

aarthika charche

FPI Journal of Economics & Governance

- *Approaches to designing a Central-State Equalization System*
- *Government Expenditure and Revenue Relationship in the Indian Economy: Evidence from Nonlinear Autoregressive Distributed Lag Modelling*
- *Inchoate Amendments to the Finance Commission's Terms of Reference – How Should it Respond?*
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- *Preparation of Medium-Term Fiscal Plan for a Municipal City Corporation in Karnataka State: A Practitioner's Insights*



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FISCAL POLICY INSTITUTE



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Aims and Scope

Aarthika Charche is a bi-annual journal brought out by Fiscal Policy Institute, Government of Karnataka, Bengaluru. Addressed to practitioners, academics, government and non-government entities, the aim of the journal is to feature articles which bring an innovative, insightful, and influential view-point on financial and fiscal issues in government and governance.

Submission of Article

FPI welcomes contributions and submission guidelines to authors are given on the last page.

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Editorial



It gives me great pleasure to present the 8th edition (Vol-4, No-2) of Aarthika Charche- FPI Journal of Economics & Governance.

This issue contains contributions from distinguished scholars of international repute; Prof. Robin Boadway and Prof. Vasudeva N. R. Murthy. Prof. Robin Boadway, in his article, presents the instruments and models of equalisation transfers in federal economies including India based on international experiences. Prof. Vasudeva N. R. Murthy's paper focuses on empirically evidenced relationships between the Government expenditure and revenue in India, using sophisticated applied econometric methods. Sri Bhaskar's article articulates the constitutional issues in the recent amendments to Terms of Reference of Fifteenth Finance Commission. Article by Dr Shalini Rajneesh explains the Karnataka's approach to monitor the UN-SDGs and shows a way forward by each goal under human development needs and services. The article by Dr Bairagya et.al. uses the unit level data from NSSO's survey in 2011-12 to analyse the background and estimation of socio-economic determinants of female labour force participation in Karnataka. Sri Ashok Rao shares a practitioner's insights on preparation of a Medium Term Fiscal Plan for Urban Local Bodies with special reference to Shivamogga Municipal Corporation in Karnataka State.

The Book Review section in this issue contains reviews on the books sent by global publishers and authored by eminent economists and social scientists. These reviews are expected to be of policy use for our readers who mainly comprise professionals and policy makers.

This Issue has started a new feature of one-page highlight on "Innovations & Best Practices in Fiscal Policy Management" by Government of Karnataka. The focus of this highlight in this Issue is on Government of Karnataka's Child Budget Statement 2020-21.

I personally thank all the distinguished contributors and book reviewers in this issue.

On behalf of Fiscal Policy Institute and on my personal behalf, I thank the Governing Council of FPI for support. We are grateful to Sri. I. S. N. Prasad, Additional Chief Secretary (Finance Department), Government of Karnataka and Chairperson, Governing Council, FPI for his continued encouragement and guidance.

Sujit Kumar Chowdhury
Director, FPI

Articles by distinguished researchers from the premier international and national level research institutions, policy makers and practitioners; book reviews by eminent scholars; comments and suggestions on submitted articles by the peer reviewers; professional suggestions from the members of the Editorial Advisory Board; administrative guidance and support from the Editorial Team at FPI; and timely services by an external copy-editor have strengthened the quality of contents in this edition. We are grateful and thankful to all for their continued support for all-round development of our Journal.

M.R. Narayana
Editor-in-Chief

Approaches to Designing a Central-State Equalization System

Robin Boadway ¹

Abstract

Central-state equalization transfers are important fiscal instruments in most federations. They enable states with different fiscal capacities to provide comparable levels of public goods and services to their residents. We review the equity and efficiency economic arguments for equalization transfers in federations where states have significant fiscal responsibilities. Different forms of equalization transfers are outlined and evaluated, including that used in India. Some important design issues are discussed including the relation of equalization with other Central-state transfers in the system, the importance of determining equalization transfers by an objective formula, and the relevance of population as a criterion in the equalization formula. The importance of societal consensus for equalization is stressed, as well as consequences of equalization for regional development and the effect on state behaviour.

1. Introduction

It is usual in federations for the central government to collect more tax revenue than it needs for its own expenditure programs and to transfer the excess to the states. This is partly a consequence of states having more expenditure than revenue-raising responsibility, with the central government using transfers to close the fiscal gap. Federalism principles support considerable decentralization of spending responsibility to the states, given that a high proportion of government expenditures are public services to persons and firms, and that the states can deliver them most effectively. State governments are closer to those being served, and can in principle better determine local needs and preferences and provide public services efficiently. At the same time, the advantages of decentralizing revenue-raising are limited given the administrative advantages of a common tax-collecting authority and the possibilities of tax competition. It is relatively more efficient and equitable for the central government to raise more

tax revenues than it needs and transfer the excess to the states.

Fiscal transfers reflect more than gap-filling measures to address the asymmetry in expenditure and revenue decentralization. There are compelling arguments for fiscal transfers in their own right, and for creating a fiscal gap in order to generate them. We can identify four especially important arguments for central-state transfers. We focus entirely on central-state transfers and set aside transfers to local governments in this paper.

One is that fiscal decentralization inevitably results in states having different abilities to provide goods and services that would have been provided more or less uniformly in the absence of decentralization. These include public services that serve important equity objectives—such as education, health care and social welfare—that typically comprise the bulk of state and local expenditures in federations. States will differ in their revenue-raising ability, that is, in the

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per capita size of their tax bases. They will also differ a) in the need for public services, given the different demographic make-ups of their residents and their different levels of development, and b) in the cost of providing public services, given their geographic features and population densities. Federations address these differences in the ability to provide public services using equalization transfers.

Second, and related to the equalization argument, the central government may regard some of the main public services provided by the states as being of national interest because they are important for equity, economic development and equality of opportunity goals. Block transfers in support of education, health care and other specified areas help to ensure that states prioritize expenditures in these areas, especially if they are faced with fiscal competition pressures from neighbouring states. These block transfers may come with general conditions attached that are intended to encourage states to design their programs to satisfy minimal national standards. The fact that the central government is providing block support to the states also gives it the ability to influence state program design by moral suasion. At the same time, central transfers should not be so conditional and the central government so influential that the autonomy of the states and the benefits of decentralization are undermined.

A third argument for central-state transfers is to encourage state spending on items that have spillover benefits to residents of other states. For this purpose, specific conditional grants appropriate, possibly using a matching formula. Specific matching grants can also be used to support state infrastructure investments.

A fourth argument for general central-state transfers is that they can facilitate tax harmonization. To the extent that the central government dominates income or sales taxes, it can more easily induce states to harmonize their

tax systems with those of the federal government. This can, for example, entail using common central and state tax bases as well as a single tax administration, while at the same time allowing states some discretion in setting their own individual tax rates.

This paper focuses on the choice of an equalization transfer system. In so doing we recognize that equalization is part of a more general central-state transfer system whose parts are interrelated. For example, other transfers contribute to equalization and are therefore complementary.

2. The Nature and Purpose of Equalization

Equalization is a system of annual differential transfers from the central government to some or all states. It is typically formula-based rather than discretionary, and the formula is revised periodically. The standard underlying purpose of equalization is to enable the states to provide comparable standards of public services to their residents at comparable tax rates. At the same time, the transfers are unconditional so states are not obliged to provide the similar public services: they are provided with the potential to provide comparable public services. This is in the spirit of a federal form of government, whose characterizing feature is some decentralization of fiscal responsibility and accountability to the states.

As a secondary purpose, equalization also insures states against long-term regional fiscal shocks. If a state suffers a decline in fiscal capacity, equalization offsets the decline to some extent. It may do so with a lag due to the delay involved in collecting the data used in the equalization formula.

There are two points of note about the design of equalization. First, the program should avoid as much as possible giving states the incentives

to take actions to increase their equalization entitlements. This implies that a state's equalization should not depend directly on the revenue the state raises or its level of expenditures. Second, equalization is not an instrument for interpersonal income redistribution. It addresses inequality in the provision of public services, not inequality of personal incomes. Income redistribution among individuals is better achieved by the personal tax-transfer system than by central-state transfers.

There are two core arguments for equalization transfers. One is referred to as fiscal equity and is motivated by the public finance notion of horizontal equity. Government policy is horizontally equitable if individuals who are equally well-off before policies are undertaken remain so afterwards. That is, equals are treated equally. In a federalism context, fiscal equity refers to the treatment of otherwise identical persons living in two states. While full horizontal equity requires that they be treated identically, fiscal equity only requires that states could treat them equally if they chose to do so. That is, states have the potential to achieve horizontal equity.

Fiscal equity is grounded in the idea of national solidarity or social citizenship. As national citizens, individuals have the right to be treated comparably wherever they reside. This is a substantial requirement in federations with states that are diverse in terms of average income and ethnicity. The commitment to fiscal equity—and therefore to full equalization—will vary nation by nation depending on their diversity. The force of fiscal equity is enhanced when viewed from a longer-run perspective since relative incomes of different states can change as states face long-run fiscal shocks. In that sense, fiscal equity is akin to a form of social insurance among states.

The second argument is fiscal efficiency. Interstate differences in fiscal capacity will give rise to differences in the net fiscal benefit from state fiscal programs, that is, the difference between the benefit of public services and their

costs. States with lower fiscal capacity will offer lower net fiscal benefits to their residents. This will encourage the inefficient migration of individuals and businesses from low to high net fiscal benefit states. Equalization enhances fiscal efficiency by redistributing from high net fiscal benefit states to low net fiscal benefit states.

A conceptual way to think of equalization is relative to a unitary nation. In a unitary nation, the national government applies a uniform individual tax system nationwide and provides comparable levels of public services to all residents. Decentralization creates disparities in fiscal capacity and therefore leads to fiscal inequity and inefficiency. Equalization facilitates fiscal decentralization by addressing the horizontal imbalances it creates while preserving the benefits of decentralization in terms of enhancing the efficient provision of public services.

Some Design Issues

Equalization systems vary considerably from country to country, and we discuss the main approaches in the next section. Whatever the precise system chosen, there are two overriding properties that equalization should ideally satisfy. First, well-designed equalization systems should limit the incentives for states to modify their behavior to influence the size of transfers. This suggests the use of unconditional transfers. As well, the amount of the transfers should be based on factors that are beyond the influence of state behavior as much as possible. For example, revenue-raising capacity should not be based on actual tax revenues, but on a measure of the potential for a state to raise revenues, such as the size of state tax bases. This does not fully avoid the possibility of state policy influence, but it minimizes it. Similarly, expenditure needs should be based on some objective indicators of needs rather than actual state expenditures. Second, formula-based equalization systems are much preferable to those that are at the year-to-year discretion of the central government. Formula-

based transfers provide some predictability to the states and enhances the integrity and acceptability of the system. It also mitigates the soft-budget constraint, that is, the tendency of the central government to adjust transfers to help the states deal with fiscal contingencies. To the extent that the states anticipate that the central government will bail them out of fiscal difficulties, they will be less likely to behave prudently. The equalization formula should be responsive to changes in state fiscal capacities, with as short a time lag as possible. Finally, basing equalization on a formula reduces the ability of the central government to use transfers to achieve short-run political objectives, such as influencing political support in certain states or addressing central fiscal problems by passing them on to the states by reducing transfers.

The equalization of differences in state fiscal capacities varies depending on the formula adopted. Equalization may be partial in the sense that the system equalizes only a portion of fiscal capacity differences. Moreover, the relative treatment of states with above- versus below-average fiscal capacities can differ as well as the extent of central government financing. Net equalization systems equalize all states to some national average. Below-average states are equalized up with positive transfers, while above average states receive negative equalization so contribute revenues. Net equalization schemes are self-financing, but may not be feasible if the central government does not have the authority to extract revenues from above-average states. The alternative is a gross equalization system where transfers are financed from central general revenues. Under gross equalization, transfers may be made only to states below the national average. Alternatively, transfers may be made to all states in such a way as to offset fiscal capacity differences among all of them. The latter system entails much larger central financing than one that makes transfers only to those below the average, and also makes equalization more complete.

A simple form of implicit equalization is one where the central government provides equal per capita transfers to the states financed from central general revenues. Such a system effectively equalizes revenue-raising capacity by financing the transfers using a common central tax system. The equal per capita feature of such a system is a rough-and-ready way of taking expenditure needs into account, where needs are approximated by state population.

3. Types of Equalization

One can observe a number of different approaches to equalization in federations around the world. They tend to be variations of three approaches to measuring fiscal capacity of state governments. The first is macro-based equalization whereby fiscal capacity is indicated indirectly using proxy measures that are aggregate in nature. Macro-based schemes can rely on a single indicator of fiscal capacity, such as gross state product or income, typically on a per capita basis. Alternatively, a weighted sum of multiple indicators might be used, where the indicators can reflect economic aggregates, demographic indices or geographical properties of the states. The second is revenue equalization, where equalization is based on the revenue-raising capacity of the states. In this case, revenue-raising capacity refers to the ability to raise revenue using the tax instruments that the states actually deploy. The third form is expenditure equalization where transfers are based on the expenditure needs and/or costs facing the states. Expenditure needs reflect the demographic composition of the state that affects the take-up of state public services, while expenditure costs take into account input costs such as wage rates and land rents as well as geographical factors.

Actual equalization schemes can include a combination of these factors, such as expenditure needs and costs combined, revenue and expenditure equalization combined, and revenue and/or expenditure equalization combined with some macro-equalization. In what follows, we discuss in more detail these different approaches.

3.1. Macro-Based Equalization

The simplest approach to equalization bases state transfers on an aggregate statistic like gross state product, gross state income or personal income, all on a per capita basis. Arguably, measures of state output or income are proxies for the size of state tax bases and therefore revenue-raising ability. Using a per capita measure guarantees that equalization increases with population, which is important because state expenditure needs will also increase with population. Thus, macro-based equalization incorporates elements of both revenue capacity and needs, albeit in a very indirect and approximate way.

Macro-based equalization allocates a given amount of aggregate equalization among states in proportion to the macro-indicator for each state. The central government must determine the amount of funds available for equalization. In that sense, macro-based equalization is not completely formula-based. It is advisable to fix the size of the equalization fund for a minimal number of years, for example, five, so that there is some predictability for the states. There could however be an automatic escalator during the period, such as the rate of increase in GDP. There could also be some protection for individual states against sudden changes in equalization allocations. For example, changes in annual entitlements due to changes in the macro-indicator could be phased in by a three-year moving average.

In some federations, more than one macro-indicator is used. Common ones include density, rural land and poverty rates. These typically reflect expenditure need and are used in conjunction with per capita state output or income. When more than one macro-indicator is used, the weights of each in the formula must be specified. That necessarily involves some arbitrariness.

Macro-based equalization systems are relatively simple and easy to understand. Their

disadvantages are that they do not directly measure fiscal capacity or expenditure need, and the formula involves some central government discretion that can be controversial. The use of a macro-based approach may be dictated by data constraints that preclude the more sophisticated approaches. In addition, revenue-raising ability or expenditure needs measures of fiscal capacity may be difficult to implement if state policies are very diverse so representative state tax or expenditure policies are hard to define. Whatever macro-indicators and their weights are used, a sensible procedure would be to use the indicators to calculate per capita equalization entitlements. Doing so would ensure that equalization transfers are increasing one-for-one population since total entitlements are per capita entitlements multiplied by population.

3.2. Revenue Equalization

Revenue equalization aims to equalize the ability of states to generate revenues using the taxes assigned to them. The standard method of revenue equalization uses the Representative Tax System (RTS) approach. According to this approach, state equalization entitlements are based on the amount of revenue each could raise by applying a common set of state tax rates to the given tax bases of the states. The RTS approach can be based on virtually all state tax bases, but for simplicity only the most important state tax based could be used.

The calculation of equalization entitlements for a given state under the RTS is as follows. For each state tax base, the state's per capita equalization entitlement is the difference between a) the revenue that would be obtained by applying a standardized tax rate to the national per capita average of all state tax bases and b) the revenue obtained by applying the standardized tax rate to the state's own per capita tax base. The standardized tax rate used would be the average of all state tax rates applied to the given base, so would reflect

actual state tax policies. The aggregate per capita equalization entitlement of the state is sum of the per capita entitlements of all included taxes. Then, the total equalization entitlement is the per capita entitlement multiplied by the state population.

By definition, some states would have positive equalization entitlements and others negative. In a pure net system, the positive entitlement would be paid for by contributions by states with negative entitlements. If this is not feasible, one of the other options mentioned above would be used. All entitlements could be made positive by augmenting all state entitlements on an equal per capita basis until none remained negative. Alternatively, the central government could opt for partial equalization by making payments only to states with positive entitlements. Some examples of each of these approaches may be found in practice. Net equalization has been used in Germany in equalizing among *länder* and in Sweden in equalizing among municipalities. In Canada, the latter approach is adopted: revenue equalization transfers are only made to provinces with positive entitlements. In Australia, the equalization pool is large enough such that states with above average entitlements receive some transfers, but proportionately less than states with positive entitlements. As well, equalization applies to both revenues and expenditures as discussed below.

Several features of the RTS approach are noteworthy. For one, the aggregate amount of equalization is endogenous and determined by the RTS formula. Since national average state tax rates are used to determine revenue-raising ability, the amount of equalization corresponds on average with the amount of revenues that states actually raise. Next, since entitlements are calculated on a per capita basis and then multiplied by population, equalization transfers are proportional to population. To the extent that expenditure needs are increasing in population, the RTS approach

implicitly incorporates expenditure needs into the formula. Also, the RTS approach does not penalize states for adopting different tax rates since the formula is based on national average state tax rates.

At the same time, there are some important caveats to the RTS approach. States are penalized if their per capita tax bases increase, so to the extent that state policies influence tax bases, there can be adverse incentive effects. If this is a problem, less than full equalization could be implemented to avoid disincentives for States to develop their own economies. Partial equalization could be restricted to tax bases over which states have particular control, such as natural resource development. Finally, since the RTS method requires measuring state tax bases according to some common definition, revenue equalization can be difficult to implement if State tax bases are very heterogeneous. That means that harmonization of state tax bases is a valuable goal not just in terms of simplifying tax compliance and collection costs and mitigating state tax competition, but also in terms of facilitating equalization.

3.3. Expenditure Needs Equalization

The RTS system outlined above implicitly makes equalization entitlements proportional to state population. Different segments of the population may put more demands on public services than others. Education will be relevant for school-age children; health services will be used relatively more by the elderly; social or welfare services will be used by the unemployed or disabled, and so on. Expenditure needs equalization weights for equalization transfers by the demographic make-up of the population, in particular, demographic composition combined with estimates of the relative cost associated with difference household types to generate relative needs by state for particular public services.

