A Comparison of Fiscal Effort by Provincial Governments in Pakistan

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Considerable variation exists among Provinces of Pakistan with respect to their abilities to raise revenues. This is due to underlying varied provincial characteristics like area, resources, population, nature of economic activities and provincial GDPs. The main focus of this paper is to make inter-provincial comparison of their fiscal efforts after allowing for difference in taxable capacity. Therefore, objective of such inter-provincial comparisons of fiscal effort is to identify whether provincial revenue collection is limited by capacity (revenue base) or if a province is unwilling to exploit the available capacity to generate revenues.[1] This will enable development of the appropriate resource mobilisation strategy for each province and help in enhancing the overall provincial tax revenue to GDP ratio which is currently below 1 percent of the GDP. This analysis will also help policy-makers in designing fiscal equalisation formulae for assisting those provinces which have demonstrated lesser capacity to raise revenues from their own sources.

The paper is organised as follows: Section II identifies trend in revenue receipts of provinces. Section III reviews the literature on measurement of fiscal effort. Section IV describes the methodology used in this paper. Section V presents data and the derived estimates of fiscal efforts. Section VI draws conclusions and gives policy recommendations.

II. TREND IN PROVINCIAL REVENUE RECEIPTS

We observe a low to moderate growth in both provincial tax and non-tax revenues of all provinces (Table 1). Overall, the provincial tax revenue to GDP has declined from 0.55 percent in 2009-01 to 0.46 percent in 2009-10. This is one of the factors contributing to the overall lack of improvement in the tax to GDP ratio of Pakistan. Summary of provincial revenue receipts (Table 1) reveals that share of provincial own tax revenues in

[1]Stotsky and Mariam (1997) identify this objective for international comparisons.

Table 1

total revenue receipts is very low and appears to have shown no significant improvement over time. Smaller provinces appear to rely more on non-tax revenues as compared to tax revenue receipts. Surprisingly, share of non-tax revenue of Khyber Pakhtunkhwa has been the largest among all provinces since 2000. Sindh has shown substantial growth in the share of non-tax revenues followed by Punjab in last decade. Growth in the share of non-tax revenues both in Khyber Pakhtunkhwa and Balochistan has remained negative in last decade probably due to war on terror.

III. LITERATURE REVIEW

Bahl, *et al.* (2008) point out that economic, political and administrative constraints like low taxable capacity, much of informal sector, weak tax administration, narrow tax base and strong political pressure from interest groups as source of inhibiting revenue growth, at both national and sub-national level, in developing countries, including Pakistan. There are three main approaches in literature to measure tax effort:

  (i) Regression or Econometric Modelling.
 (ii) Representative Tax System.
(iii) Cost Recovery Index (CRI).

The first two approaches are conceptually similar. In the regression or econometric modelling approach tax revenues or tax to GDP ratios are regressed on variables likely to serve as revenue bases for a sample of tax units (like states, countries or provinces). Estimated parameters or coefficients of explanatory variables are considered as average tax rates which are then applied to each revenue base to calculate potential revenues. Ratio of actual to potential revenue is used as an index of fiscal effort [Lotz and Morss (1997); Bahl (1971); Tanzi (1987); Tanzi (1992); Chelliah (1971); Tait and Echingreen (1978); Ghaus and Khan (1995)].

On the other hand, in the Representative Tax Approach, tax revenues and tax bases are selected for a set of sample tax units (states, countries or provinces). Sum of tax base of all tax units is divided on sum of revenue of all tax units for each selected source to represent national average tax rate which then is applied to tax base to calculate potential tax revenue. Ratio of actual to potential tax revenue serves as an index for fiscal effort [Bahl (1971); Tait and Echingreen (1978); Tanzi (1981)]. Representative Revenue System is, more or less, similar to the Representative Tax System Approach. Representative Revenue System in addition to tax revenues also includes non-tax revenues [State Fiscal Capacity and Effort: An Information Repot (1986)].

Cost Recovery Index measures fiscal effort in terms of recovery of current expenditure from non-tax revenue receipts. It is a ratio between revenue receipts and current expenditure on a particular service or group of services.

Ghaus and Khan (1995) used Representative Tax System Approach to measure fiscal effort of the provinces of Pakistan from 1990 to 1995. This work excludes non-tax revenues from analysis. Our paper contributes to the literature in two ways. Firstly, this paper measures provincial fiscal effort for both tax and non-tax revenues. Secondly, this paper extends previous analysis of provincial fiscal effort from year 2000 to 2010.

IV. METHODOLOGY

In first part of paper, following Ghaus and Khan (1995), this study uses Representative Tax System Approach [Bahl (1972)] to calculate Indices for Fiscal Effort for individual tax revenue receipts of all provinces and Overall Indices for Fiscal Effort for all provinces. In addition to this, in second part of the paper, we also construct Cost Recovery Indices for individual non-tax revenue receipts and Overall Cost Recovery Indices for each province.

