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Impact of Public Finances on Economic Growth: A Case Study of Punjab, Pakistan

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Abstract

It is a long standing debate between Economists on the impact of public finances; as some are in favor while others don't want its impact on the economy. By looking at the development experience of the province of Punjab, this research will attempt to highlight the role that a provincial Government had played (during the period from 1972 till 2014) in the development of the province and hence the country, especially through the size and composition of its expenditure. Using standard Keynesian model with simple system estimation technique, this research will try to highlight and estimate the impact of provincial public finances on economic growth.

Keywords: Public expenditures, economic growth and provincial government

1. Introduction

Pakistan is a federation comprising four provinces. These provinces are an important intermediate tier in governmental hierarchy. Not only are the provincial governments bound by the constitution to assist both the federal and local governments in their functions, but also are solely responsible for the development of some key public services (such as education, health, agriculture, irrigation, etc.) entrusted with sizeable expenditure functions the provinces have limited own taxation powers and have to rely on fiscal transfers from the Federal Government to supplement their revenues. Despite the clear disparity in provincial fiscal rights and responsibilities, the

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provincial finances, till the early eighties, were managed quite prudently. This trend, however, reversed in the mid-eighties and a rapid deterioration was observed in fiscal position of the provinces. In the absence of adequate provincial revenue effort, this implied an increasing reliance of the provinces on federal assistance to meet their budgetary needs. The major portion of federal development assistance was, however, provided in the form of cash development loans (CDLs). This gave rise to an ever increasing loan--interest-payment, spiral which reached an exceptionally high level in 1987-88 and threatened the country's overall fiscal stability. To avoid a fiscal disaster the federal government made attempts to regulate the provincial reliance on federal assistance by unilaterally imposing constraints at the level of provincial deficit that the federal government would consider acceptable to finance. These attempts were partially successful in restraining the provincial current expenditures, but instead of making attempts to generate resources from their own sources the provinces chose to combat the federally imposed constraints on constitutional and political grounds. This led to an increasing political friction between the centre and the provinces along with an increase in the provincial fiscal stress.

Punjab is the most populous, and perhaps the most important province as it constitutes about 59 percent of national economy and perhaps the most important province. Partly because of its size, Punjab has a major influence on the level and change of national economic and social indicators. With a total population of about 74 million in 1998—well over half of the national total—and a close to 52 percent share of the economy, Punjab remains a major determinant of national economic growth and poverty reduction. During early 2000s, Pakistan’s solid economic and social performance was closely related to the robust economic growth and poverty decline in Punjab. Social indicators in Punjab, like those in rest of Pakistan, have shown noticeable improvements in recent years, but still lag those of comparable countries and regions.

The impact of public expenditures in economic growth is well understood and recognized. However, most of theoretical and empirical

research on determining this role is focused at national level, thereby ignoring that in Pakistan, provinces are an important intermediate tier of government which had always (especially since 1972) performed important functions which are intrinsically related to economic and social development. .After the adoption of 18th Amendment; almost all of the functions of the "Concurrent List" of the Constitution became exclusively provincial functions. So here is an intense need to work on provincial level.

2. Government's Role in Economic Development – A Brief Review of Literature

Past economic literature provide ample evidence of the impact of government expenditure on economic development. According to Keynes, public investment always plays a role as economic stabilizer (see elaboration of Keynes argument in Musgrave(1959)). However, it is also true that no concept in economic history has generated a more prolonged and passionate debate than what should be the role of government in the economy. Friedman (2006) for example, had defined four main roles of government i.e. 1) to provide protection from enemies within the country and outside the country. 2) supremacy of rule of law 3) availability of public goods to every one without any discrimination and 4) protection of those who are unable to look after themselves like, children and mentally sick people. The debate has also dwelt into the appropriate role in economy of various levels of government. Tiebot (1956), for instance, suggested that because of the geographical variations in development it is the central government which is best suited to impact economic and social development in the country. A view which runs almost opposite to the view of many fiscal economists (e.g. Musgrave) who believe that decentralization will increase the economic activity by having the positive edge to know about the needs of people on local level.