Relative expenditure needs can be used to convert population-based central-state transfers into needs-related ones. For example, suppose the central government chooses an aggregate level of equalization transfers to be financed out of general revenues, perhaps reflecting average state expenditures nationwide. The simplest expenditure needs allocation among states would be equal per capita. That is, aggregate equalization would be allocated among states based on their share of the population. However, if relative needs differ among states, population shares would be weighted by needs factors based on the proportions of the population that use state public services.

Weighting all state public services by demographic factors would be difficult. Suppose only a portion of state public services are deemed to be demographically targeted. The aggregate equalization entitlement could be divided up according to the proportion to which needs weighting should apply, and the remainder are given on an equal per capita basis. The proportion subject to needs weighting would be disaggregated by type of service (education, health, etc.), with appropriate demographic weights applied to each type of service.

Allocating equalization among states by applying demographic weights where appropriate is attractive since it recognizes the different needs that states face. It is also demanding from a measurement point of view. State public expenditures must be disaggregated by type, and that would most easily be done by using nationwide averages. Then, the application of demographic weights requires an estimate of the relative cost of providing public services to the different types. This can be done using sophisticated econometric estimation as in Australia, or it can be done using more rough and ready measures of the relative costs. As with revenue equalization using the RTS approach, heterogeneity in state expenditures adds to the difficulties of the approach.

As mentioned, the fallback for categories of expenditures for which determining relative expenditure needs for different segments of the population is to use an equal per capita allocation. It is perhaps comforting to recall that even if revenue equalization is pursued using the RTS approach, a crude form of expenditure equalization will also apply since equalization entitlements are proportional to population.

A simple approach to estimating needs equalization is as follows. First, disaggregate state expenditures into categories such as levels of education (primary, secondary), health care (hospital services, medical services, etc.), and so on. For each category, calculate aggregate state expenditures nationwide. Suppose that for a given category a needs indicator is specified that corresponds roughly to expenditure needs within that category (e.g. number of primary school age children for primary education). Then, for that category, define a state's expenditure needs as the product of aggregate state expenditures and the state's needs indicator as a proportion of the aggregate of all needs indicators over all states. Repeat that for each category for which a rough needs indicator can be defined. For all other categories, use state population as the rough indicator. The state's expenditure needs are then the sum of the needs for each category thus defined. Of course, this will not be a fully accurate measure of needs since the indicators are only approximate, but over time the indicators can be refined.

3.4. Expenditure Cost Equalization

In addition to state expenditure requirements varying by need, they can also differ by cost. The cost of providing a given service can vary across states depending on wage costs, land costs, population density and geography. While equalizing to account for different needs on

account of demographic composition is quite defensible, equalizing to address different costs of service provision is less so. One way to conceptualize it is through the lens of a unitary nation. National public services would ideally be provided on a uniform basis to all persons of a given demographic category regardless of where they reside. However, similar levels of provision may not be provided to high- and low-cost locations because of a perceived efficiency-equity trade off. For example, the same level of health care will not be provided to persons in remote locations as to urban residents. Thus, where cost differentials are equalized, full equalization is not the norm.

One approach is to equalize separately for state public services in rural areas, in small cities, in medium-sized cities and in large cities. The simple procedure outlined above could be applied to each of these, and state expenditure equalization would be the sum of equalization entitlements of all four geographic areas. This approach Australia follows, albeit using a much more sophisticated estimate of expenditure needs than the crude one we proposed.

An alternative approach is to condition equalization entitlements on inter-state wage differentials solely. This is based on the fact that labour costs make up the bulk of the cost of providing public services. Using public sector wage rates to determine equalization transfers would have adverse incentive effects. States would have an incentive to increase their public sector wages in order to attract greater transfers. This could be mitigated by using an index of private sector wages within each state.

Expenditure cost equalization would be separate from equalization based on needs or revenue-raising ability. However, as the following discussion indicates, various types of equalization could be combined.

3.5. Combined Forms of Equalization

In principle, both revenue and expenditure equalization together would satisfy the program's objectives. The ability of states to provide common levels of public services depends both on their ability to raise revenues and on their expenditure requirements. Different combinations of expenditure and revenue equalization might be most suitable depending on the circumstances. One could focus solely on expenditure equalization, and combine both needs and cost equalization according to the above discussion. This might be appropriate where states have limited revenue-raising capacity. Expenditure equalization is particularly well suited for equalization systems applying at the municipal level.

Where both revenue-raising and expenditures are significantly decentralized to the states, revenue and expenditure equalization could simultaneously apply. Revenue equalization entitlements and expenditure equalization entitlements could be separately calculated and aggregated together. This is the approach taken in Australia. There, all value-added tax revenues are earmarked for equalization and are allocated among all states according to revenue and expenditure equalization combined. As mentioned, the RTS system of equalization based on per capita equalization calculations also combines revenue equalization with purely population-based expenditure equalization.

Mixing macro-indicators with expenditure or revenue equalization would be less attractive. One possibility would be to equalize state revenue-raising capacity using, say, the RTS method, and complement that with macro-based equalization using indicators that are meant to approximate expenditure needs. Using macro-indicators as a fallback for expenditure equalization might be justified if more direct estimates of expenditure needs are difficult to estimate because of data limitations.

While including revenue capacity, needs and costs in a single equalization formula has the advantage of preciseness, it can also result in considerable complexity. This reduces transparency and erodes public support for equalization. It might also lead states to second-guess specific elements of the equalization system.

3.6. Indian Equalization, in Brief

The Indian equalization system follows the recommendations of the Finance Commission established every five years. The current system is based on the Fourteenth Finance Commission and will be in place until April 2020. The Indian federation is relatively centralized and there is a wide disparity of fiscal capacity among states. The states rely heavily on transfers from the central government, both equalization transfers and transfers in support of specific service areas like education, healthcare and social services. The latter are not allocated according to fiscal capacity, and equalization is largely based on divisible shares that are determined by a weighted index of macro-indicators.

Five macro-indicators are used: per capita state income relative to the top state (50%), population in 1971 (17.5%), population in 2011 (10%), state land area (15%), and forest area as a proportion of total Indian dense forest (7.5%). These indicators combine elements of revenue capacity and of expenditure needs. Per capita state income is an index of fiscal capacity of the state, while the rest of the indicators broadly reflect expenditure needs. Population directly reflects need, with population in 1971 implicitly rewarding states whose populations have increased least so as to reward state family planning efforts. State land area is an indicator of expenditure costs, while forest cover represents state ecological services as well as a fiscal disability to the extent that dense forest cannot be used for economic purposes.

The Indian approach is characterized by the advantages and disadvantages of the macro-based approach discussed above. Of particular note is that state equalization transfers are far from proportional to population, which as mentioned is one of the most basic indicators of expenditure need. Where it appears in the formula, population is based on somewhat dated figures. This is a consequence of the challenges of maintaining current population figures by state. This is a matter of policy relevance since population is the most important element of a satisfactory equalization system.

4. Further Issues

There are a number of other issues related to the design of an equalization system. Some of the more important ones are as follows.

4.1. Societal Consensus for Equalization

Equalization involves sharing of resources so states can provide comparable levels of public services. As mentioned, in a unitary country the national government automatically achieves implicit equalization by providing public services uniformly across the country and financing them by a common tax system. However, when fiscal responsibility is decentralized to the states to accommodate the benefits of federalism, fiscal disparities are inevitable. Undoing those fiscal disparities involves redistributive equalization transfers, and implementing them presupposes social solidarity. In federations where there is considerable variation in the characteristics of residents across states—such as by race, religion, language, and so on—public consensus may not exist to support full equalization. Consensus is also strained if some states are perpetually poor and others perpetually rich. At best, there may be public support for some limited form of equalization.

By the same token, to the extent that equalization is perceived as being a state social insurance system in which all states might benefit in the long run, consensus is more likely. Similarly, if the public views equalization as mitigating inefficient fiscally induced migration of individuals and businesses, it will be less contentious.

In any case, equalization is a program whose benefits accrue over the longer term as relative state fiscal capacities fluctuate. The long-run integrity of the program requires that governments have a commitment to it despite the fact that their focus is on the electoral cycle. Some mechanisms exist to foster a long-term perspective. In some federations (Canada, Germany), the commitment for the central government to provide equalization is written into the constitution. In others (India, Australia), arms-length commissions are established whose purpose is to make recommendations about the form of the central-state transfer system. Since these commissions are removed from day-to-day political decision-making, they can take a longer-term perspective. The credibility of such commissions can also be enhanced by enlisting the states participation in their work, as well as by creating a permanent secretariat so institutional memory is maintained.

4.2. Equalization and Regional Development

We have stressed that equalization can enhance the efficiency of interstate allocation of resources by removing the incentive for persons and firms to migrate to states that offer higher net fiscal benefits. At the same time, there may be some drawbacks to discouraging migration. If persons and firms are encouraged to stay in stagnant regions rather than moving to growing ones, agglomeration benefits may be foregone. Productivity growth may be higher in more densely populated areas because of stronger and thicker labor markets and the rapid dissemination of information and technology.

Agglomeration is associated with externalities that would not be exploited by individual decision-makers. The existence of agglomeration externalities would support less than full equalization and targeted infrastructure to promote agglomeration and nodes of growth.

4.3. Infrastructure

Equalization transfers address differences in the abilities of states to provide common levels of recurring public services. States also have need for infrastructure investments, which tend to be large and periodical. Infrastructure investment promotes local development and cross-border trade, and in some cases supports public utilities.

The case for central government financial support of public infrastructure rests partly on the fact that such investments provide benefits to other states and to the nation as a whole, for example, by promoting regional development. As well, the need for infrastructure spending varies among states as does the ability of states to finance it. Moreover, some infrastructure financing comes from borrowing, and the central government has better access to capital markets than do the states. For these reasons, it is common for the central government to support infrastructure investment by state and municipal governments.

Central financing of infrastructure investment should be separate from equalization given the non-recurrent nature of such investment. Financing is based on need, but it is typically discretionary rather than formula-based, and often involves cost-sharing to recognize state responsibility and encourage state participation. Given the discretionary nature of central support, it is challenging to avoid political influence from financing decisions. Ideally, the terms of central support should be objective, transparent and comparable across states.

There are some other issues relevant for central government financing of infrastructure. Evaluating potential projects and specifying the division of responsibilities between central and state governments involve judgment. Infrastructure investment entails upfront capital costs, but ongoing maintenance and financing costs in future years. Maintenance responsibility presumably lies with the state in which the investment occurs. This takes the form of recurring expenditures that can be financed out of annual state general revenues as well as central transfers including equalization. To the extent that infrastructure is debt-financed, debt repayment must come either from future user fees or from general revenues, both of which would be state responsibilities.

4.4. Incentive Effects of Equalization

Even the most carefully designed equalization system cannot avoid having some influence on state fiscal incentives. Indicators of state revenue capacity, such as state tax bases or state output or income, can potentially be affected by state policies. In some cases, such as natural resource revenues, states have direct control over the development of the tax base. State influence over income or consumption tax bases is less direct but nonetheless still exists. To the extent that this is a problem—and there is little evidence to suggest that it is for most tax base—less than full equalization could be implemented. The RTS system also uses national average state tax rates. In principle, changes in a state's own tax rate could influence this, but unless that state is relatively large compared to the nation as a whole this is unlikely to be a problem.

The effect of equalization on tax effort may be of broader concern to the central government, especially in developing countries where state revenue administrations are not mature. The central government may want to encourage state

governments to improve their tax administration effort so as to raise more money from given tax bases and rates. It may be tempting to include an indicator for tax effort in the equalization system, as some federations have done. However, that could undermine equalization in the sense that the most economically advanced states may be better placed to improve tax effort and thereby increase their transfers. An alternative would be to improve tax collection by reforming the tax administration. For example, the central government and states could agree to tax collection arrangements whereby a single national agency collects taxes on behalf of both the central and state governments. This procedure is followed in Canada where the provinces can choose to opt into a tax collection agreement with the federal government, and most do so. Alternatively, measure could be undertaken to support state tax administration capacity building, including by training personnel and investing in information technology.

Similar incentive issues arise on the expenditure need side, although they are less pronounced. We have noted that equalization transfers are commonly increasing with population, often on a one-for-one basis. To the extent that states can influence population, they could affect their transfers. Even if they could influence population, doing so might not result in an overall benefit given that the increase in population entails an increase in public services to support the extra population. The central government may want to encourage states to decrease their population if that is a national objective. In principle, the equalization system could include a factor rewarding states for population control, but this might better be addressed outside the equalization system by conditional transfers. Population control is not one of the objectives of equalization. Other indicators of expenditure requirements in the equalization system might also be subject to state influence,

such as the number of persons eligible for social assistance or the cost of providing public services. To the extent that need relies on demographic composition, this should not be a problem.

There are some design issues with including population in the equalization system, as valuable as that might be. The most obvious is the possible inaccuracy and obsolescence of population statistics. State population statistics may be challenging to measure since they require knowing the state residency of individuals, and that may be difficult to verify accurately. The timeliness of population numbers is also important since equalization transfers are typically calculated annually and ideally should incorporate current year population numbers. In the event that population data is subject to revision, equalization transfers should also be adjusted *ex post* to take the revisions into account.

Another problem with equalization transfers being proportional to population is that states with changing population take time to adjust to changes in the level of population, and those adjustments can be costly. For example, if a state's population declines, say, because of out migration to another state, it will take time for the state's expenditures to adjust to lower levels. A possible response to this would be to base equalization transfers on a weighted average of population over the past few years.

More generally, a formula-based equalization system that is based on factors that are as far beyond state influence as possible enhances the integrity of the system and provides certainty to assist the states in their fiscal planning. The formula can be renewed periodically according to a fixed schedule. The temptation of the central government to make discretionary changes to the system undermines its predictability, and give rise to potential soft-budget constraints.

4.5. Relation with Other Central-State Transfers

It is worth recalling that equalization transfers are only one of possibly several types of central-state transfers, some of which may themselves contribute to equalization objectives. Many federations have bloc transfers in support of state expenditures in important areas like education, healthcare and welfare. As mentioned, federal support for these expenditures is partly motivated by the fact that these programs are of national interest. They are redistributive in nature, and contribute to equality of opportunity, economic development and poverty reduction. They may have conditions attached that require that state social programs satisfy some minimal national standards. The structure of these programs may or may not be equalizing. If federal block transfers are equal per capita—as in Canada—they are equalizing since they are proportional to population. On the other hand, if they match state program expenditures at some rate, they will not be dis equalizing. The formal equalization system may then be adjusted to take that into account.

The treatment of state VAT or GST revenues might also have implications for equalization. In Australia, all GST revenues go into a fund that is the sole source of equalization revenues. In Canada, provincial GST revenues are subject to revenue equalization using to the RST approach. In India however, State GST revenues are not equalized even though they contribute to state revenue-raising capacity.

Note finally that the central-state equalization system should in principle take into account revenue-raising and expenditures of the municipal governments in each state, though not all systems do. These too contribute to fiscal equity and efficiency. Revenue capacity under the RTS system would include municipal tax bases as one

of the revenue sources to be equalized. Similarly, expenditure needs indicators would include municipal services. Including municipal revenues and expenditures in equalization would ensure that the ability to provide public services in each state included both state and municipal public services. The states would then be responsible for equalizing among municipalities within their state boundaries.

5. Concluding Comments

Equalization transfers are commonplace in federations, but their forms differ considerably. The broad purpose of equalization is to enable all states to have the fiscal capacity to provide similar levels of public services at similar tax rates. The transfers are unconditional so states are not obliged to use them in comparable ways. But, they would have the potential to provide similar levels and types of public services. This is consistent with the principles of federalism which teaches that the decentralization of fiscal responsibility to the states enhances the efficiency of public service provision. Equalization facilitates decentralization by counteracting the fiscal disparities that it causes. The elimination of fiscal disparities—or horizontal imbalances—contributes to fiscal equity by ensuring that residents have comparable access to public services wherever they reside. It contributes to fiscal efficiency by removing purely fiscal incentives to live in one state rather than another. Equalization also provides a form of social insurance to the states against unexpected fiscal shocks that the federal government is better able to insure. However, public support for equalization involves accepting the social solidarity it entails, and that may be difficult in federations characterized by highly diverse states.

It is worth reiterating that the purpose of equalization is to equalize citizens' access to public services in all states. It is not intended to equalize personal incomes across states. That is the purpose of the income tax-transfer system. This distinction becomes muted in macro-based equalization systems where per capita state incomes is used as an indicator. In this context, per capita income is a proxy for revenue-raising ability, albeit an imperfect one.

Equalization transfers are only one component of central-state transfers. They exist alongside transfers for infrastructure, which tend to be more discretionary and irregular. Infrastructure transfers are also based on state needs, and can be important instruments for regional development and exploiting agglomeration benefits. There can also be block transfers in support of major state expenditure categories such as education and health. Block transfers often have conditions attached to them to encourage states to design their programs in accordance with minimal national standards. Ideally, conditions should not be too detailed or intrusive so that states have the discretion to design their expenditure programs to suit local needs and preferences. Block transfers can also be equalizing, especially if they are proportional to population. The central government may also offer specific conditional grants for particular projects that have spillover of national benefits. These may match state expenditures and are typically not equalizing.

Finally, it is important to stress the desirability of a formula-based approach to equalization. A properly designed equalization formula that determines equalization transfers for a fixed period subject to periodic revision is important

for several reasons. First, it commits the central government to a program of transfers for the specified time period so that there is some financial certainty for the states. It may not be possible to rule out completely unilateral central government changes in the size of equalization transfers, but making them formula-based guards against unexpected changes as much as possible. Second, a formula-based approach can be designed so that the incentives for state behavior to be affected is minimized. This mitigates against soft state budget constraints and the fiscal crises they can cause. Third, basing equalization on a formula reduces the possibility of short term political considerations influencing the payment of transfers to the states. Finally, unconditional formula-based equalization

transfers contribute to effective decentralization of decision-making to the states. Well-functioning federations operate effectively when state governments have legislative discretion to design their fiscal programs to serve local needs. They are closer to the citizens who are being served and more accountable for the public services they provide.

Acknowledgement

This paper draws on Boadway and Shah (2009).

Reference

Boadway, Robin., and Shah, Anwar. (2009). *Fiscal Federalism: Principles and Practices of Multiorder Governance* Cambridge, UK: Cambridge University Press

Government Expenditure and Revenue Relationship in the Indian Economy: Evidence from Nonlinear Autoregressive Distributed Lag Modelling

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Abstract

This research paper empirically investigates the long-run economic relationship between the Central government expenditure and revenue in the Indian economy over the period 1950-2018, using the Non-linear Auto-regressive Distributed Lag Modelling (NARDL). The results indicate the existence of cointegration or a long-run asymmetric equilibrium economic relationship between government expenditure and revenue in the Indian economy. Further, the results support for the fiscal synchronization hypothesis driving the relationship between government expenditure and revenue with asymmetric interactions in both the long-run and short-run horizons. Policy implications are discussed.