As a first step, we identify the major provincial tax revenue sources and respective tax bases. Based on provincial tax revenue statistics, available in Annual Budget Statements of the provinces, we select following major provincial tax revenue receipts and respective tax bases for our analysis as shown in Table 2. Revenue sources with similar tax bases are grouped together.

Table 2

Selected Provincial Tax Revenue Sources and Tax Bases

Tax Revenue	Tax Bases
(i) Stamp Duties and Property Tax	Value added in ownership of Dwellings + Finance and Insurance
(ii) Motor Vehicle Tax	Value added in Transport, Storage and Communication
(iii) Land Revenue and Agriculture Income Tax	Value added in Agriculture
(iv) Electricity Duty	Value added in Electricity and Gas
(v) Tax on Professions, Trade and Callings	Value added in Wholesale and Retail Trade and Other Services

In second step, we estimate average tax rate:

$$tjy = \frac{\sum_{i=1}^{4} T_{ijy}}{\sum_{i=1}^{4} TB_{ijy}}$$

Where *tjy* measures national average tax rate for tax source *j* (*j*=1 to *n*) in year *y*

$\sum_{i=1}^{4} T_{ijy}$ = Sum of tax revenue of all provinces from source *j* in year *y* and

$\sum_{i=1}^{4} TB_{ijy}$ = Sum of tax base of all provinces for revenue source *j* in year *y*

In third step, we apply average tax rate on respective tax base to calculate provincial potential tax revenue from each source *j*:

$$PTR_{ijy} = t_{jy} \times TB_{ijy}$$

Where PTR_{ijy} = Potential Tax Revenue of province *i* from resource *j* in year *y*.
         TB_{ijy} = Tax Base of province *i* for source *j* in year *y*.

In fourth step, we construct an Index for Fiscal Effort (IFE_{ijy}) for tax revenue of province i from source j in year y:

$$IFE_{ijy} = \frac{T_{ijy}}{PTR_{ijy}}$$

In fourth step, we construct Overall Index for Fiscal Effort ($OIFE_{iy}$) for province i in year y:

$$OIFE_{iy} = \frac{\sum_{j=1}^{n} T_{ijy}}{\sum_{j=1}^{n} PTR_{ijy}}$$

Where $\sum_{j=1}^{n} T_{ijy}$ = Sum of tax revenues of a province i from all sources (j=1 to n) in year y.

$\sum_{j=1}^{n} PTR_{ijy}$ = Sum of potential revenues of province i from all sources in year y.

For second part of our paper, we select following major significant non-tax revenue sources and revenue expenditures.

(1) Law and Order
(2) Community Services
(3) Social Services

   (i) Education
   (ii) Health

(4) Economic Services

   (i) Agriculture
   (ii) Irrigation

We construct Cost Recovery Index (CRI_{ijy}) of province i for non-tax revenue from source j in year y as follows:

$$CRI_{ijy} = \frac{NTR_{ijy}}{CE_{ijy}}$$

Where NTR_{ijy} is non-tax revenue of province i from source j in year y and
   CE_{ijy} is current expenditure of province i from source j in year y

We construct Overall Cost Recovery Index ($OCRI_{iy}$) for province i in year y as follows:

$$OCRI_{iy} = \frac{\sum_{j}^{n} NTR_{ijy}}{\sum_{j}^{n} CE_{ijy}}$$

$\sum_{j=1}^{n} NTR_{ijy}$ =Sum of non-tax revenues of province i from all sources 1 to n in year y.

$\sum_{j=1}^{n} NTR_{ijy}$ = Sum of current expenditure of province i from all sources 1 to n in year y.

V. DATA ANALYSIS AND CONSTRUCTION OF
## INDICES FOR FISCAL EFFORT

This paper uses Annual Budget Statements of provinces, their White Papers on Budgets for various years and Regional Accounts of Pakistan: Methodology and Estimates-1973–2000 by Kaiser Bengali and Mahpara Sadaqat as main data sources. This study reveals that provincial shares of value added by sector have remained quite stable over the time span of twenty seven years. Therefore, we estimate provincial value added by sector in Table 2-A[2] by using average annual growth rate of provincial shares from 1973 to 2000 based on Regional Accounts of Pakistan: Methodology and Estimates-1973-2000 by Bengali (2005-06). By using methodology described in previous section, we construct following Indices:

  (i) Indices for fiscal effort by province for individual taxes,
 (ii) Overall indices for fiscal effort for all provinces,
(iii) Cost recovery indices by province for individual non-tax revenues, and
(iv) Overall cost recovery indices for all provinces.
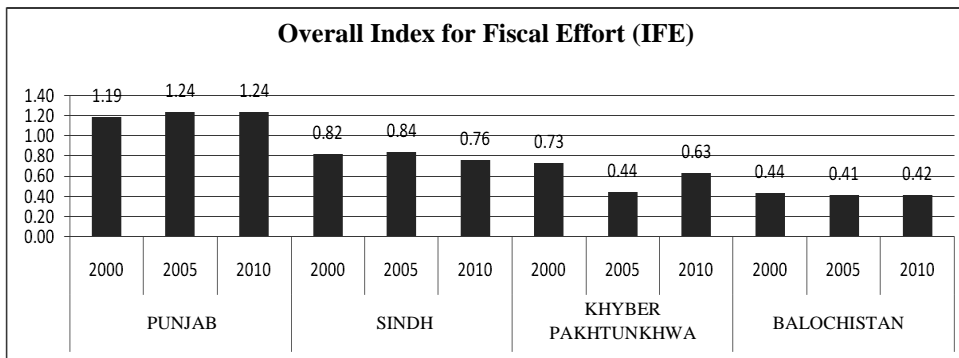
Source: Calculated by authors.