Katraklidis and Tsiliki (2009) have found supporting results with the Wagner's law and Keynesian hypothesis in case of Greece, they even found two-way causation between public expenditures and economic growth from

1958 till 2004. Kelly (1997) found a positive impact of public expenditures; especially social expenditures on the enhancement of economic growth. Faris (2010) has estimated the Wagner's law and Keynesians' hypothesis on the GCC countries and report a positive impact a two-way causation was reported in case of Bahrain. Ahmed and Qayyum (2007) analyzed the positive linkage between government's development expenditures and private fixed investment. They and Landea (2005) also found that higher or larger government size has negative impact on the private sector's betterment, which ultimately effects economic growth.

Attempts were also made to determine the direction and volume of impact of government interventions on the economy. Davoodi and Zhou (1998) found a negative relationship between fiscal decentralization and economic growth among many developing countries while they found a positive relationship in developed countries. Daniele (2009) analyzed the effect of public investment on labor productivity and showed that there is a positive impact and concluded that through strategic public investments, government can achieve regional convergence in economic growth.

Rodreguez et al (2012) found a different impact of public investment on different sectors of the economy. They showed that on education and infrastructure there is a direct and positive impact, with the investment in transportation infrastructure having a maximum impact on economic growth.

As for rest of the world, significant research efforts have been made to determine the appropriate role of government in Pakistan's economy. Malik, Hassan & Hussain (2006) found positive impact of fiscal decentralization on economic growth of Pakistan. Oates (1972) determined that local governments are always better in providing goods and services according to the needs of people. Iqbal, Din & Ghani (2012) have measured the ratios of revenue decentralization (as a growth promoter affect), expenditure decentralization (it has negative impact on per capita income) and composite decentralization (has positive relation with economic growth) of Pakistan.

2.1 Impact of Public Finances and Growth in Punjab

2.1.1 Fiscal Situation of Punjab

***Provincial Revenue*:** Revenue mobilization has not been the strongest point of the federal or provincial governments in Pakistan. Constitutionally most of the buoyant taxes have been assigned to the federal government, leaving provinces with "residual" taxation authority. However, provinces cannot be totally absolved from this failure to raise more revenue as they have failed to properly utilize the more buoyant tax bases assigned to them. These include, Urban Immoveable Property Tax (UIPT), the Agricultural Income Tax (AIT) and recently the General Sales Tax on Services (GSTS). The main factor contributing to this rather poor revenue mobilization by provinces, including Punjab, is the revenue transfer mechanism, where Punjab is getting 83 percent of its revenue as transfers from the federal government.

***Provincial Expenditure*:** Public spending in the Punjab is characterized by acute "structural rigidities" (It implies that about 40percent of total provincial expenditures go towards paying wages and pensions of government employees and other weaknesses) (Figure 1). Although continuous reduction in public debt, especially of more expensive Cash Development Loans of the federal government, has lowered provinces interest bill, which now constitute only 2 percent of recurrent budget, expenditure on subsidies and grants have increased very sharply (to 26 percent of recurrent spending) (Figure 1). Provincial governments operations and maintenance expenditure continues to be woefully low (5 percent). This implies that the operational efficiency of public infrastructure and services continues to be low. On the positive side, however, the non-salary expenditure of the district governments constitutes another 26 percent of non-development spending. With the district government not having large expenditure on subsidies and grants or interest payments, there is every possibility that a large portion of districts' non-salary expenditure will be going towards operation and maintenance.

However, with sharp increase in salaries and pensions of government

employees in recent years, the structural rigidities in provincial expenditure have increased, impacting further the already low operational efficiency of spending.

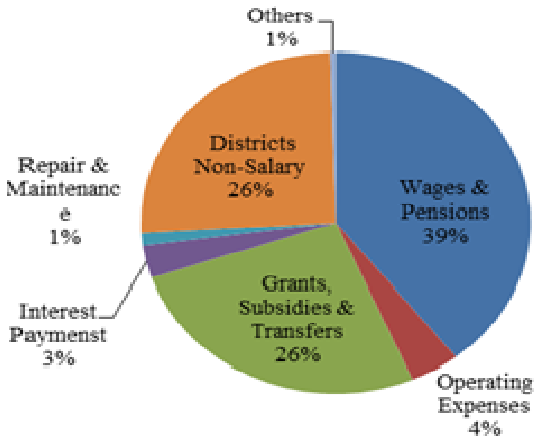

Fig. 1 Composition of Provincial Recurrent Expenditure

3. The Model and Methodology

To estimate the effect of public expenditure on economic growth we postulate an "Output" (i.e. GDP) relationship with labor, private capital and total government expenditure specified as a log-linear (i.e. Cobb-Douglas type production function) equation.[1] The equation specifies a standard production function where output (GDP) is determined by the level of employment, the stock of private capital[2] and real expenditure of the government.

