technique crashes and it yields spurious results. According to Ouattara (2004), if variables are I(2), the computed F-statistics are not valid and the estimated results are spurious because the bound testing approach is based on the assumption that the variables are either I(0) or I(1) not I(2). Finally, this new technique could be used with limited number of observations (30 observations to 80 observations).

With respect to Equation (4.2) it is assumed that there is a long-run relationship among GDP, FD, POP, GFC, MIDDLE, and OPEN. As the direction of long-run relationship among the variables is unknown, a prior, the following unrestricted error correction model can be regressed for determination of long-run relationship:

$$\Delta \ln(Y)_t = \alpha + \sum_{i=1}^{n} \beta_i \Delta \ln(Y)_{t-I} + \sum_{i=0}^{n} \gamma_i \Delta \ln(FD)_{t-i} + \sum_{i=0}^{n} \delta_i \Delta \ln(POP)_{t-i} + \sum_{i=0}^{n} \theta_i \Delta \ln(GFC)_{t-i} + \sum_{i=0}^{n} \lambda_i \Delta \ln(MIDDLE)_{t-i} + \sum_{i=0}^{n} \pi_i \Delta \ln(OPEN)_{t-i} + \psi_1 \ln(Y)_{t-1} + \psi_2 \ln(FD)_{t-1} + \psi_3 \ln(POP)_{t-1} + \psi_4 \ln(GFC)_{t-1} + \psi_5 \ln(MIDDLE)_{t-1} + \psi_6 \ln(OPEN)_{t-1} + \nu_t \quad \ldots\ldots\ldots\ldots(4.3)$$

Where 'Δ' is first difference operator, 'i' is the number of lags, 'n' is the optimal lags length which can be chosen either Schwarz Bayesian Criterion (SBC) or Akaike Information Criterion (AIC) before the given model is estimated by OLS and ν_t is the error term. However, given the limited number of observations (38) and use of annual data, following Pesaran and Shin (1999), the lag length is restricted to two (i.e. n=2).

The F-test is used for validating of long-run relationship. The null hypothesis for no long-run relationship amongst the variables in equation (4.3) is

(H_0: $\psi_1 = \psi_2 = \psi_3 = \psi_4 = \psi_5 = \psi_6 = 0$) against the alternative hypothesis (H_1: $\psi_1 \neq \psi_2 \neq \psi_3 \neq \psi_4 \neq \psi_5 \neq \psi_6 \neq 0$). Two critical values [I(0) and I(1)] are taking from Pesaran (2001). The value I(0) shows the lower bound while I(1) represent the upper bound. If computed F-statistics is greater than upper bound, the null hypothesis of no long-run relationship can be rejected. Conversely, if computed value of F-statistics is lower than lower bound, the null hypothesis can not be rejected. Finally, if computed F-statistics falls between lower and upper bounds, the results are inconclusive.

Once the long-run relationship is established using equation (4.3) and following the above procedure, the long-run model can be estimated as follows:

$$\ln(Y)_t = \Omega_0 + \sum_{i=1}^{n} \Omega_1 \ln(Y)_{t-i} + \sum_{i=0}^{n} \Omega_2 \ln(FD)_{t-i} + \sum_{i=0}^{n} \Omega_3 \ln(POP)_{t-i} + \sum_{i=0}^{n} \Omega_4 \ln(GFC)_{t-i} + \sum_{i=0}^{n} \Omega_5 \ln(MIDDLE)_{t-i} + \sum_{i=0}^{n} \Omega_6 \ln(OPEN)_{t-i} + \nu_t \quad \text{…….(4.4)}$$

Where, all variables are as previously defined and 'i' represents the optimal number of lags which can be selected by using either AIC or SBC criteria. After estimating the long-rum model, the short-run dynamic parameters can be obtained by estimating the following error-correction model associated with long-run elasticities:

$$\Delta\ln(Y)_t = \rho_0 + \sum_{i=1}^{n} \Pi_i \Delta\ln(Y)_{t-i} + \sum_{i=0}^{n} \Theta_i \Delta\ln(FD)_{t-i} + \sum_{i=0}^{n} \Omega_i \Delta\ln(POP)_{t-i} + \sum_{i=0}^{n} \Psi_i \Delta\ln(GFC)_{t-i} + \sum_{i=0}^{n} \Gamma_i \Delta\ln(MIDDLE)_{t-i} + \sum_{i=0}^{n} \Phi_i \Delta\ln(OPEN)_{t-i} + \lambda ECT_{t-1} + \nu_t \quad \text{……..….(4.5)}$$

Where Π_i, Θ_i, Ω_i, Ψ_i, Γ_i, and Φ_i, are coefficients of short-run dynamic parameters and λ captures the speed of adjustment and tells us how much of the adjustment to

equilibrium takes place each period, or how much of the equilibrium error is corrected.