1. Introduction

Since the emergence of the Keynesian revolution in macroeconomics, fiscal policy has been accorded a welcoming reception by policy makers in many countries. It is known that fiscal policy actions and changes in government expenditure and revenue (mainly taxes), affect the economy, in the short-run, through their allocative, distributive and economic stabilization effects. It is widely recognized that identifying the long-run government expenditure and revenue nexus is of vital significance in designing the appropriate strategy for fiscal discipline and the operation of the fiscal policy in an economy. The role of fiscal policy actions, in affecting the rate of economic growth, in the long-run was emphasized by the neoclassical economists. They stressed how fiscal imbalance between government expenditure (spending) and government revenue in an economy, culminating as fiscal deficits, would adversely affect national savings, investment, and hence economic growth in the long-run.

The economic performance of the Indian economy has been a testimonial to the vital roles that fiscal and economic reforms have played in recent years, especially after the first round of economic reforms that transformed the economy more towards a market type economic system. Although there has been a considerable amount of economic progress in the Indian economy, it has been noted in very recent years, that the continuing fiscal deficit at the Center and State levels, have impaired the rate of economic growth. Fiscal deficits have been permanent economic phenomena in the Indian economy. Since the 1950s, the Indian economy has been experiencing a high ratio of fiscal deficit to Gross Domestic Product (GDP). For instance, during the period, 1980-81, the size of the fiscal deficit at the Central Government level was -5.5 % of the GDP (percentage of Gross Domestic Product), while it stood at -6.46% in 2009-10 and it was -3.94 in 2015-2016 (RBI, 2012; 2015; 2019). In fact, the policy makers in the Indian economy, realizing

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the adverse impact of fiscal imbalance, passed the famous Fiscal Responsibility and Budget Management Act 2003 (FRBM Act of 2003), to reduce the size of the re-occurring fiscal deficits.

Thus, studying the long-run economic relationship between government expenditure and government revenue, and hence, trends in fiscal deficit, is of paramount significance. The probing question is, will fiscal deficits augment or impair economic growth? There have been many recent econometric studies presenting statistical evidence, that in the Indian economy, fiscal deficits have negative effects on the rate of growth of real gross domestic product (RGDP). For instance, Mohanty (2018) conducted a study, for the period 1980-2016, by employing the econometric technique of the Autoregressive Distributed Lag Approach (ARDL). In that study, he has shown that in the Indian economy, fiscal deficits have affected economic growth adversely. According to his findings, a one percent increase in fiscal deficit reduces GDP by -0.13%, during the post Fiscal Responsibility and Budget Management (FRBM) period and -0.16% in the pre-FRBM period. Another recent econometric investigation, using the technique of Vector Error-Correction Method (VECM) undertaken by Anantha Ramu & Gayithri (2017), for the period 1980-2016, concludes that a one percent increase in fiscal deficit would reduce GDP by 0.31%, whereas a one percent increase in private investment leads to 0.87% increase in GDP (Also, see Amrutha et al. 2017). Their empirical findings on the relationship between fiscal deficit and economic growth support the neoclassical contention. Furthermore, it is interesting to note that fiscal deficits in the Indian economy have adversely impacted the level of inflation (See for details, Anantha Ramu & Gayithri, 2017). Even though India is basically, a mixed economy, the need for fiscal discipline and conducting fiscal policy along sound lines has become very imminent. Therefore, identifying the government expenditure and revenue nexus, empirically, is

of economic significance. Studying the long-run econometric relationship between government expenditure and government revenue in the Indian economy and employing long time-series data on government expenditure and revenue may facilitate the policy makers to identify the driving forces of fiscal deficit and to implement suitable fiscal policy actions to reduce the degree of fiscal imbalance, such as undertaking structural reforms and increasing the tax-GDP ratio and streamline tax collections. It is observed that the direct tax-GDP ratio in the Indian economy, as compared to other countries, is still low.

This paper, therefore, quantifies the economic relationship between government expenditure and government revenue by applying the nonlinear autoregressive distributed lags model (NARDL), developed recently by Shin, Yu & Nimmo (2011; 2014) and using the data for the period, 1950-2018. An innovative aspect of this econometric methodology is to assess both in the short-run and long-run, the possible asymmetric effects of positive and negative components of fiscal variables. There is a possibility that policy makers may respond asymmetrically in different time periods, to varying levels of fiscal imbalance (fiscal surplus, fiscal deficit or changes in the degree of fiscal deficits during various phases of a business cycle). It is also likely that there might be differences in tax payers' responses to changing tax rates during various phases of business cycles and economic growth. There is likelihood that one of the important components of government expenditures, the defense expenditure might be sensitive to special economic emergencies such as war time versus peace time, resulting in asymmetric responses. To the authors' knowledge, this paper is the first attempt to use a very long time series and also to test whether asymmetrical relationships between government expenditure and revenue exist. One attractive statistical positive aspect of this research is that since the number of observations used in the paper is large, some of the

econometric tests, based on asymptotic properties, are appropriate and yield meaningful statistical inferences.

2. A Brief Literature Survey

The relationship between government expenditure and government revenue has been an ongoing debate in the areas of public finance and public choice. We observe that in the literature, there is a plethora of empirical studies dealing with this topic. They are based on the four prevailing hypotheses in the literature. Firstly, *the Tax-Spend Hypothesis* formulated by Friedman (1978), Buchanan & Wagner (1977; 1978; also, see Barro, 1979). This hypothesis states that whenever government revenue (taxation) increases, government spending escalates. In light of this hypothesis, raising taxes to reduce government budget deficit is not a very effective way because, invariably increased taxes lead to the escalation of government expenditure, especially in the presence of a high marginal propensity of politicians and policy makers to exaggerate benefits of government projects. The proponents of this hypothesis postulate a unidirectional causality from government revenue (taxes) to government expenditure. Empirical support for this Tax-Spend Hypothesis is found in Ram's (1988) study on the United States, Park's work (1998) on the Korean economy, Hatemi & Shukur's (1999) investigation of the Finnish economy, and Narayan & Narayan's (2006) econometric evidence from a group of developing countries. Recently, Apergis et al. (2012) and Payne et al. (2008) furnished empirical evidence to support this hypothesis (also, see Payne, 2003; 1997). Secondly, *the Spend-Tax Hypothesis* stating that often government spending decisions are made first, and then revenue-resources (taxation) are adjusted accordingly. This hypothesis is developed by Peacock &

Wiseman (1979). The line of economic reasoning underlying in this hypothesis is also supported by tax smoothing phenomenon advanced by Barro (1979). This hypothesis postulates, empirically, a unidirectional causality from government expenditure to government revenue. According to this hypothesis, there is always a very highly likelihood of a temporary increase in government expenditure leading to a permanent escalation of taxes. Empirical support for this hypothesis is found again, in Ram's work (1988) on the U.S. States and local governments, Hondroyiannis & Papapetro's (1996) study of public finances of Greece. Thirdly, the *Fiscal Synchronization Hypothesis*, developed by Musgrave (1966) and Meltzer & Richard (1981), maintaining the view that government expenditure and government revenue decisions are made jointly, and they are interdependent on each other. According to this hypothesis, voters weigh both marginal benefits and marginal costs of government services in arriving at an optimal level of government expenditure and revenue. In a time-series framework, this hypothesis requires that both government expenditure and government revenue are cointegrated and there is a bi-directional long-run causality. An empirical support for this hypothesis warrants, in the long-run, the existence of statistically significant error-correction mechanisms (error-correction terms) in both the cointegrated government expenditure and government revenue models. Empirical support for this fiscal synchronization hypothesis is found in Miller & Russek (1990) for the United States, Paleologou (2013) for Germany and Sweden, Chang & Chiang (2009) for the OECD countries, Turan & Karakas (2018) for the CCE countries (Croatia, Czechia, Hungary, Poland, Romania and Slovenia) and recently, in Athanasenas et al. (2014) for the Greek economy. Fourthly, the *Institutional Separation Hypothesis* stating that government expenditure and government revenue

decisions are undertaken independently, and they are not related (See, Baghestani & McNown, 1994; Young, A.T. 2009).

In recent years, there have been a number of econometric studies that deal with the government expenditure and revenue nexus in the Indian economy. Bhat et al. (1991), is the earliest systematic study on the relationship between government expenditure and revenue in the Indian economy, focusing on the state level data. They found empirical evidence supporting the fiscal synchronization hypothesis. Das & Das (1999) employed techniques of cointegration and Granger causality to find a bi-directional causality between the nominal government expenditure and nominal revenue. Their overall results indicate that Spend-Tax Hypothesis is the underlying economic force. The study of the nexus between government spending and revenue, conducted, by applying the Granger and Sim test of causality by Naidu et al., (1995) for the economy of Andhra Pradesh, supports the fiscal synchronization hypothesis. Roy, Sahoo & Kamaiah (2000), employed the cointegration and error-correction modelling in the presence of structural breaks, for the period 1960 to 1997 on both Central Government revenue and expenditure. They found a statistically significant existence of a long-run cointegrating economic relationship between government expenditure and revenue in India. Their empirical findings supported the validity of the fiscal synchronization hypothesis in the Indian economy. Dhanasekaran (2001), using a two-prong approach, concluded that while the Granger causality supported the Spend-Tax Hypothesis, the Gweke decomposition method points out the validity of the fiscal synchronization hypothesis for the Indian economy. Vadlamannati et al. (2009) investigated the government spending and revenue nexus for Andhra Pradesh, for the period 1980-2006, and

they concluded that the fiscal synchronization hypothesis drives the spending and revenue behavior in the Andhra Pradesh economy. Chaudhuri and Sengupta's (2009) study of the revenue and expenditure nexus for Indian Southern states, for the period, 1980-2005, provides the evidence favoring the spend-tax hypothesis for the state of Karnataka and fiscal synchronization hypothesis for the Southern Indian states of Andhra Pradesh and Kerala. They also conclude in their study that for the state of Tamil Nadu, the evidence supports the institutional separation hypothesis. Recently, Akram & Rath (2019), conducted a panel econometric study of the expenditure and revenue for a panel of 26 Indian states, for the period, 1980-2015, and they conclude that fiscal synchronization hypothesis is valid for the members included in the panel. Another recent econometric investigation, that employs the Johansen-Juselius cointegration technique (1990) undertaken by Mohanty & Misra (2017) and employing the ARDL Bound Testing approach for the Indian economy supports the fiscal synchronization hypothesis guiding the empirical relationship between government expenditure and government revenue in the Indian economy for the period, 1980-2014 (Also, see Yashobantha, and Behera, 2012; Bishnoi & Juneja, 2016). Recently, Samal (2017), using the linear Autoregressive Distributed Lag Approach (ARDL) for the period, 1980-2016, finds support for the fiscal synchronization hypothesis in India.

3. Model Specification

Following Schordert (2003), Shin et al., (2011; 2004), Shinet al., (2014; P.293) and Athanasenas et al. (2014), we specify the following set of equations in applying the Non-Linear Autoregressive Distributed Lag Model (NARDL):

$$y_t = \beta^+ x_t^+ + \beta^- x_t^- + u_t \quad \dots\dots\dots (1)$$

$$x_t = x_0 + x_t^+ + x_t^- \quad \dots\dots\dots (2)$$

$$x_t^+ \sum_{i=1}^t \Delta x_i^+ = \sum_{i=1}^t \max(\Delta x_i, 0) \quad \dots\dots\dots (3)$$

$$x_t^- \sum_{i=1}^t \Delta x_i^- = \sum_{i=1}^t \min(\Delta x_i, 0) \quad \dots\dots\dots (4)$$

$$\Delta y_{t-\alpha_0} + \rho y_{t-1} + \theta^+ x_{t-1}^+ + \theta^- x_{t-1}^- + \sum_{i=1}^{p-1} \varphi_i \Delta y_{t-i} + \sum_{i=0}^q (\pi_i^+ \Delta x_{t-i}^+) + \sum_{i=0}^q (\pi_i^- \Delta x_{t-i}^-) + e_t \quad \dots\dots\dots (5)$$

Where y_t and x_t refer to the natural logarithms of real government expenditure (GE as % of RGDP) and real government revenue (GR as % of RGDP). The series, x_t is decomposed into positive and negative components. Hereafter, GE and GR refer to natural logarithms of real government expenditure and real government revenue as percentage of real gross domestic product, respectively.

Based on the above specified equations (1) through (5) to test the nexus between the natural logarithms of government expenditure (GE) and government revenue (GR), we express the following estimable NARDL models separately, for both real government expenditure (GE) and real government revenue (GR) as equations (6) and (7), in an Autoregressive Distributed Lag Modeling (ARDL) framework:

$$\Delta GE_t = a_1 + \rho GE_{t-1} + \theta^+ GR_{t-1}^+ + \theta^- GR_{t-1}^- + \sum_{i=1}^{p-1} \varphi_i \Delta GE_{t-i} + \sum_{i=0}^q \pi_i^+ \Delta GR_{t-i}^+ + \sum_{i=0}^q \pi_i^- \Delta GR_{t-i}^- + \eta_t \quad \dots\dots\dots (6)$$

$$\Delta GR_t = a_2 + \rho GR_{t-1} + \theta^+ GE_{t-1}^+ + \theta^- GE_{t-1}^- + \sum_{i=1}^{p-1} \varphi_i \Delta GE_{t-i} + \sum_{i=0}^q \pi_i^+ \Delta GE_{t-i}^+ + \sum_{i=0}^q \pi_i^- \Delta GE_{t-i}^- + \nu_t \quad \dots\dots\dots (7)$$

Where, in equations (6) and (7), the coefficients, θ^+ and θ^- measure the long-run impact of the positive and negative changes in the explanatory variable on the dependent variable. In equations (6) and (7), the coefficients of the first-differenced explanatory variables, π_i^+ and π_i^- measure the short-run influences of increases and decreases in the explanatory variables, respectively. Using the Ordinary Least Squares (OLS) technique, we estimate equations (6) and (7). The stochastic disturbance terms are, η_t and ν_t in equations (6) and (7), respectively. The disturbance terms are

assumed to be normally distributed and free from heteroscedasticity and serial correlation. It should be noted here that the coefficients of the regressors are the elasticities of the dependent variables with respect to the explanatory variables. The main objective of estimating equations (6) and (7) is to find out the short-run and long-run positive and negative asymmetric effects, of government expenditure (revenue) policy changes on government spending (revenue).

Even though the NARDL modeling, as in the Linear Autoregressive Distributed Lag (ARDL) approach, is applicable irrespective of the orders of the variables incorporated in a cointegration model, it does not require pre-testing of the integration order of the variables. We must however, make sure that the variable-series used for estimation are not integrated of the order two, $I(2)$. When a variable-series is non-stationary in levels, the series is said to be order of one, $I(1)$. If it is found stationary in levels, the series is said to be integrated of the order zero, $I(0)$.

The NARDL modeling is undertaken in this paper because, unlike the Johansen technique (1998) and other cointegrating estimators, this approach has many econometric advantages. The NARDL approach, besides not requiring pre-testing of the integration order, allows for the presence or absence of asymmetric effects of the positive and negative components of the explanatory variables. The NARDL method is highly flexible and has many desirable statistical power and size properties. Unlike the Johansen method, it is not very sensitive to the chosen lags. Another positive attribute of the NARDL modeling is that it is not too restrictive in assuming a linear and symmetric long-run economic relationship, but it recognizes that the cointegrating relationship can be subject to joint long-run and short-run asymmetries and nonlinearity. Finally, the NARDL approach can test the existence of what Granger & Yoon (2002), call "Hidden Cointegration." The phenomenon of hidden cointegration refers to the existence of a long-run relationship between negative and positive changes among the underlying variables. Not many studies on hidden cointegration are found in the literature, although some of them are emerging in very recent years.

4. Variables and Data Descriptions

The details on the sources of the data used, and the notations of the variables are given in Table 1. The data on Central Government's tax revenue and expenditure in current prices (billions of ₹) are collected from GoI (2019a). They are converted into real government expenditure and revenue by deflating them using the GDP deflator (2011-12=100). The data on the GDP Deflator (2011-12=100) and real GDP in 2011-12 prices (2011-12=100) are collected from GoI (2019). The RBI (2012; 2015; 2019) were referred to for consistency of data.

Table 1: Data sources and notations of the variables

GE	Real government expenditure as a percentage of Real GDP* in ₹ billion at 2011-12 prices*
GR	Real government revenue as a percentage of Real GDP** in ₹ billion at 2011-12 prices*
GDP Deflator	2011-2012 as the Base Year **

Source: *from GoI (2019a); and ** from GoI (2019). Cross-checked with RBI (2012; 2015; 2019).

Table 2 reports the summary statistics of real government and real government revenue. As it is clear from Table 1, the standard deviation of the variables GE and GR exhibit a wide range. But, as the observed Jarque-Bera (JB) statistics show, the data series of GE and GR are normally distributed. The JB test is a commonly used statistical test and its purpose is to statistically find out whether a time series is normally distributed.

Table 2: Summary statistics of the key variables

Variable	Real Government Expenditure (RGE)*	Real Government Revenue (RGR)*
Mean	4702.359	2248.220
Median	2908.220	1217.310
Maximum	17202.970	9847.090
Minimum	244.836	166.584
Std. Deviation	4561.696	1520.097
Jarque-Bera (JB)	14.985 (0.000)	26.773 (0.000)

Source: Authors' calculations

Note: *Real GE (RGE) and real GR (RGR) are in ₹ billion at 2011-2012 prices.

5. Empirical Findings

In econometric modelling, to decide which estimator (method) to be employed to estimate the specified model, depends whether the time-series of the variables incorporated in the model are stationary or non-stationary in level. If the time-series are non-stationary in levels and stationary in differences, we cannot use the widely used Ordinary Least Squares (OLS) method. If the moments of the distribution, (such as, the mean and variance) of a variable-series depend on time, the series are said to be non-stationary, and integrated of the order one, I (1). If the variable-series are non-stationary in levels, we cannot use the OLS technique to estimate economic relationships, because the estimation results in spurious regression. On the other hand, if the series, although individually non-stationary, but as a group move together, they are said to be cointegrated or they form a long-run link. In this case, we can use any cointegrating estimator, such as the NARDL modelling procedure employed in this paper to estimate economic relationships. Therefore, at the very outset, in order to find out whether the series are stationary or non-stationary

(the order of integration of the variables used in this paper), we conduct the traditional unit root tests, such as the augmented Dickey-Fuller test (ADF) and the KPSS (1992), Ng-Perron MZ_{α} and Ng-Perron MZ_t tests (2001), on GE and GR. While the ADF, Ng-Perron MZ_{α} and Ng-Perron MZ_t test maintain the null hypothesis of the presence of a unit root, the KPSS test state the null of stationarity or the absence of a unit root in the data generating process. Although there are subtle differences among these tests, they all facilitate in determining whether the time series are stationary or non-stationary in levels, enabling us to decide whether to employ OLS or a cointegration procedure. The results are reported in Table 3. Using the critical values (see, the Note to Table 3), we determine that the time series on GE, GE^+ , GR and GR^- are non-stationary in levels and stationary in their first differences. The GE, GR, GE^+ and GE^- are integrated of the order, I (1), and not I (2). Therefore, we can employ the NARDL modelling using these variables. None of the variable-series is integrated of the order two and therefore, we can apply the NARDL modeling.