The model has been estimated by using the 3sls (Three stage least square) Method with system estimation technique. Simultaneous equation

[1]An added benefit of this specification of output equation is that economic growth is expressed as a weighted sum of growth in explanatory variables labor (EMPN), real private capital (KAPR) and real government expenditure (TEXPR), with weights being the elasticties (β_s).
[2]Capital series is obtained by first using the "allocators" to apportion national investment among four provinces and then by using appropriate assumptions on Capital-Output ratios (CORs) and Incremental Capita-Output-Ratios (ICORs) and of aggregate depreciation rate (assumed to be constant at 5 percent), we derived the series for capital stock.

system resolves the issue of interdependence and gives results in one time regression. It also resolves the issue of endogeniety.

The output/income equation

$$LOG(GDPFCR) = \beta_0 + \beta_1 LOG(EMPN) + \beta_2 LOG(KAPR) + \beta_3 LOG(TEXPR) \quad (1)$$

Where:

GDPFCR = Gross Domestic Product at constant (2005-06) factor cost (estimated from the national GDP data using provincial "allocators").

EMPN = level of employment (in millions)

KAPR = the capital stock in constant (2005-06) prices, (estimated from the investment data).

TEXP = the level of real (i.e. at constant prices of 2005-06) level of public expenditure (see description of equation (5)).

The regression coefficients, β_1, β_2 and β_3 are the labor, capital and public expenditure elasticities of income, respectively, and are expected to be all positive.

The labor demand equation

$$LOG(EMPN) = \delta_0 + \delta_1 LOG(GDPFCR) + \delta_2 LOG(EMPN(-1)) \quad (2)$$

Where EMPN(-1) is the value of EMPN lagged by one year. i.e. demand for labor depends on the level of real GDP and labor demand in the last year. The real wage rate is excluded as it depicted little variation, i.e. wage rate and output price moved more or less in a similar trend. The lagged value of labor demand indicates the stickiness of labor demand due to inherent difficulties in hiring and firing of labor in Pakistan.

Capital demand equation

$$LOG(KAPR) = \theta_0 + \theta_1 LOG(GDPFCR) + \theta_2 LOG(KAPR(-1)) \quad (3)$$

Where: KAPR(-1) is the value of KAPR lagged by one year.

Nominal expenditure equation

In Pakistan, like many countries of the world, fiscal decisions are made primarily on nominal basis. There we specify the fiscal relationships in nominal terms.

$$LOG(TEXPC) = \gamma_{0+} \gamma_1 LOG(TREVC) + \gamma_2 LOG(TEXPC(-1)) \quad (4)$$

Where:

TREVC = The nominal (i.e. in current prices) level of Punjab government's revenue.

TEXPC(-1) = Value of TEXPC lagged by one year. The lagged value of expenditure variable is used in the equation to account for inherent rigidities in public expenditure.[3] These variables therefore indicate that despite significant improvements in budgeting an planning techniques, budgetary allocations in Punjab are still determined to a large extent on incremental basis, i.e. last year's allocation plus an "add-on" which depends on the level of revenue collected.

Total revenue equation

$$LOG(TREVC) = \alpha_0 + \alpha_1 LOG(GDPFCC) + \alpha_2 LOG(TREVC(-1)) \quad (5)$$

[3] More than 50 percent of Punjab government's total (recurrent and development) expenditure goes in for payment of salaries and pensions of government employees; another about 5 percent is spent on interest payments. As these two heads of expenditure cannot be adjusted immediately, the burden of adjustment falls on the remaining 45 percent of expenditure.

Total revenue of the government is assumed to depend on nominal GDP (α_1 being the buoyancy coefficient), and the lagged value of revenue. The latter indicates rigidities in revenue collection due to weaknesses of revenue agencies and the manner in which revenue targets are set (which are mainly on the basis of last year's collection).

To complete the model we need to connect the real sector with the nominal fiscal sector. This is done with the help of two identities.

Real expenditure identity

$$TEXPR = TEXPC/PGDP \quad (6)$$

As total expenditure is being used as the main fiscal variable, GDP deflator is used to deflate nominal expenditure. Nominal public expenditure, TECPC, signifies the budgetary expenditure incurred by the Punjab government in a given year. The real expenditure TEXPR, is the corresponding level of real expenditure; i.e. the actual level of goods and services that could be bought (compared to the base year, 2005-06 level) from TEXPC if one takes into nets out the impact of increase in prices.