Annual data for the period of 1972-2009 is used for empirical analysis. Data on GDP at market price is taken from *Pakistan Economic Survey various issue*. For making the data real, it is divided by Consumer Price Index and data is taken from the same source. The real GDP is used as a proxy for economic growth mainly for the reasons that it is easy to measure and interpret than other economic performance indicators and data on this variable is readily available.

Data on FD, POP, GFC and MIDDLE are obtained from *Handbook of Statistics on Pakistan Economy 2005* up to year 2005 while the data on remaining years are obtained from *'Pakistan Economic Survey 2009-10'*. Openness is defined as total volume of foreign trade (sum of export and import) as a percentage of GDP and data is taken from Penn's World Table.

4.3 Empirical Results:

Prior to testing the long-run relationship between variables of interest, a unit root test is conducted for each variable for checking the order of integration. Even though ARDL does not require pre-testing of variable, the unit root test is conducted to convince my-self whether or not ARDL technique can be used. As discussed above, in presence of I(2) variables, ARDL technique crashes and its yields spurious results. For checking the order of integration, Augmented Dickey Fuller (ADF) test is conducted. Results of ADF are presented in Table 4.1. It is clear from the Table 4.1 that FD, POP and OPEN are stationary at level while Y, GFC and MIDDLE are stationary at first difference operator. This implies that ARDL technique can be used as it confirms the complex nature of dynamic properties of variables, with mixture of I(0) and I(1) series that are suitable for using ARDL technique.

Table 4.1 : Augmented Dickey Fuller Test for Unit Root

Variables	ADF Test Statistics		Criteria	Conclusion
	Level	First Difference		
ln (Y)	-1.470	-6.055*	With intercept	I(1)
ln (FD)	-4.515*	-	With intercept and trend	I(0)
ln (POP)	-3.190**	-	With intercept	I(0)
ln (GFC)	-1.578	-5.183*	With intercept	I(1)
ln (MIDDLE)	-0.941	-5.831*	With intercept	I(1)
ln (OPEN)	-7.774*	-	With intercept and trend	I(0)

*, **, *** represent the significance at 1%, 5% & 10% respectively
Source: Author's calculation based on E-views

In ARDL analysis, the first step is to determine the existence of long-run relationship among the variables. For this purposes, equation (4.3) is estimated. Following Pesaran and Shin (1999) maximum two orders of lag are used in the estimation. F-statistics is computed by applying Wald test wherein coefficients of long-run variables are restricted (i.e. $\psi_1 = \psi_2 = \psi_3 = \psi_4 = \psi_5 = \psi_6 = 0$). The computed F-statistics together with critical values computed by Pesaran et.al (2001) are shown in Table 4.2. The computed F-statistics (3.776) is higher than upper bound critical value at 10 % significance level (3.56), using unrestricted intercept and unrestricted trend[27]. This implies that the null hypothesis of non existence of long-run relationship can be rejected. Thus, it establishes that there is a long run relationship among the variables.

Table 4.2: Testing For the Existence of Long-Run Relationship

Computed F-statistics Value	Level of Significance	Critical Values (unrestricted intercept and unrestricted trend)	
		I(0)	I(1)
3.776	1%	3.60	4.90
	5%	2.87	4.00
	10%	**2.53**	**3.59**

Source: critical values are obtained from Pesaran et.al (2001)

After establishing the long run relationship, coefficients of long-run model (equation 4.4) are estimated. The optimal lags are selected on the basis of AIC criteria. The

[27] The other possibilities as proposed by Pesaran et. al (2001) such as unrestricted intercept and restricted trend etc. were also checked but the result was not significant.

estimated results are reported in Table 4.3.