It has been demonstrated by Perron (1989) that the traditional unit root tests, in the presence of structural breaks, too often reject the null of unit root and their statistical power is limited. Perron remarks that '*Most macroeconomic time series are not characterized by the presence of a unit root. Fluctuations are indeed stationary around a deterministic trend function. The only 'shocks' which have had persistent effects are the 1929 crash and the 1973 oil price shock*' (1989, pp. 1361). Therefore, we have presented, in Table 4, the results from the Lee & Strazicich minimum LM unit root tests (See, Lee & Strazicich, 2003 and 2004; hereafter, L&S tests). The L&S three structural breaks-unit root tests accommodate large data sets and they allow for two or three structural breaks in the null and alternative hypotheses, in both level and trend of the data generating processes.

Table 3: Traditional unit root tests

Variables	ADF	KPSS	Ng-Perron MZ_{α}	Ng-Perron MZ_t
GE	-3.814	0.124	-5.513	-1.626
GE ⁺	-2.460	0.263	-1.193	-0.542
GE ⁻	-3.402	0.083	-16.014	-2.829
Δ GE	-7.628	0.082	-32.645	-4.022
Δ GE ⁺	-9.060	0.055	-32.350	-4.020
Δ GE ⁻	-7.898	0.076	-32.498	4.020
GR	-2.645	0.109	12.541	-2.453
GR ⁺	-1.937	0.202	-2.262	-0.964
GR ⁻	-4.270	0.111	-9.746	-2.189
Δ GR	-7.905	0.046	-30.722	-3.902
Δ GR ⁺	-8.464	0.038	-31.765	-3.984
Δ GR ⁻	-7.339	0.093	-22.274	-3.334

Source: Authors' calculations

Notes: The deterministic terms in estimation are a constant and trend. Lag length is determined by the SBC criteria. The SBC (The Schwartz Bayesian Information Criterion) is widely used in time-series econometrics to decide the optimal lag length to be incorporated in unit root testing. For the critical values for the ADF test see MacKinnon (1996) one-sided p-values. For the critical values of the KPSS test, see Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1). For the critical values of the Ng-Perron tests, (see, Ng-Perron (2001, Table 1)). Also, see EVIEWS10 (2018).

The results shown in Table 4 clearly indicate that the series GE and GR, despite experiencing structural breaks, are integrated of the order one, I (0). As the main objective of this paper is to estimate the government expenditure and revenue

nexus, we do not dwell on explaining the dating of structural breaks. In this regard, it is enough to observe that most of the structural breaks broadly coincide with the energy crises of 1973 and the onset of economic reforms of 1990-1993.

Table 4: The Lee & Strazicich minimum LM unit root tests: Trend Break Model with 3 Breaks

Series	Constant	$S_{t-1}k$	Break Dates
GE	0.286 (6.464) ^a	-2.0116 (-6.349) [*]	1962; 1973; 1990
GR	-0.212 (-4.099) [*]	-1.442 6 (-5.729) ^{**}	1963; 1973; 1992
Δ GE	-0.067 (-3.255) ^a	-2.6896 (-7.600) [*]	1966; 1977; 1986
Δ GR	-0.076 (2.749) ^a	-2.006 (-7.052) [*]	1965; 1971; 1995

Source: Authors' calculations

Notes: k is the lag length. S_{t-1} is the coefficient of the unit root parameter. Observed t-values are reported in parentheses. Critical values are from Lee and Strazicich (Model C Table 2;2003). Tests conducted using RATS 9.2. The critical values applied to the dummy variables follow the standard normal distribution. The superscript, a indicates significance of the observed t-value at the 1% level. See Table 4. The coefficient on S_{t-1} tests for the presence of a unit-root in the data generating process. The critical values for the Lee-Strazicich's two-breaks-unit-root test (multiple-breaks) depend upon the location of the breaks ($\lambda_1 0.2$ and $\lambda_2 0.8$). The critical values equal, respectively, -6.32 (1-percent level), -5.71 (5-percent level), and -5.33 (10-percent level). * and ** denotes rejection of the null hypothesis at the 1-percent and 5% significant levels, respectively. The break-dates are significant at the 5% and above.

Table 5 reports the results of the Pesaran's bounds tests (2011), to discern if GE and GR are cointegrated and in a dynamic analysis of the government spending and revenue nexus, we estimate equations (6) and (7). We used the lag selection method using the Akaike Information Criterion (AIC) with automatic selection of two

lags. The model results are basically robust to both the lag lengths and the presence of alternative deterministic terms. We found the NARDL model estimated with restricted constant with automatic 2 lags (automatic selection; 2,2,0) to be extremely satisfactory. Thus, the selected model by *Eviews 10* routine is NARDL (2, 2, and 0).

Table 5: Bounds Tests for non-linear cointegration

Variable	F-Statistics (FPSS)	95% Upper critical Values	Test Result
GE	6.028*	4.07	Cointegration
GR	4.249*	4.07	Cointegration

Source: Authors' calculations

Notes: The deterministic terms in estimation are a constant and trend. Lag length is determined by the SBC criteria. See *EIEWS10*. (2018). *indicates significance at the 5% level. $k=1$.

We evaluate the results of the bounds tests reported in Table 5. The null hypothesis is $H_0: \theta^+ \text{ and } \theta^- = 0$, in equations (6) and (7) and the alternate hypothesis where the coefficients, $\theta^+ = \theta^-$,

are not equal to zero. It is clear from the results, shown in Table 5 that the observed F-Statistics are greater than the tabular F-Statistics at the 5% level. Therefore, we reject the null hypothesis and conclude that cointegration is present.

Table 6: Results from Non-linear ARDL (NARDL) estimations

Panel A			Panel B		
Dependent Variable: ΔGE			Dependent Variable: ΔGR		
Variable	Coefficient	t-Value	Variable	Coefficient	t-Value
GE_{t-1}	-0.302*	-4.014	GR_{t-1}	-0.353*	-4.07
GR^+_{t-1}	0.275*	3.160	GE^+_{t-1}	0.246*	3.509
GR^-_{t-1}	0.319*	3.085	GE^-_{t-1}	0.185**	2.667
ΔGE_{t-1}	0.233***	1.926	ΔGR_{t-1}	0.241**	2.092
ΔGR^+	0.970*	4.90	ΔGE^+	0.572*	4.279
ΔGR^-	-0.447***	-1.871	ΔGE^+_{t-1}	-0.276***	-1.922
Diagnostics			Diagnostics		
χ^2_{SC}	2.89 [0.23]		χ^2_{SC}	3.057 [0.80]	
χ^2_{HET}	5.52 [0.47]		χ^2_{HET}	0.11 [0.94]	
JB_{NORM}	0.71 [0.70]		JB_{NORM}	1.59 [0.45]	
F_{PSS}	6.028*		F_{PSS}	4.249*	
Adj.R ²	0.91		Adj.R ²	0.93	

Source: Authors' calculations (Eviews 10, 2018).

Notes: * and ** denotes 1% and 5% significant levels respectively.

In Table 6, we present the results of the nonlinear ARDL estimation. At the outset, we notice that in Panel A, all the coefficients, with the exceptions of the coefficients of ΔGE_{t-1} and ΔGR , are statistically significant at the 1% level. However, the coefficients of ΔGE_{t-1} and ΔGR are statistically significant at the 10% level. In Panel B, the results are basically similar to those in Panel A. All the coefficients, with the sole exception of the coefficient of ΔGE_{t-1}^+ , are significant at the 5% and above level of significance. The results of the diagnostics tests, both in Panels A and B, indicate the absence of serial correlation, heteroscedasticity and non-normality in the estimation of the NARDL models. Again, as stated before, the observed Pesaran F_{PSS} statistics, in both panels A and B, exceed the 5% critical value indicating cointegration. The coefficient of determination, R^2 , adjusted for degrees of freedom in both the panels A and B, are very high, indicating a very high explanatory power. The value of the bounds F-Statistics, F_{PSS} Statistics for both GE and GR exceed the upper critical values provided by Pesaran (2001), Narayan (2006) and EViews 10 (although, we have used the critical values provided by *Eviews10*), indicating that we can reject the null hypothesis of no cointegration. Therefore, we conclude that both GE and GR are cointegrated and they do form a long-run link or

equilibrium economic relationship. We also note that there is a bi-directional causality between GE and GR, as indicated by the results of the error-correction modeling. This evidence points out that the fiscal synchronization hypothesis is the driving force behind the government expenditure and revenue nexus in the Indian economy.

In panel A and B of Table 7, we report the normalized long-run coefficients of positive and negative changes in GR and GE (GE_L^+ and GR_L^+), as $-\theta^+/\rho$ and $-\theta^-/\rho$, for both government spending and revenue, respectively. In Panel A, we find both the normalized coefficient of the long-run positive and negative components of government revenue are highly significant at the 1% level of significance. This evidence indicates that in the Indian economy, during the period under investigation, the positive and negative components of government revenue exert impact on the level of government spending, although the effect of the negative component is greater. While the impact of 1% increase in GR leads to a 0.910 % increase in the level of government spending, a 1% decline in government revenue would cause the government spending to increase by 1.055%. We further test for the presence of long-run and short-run symmetry on the normalized coefficients of positive and negative components by conducting the long-run Wald test (W_{LR}) and the short-run Wald test (W_{SR}).

Table 7: Normalized long-run coefficients from Non-linear ARDL modelling

Panel A: For GE			Panel B: For GR		
Variable	Coefficient	t-Value	Variable	Coefficient	t-Value
GR_L^+	0.910*	5.562	GE_L^+	0.700*	5.527
GR_L^-	1.055*	4.652	GE_L^-	0.523*	3.149
Constant	-2.347*	-25.617	Constant	-3.633*	-29.501
W_{LR}	4.03[0.05] *		W_{LR}	4.10 [0.04] *	
W_{SR}	0.045 [0.83]		W_{SR}	7.66 [0.005] *	

Source: Authors' calculations (Eviews 10, 2018).

Notes: * and ** denotes 1% and 5% significant levels respectively. .

In Table 8, the results of the error-correction modeling for both GE and GR dependent variables are shown. First, the highly significant error-correction terms, for both dynamic GE and GR equations, have the required negative sign indicating the long-run bi-directional causality. The highly significant error-correction terms also affirm the existence of cointegration between GR and GE and vice versa. The magnitudes of the error-correction terms imply that about 35% of the long-run disequilibrium in the GE and GR equilibrium

relationship would be corrected. This finding points out that the policy makers have to recognize the lag effect in simultaneously adjusting government expenditure and revenue. The coefficients of the dynamic explanatory variables in both GE and GR equations are statistically significant mostly at the 1% level. This econometric finding of bi-directional causality further supports the evidence for the fiscal synchronization hypothesis in the Indian economy.

Table 8: Non-linear ARDL error-correction results

Dependent Variable: ΔGE			Dependent Variable: ΔGR		
Variable	Coefficient	t-Value	Variable	Coefficient	t-Value
ΔGE_{t-1}	-0.233**	- 2.193	ΔGR_{t-1}	0.241**	2.241
ΔGR^+	0.971*	6.236	ΔGE^+	0.572*	5.577
ΔGR^-	- 0.447**	-2.420	ΔGE^-_{t-1}	-0.276 **	-2.380
ECT_{t-1}	-0.302*	-5.036	ECT_{t-1}	-0.354*	-4.228
Adj. R ²	0.50		Adj. R ²	0.35	

Source: Authors' calculations (Eviews 10, 2018).

Notes: * and ** denotes 1% and 5% significant levels respectively.

6. Conclusions

This paper is the first attempt to study, employing the recently developed nonlinear autoregressive distributed lag (NARDL) modeling, based on a long time series data from 1950 to 2018. The main objective is to test whether asymmetric government expenditure and revenue nexus exists in the Indian economy. The econometric evidence presented in this paper supports the fiscal synchronization hypothesis in the Indian economy. We find that government spending and government revenue are cointegrated, and hence they exhibit a long-run equilibrium relationship in the Indian economy. If this equilibrium is disturbed, it will take about three months for its restoration. Furthermore, the evidence indicates a bi-directional causality between government expenditure and revenue. The fiscal synchronization hypothesis states that

government expenditure and revenue are adjusted simultaneously. Therefore, in the presence of fiscal deficits, a stricter fiscal discipline and fiscal consolidation is warranted. The fiscal authorities have to devise a viable and careful tax, non-revenue to raise more revenue and at the same time streamlining unnecessary spending policies.

The policy makers, in order to reduce fiscal deficit levels, may have to resort structural reforms, slash unproductive and non-essential government consumption, subsidies on food, fertilizers and petroleum that cause disincentives and deadweight loss. Reducing interest payments on public debt and retiring past public debt by financing them through funds acquired from disinvestment of some loss making public enterprises and entities. Some other structural reforms are, improving tax collection, increasing the effective tax base by taxing agricultural income and extending tax

bases to include unorganized industrial and the expanding service sectors. What is needed in the Indian economy is a much broader policy framework so that the effective tax handle will be larger.

As the Chief Economic Advisor to the Government of India, Dr. Krishnamurthy Subramanian in his recent statements to the Indian Press remarked that the recently announced major cut in corporate tax rate, by the Finance minister, from the previous 30% to the present 22%, was a first step in ushering structural reforms. To quote his words, “*The (corporate) tax rate cut is a historic change which clearly signals the intent of the government to implement the structural reforms that are necessary for high growth rate,*” (Business Standard, October 2, 2019). In the long-run reducing the high marginal tax rates on corporate and individual income, and wealth would result in higher tax collections through reduced disincentives on work effort, savings and productivity, a kind of the Laffer curve effect.

Furthermore, the concerned legislators can further undertake another round of economic reforms to open the economy and remove unnecessary government regulations, all with the intention of simultaneously handling tax and spending policies, responsibly. To stress the point again, the prevalence of fiscal synchronization in the Indian economy, offers a much-warranted flexible opportunity to reduce unproductive government expenditures, bring down the tax rates, decentralize (delegate) some of the government budget processes to the states and local levels. Our empirical findings also clearly show that asymmetric effects of policy changes in the government spending and revenue nexus do prevail in the Indian economy. Increases and reductions in government expenditure and revenue produce different statistically significant fiscal effects.

In India, government spending (government revenue) do respond differently to positive and negative government revenue (government spending) changes in the long-run. The policy makers must take into consideration the asymmetric effects of government expenditure and revenue in balancing the budget or in managing fiscal deficits and fiscal consolidation. Whenever fiscal synchronization is not undertaken judiciously, there is a high likelihood for the economy to experience persistent fiscal deficit that would result in high rates of inflation and lower rate of economic growth in the future.

References

- Akram V., & Rath B.N. (2019). Is there any evidence of tax-and-spend, spend-tax or fiscal synchronization from panel of Indian state, *Applied Economics Letters*, 26(18), pp.1544-1547.
- Amrutha T., Gowda H.R.C., Bi, A.Z., & Rashmi K.S. (2017). Impact of fiscal deficit on economic growth in India: A Cointegration Analysis, *International Research Journal of Agricultural Economics and Statistics*, 8, pp.96-99.
- Anantha Ramu, M.R., & Gayithri K. (2017). Fiscal deficit and economic growth relationship in India: A time series econometric analysis, In Kamaiah B., Shyamalan C.S., Venkata Seshaiyah, Aruna M., and Mukherji S., *Current Issues in Economics and Finance* (pp.19-36). Singapore: Springer Nature Singapore Pte Ltd.
- Anantha Ramu, M.R., & Gayithri K. (2017). Fiscal deficit and inflation linkages in India: tracking the transmission channels, *Journal of Social and Economic Development*, 19 (1), pp.1-24.
- Apergis N., Payne, J.E., & Saunoris J.W. (2012). Tax-spend nexus in Greece, Are there asymmetries? *Journal of Economic Studies*, 39 (3), pp.327-336.

- Athanasenas A., Katrakilidis C., Trachnas E. (2014). Government spending and revenues in the Greek economy: Evidence from nonlinear cointegration, *Empirica*, 41 (2), pp.365-376.
- Bagestani & McNown R. (1994). Do revenue or expenditure respond to budgetary disequilibria? *Southern Economic Journal*, 61 (2), pp.311-322.
- Barro R. (1979). On the determination of the public debt, *Journal of Political Economy*, 87 (5), pp.940-971.
- Bhat V., Nirmala., & Kamaiah, B. (1991). Causality between revenue and expenditure of Indian states, *Arthavijnana*, 33 (4), pp.335-344.
- Bishnoi N.K., & Juneja T. (2016). An examination of interdependence between revenue and expenditure of government of Haryana, *Indian Economic Journal*, 64 (1&2), pp.176-185.
- Buchanan J.M., & Wagner, R.E. (1977). *Democracy in deficit*, New York: Academic Press.
- Buchanan J.M., & Wagner, R.E. (1978). Dialogues concerning fiscal religion, *Journal of Monetary Economics*, 4 (3), pp.627-636.
- Business Standard* (Press Trust of India, October 2,2019).
- Chang T., Liu W.R., & Caudill S.B. (2002). Tax-and-Spend, spend-and-tax, or fiscal synchronization: New evidence for ten countries, *Applied Economics*, 34 (12), pp.1553-1561.
- Chang T., & Chiang, G. (2009). Revisiting the government revenue-government-expenditure nexus: Evidence from 15 OECD countries based on the panel data approach, *Czech Journal of Economics and Finance*, 59 (2), pp.165-172.
- Chaudhuri K., & Sengupta B. (2009). Revenue-Expenditure for southern states: Some policy oriented econometric observation, *Working Paper 48*, Madras School of Economics, pp.1-34.
- Das A., & Das S. (1999). Temporal causality between government taxes and spending: An application of error correction models, *Prajnan*, 27, pp.37-46.
- Dhanasekaran K. (2001). Government tax revenue, expenditure and causality: the experience of India, *Indian Economic Review*, New Series, 36 (2), pp.359-379.
- Dickey, D.A., & Fuller W.A. (1979). Distribution of the estimators for autoregressive time series with a unit root, *Journal of the American Statistical Association*, 74 (366), pp.427-431.
- Eviews 10, HIS, Global Inc.; <https://www.eviews.com> (2017).
- Friedman, M. (1978). The limitations of tax limitation, *Policy Review*, pp.7-14.
- GoI (2019). *National Accounts Statistics*, New Delhi: Central Statistical Organization, Ministry of Statistics and Program Implementation, Government of India.
- GoI (2019a). *Indian Public Finance Statistics*, New Delhi: Department of Economic Affairs, Government of India.
- Granger, Clive W.J., & Gawon Yoon.(2002). Hidden Cointegration, *Working Paper-02*, San Diego: Department of Economics, University of California.
- Hatemi-J., & Shakur G. (1999). The causal nexus of government spending and revenue and the government revenue in Finland: a bootstrap approach, *Applied Economics Letters*, 6 (10), pp.641-644.
- Hondroyannis G., & Papapetrou E. (1996). An examination of the causal relationship between government spending and revenue: A cointegration analysis, *Public Choice*, 89 (3-4), pp.363-374.