Nominal GDP identity

$$GDPFCC = GDPFCR*PGDP \quad (7)$$

Similarly, nominal GDP is a product of real GDP and GDP deflator. As GDPFCR is the actual (real) level of goods and services produced in a given year (but evaluated at base year, 2005-06 prices), GDPFCC specifies their monetary value in today's prices.

3.1 Estimating the Base Model and Results

The simple seven-equation system is estimated using Three-Stage Least

Squares (3-SLS)[4]. The results are presented as below.

LOG(GDPFCR)=3.9892 + 0.8907*LOG(EMPN)+0.4190*LOG(KAPR)+0.1764*LG(TEXPR)
(6.071) (7.6937) (6.0622) (4.9193)
Adjusted R-squared =0.997149
Durbin-Watson stat =0.693128

LOG(TEXPC) = 0.1876 + 0.4284*LOG(TREVC) + 0.5644*LOG(TEXPC(-1))
(1.803) (5.07) (6.933)
Adjusted R-squared =0.996511
Durbin-Watson stat =1.459217

LOG(TREVC)=- 1.9734 + 0.5361*LOG(GDPFCC) + 0.4430*LOG(TREVC(-1))
(4.1578) (4.6676) (3.7538)
Adjusted R-squared =0.998059
Durbin-Watson stat =1.581995

LOG(EMPN) = -1.1086 + 0.1168*LOG(GDPFCR) + 0.7487*LOG(EMPN(-1)
(-2.823) (2.924) (8.790)
Adjusted R-squared =0.994524
Durbin-Watson stat =1.724913

LOG(KAPR) = 0.2441+ 0.0395*LOG(GDPFCR) + 0.9523*LOG(KAPR(-1))
(11.687) (3.433) (83.201)
Adjusted R-squared =0.999962
Durbin-Watson stat =0.72868

The results show not only a positive, but also quite a high, labor elasticity for GDP. Also, output elasticity for capital is about half of labor elasticity. Public expenditure has a positive and statistically significant impact on GDP; showing that for a 10 percent increase in expenditure of Punjab government, provincial GDP increases by almost1.8 percent. The

[4]All the structural equations in the system were over-identified, as such 3-SLS was considered as the most appropriate estimation technique. Nonetheless, robustness of estimates was tested by using 2-SLS and GMM methods. The results were found to be quite robust to changes in estimation techniques.

estimated results also show some other important relationships in the provincial economy. For example, the labor demand elasticity (with respect to GDP) is quite low. Whereas the lagged employment variable has quite a high coefficient, the latter points to prevalence of significant rigidities in employment. This may partly be due to dominance of agriculture in provincial economy. It has long been determined that employment in agriculture sector in developing economies is generated not on the basis of marginal but average product. In other words, with bulk of employment being family labor, the produce is (at least theoretically) evenly shared among the workers. As such, there is no room for hiring or firing on the basis of an individual's contribution to the overall product. Partly, although at a much smaller scale, these rigidities arise from trade unionism.

On the other hand, the smallness of GDP elasticity of labor demand should be a concern for the government as it implies that economic growth in the province will generate only limited employment opportunities.

Another area of concern is low revenue buoyancy, which shows that a 10 percent growth in nominal GDP leads to only 5.4 percent increase in provincial revenue. This however requires deeper investigation as bulk of provincial revenue accrue to the provincial government as transfers from federal government, whereas federal revenue which generates these transfers depends on the volume of national (nominal) GDP rather than provincial GDP (although Punjab by its very size is the biggest contributor to national GDP). As such, before something definitive is said about the size of buoyancy coefficient, it is important to determine the buoyancy coefficient at the national (federal) level, the relationship between provincial revenue and federal transfers and the relationship between national and Punjab's GDPs.
The expenditure equation clearly highlights the rigidities in provincial expenditure as 56 percent of today's expenditure is defined by last year's expenditure. In Pakistan the Constitution virtually prohibits provinces from running any fiscal deficit (without the consent of the federal government). On the flip side, provinces have very little incentive to show budgetary savings. As such, it is expected that any increase in revenue would show a corresponding increase in expenditure. The estimated regression however

shows that a 10 percent increase in revenue leads to only a 4.3 percent increase in expenditure. A part of this could be attributed to the fact that the level of revenue in general is smaller than that of expenditure (i.e. Punjab, and other provinces, do run some fiscal deficit), hence a 10 percent change in revenue is smaller than a 10 percent change in expenditure. However, given that the fiscal deficits could be quite small, this explains only a small part of the gap between the percentage increase in revenue (10 percent) and the implied increase in expenditure (4.3 percent). A large part of the gap is explained by the fact provincial government has used its revenue to finance non-expenditure financial transactions. For example, Punjab government has used the surplus to retire its debt, partially recapitalize the G.P. Fund and establish a Pension Fund for its employees.