Table 4.3: Long-Run Model
[Dependent Variable: ln (Y)]

ARDL (1,0,0,1,2,1) is selected on the basis of AIC criteria

Variables[28]	Coefficients	Std. Error	t-Statistics	p-value
ln $(Y)_{t-1}$	0.494*	0.144	3.421	0.002
ln $(FD)_t$	0.077***	0.041	1.873	0.072
ln $(POP)_t$	0.871**	0.356	2.445	0.021
ln $(GFC)_{t-1}$	0.103*	0.025	4.058	0.000
ln $(MIDDLE)_{t-2}$	-0.129*	0.039	-3.287	0.003
ln $(OPEN)_{t-1}$	-0.101**	0.049	-2.073	0.048
Constant	1.989**	0.578	3.440	0.002
Trend	0.011**	0.004	2.712	0.011
R-squared	0.999		S.E. Reg.	0.022
Adjusted R-squared	0.998		No. of Obs.	36

*, **, *** represent 1%, 5% and 10% level of significance respectively.
Source: Author's estimations based on E-Views 5

The estimated coefficients of long-run relationship show that FD has positive and significant impact on output. It is significant at 10%. The result is inline with our expectation and findings of Lin and Liu (2000), Behnisch et. al (2001) and Malik et. al (2006). The magnitude of its coefficient shows that ceteris paribus, if 1% autonomy in expenditure is given to the provinces, it will raise the output by more than 0.07%. The statistical significance of this variable supported the theoretical linkages of FD with economic growth as discussed in chapter 3. The positive relation implies that society has started getting benefit from decentralization policy. The sign of population is positive and significant at conventional 5% level of significance. The results suggest that ceteris paribus, a 1% increase in population size leads to more than 0.87% rise in output level. Gross fixed capital formulation is significant at 1% and has positive impact on economic growth. The human capital that is proxied by gross enrollment in school at middle level has significant but negative impact on economic growth. The apparently negative impact of human capital on

[28] Beside these variables, other variables such as Labor Force, Market Capitalization, External Debt, Inflation Rate, Fiscal Deficit etc which have possible effect on economic growth were also included in the model but the results were not significant.

output may be due to measurement inaccuracies. The possible implication for this negative sign might be that knowledge imparted during the school is not enough for making labor force productive. The openness is statistically significant at 5% but appears with negative sign. This implies that Pakistan's economy is specializing in sectors which have comparatively disadvantage in the long-run. Alternatively speaking, the economy is specializing in traditional goods and experience is reduction in long-run economic growth.

The results of short-run dynamics associated with long-run elasticities estimated from equation 4.5 are reported at Table 4.4. The sign of short-run dynamic impacts are maintained to the long-run except openness variable whose sign has now changed to positive. However, when short-run model is estimated on the basis of long-run relationship, all control variables become insignificant at conventional levels of significance. This is inline with modern growth theories which argued that under steady state of growth, in short-run, differenced variables become insignificant.

The coefficient of Error Correction term (ECT_{t-1}) measures the speed of adjustment towards long-run equilibrium. It is significant at 10% and has correct sign which ensures that long-run equilibrium can be attained. The magnitude of its coefficient shows that approximately 56% of disequilibria from the previous year's shock converge back to the long-run equilibrium in the current year.

Table 4.4: Short Run Dynamics – Error Correction Model
[Dependent Variable: Δln(Y)]

ARDL (1,0,0,1,2,1) is selected on the basis of AIC criteria

Variables	Coefficients	Std. Error	t-Statistics	p-Value
$\Delta \ln(Y)_{t-1}$	0.217	0.289	0.753	0.459
$\Delta \ln(FD)_{t}$	0.124	0.040	3.098	0.005
$\Delta \ln (POP)_{t}$	0.106	0.136	0.776	0.445
$\Delta \ln (GFC)_{t-1}$	0.095	0.061	1.556	0.132
$\Delta \ln (MIDDLE)_{t-2}$	-0.053	0.042	-1.253	0.222
$\Delta \ln (OPEN)_{t-1}$	0.014	0.057	0.252	0.803
Constant	0.054	0.018	2.955	0.007
Trend	-0.001	0.000	-2.062	0.050
ECT_{t-1}	-0.560	0.323	-1.737	0.095
R-squared	0.368		S.E. Reg.	0.026
Adjusted R-squared	0.166		No. of Obs.	34