- Johansen S., & Juselius K. (1990). Maximum likelihood estimation and inference on cointegration with applications to the demand for money, *Oxford Bulletin of Economics and Statistics*, 52 (2), pp.169-210.
- Kwiatkowski D., Phillips, P.C.B., Schmidt P., & Shin, Y. (1992). Testing the null hypothesis of stationarity against the alternative of a unit root: how sure are we that economic time series have a unit root? *Journal of Econometrics*, 54 (1-3), pp.159-178.
- Lee, J., & Strazicich M. (2003). Minimum lag range multiplier unit root test with two structural breaks, *The Review of Economics and Statistics*, 85 (4), pp.1082-1089.
- Lee, J., & Strazicich M. (2004). Minimum LM unit root test with one structural break, *Working Paper-17*, North Carolina: The Department of Economics, Appalachian State University.
- MacKinnon, J.G. (1996). Numerical distribution function for unit root and cointegration tests, *Journal of Applied Econometrics*, 11 (6), pp.1099-1255.
- Meltzer A., & Richard, S. (1981). A rational theory of the size of government, *Journal of Political Economy*, 89 (5), pp.914-927.
- Miller, S.M., & Russek. (1989). Cointegration and error-correction models: the temporal causality between government taxes and spending, *Southern Economic Journal*, 57 (1), pp.221-229.
- Mohanty, R.K., & Misra B.R. (2017). Cointegration between government expenditure and revenue: evidence from India, *Advances in Economics and Business*, 5 (1), pp.33-40.
- Mohanty, R.K. (2012). Fiscal deficit – economic growth nexus in India: A cointegration analysis, New Delhi; Center for Economic Studies and Planning, School of Social Sciences, Jawaharlal Nehru University.
- Mohanty, R.K. (2018). Fiscal deficit and economic growth linkage in India: Impact of FRBM Act, in Khan, N.A *Challenges and Issues in Indian Fiscal Federalism* (pp.89-105), Singapore: Springer.
- Musgrave, R. (1966). Principles of budget determination, In H. Cameron & W. Henderson, *Public Finance: Selected readings* (pp.15-27), New York: Random House.
- Naidu, C.R., Md. Mohsin & Naidu, V.J. (1995), Government expenditure in Andhra Pradesh: An analysis of growth and determinants, *Prajnan*, 23, pp.332-352.
- Narayan, P.K. (2005). The saving and investment nexus in China: Evidence from cointegration tests, *Applied Economics*, 37 (17), pp.1979-1990.
- Narayan, P., & Narayan, S. (2006). Government revenue and government expenditure nexus: evidence from developing countries, *Applied Economics*, 38 (3), pp.285-291.
- Ng, S., and Perron P. (2001). Lag length selection and construction of unit root tests with good size and power, *Econometrica*, 69 (6), pp.1519-1554.
- Paleologou S.M. (2013). Asymmetries in the revenue –expenditure nexus: a tale of three countries, *Economic Modelling* 30, pp.52-60.
- Park, W.K. (1998). Granger causality between government revenues and expenditures in Korea, *Journal of Economic Development*, 23 (1), pp.145-155.
- Payne, J.E. (1997). The tax-spend debate: the case of Canada, *Applied Economics Letters*, 4 (6), pp.381-386.
- Payne, J.E. (2003). A survey of the international empirical evidence on the tax-spend debate, *Public Finance Review*, 31(3), pp.302-324.

- Payne, J.E., Mohammadi H., and Cak M. (2008). Turkish budget deficit sustainability and the revenue expenditure nexus, *Applied Economics*, 40 (7), pp.823-830.
- Peacock, A.T., and Wiseman, J. (1979). Approaches to the analysis of government expenditure growth, *Public Finance Review*, 7 (1), pp.3-23.
- Perron, P. (1989). The great shock, the oil price shock, and the unit root hypothesis, *Econometrica* 57 (6), pp.1361-1401.
- Pesaran, M.H., Shin, Y. (1999). An autoregressive distributed lag modeling approach to cointegration analysis, in S. Strom, *Econometrics and economic theory in the 20th century: The Ragnar Frisch centennial symposium*, Cambridge: Cambridge University Press.
- Pesaran, M.H., Shin Y., & Smith, R.J. (2001). Bounds testing approaches to the analysis of level relationship, *Journal of Applied Econometrics*, 16 (3), pp.289-326.
- Ram, R. (1988). A multi country perspective on causality between government revenue and government expenditure, *Public Finance*, 43 (2), pp.261-270.
- RBI (2012). Handbook of Statistics on Indian Economy, Mumbai: Reserve Bank of India.
- RBI (2015). Handbook of Statistics on Indian Economy, Mumbai: Reserve Bank of India.
- RBI (2015). Handbook of Statistics on Indian Economy, Mumbai: Reserve Bank of India.
- Roy, A., Sahoo P., & Kamaiah B. (2000). A causal test of fiscal synchronization hypothesis in India, *Working Paper- 54*, Bangalore: Institute for Social and Economic Change.
- Samal, A. (2017). Tax spend, spend tax or fiscal synchronization in India, Evidence from ARDL bound test approach, *The Empirical Economics Letters*, 18 (8), pp.773-780.
- Schorderet, Y. (2003). Asymmetric cointegration, *Working Paper-01*, Geneva: Department of Economics, University of Geneva.
- Shin, Y., Yu, B., & Greenwood-Nimmo M. (2011). Modelling asymmetric cointegration and dynamic multipliers in nonlinear ARDL framework, Mimeo.
- Shin, Y., & Yu, B. (2004). An ARDL approach to an analysis of asymmetric long-run cointegrating relationships, Leeds University, Business School, Mimeo.
- Shin, Y., Yu, B., & Greenwood-Nimmo M. (2014). Modelling asymmetric cointegration and dynamic multipliers in nonlinear ARDL framework, in William Horrace & Robinsickles, *The Festschrift in honor of Peter Schmidt, Econometric Methods and Applications* (pp.281-314), New York: Springer.
- Turan, T., & Karakas, M. (2018). Asymmetries in twin deficit hypothesis: Evidence from CEE countries, *Ekonomicky Casopis*, 66 (6), pp.580-597.
- Vadlamannati, K.C., & Veni, L.K. (2009). Fiscal synchronization hypothesis in Andhra Pradesh: An empirical testing, *IUP Journal of Applied Economics*. 8 (2), pp.29-44.
- Yashobanta, P.Y., & Behera, S.R. (2012). Causal link between central government revenue and expenditure: Evidence for India, *MPRA Paper No.43072*, <https://mpra.ub.uni-muenchen.de/43072/>
- Young, A.T. (2009). Tax-spend on fiscal illusion, *Cato Journal*, 29 (3), pp.469-485.

Inchoate Amendments to the Finance Commission's Terms of Reference – How should it Respond?

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Abstract

Two recent amendments to the Terms of Reference (ToR) of the Fifteenth Finance Commission (FFC) appear problematic. The first requires the FFC to examine “whether a separate mechanism for funding of defence and internal security ought to be set up and if so, how such a mechanism should be operationalised”. The second arises from Section 83 of the Jammu and Kashmir Reorganisation Act 2019 (J&K Act), which requires the President to “make a reference to the Fifteenth Finance Commission to include Union Territory of Jammu and Kashmir in its Terms of Reference and make award for the successor Union Territory of Jammu and Kashmir.” This article argues that both these amendments are perfunctorily worded, raising constitutional and interpretational issues which the FFC may find challenging to address. They also work to the detriment of the states.

This article examines two recent amendments to the Terms of Reference (ToR) of the Fifteenth Finance Commission (FFC). The first is the insertion of a new paragraph requiring the FFC to examine “*whether a separate mechanism for funding of defence and internal security ought to be set up and if so, how such a mechanism should be operationalised*”. The second arises from Section 83 of the Jammu and Kashmir Reorganisation Act 2019 (J&K Act) effectuated on the 31st October 2019 when Jammu and Kashmir became a Union Territory. It requires the President to “*make a reference to the Fifteenth Finance Commission to include Union Territory of Jammu and Kashmir in its Terms of Reference and make award for the successor Union Territory of Jammu and Kashmir.*” The Center did not consult the states before introducing these two amendments. The FFC had already completed most of its state consultation visits and hence did not have an opportunity to ascertain their views on these changes. This lack of consultation is unfortunate because both these amendments, could work to the detriment of the states by reducing their share of the divisible pool. This article argues that both these amendments

appear perfunctorily and cursorily worded, raising constitutional and interpretational issues which the FFC may find challenging to address. They also work to the detriment of the states. It is further argued that it may be preferable for the FFC to ignore these amendments and stick to its constitutional mandate.

The ‘defence and internal security’ amendment raises several issues. The first problem arises from the use of the words ‘*separate mechanism*’. This points to creating a new mechanism different from the present one dictated by the Constitution. Article 266 requires all Union receipts to be credited to the Consolidated Fund of India (CFI). It also explicitly prohibits appropriation of moneys from the CFI not in accordance with the Constitution. Article 112 and 113 require that estimates relating to voted expenditure in the Annual Financial Statement be submitted in the form of demands for grants to the Lok Sabha. Defence is included in Union List and the Government of India (GoI) submits demands for grants relating to defence in its budget. Similarly, deployment of armed forces in states as aid to civil power is also in the Union

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list and demands for grants under this head are submitted under the Home Ministry's budget. This is the constitutionally established procedure which must be repeated in an annual cycle.

What is perhaps being hinted at in the ToR is the creation of a defence and internal security fund in the public account to which annual budgetary allocations to these sectors will be credited and can be then spent over a multi-year time frame without threat of lapse. Such an arrangement already exists for a number of funds like the Prarambhik Siksha Kosh, the Nirbhaya Fund and the National Disaster Relief Fund. These funds are created under Appendix 4 of the Government Accounting Rules 1990 (GAR) which allow for creating a fund in the public account for the implementation of specified schemes /programmes of Ministries². However, it is debatable whether the allowance made for specified schemes of Ministries can be grossly expanded to incorporate entire departments of the GoI. This is especially in view of the numbers involved.

The defence budget for 2019-20 is ₹4,71,843 crore. The police grant head of the Home ministry for the same period has a provision of ₹99,519 crore. Assuming that expenditure under this accounting head can be deemed to be a proxy for internal security, the total amount which will need to be transferred to the proposed public account dedicated to defence and internal security will be about ₹5,71,000 crore. This figure represents 20.4 % of GoI's total budgeted expenditure of ₹27,86,349 crore for 2019-20. It will be inappropriate to squirrel away one fifth of the budget allocations into the public account for five reasons. First, escrowing such a large amount from its resources will hamper GoI's budgetary management. Second, similar demands could arise from other critical ministries like infrastructure and

health, which if agreed to will further emasculate budgetary flexibility. Third, it will lead to lazy budgeting by the beneficiary ministries. Fourth, it violates the Government Accounting Rules 1990 (GAR) which allow for creating a fund in the public account only for the implementation of specified schemes of Ministries. The total amount proposed to be transferred to the public account for this purpose will be equivalent to the aggregate outstanding balance in the GoI's public fund account which was ₹5,54,170 crore spread over more than 150 deposit accounts as on 31st March, 2018. The GAR does not permit keeping budgetary allocations of entire departments in the public account, only individual schemes. Fifth and most important, it violates the fundamental canons of annual budgeting mandated in the Constitution – obtaining Parliament's approval every year for the Annual Financial Statement and providing for lapse of moneys budgeted but unspent during a year.

On the revenue side, the use of the word '*funding mechanism*' could possibly indicate exploration of either an independent source of revenue for meeting the specified objectives or through the mechanism of first charge on its revenue receipts. The use of a cess, as an independent source to generate ₹5,71,000 crore, when already about ₹3,00,000 crore is being generated through cesses and surcharges would be extremely inappropriate. In any case, recommending levy of taxes/ cesses /surcharges is totally outside the remit of the FFC which is required to submit its report based on existing levels of taxation. This interpretation is therefore discarded. If it is made a first charge on revenue receipts, there would be a corresponding decline in resources that would be available for the divisible pool to the detriment of the states. In any case, escrowing expenditure as a first charge on revenue receipts is not consistent

²Government Accounting Rules 1990 Appendix 4 Para 5.

with Constitutional requirements that all approved demands for grants be given equal status. This interpretation is thus also discarded. Perhaps the use of the words '*expenditure mechanism*' instead of '*funding mechanism*' in the amendment would have been less problematic.

A further problem is the use of the word 'internal security'. This word is not defined in any national legislation concerning itself with internal security including the Maintenance of Internal Security Act (now repealed) and the National Security Act. Wikipedia³ defines internal security, as "*the act of keeping peace within the borders of a sovereign state, generally by upholding the national law and defending against internal threats. Responsibility for internal security may range from police to paramilitary forces, and in exceptional circumstances, the military itself*". Public order and Police (excluding deployment of central forces in aid of civil power) find place as items 1 and 2 in the State List of the Seventh Schedule of the Constitution. It cannot be denied that internal security is as much a state concern as it is a concern of the GoI, especially as the latter bills state governments to reimburse the cost of central forces deployed in their respective territories to maintain public order. Additionally, state governments spend significant amounts on their police establishments. Even if the indicated fund is created, as far as the internal security component is concerned, it would need to be shared between the Central and State governments. Would it be appropriate for the Finance Commission to recommend creation of a fund in the GoI's Public Account, the proceeds of which must be shared with states? This will not only violate the GAR (which requires separate accounting for GoI and state governments) but create an additional knotty

problem for the FFC to set up norms on how this fund has to be allocated between the GoI and the states.

An additional problem arises from the use of the word 'ought'. The FFC is required to examine whether a separate funding ought to be set up. The word 'ought'⁴ denotes an obligation which may or may not amount to a legal duty depending upon the context. This word is not found in any of the ToRs of the earlier fourteen finance commissions. Critics argue that the use of such a subjective word is detrimental to the credibility of the ToR of a constitutional creature like the FFC. There is no legal duty cast on the GoI to set up such a fund. On the contrary, there appears to be a legal duty cast on the GoI to adhere to the Constitution and not create such a fund and it may be the legal duty of the FFC, created by the Constitution to express such an opinion.

Finally, there is the question of redundancy. As many critics have pointed out, this reference is redundant, since the existing ToR already mandates the FFC to have regard to the "*the demand on the resources of the Central Government particularly on account of defence, internal security...*". The FFC is thus already required to take into account the requirements of defence and internal security as part its determination of the fiscal capacity of the Union, the first step in the determination of the state share of the divisible pool.

The FFC is a creature of the Constitution and it may find it difficult to recommend a '*separate mechanism for funding of defence and internal security*' for the reasons mentioned above, including also that it appears to infringe on Articles 112, 113 and 266 of the Constitution and the Government Accounting Rules issued under Article 150 of the Constitution.

³https://en.wikipedia.org/wiki/Internal_security

⁴<https://legaldictionary.lawin.org/ought/>. The Hindi version of this phrase in the ToR uses the words "*kiya jana chahiye*" which strengthens this interpretation.

We now address the amendment to FFC's ToR to be effectuated on the 31st October 2019. Section 83(1) of the Jammu and Kashmir Reorganisation Act 2019(J&K Act) reads as under

The award made by the Fourteenth Finance Commission to the existing State of Jammu and Kashmir shall be apportioned between the successor Union Territory of Jammu and Kashmir; and Union Territory of Ladakh by the Central Government on the basis of population ratio and other parameters:

Provided that on the appointed day, the President shall make a reference to the Union Territories Finance Commission to consider the resources available to the successor Union Territory of Ladakh and make separate award for the successor Union Territory of Ladakh:

Provided that on the appointed day, the President shall make a reference to the Fifteenth Finance Commission to include Union Territory of Jammu and Kashmir in its Terms of Reference and make award for the successor Union Territory of Jammu and Kashmir.

(2) Notwithstanding anything in sub-section (1), the Central Government may, having regard to the resources available to the successor Union Territory of Ladakh make appropriate grants and also ensure that adequate benefits and incentives in the form of special development package are given to the backward areas of this region.

The appointed date has been separately notified as 31st October 2019. Significant interpretation problems arise in the reading of the second proviso. Firstly, the phrase '*include Union Territory of Jammu and Kashmir in its Terms of Reference*' is unclear. The ToR of the FFC has fifteen clauses. In which clause and where should it be included? The names of no state or union territory find place in any of these fifteen clauses. This direction is incomprehensible.

It can be argued that the intent of this amendment is to require the FFC to treat the Union Territory of Jammu and Kashmir as a state for the purposes of its award. Assuming this to be the case, the consequences of such an interpretation are now explored. After 31st October 2019, Jammu and Kashmir no longer finds place in Part I of the First Schedule of the Constitution which lists all the states in the Union. Its name now appears in Part II of the same schedule which lists the Union Territories. Article 280(3)(a) of the Constitution requires the Finance Commission to recommend the '*distribution between the Union and States of the net proceed of taxes*'. J&K has ceased to be a state on 31st October. On what basis can the FFC treat Jammu and Kashmir as a state and allocate to it a share of the divisible pool on par with other states? None of the earlier fourteen Finance Commissions has ever made an award for any Union Territory.

Further, can similar claims of other Union Territories like Delhi and Puducherry which have been demanding from successive finance commissions that they be allocated a distinct share of the divisible pools similar to state governments be ignored? It is note worthy that the first proviso of the same clause of the J&K Act provides that the Union Territory of Ladakh will be treated on par with other Union Territories requiring its claims to be adjudicated by the Finance Commission for Union Territories. No case has been made for treating Jammu and Kashmir on a different footing. States argue that the impact of such a provision would be to significantly reduce the share of each state in the divisible pool. It is further argued that the GoI which leveraged political benefits from its decision to convert the state of Jammu & Kashmir into a Union Territory should not be allowed to pass on the financial outcomes of such a decision to states. GoI should treat the budgetary

requirements of the Union Territory of Jammu and Kashmir on par with the requirements of not only the Union Territory of Ladakh but all the other union territories as well, within the demands for grants of the Union Home Ministry. If GoI chooses to treat the Union Territory of J&K uniquely, then perhaps a prior amendment to Article 280 may be required .