3.2 Expanding the Model – Recurrent and Development Expenditures

Now that it is conclusively established that public expenditure does have a positive impact on GDP (and in turn is also impacted by GDP), it is important to deepen this investigation to determine if every expenditure that government made impacts GDP and in the same way as the other, or whether some types of expenditures impact GDP more than the others.

As a first step in this direction public expenditure is bifurcated on the basis of government's own classification of non-development (current) and development expenditures. The general impression is that non-development would have much smaller (if any) impact on GDP compared to development expenditure. We therefore modified the model as follows:

The modified output/income equation

$$LOG(GDPFCR) = \beta_0 + \beta_1 LOG(EMPN) + \beta_2 LOG(KAPR) + \beta_3 LOG(CEXPR) + \beta_4 LOG(DEXPR) \quad (1')$$

Where:

CEXPR = Government's real current expenditure.
DEXPR = Government's real development expenditure.

Nominal expenditure equations

$$LOG(CEXPC) = \gamma_{0+}\gamma_1 LOG(TREVC) + \gamma_2 LOG(CEXPC(-1)) \quad (4')$$
$$LOG(DEXPC) = \mu_{0+}\mu_1 LOG(TREVC) + \mu_2 LOG(DEXPC(-1)) \quad (4'')$$

The estimation results of the modified model are given as below:

LOG(GDPFCR) =
-0.1338+0.2341*LOG(EMPN)+0.7613*LOG(KAPR)+0.0727*LOG(CEXPR)+0.129042*LOG(DEXPR)
(-0.1251) (1.3047) (8.2250) (1.8476) (7.142028)
Adjusted R-squared = 0.996254
Durbin-Watson stat = 0.885493

LOG(CEXPC) = 0.0357 + 0.2672 *LOG(TREVC) + 0.7338 *LOG(CEXPC(-1))
(0.3119) (4.4156) (13.1826)
Adjusted R-squared = 0.997163
Durbin-Watson stat = 2.18372

LOG(DEXPC) = 0.7161 + 0.1359 *LOG(TREVC) -0.0131*LOG(DEXPC(-1))
(6.8138) (0.5501) (-0.1920)
Adjusted R-squared = 0.959214
Durbin-Watson stat = 1.407744

LOG(TREVC) = 0.1359 + -0.0131 *LOG(GDPFCC) + 1.0182 *LOG(TREVC(-1))
(0.5501) (-0.1920) (10.6049)
Adjusted R-squared = 0.97691
Durbin-Watson stat = 2.098104

LOG(EMPN) = -0.9208 + 0.0978*LOG(GDPFCR) + 0.7883*LOG(EMPN(-1)
(-2.3586) (2.4628) (9.3096)
Adjusted R-squared = 0.99459
Durbin-Watson stat = 1.813851

LOG(KAPR) = 0.2553 + 0.0484*LOG(GDPFCR) + 0.9435*LOG(KAPR(-1))
(12.4098) (4.3511) (85.2938)
Adjusted R-squared = 0.999962
Durbin-Watson stat = 0.699794

The estimated results for the expanded model show that the output (production) function has constant returns to scale in labor and capital, although the labor elasticity remains low and not statistically significant. Both non-development and development expenditure has a positive impact on GDP. The impact (elasticity coefficient) of development expenditure is 78 percent higher than that of non-development expenditure. The estimated value of regression coefficients (i.e. elasticities) imply that a 10 percent increase in development spending can enhance the provincial economic growth by 1.2 percent, whereas a 10 percent increase in recurrent expenditure will enhance growth by 0.7 percent. This result has significant implications for public policy as they imply that while recurrent expenditure of the government positively impact economic growth, the higher impact of development expenditure imply that a 10 percent shift in expenditure from non-development to development can enhance provincial economic growth by 0.5 percent. In other words, there is room in the provincial budget to increase economic growth by saving on non-development budget to enhance development budget, *ceteris paribus*.