Fig. 1. Overall Index for Fiscal Effort
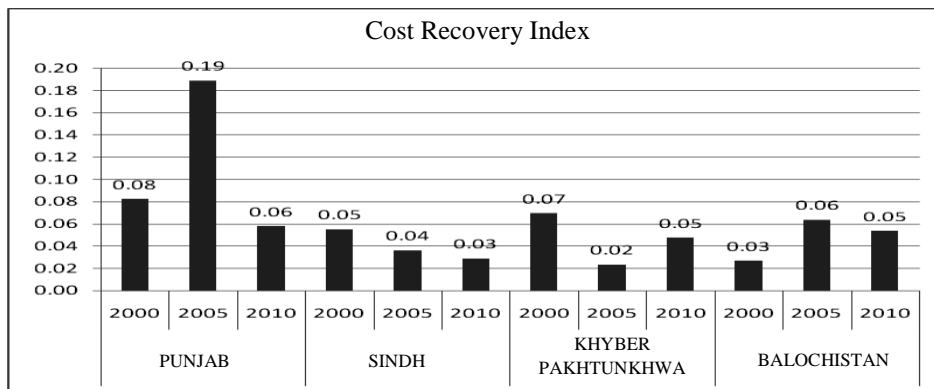
Source: Calculated by authors.

Fig. 2. Overall Cost Recovery Index

[2]See statistical appendix.

VI. CONCLUSIONS AND POLICY RECOMMENDATIONS

Punjab has the highest fiscal effort which has gradually improved over time since 2000, while the position of Sindh has remained variable in the last decade. Despite this, Sindh has been managing its fiscal effort through imposition of sizable Sindh development fee for infrastructure maintenance (Rs 13 Billion in 2010–11) that it charges from the users of Karachi Port. This implies a very high degree of 'tax exporting' to other provinces. There is also some degree of tax exporting among all provinces in motor vehicle tax because motor vehicles may be used in some other province other than of their registration where tax is collected. But the degree of tax exporting in   motor vehicle tax is far less as compared to that in Sindh development fee for infrastructure maintenance. Overall index for fiscal effort of Sindh has dropped to 0.76 in 2010. Fiscal effort of Khyber Pakhtunkhwa has also tended to decline from a high level probably due to military operations on account of insurgency and war on terrorism. Balochistan has shown no improvement in its fiscal effort.

Our estimates show that if Sindh, Khyber Pakhtunkhwa and Balochistan improve their fiscal effort indices to 1, there exists potential for raising Rs 6 billion[3] additional tax revenue i.e., Rs 3 billion from Sindh, Rs 2 billion from Khyber Pakhtunkhwa and almost one billion Balochistan.

Indices for all tax revenues and overall index for fiscal effort for Punjab (greater than or almost equal to one) indicate its firm determination to realise its available taxable capacity (Table 3). For Sindh, on the other hand, low indices (less than one) for all taxes are indicative of scope for improvement in its fiscal effort (Table 3). Our conclusion is consistent with the results of previous study by Ghaus and Khan (1995). There is the potential for higher revenues in Sindh from land revenue and agriculture income tax, and electricity duty. Khyber Pakhtunkhwa needs to focus especially on stamp duties and property tax, land revenue, agriculture income tax and electricity duty to improve resource mobilisation.   Balochistan has scope for substantial improvement in its fiscal effort for all taxes except for motor vehicle tax.

All provinces need to raise their cost recovery ratios, especially in economic services. Subsidies on social services may be also, the justified on redistributive grounds. Also, the low national average tax rates for all taxes revenues (Table 3-A)[4] and poor cost recovery levels highlight the roots of fiscal problems faced by the governments. Therefore, we also suggest raising tax rates and user cost recovery for resource mobilisation at province level across the board.

The overall conclusions are, first, the low and generally declining effective tax rates of provincial taxes which have led to a fall in the provincial tax to GDP ratio to below 0.5 percent of the GDP. All provinces need to enhance these rates as the part of their resource mobilisation strategy. Second, fiscal effort varies considerably among the provinces and the smaller provinces in particular have potential for higher revenues which they are currently not exploiting. Third, user charges need to be developed, especially on economic services.

[3]Difference between potential and actual tax revenues.
[4]See statistical appendix.

Table 3

Table 4

Table A-1

Table A-2

Table A-3

Table A-4

Table A-5

Table A-6

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