FFC has already been burdened with an onerous and a challenging ToR. Some state governments have complained about its perceived inequities to the President of India. For the

reasons outlined above, these new amendments may unnecessarily complicate its task as it sets about finalising its report. Perhaps it should ignore these two amendments and confine itself to its constitutional mandate.

Acknowledgement

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Strategy of Karnataka towards achieving Sustainable Development Goals 2030 under Human Development Needs and Services

Shalini Rajneesh¹

Abstract

The SDG India Index developed by NITI Aayog in 2018, in partnership with UN India has enabled States and UTs to benchmark their progress relative to others, and identify priority areas while promoting competition among them for improving performance. This article mainly focuses on the SDG by goal-wise performance of Karnataka related to human development needs and services in comparison with India and best performing States and suggests the way forward for Karnataka towards achieving all India SDG targets set for 2030. Exploratory research approach is followed based on the recent policy literature and insights from Karnataka SDG goal committees. Karnataka is following a comprehensive holistic path with effective and innovative implementation strategies considering the multidimensional nature (social, economic and environment) of SDG goals. The government is ensuring investments across all sectors towards achieving SDGs, through scheme and budget mapping. Mainstreaming resource efficiency approach and convergence strategy in the outcome based development pathway would go a long way in achieving SDG Targets by 2030.

1. Introduction

The Millennium Development Goals (MDGs) marked a historic and effective initiative for global mobilization to achieve a set of important social priorities worldwide. The agenda of MDGs was further carried forward in a broad based and quantifiable form through Sustainable Development Goals or SDGs (2015-2030). Reinforcing India's commitment to the national development agenda and SDGs, the government has introduced and implemented several policies and action programmes for the elimination of poverty, promotion of gender and economic equality and addressing climate change. India attempts to align and map its programmes under the 'Strategy for New India @ 75' (NITI Aayog, 2018) with its commitment to the UN-SDGs, which is evident from India's national development

goals based on the motto, 'Sabka Saath, Sabka Vikas' or 'Collective efforts, Inclusive growth'. The NITI Aayog has done detailed mapping of the 17 Goals and 169 targets to Nodal Central Ministries, Centrally Sponsored Schemes and major government initiatives.

Planning, Programme Monitoring and Statistics Department of Government of Karnataka is formulating strategies for attainment of SDGs by 2030. The Department has formed the Monitoring and Coordination Committee and State level Steering Committee for formulation of effective and efficient action plans. A separate technical cell has been established and goal specific committees have been formed to provide technical support through departments and experts that contribute to the Goal as members.

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The Goal-wise Committees have appraised the State Government of the budget requirements and created an indicator-wise monitoring system with base values and targets for 2022 and 2030. A monthly review of NITI Aayog's 62 priority indicators from the SDG India Index Report of 2018 is a part of the Karnataka Development Programme (KDP) Review at the district and State level. Karnataka has been actively working towards spreading awareness about SDGs. It has prepared an SDG Calendar and posters in both, English and the regional language, Kannada, and on each of the Goals (NITI Aayog, 2019).

The State Government also advertises SDGs through short videos, jingles and public events. Modules for capacity building, officials, elected leaders and citizens as stakeholders are being prepared by Administrative Training Institute, Mysuru for localising SDGs. The State aims to train 1,35,000 officials and elected representatives in 5 years through 2915 master trainers. The State is also preparing strategies for better inclusion of the vulnerable groups in the budget allocation. The State has included strategies under SDG 10 Action Plan Report for Social Groups (SC/ ST/ OBC/ minorities) focusing on skill development (NITI Aayog, 2018 & 2019).

Karnataka, being one of the progressive states in the country, is highly sensitive to universal developmental programmes initiated by international institutions such as United Nations Development Programme (UNDP), World Bank, UN and other organisations. The state has been the front-runner in formulating action plan, vision and targets of sustainable development goals and proactive in formulation and implementation of programmes, to achieve the targets of SDGs.

The main objectives of this paper are as follow. First, explain the current position of Karnataka by

attainment of the UN-SDG Goals. Second, analyse the comparative performance of Karnataka with all India and select other states. Third, describe the goal-wise performance of Karnataka and policy initiative of Government of Karnataka towards attainment of the Goals and show a way forward for higher attainment of those goals in future. To limit the scope of the entire analyses, SDGs under human development needs and services are focused in this paper. These analyses are contributory to understanding Karnataka's performance and share policy experiences of Karnataka on attainment of SDGs which may be of relevance and applicability for other states in India.

2. Performance of Karnataka

In 2018, NITI Aayog, in partnership with UN India, developed the SDG India Index Baseline Report and an accompanying Dashboard spanning across 13 out of 17 SDGs (excluding Goals 12, 13, 14 and 17) for States and UTs. The SDGs have been clustered and categorized into various dimensions via; SDGs 1, 2, 3, 4, 5, 7 is related to achieving basic human development needs and services; SDGs 6, 11, 12, 13, 14, and 15, explicitly target environmental issues and the common drivers and cross-cutting issues essential to advance sustainable development across all dimensions are addressed in SDGs 8 to 10 and those that promote peaceful environment and inclusive societies are measured in SDGs 16 and 17. Based on this categorization, strategies for each SDG have been devised (except 17) towards achieving targets by 2030.

Further, the Index categorized States based on the score as Achiever (100), Front Runner (65-99), Performer (50-64) and Aspirant (0-49). Table 1 shows the performance of Karnataka in each SDGs by total score and rank among states. The SDG Index Score ranges between 36 and 88 for

Karnataka. Karnataka State is a 'Performer' with a score of 64. The States like Kerala, Himachal Pradesh and Tamil Nadu are considered as front runners with an aggregate score of 69, 69 and 66 respectively. Performance of Karnataka in each

SDG is presented in Table 1. It can be clearly seen from the Table 1² that we need a greater focus on Goal 5 on 'Gender Equality' and Goal 11 on 'Sustainable Cities and Communities' to move up to Performer and to Front Runner category of states.

Table 1: Performance of Karnataka in each SDG

Category	SDG Goal	Score	Rank
Front Runner (65-99)	SDG 3: Good Health and Well-being	69	5
	SDG 4: Quality Education	76	5
	SDG 7: Affordable and Clean Energy	77	5
	SDG 8: Decent Work and Economic Growth	72	11
	SDG 10: Reduced Inequalities	68	16
	SDG 15: Life on Land	88	8
	SDG 16: Peace, Justice and Strong Institutions	74	12
Performer (50-64)	SDG 1: No Poverty	52	17
	SDG 2: Zero Hunger	54	11
	SDG 6: Clean Water and Sanitation	62	14
	SDG 9: Industry, Innovation and Infrastructure	57	7
Aspirants (0-49)	SDG 5: Gender Inequality	43	6
	SDG 11: Sustainable Cities and Communities	36	16
	Karnataka (All Goals)	64	3

Source: NITI Aayog (2018)

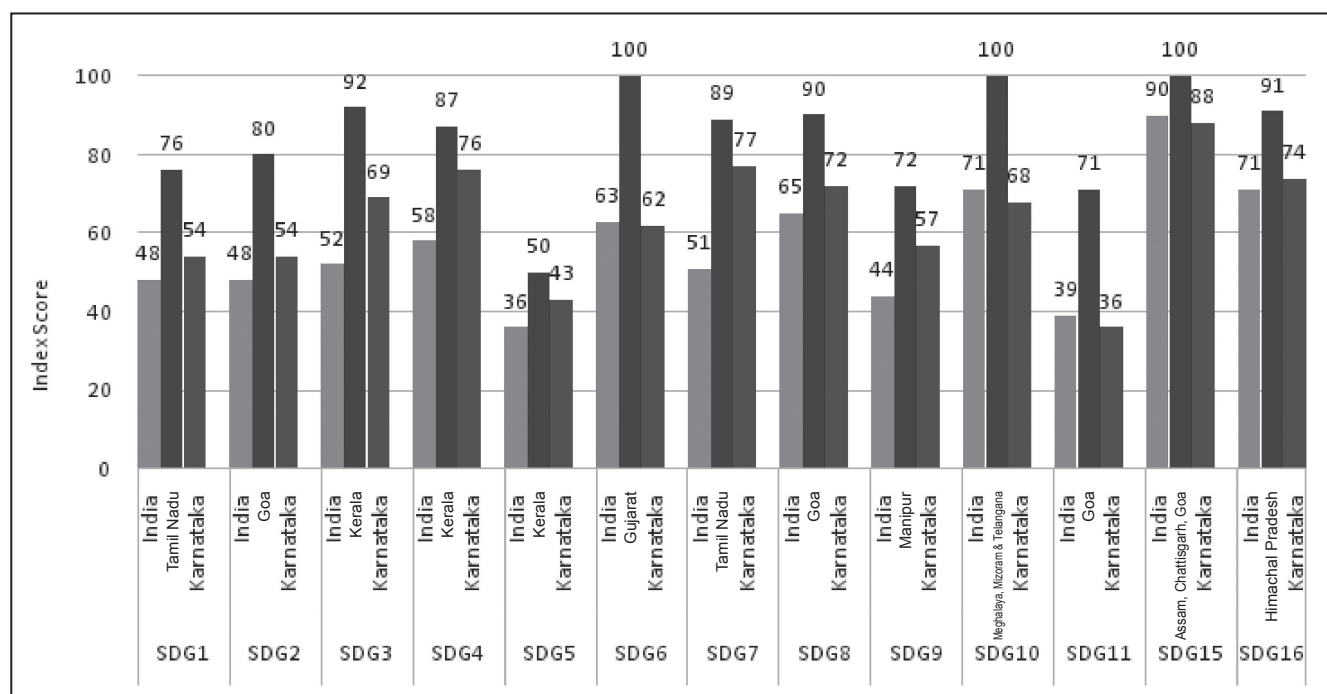
3. Comparative performance of Karnataka

Figure 1 shows the comparative performance of Karnataka with all India and best performing state by each of 13 SDGs. Karnataka's performance is higher than all India in all goals except SDG

6, SDG10, SDG 11 and SDG 15. Of the states, Kerala is a top performer in SDG 3, 4, and 5; Goa is top performer in SDG 2, 8, 11 and 15. These comparisons signify the need for policy efforts for higher comparative performance of Karnataka at all India level as well as at inter-state level.

² Methodology and data for calculations of scores and ranking of states are detailed in Chapter I of NITI Aayog (2018).

Figure 1: Goal-wise SDG India Index of Karnataka and India



Source: NITI Aayog (2018)

4. Goal-wise analysis of Karnataka's performance related to Human Development Needs and Services

This section presents comparative analyses between Karnataka and all India by the raw (or basic) performance data of each goal by its indicators. In addition, way forward is also presented for each goal. Goals related to human development needs and services are presented.

SDG 1: No Poverty

All countries in their Voluntary National Reviews have explicitly focused on the eradication of extreme poverty, since it has been a large unresolved societal challenge that results in increasing inequality including unemployment, lack of access to resources, disease, environmental degradation and exposure and vulnerability to climate change.

India, over the last two decades, has made significant advances in poverty reduction with schemes that finance social spending through governmental interventions such as *Mahatma Gandhi National Rural Employment Generation Act*, *Pradhan Mantri Jeevan Jan Dhan Yojana*, *Deendayal Antyodaya Yojana*, *Indira Gandhi National Old Age Pension Scheme*, *Indira Gandhi National Destitute Widow Pension Scheme*, *Indira Gandhi National Disabled Pension Scheme* and *Direct Benefit Transfer* of beneficiary oriented schemes among others. The index score for SDG 1 ranges between 37 and 76 for States and between 21 and 61 for UTs and the overall country score is 54. As Table 2 shows, Karnataka is a Performer with a score of 52, a wide gap from the Front runner State, Tamil Nadu leading with 72. The indicator that falls short in comparison to the India score is 'the proportion of eligible beneficiaries receiving Maternity benefits', which is at 19%. The other four indicators are in close proximity to the India scores.

Table 2: Performance of Karnataka: SDG1 on ‘No Poverty’

Indicators	Baseline Data			Score		
	Karnataka	India	Target 2030	Karnataka	India	Target 2030
Percentage of population living below National Poverty line	20.91	21.92	10.95	66	62	100
Percentage of households with any usual member covered by any health scheme or health insurance	28.1	28.7	100	26	26	100
Persons provided employment as a percentage of persons who demanded employment under MGNREGA	84.26	84.75	100	64	65	100
Proportion of the population (out of total eligible population) receiving social social protection benefits under Maternity Benefit	19.9	36.4	100	19	35	100
SDG 1 Index Score				52	54	100

Source: NITI Aayog (2018)

Way forward to SDG 1 on ‘No Poverty’:

- Proportion of the population (out of total eligible population) receiving social protection benefits under Maternity Benefit is lower for Karnataka at 19.9 (score 19) as compared to All India at 36.4 (score 35) with the target of 100% by 2030. Hence, the Health department functionaries have to gear up for better extension of maternity benefit services.
- Target-oriented anti-poverty package of programme by identifying social group or regions that experience severe poverty to be designed at a disaggregated level using Socio-Economic and Caste Census (SECC) database
- Full coverage of Below Poverty Line (BPL) card holders under health insurance, through the Ayushman Bharat – Arogya Karnataka to cover health expenditure of the poor.
- Revamping the Self Help Group (SHG) programme through convergence, skilling and marketing initiatives.

SDG 2: Zero Hunger

A direct consequence of poverty is food insecurity and the increasingly adverse impact of climate change are a challenge for achieving this goal. The key strategies to end hunger and malnutrition are resilient food production systems and sustainable agricultural practices. Towards meeting this target, the National Mission on Sustainable Agriculture (NMSA), in collaboration with other Missions under the National Action Plan on Climate Change, aims at sustaining food production through sustainable and adaptive agricultural practices.

While the country’s National Food Security Act has helped improve access by providing basic quantities of food grains to roughly 75% and 50% of the urban and rural populations respectively at affordable prices under the *Targeted Public Distribution System, Integrated Child Development Services (ICDS) and Mid-Day Meal Programme* cater to the nutritional requirement of children, pregnant and lactating mothers. Other

programmes under SDG2 include *Pradhan Mantri Matru Vandana Yojana, Antyodaya Anna Yojana, Pradhan Mantri Krishi Sinchayee Yojana, Anna Bhagya, Poushtika Karnataka Yojana and so on.*

Under this Goal, four indicators are identified that capture three of the eight SDG targets (Table 3).

All India score is at 48, while the score for top-performing States are 80 and 72 respectively. Karnataka, being a performer with the Index Score at 54, has a higher indicator value as compared to all India level (48).

Table 3: Performance of Karnataka: SDG 2 on ‘Zero Hunger’

Indicators	Baseline Data			Score		
	Karnataka	India	Target 2030	Karnataka	India	Target 2030
Ratio of rural households covered under public distribution system to rural households where monthly income of highest earning member is less than Rs.5,000	1.1	1.01	1.29	76	64	100
Percentage of children under age 5 years who are stunted	36.2	38.4	21.03	44	36	100
Percentage of pregnant women aged 15-40 yrs who are anaemic (11.0g/dl) (%)	45.4	50.3	23.57	51	40	100
Rice, wheat and coarse cereals produced annually per unit area (Kg/Ha)	2157.83	2509.22	5018.44	43	50	100
SDG 2 Index Score				54	48	100

Source: NITI Aayog (2018)

Way forward SDG 2 to ‘Zero Hunger’

- Karnataka has to improve nutritional status of pregnant women and children through innovative, demand based and participatory schemes with better coordination between Women and Child Development and Health departments. Similarly, Agriculture department has to use precision farming techniques to improve productivity and foster agro-processing with high nutrition value available locally and organise farmers through Farmer Producer Organisations (FPOs).
- Aggressive promotion of sustainable agriculture through integrated farming systems (crop & enterprise diversification), organic farming, climate-resilient crops – ‘farm-preneurs’.
- Drought proofing – watershed development, efficient resource use (micro-irrigation), promoting climate-resilient crops .
- Formation and strengthening of Farmer collectives and markets for promoting competition –Value chain development, Public-Private Partnerships and Agro-processing.
- Early and continuum care for reduction of under nutrition through ICDS platform by convergence and vigorous advocacy for first 1000 days concept of child.

- Prevention of anemia in women & children through multiple efforts such as Iron Folic Acid (IFA) supplements, fortification, diversification of the food basket, availability and access to best source of iron, vitamin 'C', and folic acid, periodic de-worming.
- Dissemination of information to address nutrition insecurity in view of the culture-specific behaviours in food habits and diet regimens through information Kiosks for general public awareness of 'Nutrition security'.
- Replication/scaling up of successful pilot projects/ Initiatives such as Karnataka Multisectoral Nutrition Project implemented in Chincholi and Devdurga Talukas in Kalyana Karnataka region; Karnataka Multi-sectoral Nutrition Project (Rural Development and Panchayat Raj Department).

SDG 3: Good Health and Well-Being

Public health is a nation's asset and the basis for achieving sustainable development. Under the National Health Mission, a broad spectrum of interventions focused on universalising primary healthcare is being implemented in India. Some of them include the *Ayushman Bharat – Pradhan Mantri Jan Aarogya Yojana, Mission Indradhanush, Integrated Disease Surveillance Programme, National Mental Health Programme,*

National Programme for Control of Blindness, National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke, Arogya Karnataka, Matru Purna among others.

The index score shows that all India score stands at 52 (refer Table 4). Kerala leads the way with a score of 92 and the Uttar Pradesh lags behind with a low score of 25. Karnataka is a forerunner with a score of 69 and shows fewer cases of maternal mortality, under five mortality and has a higher number of governmental physicians, nurses and midwives per lakh population in comparison to the national score.

The current challenge is to reduce TB to zero by 2030 through "The END TB STRATEGY" The Millennium Development Goals for Under 5 Mortality Rate has already been achieved in Karnataka. The current Under 5 Mortality Rate is 29 (SRS 2016 data), which has declined by 19 points since 2009. The current goal is to reduce Under 5 Mortality Rate from 29 to 25 and Neonatal Mortality Rate (NMR) from 18 to 12 by 2030 (GoK, 2018A). NGOs in Karnataka have contributed significantly to the improvement of the quality of school education and mass public health programmes such as polio eradication (Nava Karnataka Vision 2025).