However, the expenditure equations also warn us that achieving saving from non-development budget would not be easy, given expenditure rigidities. The recurrent expenditure of Punjab government is very heavily dependent on its lagged value (elasticity coefficient of 0.73), implying that a very large portion of current year's non-development expenditure is more or less "pre-determined". Thus a saving of 10 percent would require cutting or postponing almost 50 percent of the "more flexible" non-development expenditure. In such a situation, the government needs to make an attempt to garner as much savings from the non-development budget as is possible, but at the same time, raising revenue remains the more viable option to enhance development expenditure and consequently accelerate economic growth.

3.3 Further Expansion of the Model – "Productive" and "Non-Productive" Expenditures

Argument could also be made that not all spending of the government is

"productive" in terms of impacting GDP. For example, interest payments can impact GDP only through enhancement of aggregate demand; that too if the payments are made within Pakistan. As such, these expenditures are not likely to increase productive capacity of the economy either through creation or operation and maintenance of infrastructure or delivery of social and economic services.

Hence, the basic model is further modified to net out the "non-productive" expenditure from the output equation (1').

As such, the new output equation is written as:

$$LOG(GDPFCR) = \beta_0+\beta_1 LOG(EMPN)+\beta_2 LOG(KAPR)+\beta_3 LOG(CEXPR–EXPINTR)+\beta_4 LOG(DEXPR) \quad (1')$$

Where:

EXINTR = Real expenditure in interest payments.

We define the "productive" recurrent expenditure as,

CECPR1 = CEXPR-EXINR

Finally, the estimated results of the modified model (i.e. including only the "productive" recurrent expenditure in the output equation) are given below:

LOG(GDPFCR)=
-0.5774+0.1189*LOG(EMPN)+0.8082*LOG(KAPR)+0.0771*LOG(CEXPR1)+0.078897*LOG(DEXPR)
(-0.6445) (0.8254) (10.5883) (4.3894) (3.280517)
Adjusted R-squared = 0.996735
Durbin-Watson stat = 0.965197

LOG(CEXPC) = 0.0351+0.2679 *LOG(TREVC)+0.7331*LOG(CEXPC(-1))
(0.3069) (4.4363) (13.1956)
Adjusted R-squared = 0.997162
Durbin-Watson stat = 2.181237

LOG(DEXPC) = 0.1981+0.2317*LOG(TREVC) + 0.7240*LOG(DEXPC(-1))
(0.6335) (2.3133) (6.8616)
Adjusted R-squared = 0.959237
Durbin-Watson stat = 1.418561

LOG(TREVC) = 0.1392+ -0.0139*LOG(GDPFCC)+1.0190*LOG(TREVC(-1))
(0.5611) (0.1981) (10.3667)
Adjusted R-squared = 0.97689
Durbin-Watson stat = 2.098115

LOG(EMPN) = -0.8588+0.0915*LOG(GDPFCR)+0.8019*LOG(EMPN(-1)
(-2.1917) (2.2938) (9.4355)
Adjusted R-squared = 0.994599
Durbin-Watson stat = 1.841664

LOG(KAPR) = 0.2570 + 0.0498 *LOG(GDPFCR) + 0.9421 *LOG(KAPR(-1))
(12.4832) (4.4696) (85.0646)
Adjusted R-squared = 0.999962
Durbin-Watson stat = 0.694105

The results reveal that in case of Punjab, the growth effect of non-development expenditure is not significantly impacted by netting out "non-productive" (i.e. interest payments) expenditure from recurrent spending. This result was somewhat expected given that interest payments in 2013/14 comprise less than 2 percent of provincial spending. As such, due to smallness of the "non-productive" component in the non-development budget, there is hardly any difference between overall and "productive" non-development expenditure. As such, the impact of growth is not much different either.

4. Conclusion

The paper has determined that public expenditure (both recurrent and development) in Punjab had a positive impact on provincial economic growth, with the impact of development spending being much higher than that of recurrent expenditure. This clearly indicates that provincial

government can accelerate the pace of economic growth in the province by increasing public spending. However, this increase cannot be unbridled because results of the paper also show that higher GDP does not automatically lead to a commensurate increase in revenue. Hence, a sharp increase in public spending, with substantial revenue efforts, will have to be financed through borrowing from domestic and foreign sources, which in turn will lead to increased indebtedness of the province, which will eventually erode the effectiveness of public spending by increasing the non-productive component (i.e. interest payments) of public expenditure.