*, **, *** represent 1%, 5% and 10% level of significance respectively.
Source: Author's estimations based on E-Views 5

The ARDL model is well fitted in term of adjusted R-squared. Value of Adjusted R-square implies that about 99% of the variation in the GDP is explained by independent variables. The model passes the diagnostic tests for serial correlation, functional form misspecification, and autoregressive conditional heteroscedasticity (ARCH) test. The model also passes Jarque-Bera normality test which implies that errors are normally distributed. The cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMSQ) of recursive residual test are also conducted for checking the structural stability. The model looks stable and correctly specified as both CUSUM and CUSUMSQ test statistics are within the bounds of 5% level of significance (see Figure 4.1 and 4.2 respectively).

Figure 4.1: Cumulative Sum of Recursive Residual

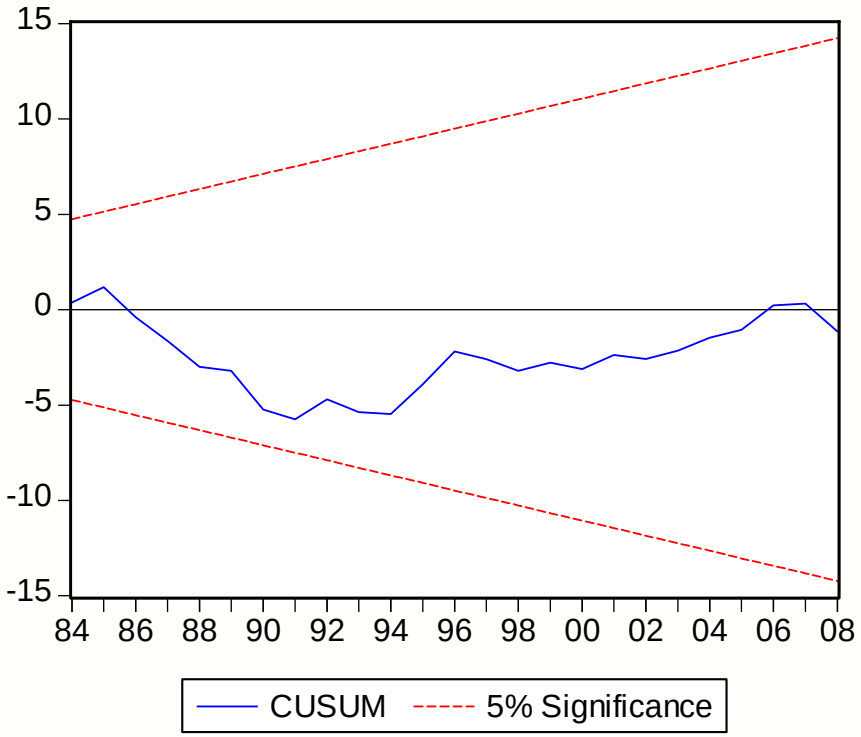
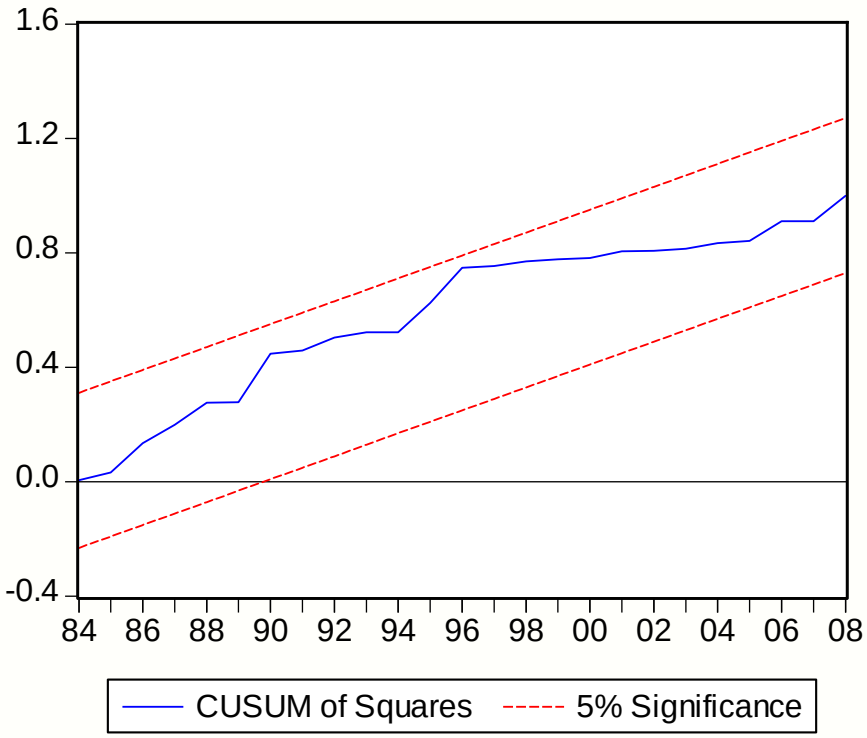