Table 4: Performance of Karnataka: SDG 3 on 'Good Health and Well Being'

Indicators	Baseline Data			Score		
	Karnataka	India	Target 2030	Karnataka	India	Target 2030
Maternal Mortality Ratio	108	130	70	77	64	100
Under five mortality rate per 1,000 live births	32	50	11	69	42	100
Percentage of children aged fully immunized and three doses of Pentavalent	62.6	62	100	42	41	100
Annual Notification of Tuberculosis (TB) cases per 1 lakh population	123	138.33	0	76	74	100
Number of governmental physicians, nurses and midwives per 1,00,000 population	452.93	220.96	549.96	82	39	100
SDG 3 Index Score				69	52	100

Source: NITI Aayog (2018)

Way forward to SDG 3 on ‘Good Health and Well Being’

- The scope for improvement of preventive care and awareness building by promoting AYUSH, enable hand-holding and follow-up support for Village Health Sanitation and Nutrition Committees (VHSNCs) and Rogi Kalyan Samitis (RKSs).
- Rapid situation analysis to assess the public health infrastructure at all administrative levels and compare with Indian Public Health Standards (IPHA) Standards.
- Bottleneck analysis of planning and implementation processes to prioritize addressing specific gaps in the delivery of interventions.
- Coordinated, holistic implementation of different national health programmes in the field of MCH, FP, Nutrition, RCH and Adolescent Health ensuring partnerships with all stakeholders with a focus on a community-based epidemiological approach.
- For children less than 6 months, intensify community-based management of acute malnutrition (CMAM) with screening, treatment of illness.
- Documentation of the life course or lifecycle-based, lifestage-specific, age-appropriate critical best practices across interventions and target populations.
- Strengthen and transform Civil Registration and Vital Statistics (CRVS) systems, use decentralized, disaggregated data to achieve universal health coverage.
- Streamline existing national/state/district-level health and nutrition surveys to improve disaggregated tracking of goals and objectives, and use the results for monitoring, evaluation and decision-making .
- Safety impact assessments of transport and land-use plans, and safety-awareness, providing visible, crash-protective, “smart” vehicles, Setting and securing compliance with key road safety rules, delivering post-crash care.

SDG 4: Quality Education

Ensuring inclusive and equitable quality education, SDG 4, continues to be a central development priority with emphasis on the need to improve access to quality education for low-income and rural students and with technological advancements to close the ‘digital gap’ by ensuring all students are computer literate. It is a shift from the narrow focus of universal primary education in the MDGs, to expand opportunities across all the phases of education from pre-primary to adult education. From this perspective, GOI moved to a right-based education framework by amending the Constitution to include the Right to Education Act in 2009. Some of the programmes by the GOI are *Samagra Shiksha, Digital Initiatives – Shala Kosh, Shagun, Shaala Saarthi, Kasturba Gandhi Balika Vidyalayas, Rashtriya Madhyamik Shiksha Abhiyan, Free Laptop Scheme for BPL Students, Vidhyasiri (Food and Accommodation for OBC student)* among others.

To measure India’s performance towards Quality Education, seven national level indicators have been identified that capture 2 of 10 SDG targets. All India score stands at 58. Karnataka is a performer with a score of 76 and the State has achieved above national scores in six of the seven indicators, but the average annual dropout rate at secondary level is 26.18%, higher than all India at 17.06% (Table 5).

Table 5: Performance of Karnataka: SDG 4 on ‘Quality Education’

Indicators	Baseline Data			Score		
	Karnataka	India	Target 2030	Karnataka	India	Target 2030
Adjusted Net Enrolment Ratio at Elementary (Class 1-8) and Secondary (Class 9-10) school (%)	85.54	75.83	100	73	56	100
Percentage correct responses on Learning Outcomes in Language, Mathematics and EVS (Environmental Studies) for Class 5 students	68.67	54.69	67.89	100	50	100
Percentage correct responses on Learning Outcomes in Language, Mathematics, Science and Social Science for Class 8 students	54.5	44.58	57.17	88	45	100
Percentage of children in the age group of 6-13 are out of school	1.49	2.97	0.28	79	54	100
Average annual drop-out rate at secondary level (%)	26.18	17.06	10	27	68	100
Percentage of school teachers professional	95.85	81.15	100	94	73	100
Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30	76.05	70.43	100	69	62	100
SDG 4 Index Score				76	58	100

Source: NITI Aayog (2018)

Way forward to SDG 4 on ‘Quality Education’

- With one of the strongest bases of education and research institutions in India, Karnataka aspires to be a global education and research hub by 2025 (GoK, 2018B). This would not be possible without ensuring arrest of dropouts at secondary level and career guidance to take them to higher education. Vocationalisation of education has to be thrust area in this sector’s strategy.
- Regulate management of the Village Education Register stipulated by the Right to Education Act for 100% enrolment.
- Computer education for all, redevelop or transform the pedagogy to be project or inquiry-based learning to inculcate the 21st-century skills of communication, creative thinking, collaboration, problem-solving, digital literacy, integrate life-skills and vocational training in high school.
- Regulation of private unaided schools for training status and aided schools for PTR; Periodical (once in 5 years) clearance of National (Teaching) Eligibility Test by all teachers, mandatory upskilling for in-service teachers.
- Corporate Social Responsibility funding in the education sector and additional allocation should be provided for ensuring learning of 3Rs through *Nali-Kali*.

- A new scheme should be implemented with the focus on career shadowing for higher secondary schools, increase awareness about career options in streams like Arts and Commerce which has comparatively less enrolment.

SDG 5: Gender Equality

This goal refers to a range of challenges, such as discrimination of women, violence against women, reproductive health, ownership rights and technology. Despite notable progress especially in enrolling girls in primary education, gender equality in many other domains still remains a distant target. Women are under represented in political life and leadership roles, get unequal pay for equal work and experience higher rates of harassment and gender-based violence.

India has enacted several legislations, undertaken targeted schemes and programmes such as Protection of Women from Domestic Violence Act (2005); Sexual Harassment of Women in Workplace (2013), Gender Budget Statement, *Beti Bachao, Beti Padhao*, *Sukanya Samridhi Yojana*, *MUDRA Yojana*, *Pradhan Mantri Ujjwala Yojana*. The maternity Benefits Bill was cleared to increase access to employment. Other technology driven initiatives include *Mahila E-haat*, *Stand up India*, *Mahila Shakti Kendra*, *Women Transforming India*, *One Stop Centres* to strengthen social protection and security. State initiatives include *Bharosa* by the Hyderabad Police and *Himmat*, safety solutions for women by the Delhi Police Emergency Services. *Bhagyalakshmi*, *Swadhar Gruha*, *One Stop Center*, *Women Helpline* and *Nirbhaya*, *Stree Shakthi* and *Santhwana* are important schemes implemented in Karnataka.

Table 6: Performance of Karnataka: SDG 5 on ‘Gender Equality’

Indicators	Baseline Data			Score		
	Karnataka	India	Target 2030	Karnataka	India	Target 2030
Sex Ratio at Birth (female per 1000 male)	935	898	954	84	54	100
Average female to male ratio of average wages/salaries received per day by regular wage/salaried employees for rural and urban	0.7	0.7	1	43	44	100
Percentage of ever married women aged 15-49 who have ever experienced spousal violence	24.4	33.3	0	55	39	100
Percentage of seats won by women in the general elections to state legislative assembly*	2.68	8.7	50	5	17	100
Ratio of female labour force participation rate to male labour force participation rate	0.42	0.32	1	34	21	100
Percentage of women in the age group of 15-49 years using modern methods of family planning	51.8	53.5	100	37	39	100
SDG 5 Index Score				43	36	100

Source: NITI Aayog (2018)

In terms of performance, India has identified six national indicators that capture four of the nine SDG targets outlined under SDG 5. Table 6 shows the national score stands at 36. Top performing States are Kerala and Sikkim with a score of 50, indicating no front runner States. Karnataka is an aspirant state with a score of 43. Fewer women (2.68%) in Karnataka have won seats in the general elections to state legislative assembly compared to India (8.70%), while the target of 50% is still a distant goal. However, in terms of sex ratio at birth (935) and percentage of women experiencing spousal violence (24.40%), Karnataka is positively in a better position than indicated by the overall country data (898 and 33.3%).

Way forward for SDG 5 on 'Gender Equality'

- While Panchayat Raj Institutions have achieved more than 33% women elected representatives, legislative strength has to be improved either through legal mandate or proactive initiatives by political parties while selecting and grooming women candidates.
- Health department has to enhance awareness about modern methods of family planning.
- Expansion of the coverage of *Beti Bachao Beti Padhao* scheme, effective implementation and monitoring of PC&PNDT Act (Pre-Conception and Pre-Natal Diagnostic Techniques), inspections at all scanning centres once in three months by District Inspection and Monitoring Committee.
- Increasing women's work participation and equal distribution of work in the care economy. Rights to resources to be strengthened and expanded: That is, strengthen SHGs, cooperatives, promote schemes that encourage entrepreneurship and provide infrastructure, support facilities (credit, legal) for women, and expand coverage of schemes like *Udyogini*.
- Support facilities like *Shishu Vihars*, crèches, old age care to help women, strengthen *Anganwadi* Centres to take care of children in 0-3 age group, increase number of working women's hostels.
- Education and skill development to include modules on gender equality in school curriculum, skill development programmes for girls, vocational training, skill up-gradation, capacity building for women in e-commerce, increasing the provision for women from 33 % to 50% under *Chief Minister's Koushalya Karnataka Yojana* skill training and placement, Skill Development Entrepreneurship and Livelihood to identify gender-friendly courses.
- "LaQshya" aims at improving the intra-partum and post-partum services, 100% tracking of all pregnant women and ensuring high quality in antenatal care is planned with the integration of IT services of Women and Child Department, and Health department.
- Civil society institutions (SHGs, NGOs, youth, civil society) to be included in monitoring the progress and to create a participatory and inclusive structure of accountability towards women's safety and empowerment.
- Promoting entrepreneurship among women-focused schemes in animal husbandry, dairy and household industries through expanding coverage of *Udyogini* scheme.
- Adopt preventive strategies to eliminate violence by changing the mindsets and psychology of men; Increasing women police satiations from 35 to 60 with focus on high incidence areas; Increasing Women police force; Quick disposal of cases by establishing special courts; Train police officials and provide advocates to improve conviction rate.

- Preparation of Gender report card providing the gender data base in all the sectors and updating it on annual basis.
- Women's access to land rights should be ensured through property and inheritance rights; direct government transfers (for poverty alleviation, resettlement, rehabilitation etc); and credit support to poor women to purchase or lease land from the market.

Initiatives taken by the centre include *National Solar Mission, Green Energy Corridor, Off-Grid and Decentralized Solar PV Applications Programme, National Biogas and Manure Management Programme, Pradhan Mantri Sahaj Bijli Har Ghar Yojana – Saubhagya, LPG Subsidy under PAHAL, Deen Dayal Upadhyaya Gram Jyoti Yojana and Pradhan Mantri Ujjwala Yojana. Anila Bhagya, Niranthara Jyothi Yojane and Surya Raitha Scheme*

SDG 7: Affordable and Clean Energy

This goal seeks to substantially increase contribution of renewable energy to global energy supply, as well as double the rate of improvement in efficiency of energy. Measures include diversifying energy sources, developing renewable energy sources, improving energy efficiency, awareness-raising activities for the public on sustainable energy consumption, and connecting more households to the energy grid in rural areas.

To measure India's performance towards achieving Goal 7, three national level indicators have been identified that capture 2 of 5 SDG targets. The overall score for the country is 51. Top performing states are Tamil Nadu with a score of 89 and Mizoram with a score of 78. Karnataka was among the top three states with a score of 77. The State has a higher percentage of households using clean cooking fuel (54.70%) and its target renewable share of installed generating capacity of 40 % is higher than the country indicator (17.51%) (Table 7).

Table 7: Performance of Karnataka: SDG 7 on 'Affordable and Clean Energy'

Indicators	Baseline Data			Score		
	Karnataka	India	Target 2030	Karnataka	India	Target 2030
Percentage of households electrified	96.45	94.57	100	85	78	100
Percentage of households using Clean Cooking Fuel	54.7	43.8	100	45	32	100
Renewable share of installed generating capacity (%)	40.77	17.51	40	100	43	100
SDG 7 Index Score				77	51	100

Source: NITI Aayog (2018)

Way forward to SDG 7 on 'Affordable and Clean Energy'

- The nomination of Karnataka Power Transmission Corporation Limited (KPTCL) as a nodal agency to plan and monitor the SDG 7.
- Additional quality-rated distribution transformers to reduce the length to ensure optimum efficiency.
- Periodic plans for all Electricity Supplying Companies (ESCOMs) to reinforce their distribution infrastructure in a coordinated manner as grid modernization and up-rating of the distribution network for the absorption of power will involve significant capital infusion.
- Clear the balance sheet of state power utilities by rate-design reforms, plugging revenue

leakage, squaring cumulative losses, and issue of bonds.

- The utility business model should transform from 'generation sales' to 'mediator for sales' to ensure sustenance in the long-term. They should keep the prosumers connected to the distribution networks to transact their surplus energy.
- Refrain from sanctioning ad hoc projects just before the end of the financial year as the only progress that is possible is calling for tenders, leaving the project in limbo by the end of each financial year.
- Re-assess cross-subsidies by cost-effective tariffs and regulatory innovations as electricity is evolving from a public utility model to a product/commodity model.
- Universal application of IT solutions such as SCADA to augment collection and collation of data and reduce manual interventions to ensure maximum uninterrupted power supply
- Change management programmes of local power distribution as well as reactivation of the franchisee system by involving local youths and they could be linked to the Skill India Mission for building their capacities on technical and managerial aspects.
- The need to make cooking gas/fuel at a reasonable cost to the deserving strata of society, not covered by the *UJJWALA* scheme with close coordination with oil companies and by providing incentives including tax concessions, as appropriate.
- Regulation in usage of farm power by individuals through limiting the number of wells per unit area and varying subsidy rates
- Increase testing labs for solar panels as well as its manufacturing capacity; encourage innovation labs such as YES SCALE (agritech, cleantech and smart cities); deployment of rooftop solutions for rationalization of the costs associated with supplying electricity to subsidized consumer categories.
- Future utility companies can promote initiatives like internet-of-things, blockchain, machine learning, use of mobile intelligence, mini-grids and microgrids as well as earn revenues from electric vehicle charging infrastructure.
- To ensure sustainable uptake of these technological innovations, there is a need for coherence between institutions and technological processes to ensure satisfactory functioning of electricity infrastructure.

5. Concluding remarks

The Government of Karnataka has been committed to basic human development needs and services through securing social, economic and political development. In line with its development models, the government has launched several successful policies and programmes like *Krishi Bhagya, Anna Bhagya, Ksheera Bhagya, Indira Canteens, Runamukta Bhagya, Vidyasiri, Nirantara Jyothi Yojana, Basava Housing Scheme, Arogya Bhagya Scheme, Citizen Service Centres (Bangalore One and Karnataka One), Unified Market Platform, Mobileone (multi mode mobile governance platform), Pratibimba (track and measure departmental performance on programmes/projects), policies for industries such as IT, BT, Aerospace, startups, FPOs, animations and visual effects, semi conductors and electric vehical manufacturing, The Karnataka Sakala Services Act, 2011 and (Amendment) Act, 2014 (Karnataka State Legislature to provide guarantee of services to citizens in the State of Karnataka within the stipulated time limit and for matters*

connected therewith and incidental thereto) (GoK, 2018A). It is to note that Public Affairs Index (PAI-2017) has ranked Karnataka second in transparency and accountability and third in governance based on 10 parameters comprising 25 subjects and 68 development indicators (GoK, 2018B).

Strategies highlighted by the respective SDG Committees in Karnataka aim to reduce inconsistencies between the measurements that determine the goal's operationalization and attainment with respect to goals categorised under basic human development needs and services. For which, the role of reliable and timely data for targeted policies with sensitivity to diverse societal values are key factors to move forward in achieving SDGs by 2030. Karnataka is following a comprehensive holistic path with effective implementation strategies considering the multidimensional nature (Social, Economic and Environment) of SDG goals. The government is ensuring adequate investments across sectors to target achieving SDGs through scheme mapping. Resource use efficiency approach and governance strategy form the base for development pathway for achieving SDGs and for in developing strategies and action plans for achieving SDG targets.

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References

- Franco, I. B., Chatterji, T., Derbyshire, E., & Tracey, J. (2019). *Actioning the Global Goals for Local Impact*, Singapore: Springer Nature Singapore Pte Ltd.
- GoK. (2018A). *Karnataka Economic Survey 2017-18*. Planning, Programme Monitoring and Statistics Department, MS Building, Bengaluru.
- GoK. (2018B). *Nava Karnataka Vision 2025*. Vision Document Project Office. Bengaluru.
- GoK. (2019). *Sustainable Development Goals*. Planning, Programme Monitoring and Statistics Department, MS Building, Bengaluru. Retrieved from <https://www.planning.karnataka.gov.in/info2/Human%20Development%20Division/Sustainable%20Development%20Goals/en>
- Grimshaw, D., & Kühn, S. (2019). Sustainable Development Goal 8. Is the World Moving towards more inclusive Economic Growth and decent work?, *World Employment and Social Outlook, 2019(1)*, 57-72.
- NITI Aayog. (2017). *India Action Plan. Three-year Action Agenda*. New Delhi, India. Retrieved from <https://niti.gov.in/writereaddata/files/coop/IndiaActionPlan.pdf>
- NITI Aayog. (2018). Meeting with States and UTs on improving implementation of SDGs. Retrieved from <https://niti.gov.in/writereaddata/files/NITI-Aayog-SDG-Presentation-to-States.pdf>
- NITI Aayog. (2018). *SDG India Index Baseline Report 2018*. New Delhi, India. Retrieved from <https://niti.gov.in/content/sdg-india-index-baseline-report-2018>
- NITI Aayog.(2019).*Localising SDGs*. New Delhi, India. Retrieved from https://www.niti.gov.in/niti/writereaddata/files/document_publication/LSDGs_July_8_Web.pdf
- UN.(2019). *UN Sustainable Development Goals Report 2019*. Retrieved from <https://unstats.un.org/sdgs/report/2019/The-Sustainable-Development-Goals-Report-2019.pdf>

What do socio-economic characteristics and determinants imply for Female Labour Force Participation Rate in Karnataka?