The best option open to the province is to make concerted efforts to raise additional revenue. It will not only increase fiscal space for the provincial government to increase public spending, it will also reduce its dependence of federal revenue transfers, ensuring more certain flow of fiscal resources than what it has today.

In the immediate-run, the province should try and economze on its recurrent expenditure (especially wages, interest and subsidies) to enhance its development outlays. Higher output impact of development expenditure (vis-à-vis recurrent expenditure) implies that this swap would generate higher economic growth for every rupee of provincial expenditure.

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Appendix:

Linear Estimation after One-step Weighting Matrix

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	3.989247	0.657139	6.070632	0
C(2)	0.890693	0.115768	7.693746	0
C(3)	0.419049	0.069125	6.062179	0
C(4)	0.176377	0.035854	4.919254	0
C(6)	0.187587	0.104049	1.80288	0.073

C(7)	0.428372	0.084535	5.067416	0
C(8)	0.564427	0.081406	6.933444	0
C(10)	-1.97341	0.474633	-4.15775	0
C(11)	0.536141	0.114865	4.667558	0
C(12)	0.443042	0.118026	3.75376	0.0002
C(14)	-1.10858	0.392749	-2.82261	0.0053
C(15)	0.116844	0.039962	2.923851	0.0039
C(16)	0.748679	0.085173	8.790076	0
C(18)	0.244097	0.020886	11.68711	0
C(19)	0.039546	0.011518	3.433282	0.0007
C(20)	0.952332	0.011446	83.20081	0

Estimation Method: Three-Stage Least Squares
Sample: 19732014
Included observations: 42
Total system (balanced) observations: 210

Linear Estimation after One-Step Weighting Matrix

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.13376	1.069517	-0.12507	0.9006
C(2)	0.234075	0.179413	1.304666	0.1933
C(3)	0.761322	0.092561	8.225044	0
C(4)	0.072667	0.039331	1.847598	0.0621
C(5)	0.129042	0.018068	7.142028	0
C(7)	0.035741	0.114596	0.31189	0.7554
C(8)	0.26717	0.060506	4.415637	0
C(9)	0.733813	0.055665	13.18264	0
C(11)	0.192344	0.312687	0.615132	0.5391
C(12)	0.239008	0.099789	2.395137	0.0174
C(13)	0.716136	0.105101	6.813802	0
C(15)	0.135915	0.247065	0.550119	0.5828
C(16)	-0.01313	0.068371	-0.19202	0.8479
C(17)	1.018233	0.096016	10.60486	0
C(19)	-0.92084	0.39041	-2.35865	0.0192
C(20)	0.097834	0.039724	2.462843	0.0145
C(21)	0.788323	0.084679	9.309585	0
C(23)	0.255293	0.020572	12.40978	0

C(24)	0.048425	0.011129	4.351131	0
C(25)	0.943495	0.011062	85.29382	0

Estimation Method: Three-Stage Least Squares
Sample: 1973 2014
Included observations: 42
Total system (balanced) observations 252

Linear Estimation after One-Step Weighting Matrix

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.57744	0.895958	-0.6445	0.5199
C(2)	0.118936	0.144095	0.825396	0.41
C(3)	0.808154	0.076325	10.58827	0
C(4)	0.077103	0.017566	4.389373	0
C(5)	0.078897	0.02405	3.280517	0.0027
C(7)	0.035142	0.114512	0.306889	0.7592
C(8)	0.267904	0.060389	4.436321	0
C(9)	0.733109	0.055557	13.19559	0
C(11)	0.198133	0.312745	0.63353	0.527
C(12)	0.231704	0.10016	2.313325	0.0216
C(13)	0.724039	0.10552	6.861641	0
C(15)	0.139161	0.24802	0.561087	0.5753
C(16)	-0.01386	0.069936	-0.19812	0.8431
C(17)	1.019028	0.098298	10.36668	0
C(19)	-0.85879	0.391832	-2.19173	0.0294
C(20)	0.091458	0.039871	2.293849	0.0227
C(21)	0.801939	0.084992	9.435499	0
C(23)	0.256958	0.020584	12.48315	0
C(24)	0.049805	0.011143	4.46956	0
C(25)	0.942126	0.011075	85.06456	0

Estimation Method: Three-Stage Least Squares
Sample: 1973 2014
Included observations: 42
Total system (balanced) observations 252