Figure 4.2: Cumulative Sum of Square of Recursive Residual



Chapter 5

Conclusion and Policy Implications

The present study relates FD with economic growth in theoretical as well as in empirical manner. The present study also analyzed efforts of political and military governments for accelerating the process of decentralization in Pakistan.

While analyzing the trends of public finance, it is observed that Pakistan's public finance has following characteristics: poor revenue mobilization, persistent fiscal deficit, high vertical imbalances between federal and provinces, highly skewed expenditure structure and weak financial management. Present study also discussed the system of inter-governmental fiscal relation as specified in the Constitution (1973). The striking feature is that the existence of local government is not formally part of Constitution (1973) till 17th amendments made in 2003. However, by amendments, the existence of local government is partially protected.

The theoretical linkages between FD and economic growth have been reviewed. The analysis of theoretical linkages showed that FD influences economic growth through improved supply of public goods by considering diverse local preferences and inter-jurisdictional competition among sub-national governments which provides incentives for product innovation that enhance consumers as well as producers efficiency. However, theory also suggests that FD leads to macroeconomic instability, vertical imbalances, and inter-jurisdictional tax competition that lead to higher regional disparities or more corruption. Therefore, it is very difficult a prior to conclude whether FD affect economic growth positively or negatively.

This study used a newly developed technique of ARDL for determination of

long-run relationship between FD and economic growth. Following the literature, expenditure approach is used for measuring the degree of FD. Under this approach FD is defined as share of consolidated provincial government expenditures in total government expenditures net of intergovernmental transfers and real GDP is used as a proxy for economic growth. After controlling the effect of growth by including other variables into the model, the ARDL technique is used for checking the long-run relationship. It established the long-run relationship amongst the variables of interest. The findings of the study imply that over dependence of provincial governments on centre, undefined functional and tax responsibilities, limited and unaffected tax base for provincial and local governments undermines the full benefits of FD.

The present study also offers several policy implications. First of all, under the condition that explicit aim of policy makers to induce economic performance by enhancing efficiency and accountability in public resources, the results of present study suggest that FD can be used as a tool for accomplishment of this aim. Second, having its long-run association with economic growth, it provides an alternative policy option for achieving the aim of sustainable long-run economic growth. Third, the benefits of decentralization could be higher if the policy makers pay attention for improving the prevailing socio-economic conditions, institutional mechanism and legal system. Fourth, the study suggests that Pakistan should specialize in a sector where it has comparative advantage and move from trade of traditional sectors to value-added manufacturing sectors. Finally, the study suggests that policy makers should pay attention for accumulation of human capital as it has long-run relationship with economic growth.

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A N N E X U R E S

ANNEX - I

THE CONCEPTUAL FRAMEWORK FOR ASSIGNING FUNCTIONS IN A FEDERAL SYSTEM

The literature on fiscal federalism provides some fundamental principles for assigning functional responsibilities to various levels of government in a federal system. These include:

***Efficiency*:** The assignment of functions should ensure that the economy is operating with economic efficiency, i.e. ensuring that all gains from trade are fully exploited given the resources, technology and constraints facing society.

***Cost Effectiveness*:** Functions need to be assigned to the level of government which can perform them with least cost (economic and social) to the society. For example, local services should be assigned to sub-national governments, not only because they can better cater to local preferences but also because they can provide these services at a lower cost as they are likely to have lower overheads. Moreover, proximity to the service location can reduce the cost of monitoring and evaluation.

Vertical Equity: A major issue of fiscal federalism is the level of government that should be responsible for vertical equity. An argument can be made for centralization of functions on the grounds that society's social welfare function ought to include all persons in the federation, and how much to redistribute from more to less affluent segments should not depend on which locality these persons reside in. On the other hand, there may be distinctly local preferences for the extent of redistribution, and some localities may have a lower aversion to inequality than others. Decentralizing the redistributive functions of government could therefore allow for "local preferences" for intra-regional inequalities.

Internal Common Market: Efficiency requires that fiscal policies (i.e. regulation and tax, subsidy, procurement and public expenditure policies) should not impede the movement of goods, services, labor and capital within the federation.

Local Public Goods and Externalities: The federation should be decentralized enough to be able to provide the type, mix and quality of public services according to the

preferences of its residents. However, in practice the benefits (positive or negative) of local public expenditures may spill over to the residents of neighboring jurisdictions. Since local governments will have no incentive to take account of these spillover benefits, a careful balance is needed in the roles of each level of government.

Fiscal deficiency and equity: While assigning functions and roles to various levels of government, inter-regional differences in fiscal capacity need to be kept in mind and also addressed explicitly.

Source: World Bank (2000)

ANNEX - II

AREAS OF TAXATION AUTHORITY OF FEDERAL AND PROVINCIAL GOVERNMENTS

Federal Government:

The Constitution (1973) specifies the following as areas of taxing responsibility for the federal government:

i) customs duties, including export duties;

ii) excise duties, including duties on salt but excluding duties on alcoholic liquors, opium and other narcotics;

iii) duties in respect to succession of property;

iv) estate duty in respect to property;

v) income taxes other than on agricultural income;

vi) corporation tax;

vii) taxes on sales and purchase of goods imported, exported, produced, manufactured or consumed;

viii) taxes on the capital value of assets, not including taxes on capital gains on immovable consumed;

ix) taxes on mineral oil, natural gas and mineral for use in generation of nuclear energy;

x) taxes and duties on production capacity of any plant, machinery, undertaking, establishment or installation in lieu of any or more of them, and

xi) terminal taxes on goods or passengers carried by railway, sea or air and taxes on their fares and freights.

Provincial Government:

All other forms of taxes fall under the purview of the provincial governments. The provincial governments than allocate some of these to the local governments on the basis of the Local Government Ordinances (LGOs). Taxes retained by the provincial governments under the LGOs include:

i) tax on agricultural income;

ii) capital gains tax on immovable property;

iii) excise duties on alcoholic liquors, opium and other narcotics;

iv) tax on professions, trades, calling or employment;

v) tax on immovable property;

vi) land revenue;

vii) motor vehicle taxes;

viii) stamp duties;

ix) entertainment taxes, and

x) taxes on purchase and sale of services (excluding railway, sea or air; transport).

Source: World Bank (2000)

ANNEX - III

AREA OF LOCAL GOVERNMENT TAXATION AUTHORITY ASSIGNED UNDER LOCAL GOVERNMENT ORDINANCES

The fiscal powers delegated to the local governments by the LGOs include the following taxation powers:

i) octroi;

ii) tax on annual rental value of buildings and land (except in Sindh)

iii) tax on cinemas and cinema tickets;

iv) entertainment tax on dramatic and theatrical shows;

v) tax on the transfer of immovable property;

vi) fees for licenses, sanctions and permissions;

vii) market fees;

viii) rates on services like water supply, drainage, lighting etc;

ix) fees at fairs, agricultural shows, etc;

x) fees for specific services;

xi) tax for export of goods and animals;

xii) tolls on roads and bridges;

xiii) tax for the construction or maintenance of any work of public utility;

xiv) taxes on vehicles other than motor vehicles;

xv) tax on professions, trades, callings and employment;

xvi) tax on advertisements;

xvii) school fess;

xviii) fees on sale of cattle at cattle fairs;

xix) tax on the annual rental value of buildings and land;

xx) tax on lands not subject to local rate;

xxi) tax on hearths;

xxii) tax on births, marriages and feasts;

xxiii) tax on animals;

xxiv) conservancy rate;

xxv) fees for erecting buildings;

xxvi) fees for slaughtering animals

xxvii) community tax on adult males for public work of general utility;

xxviii) surcharge on taxes levied by the federal and/or provincial governments; and

xxix) any other tax levied by the government.

Source: World Bank (2000)