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Abstract

The objective of the paper is to analyse the socio-economic status and determinants of female labour force participation in Karnataka by three types of employment: self-employment, regular salaried/wage employment and casual employment. Determinants are estimated by the standard Multinomial Probit Regression Model. Among the female labour force, a large number is engaged as helpers in household enterprises (unpaid family workers) and casual workers in non-public works and within 'not in labour force' category. Females engaged in domestic duties account for the highest share, both in rural and urban Karnataka, implying that it is essential to recognise the unpaid domestic work in this context. We find a U-shape relationship between levels of education and female labour force participation in Karnataka. Moreover, females with vocational training (formal or informal) are more likely to participate both in self-employment and wage (regular and casual) employment. Besides promoting skill through technical and vocational education, creation of jobs through enhancing capital formation is equally important for enhancing female labour force participation.

1. Introduction

Invariably low female labour force participation, as compared to male, observed across different countries the world over, has compelled many governments to direct their efforts towards enhancing female labour force participation as one of their priority issues. In fact, one of the targets fixed under the Sustainable Development Goal (SDG)-8 is achieving full, productive and decent employment for all women and men. The issue assumes a greater importance in the context of a developing country like India with a large pool of working-age population constituting the present stage of 'demographic dividend', coupled with the fact that the presence of females in the total labour force is substantially low, as compared to males, and as evidenced by the existing literature.

Female labour force participation apparently varies across countries. For instance, only one-third of working-age women are part of the labour force in the Middle East, North Africa and South Asian countries, while their participation amounts to two-thirds of the overall population in East Asia and Sub-Saharan Africa (Verick, 2014). A number of studies (such as, Goldin, 1994; Mammen and Paxson, 2000; Fatima and Sultana, 2009; Tam, 2011; Gaddis and Klasen, 2014; and Chaudhary and Verick, 2014) have tried to establish a pattern of relationship between female labour force participation and the countries' level of development through a 'U shaped' hypothesis. For example, Goldin (1994) examined the impact of GDP per capita on the share of women (45 to 59 years old) in the labour force, using United Nations

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WSTAT database and based on a regression analysis for 82 countries. Moreover, Tam (2011) examined a 'U shaped' hypothesis by using a panel data for 130 countries over 1950-1980. However, India does not fit in 'U shaped' curve and appears as a major outlier (Verick, 2014).

Although the participation of women in the labour force shows a significant increase across the globe (Afridi et al., 2017), thus reducing the gender gap in the labour force participation by 6% from 1980 to 2009 (World Bank, 2011), the situation is completely reverse in the Indian context with only 32.6% of India's females being engaged in the labour force (Afridi et al., 2017). In fact, it has been observed by Mehrotra and Parida (2017) that there is a sharp decline in the female labour force participation rate (LFPR) over the last three decades for low-income and developing countries, especially India.

Studies have identified certain factors, such as, educational attainment, women's reproductive role (Sudarshan and Bhattacharya, 2009) or fertility rates (Reddy, 1979), social norms (Verick, 2014), marriage-migration (Premi, 1980), access to childcare, etc. as being responsible for a decline in the female labour force participation rate. It has been found that, women concentrate more on domestic duties and give up their jobs after marriage (Sudarshan and Bhattacharya, 2009), while Fletcher (2012) points out that society's expectations of women as 'caregivers and caretakers' of the household lead to a lower participation of women in work place. Besides the above supply side barriers, a number of demand side barriers, like legal laws, social norms, and economic constraints also play an important role in determining female participation in the labour force. In particular, Indian women have to face many governing laws and rules while entering into some particular jobs, which are not suitable

for them and as a result, those are mostly offered to men (Fletcher, 2012), resulting in gender discrimination in the job market with a further declining female LFPR.

Looking at the trends in female LFPR, it has been found that this rate varies across states within India. A study by Ghosh and Mukhopadhyay (1984) has shown that the northern states like Haryana, Uttar Pradesh and Punjab exhibit low female labour force participation rates, while southern states like Tamil Nadu and Kerala display higher female labour force participation rates. Moreover, participation of females also varies across different types of employment. For instance, a study by Chandrashekhar and Ghosh (2007) found a declining rate of female casual workers and a comparatively increasing rate of regular and self-employed female workers. However, these casual workers are mostly rural females engaged in low-paying agricultural work (Sharma and Saha, 2015). Interestingly, studies have shown that female participation in the workforce is more for poorer households than for those above the poverty line. Data also indicates that women participate in the job market mainly due to poverty and thus it is 'need-based participation' or forced participation (Sundaram and Tendulkar, 2004). Hence, poverty seems to be an important cause behind female labour force participation in the low-profile jobs (Sudarshan and Bhattacharya, 2009).

States apart, the rate of female participation varies across different sectors in India as well. It has been documented by Binswanger-Mkhize (2013) and Himanshu et. al. (2011) that among the rural workers, females are more likely to engage in the primary sector as compared to the other non-agricultural sectors, thus pointing to the concept of feminisation in the agricultural labour force. In sharp contrast, Haghghat (2002) has shown that the change in female share of employment

is negative for agriculture, flat for industry and positive for service sector. The data from NSSO 68th round (NSSO, 2014) shows a significant increase in the proportion of rural female workers engaged in 'construction' sector, while the proportion of female workers in the urban areas engaged in sectors like 'other services' is highest at 40%, followed by 'manufacturing' (29 per cent), 'trade, hotel and restaurant' (13 per cent), 'agriculture' (11 per cent) and 'transport storage & communication' (2 per cent). Again, female labour force participation is strongly associated with the labour-intensive production sectors in export-oriented manufacturing (Kucera and Tejani, 2014).

What is evident from the above discussion is that while a large number of studies have discussed the issue of female workforce participation, both at the national and international levels, very few studies have attempted to deal with this issue at the state level, specifically in Karnataka. Therefore, the objective of this paper is to examine the status of female labour force participation in Karnataka by diversity of socio-economic characteristics to highlight the heterogeneity in composition of female labour force and their participation rates. In addition, this paper aims to identify and estimate the determinants of female participation by self-employment, regular salaried/wage employment and casual employment, based on a Multinomial Probit Regression Model. These analyses provide with insights into the diversity, heterogeneity and determinants of female labour force rates by their socio-economic status and contribute for design parameters of an employment policy through promotion of a higher female labour force participation in Karnataka economy.

Rest of this paper is organised as follows. Section-2 presents a descriptive account of the

present status of female labour force participation rate in Karnataka. Determinants of female participation by self-employment, regular salaried/wage employment and casual employment have been identified in Section-3. Section-4 is the conclusion.

2. Status of Female Labour Force Participation Rate

This section describes the status of female labour force participation rate in Karnataka and brings out the severity of the problems associated with it, using 68th Round National Sample Survey (NSS) data on employment-unemployment situation in India for the year 2011-12. The above survey data includes large sample individuals' characteristics, apart from accounting for a detailed employment/unemployment status of individuals. Most importantly, it provides a multiplier which can be used in the construction of population figures based on sample characteristics. We have extracted the data for Karnataka from the NSS unit level data and also restricted the sample to the age group of 15 to 59 years for our analysis. To begin with, Usual Status (adjusted) method has been considered for measuring employment and unemployment i.e., the magnitude of persons employed for relatively longer periods during the reference period of 365 days, keeping in view both their principal and subsidiary work status. It is also important to note that, while the analysis has been conducted for the state of Karnataka, our analysis starts by exploring the female labour force participation vis-à-vis the all India average. Table-1 presents the comparative analysis of labour force participation rate by gender for Karnataka and all India.

Table-1: Comparison of labour force participation rate by gender between Karnataka and all India average.

Activities	Karnataka		India	
	Male	Female	Male	Female
Self-employed: own account worker	27.08	5.31	28.88	6.23
Self-employed: employer	1.96	0.13	1.26	0.1
Helper in household enterprises (unpaid family workers)	9.47	10.18	9.28	11.62
Regular salaried/wage employee	20.65	6.94	17.17	4.33
Casual wage labour: public works	0.02	0.01	0.66	1.04
Casual wage: other types of work	22.77	11.81	23.63	8.96
Unemployed	1.36	0.53	1.86	0.83
Labour force	83.31	34.91	82.74	33.11
Attending educational institution	14.79	10.84	15.11	10.89
Attending domestic duties only	0.11	40.91	0.17	30.64
Attending domestic duties and also engaged in free collection of goods, sewing, tailoring and weaving etc. for household use	0.05	11.92	0.18	23.91
Rentiers, pensioners, remittance recipients, etc.	0.25	0.34	0.38	0.43
Not able to work due to disability	1.21	0.78	0.79	0.54
Others (including begging, prostitution, etc.)	0.28	0.29	0.64	0.47
Not in labour force	16.69	65.08	17.27	66.88
Total	100	100	100	100

Source: Authors' estimation based on unit level data in 68th Round National Sample Survey on employment-unemployment situation in India (2011-12).

As per the NSSO, labour force participation rate is defined by the percentage share of those who were either 'working' (or employed) or 'seeking or available for work' (or unemployed) out of the total number of population during the reference period. Since our entire analysis is restricted to the age group 15 to 59 years, we have measured the labour force participation rate out of the total working-age population only. Table-1 depicts that 82.74 percent of males and 33.11 percent of females are in the labour force at the all India level, showing a wide-disparity between males and females in terms of their respective labour force participation rates. The picture is more or less the same for Karnataka with a male labour force participation rate of 83.31 and a female labour force participation rate of 34.91. Among

the labour force, larger percentages of females are engaged as helpers in household enterprises (unpaid family workers) and casual workers in non-public works. Within the 'not in labour force' category, females engaged in domestic duties only account for the highest share (40.91), followed by those attending domestic duties along with collection of free goods, sewing, tailoring and weaving etc. for their household use. More interestingly, a substantial proportion of females (10.84) are attending educational institutions.

Since the labour force participation may vary by rural and urban classification, the following analysis provides an estimation of the labour force participation rate of males and females by rural-urban divide in Karnataka, as presented in Table-2.

Table-2: Comparison of labour force participation rate between male and female by rural-urban areas in Karnataka.

Activities	Male		Female	
	Rural	Urban	Rural	Urban
Self-employed: own account worker	29.97	22.31	6.13	3.89
Self-employed: employer	0.92	3.67	0.17	0.06
Helper in household enterprises (unpaid family workers)	11.29	6.46	14.24	3.1
Regular salaried/wage employee	12.16	34.66	3.53	12.89
Casual wage labour: public works	0.01	0.03	0.01	0
Casual wage: other types of work	29.21	12.16	16.52	3.61
Unemployed	0.93	2.08	0.19	1.12
Labour force	84.49	81.37	40.79	24.67
Attending educational institution	13.74	16.53	10.31	11.77
Attending domestic duties only	0.08	0.15	32.88	54.92
Attending domestic duties and also engaged in free collection of goods, sewing, tailoring and weaving etc. for household use	0.07	0	14.82	6.87
Rentiers, pensioners, remittance recipients, etc.	0.14	0.44	0.17	0.63
Not able to work due to disability	1.37	0.93	0.7	0.92
Others (including begging, prostitution, etc.)	0.11	0.57	0.33	0.23
Not in labour force	15.51	18.62	59.21	75.34
Total	100	100	100	100

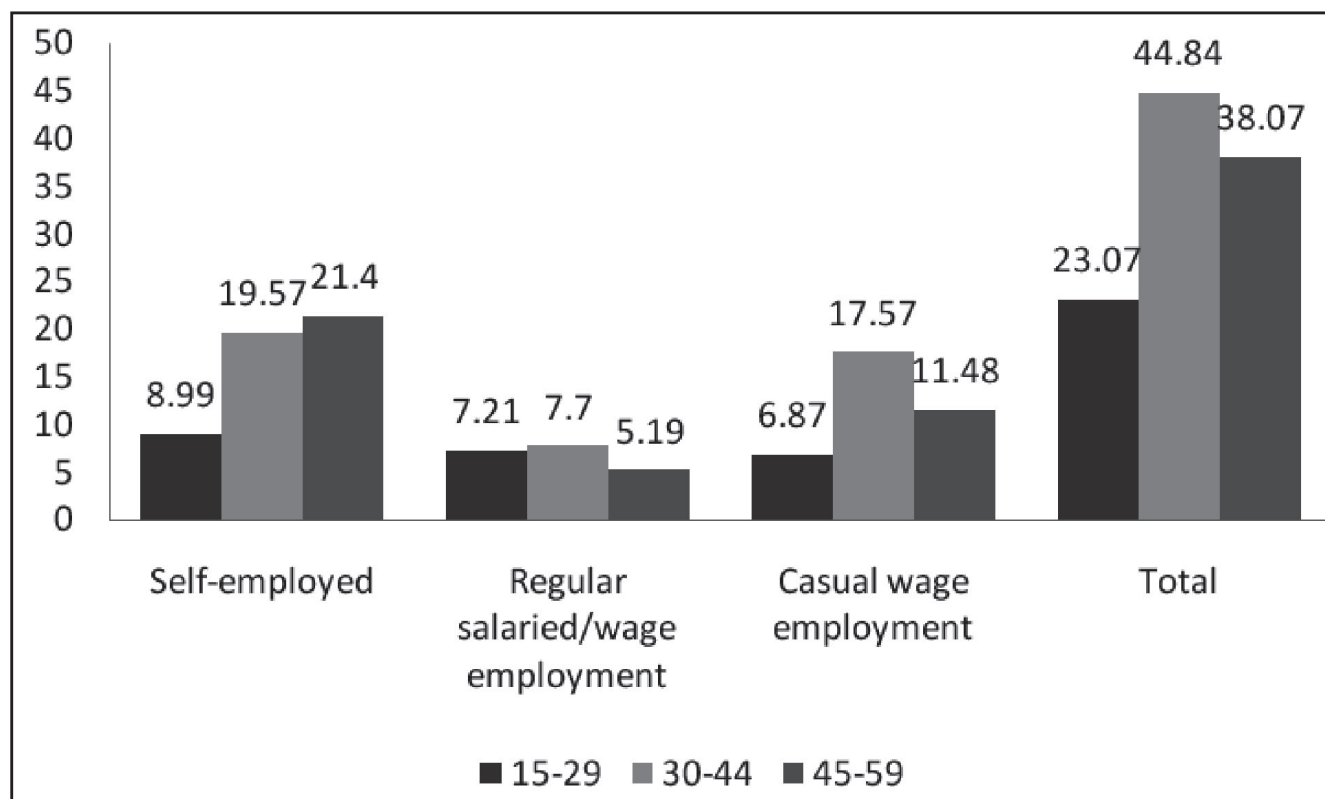
Source: Authors' estimation based on unit level data in 68th Round National Sample Survey on employment-unemployment situation in India (2011-12).

Table-2 reveals that though there is no remarkable difference in the male labour force participation rates between rural and urban areas in Karnataka. However, a notable difference exists in terms of female labour force participation. For instance, 40.79 percent of females are included in the labour force in rural areas, whereas 24.67 percent females are included in the labour force in urban areas. Rural areas account for a higher female labour force participation mainly because of the fact that a substantial proportion of females is engaged as helpers in household enterprises (unpaid family workers) and casual workers. At

the same time, females working as regular salaried/wage employees in urban areas outnumber those in rural areas.

Further, within 'Not in labour force' category, a substantial proportion of females is engaged in domestic duties only, followed by those engaged in domestic duties along with collection of free goods, sewing, tailoring and weaving etc., both in rural and urban areas. In fact, the percentage share of females attending educational institutions is also much lower than males, both in rural and urban areas.

Figure-1: Age group-wise female labour force participation rates in regular employment, casual employment and self-employment in Karnataka

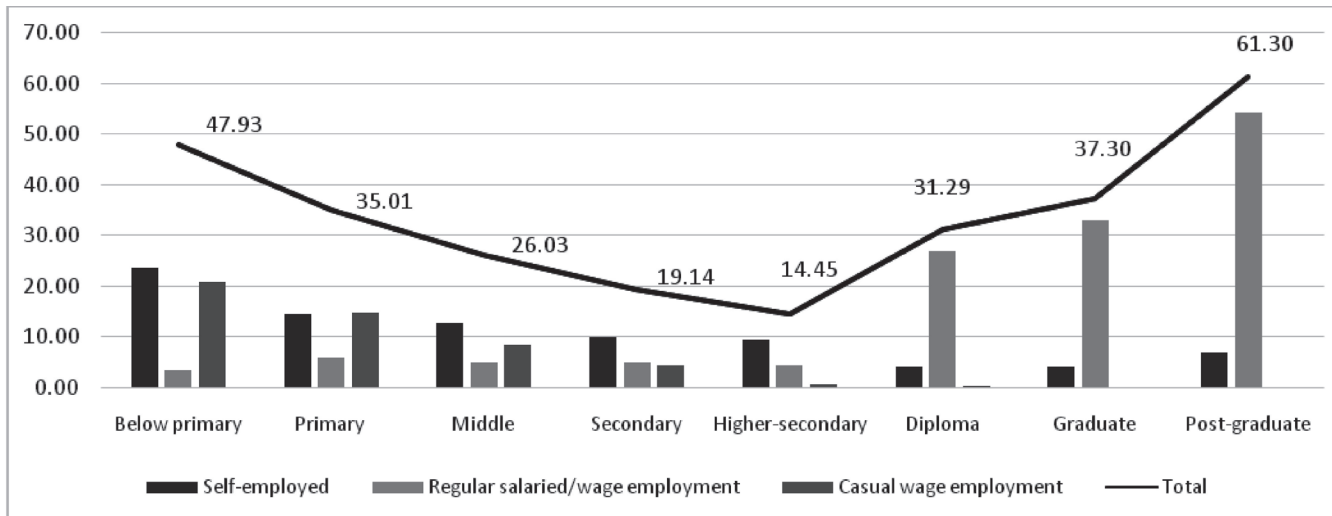


Source: Authors' estimation based on unit level data in 68th Round National Sample Survey on employment-unemployment situation in India (2011-12).

Figure-1 presents female labour force participation rates in regular employment, casual employment and self-employment in Karnataka by different age groups. The Y axis shows the participation rate (%) in this figure as well as in all the figures in this paper. Figure-1 shows that labour force participation among the young age group females (15-29 years) is much lower than older age groups (30-44 and 45-59 years). Although there is not much difference in regular salaried/wage employment across age groups, a substantial difference is evident for self-employment or casual wage employment. The possible reason could be, as Bairagya (2018) identifies, with an increase in age, people generally tend to shift towards permanent settlement either by finding a job or working as own account workers or employers in household enterprises i.e., as self-employed.

Moreover, given the fact that education and skill have an important role to play in the labour market, it is important to estimate the female labour force participation rates across different levels of education in Karnataka. Further, skill can be identified both in terms of general education and vocational training. It is, in this context, important to examine whether the educated workforce majorly engages in regular jobs or casual works or self-employment. A distribution of the workforce participation rates in regular jobs, casual works and self-employment by different educational categories is presented in Figure-2.

Figure-2: Female labour force participation rates in regular employment, casual employment and self-employment by levels of education in Karnataka



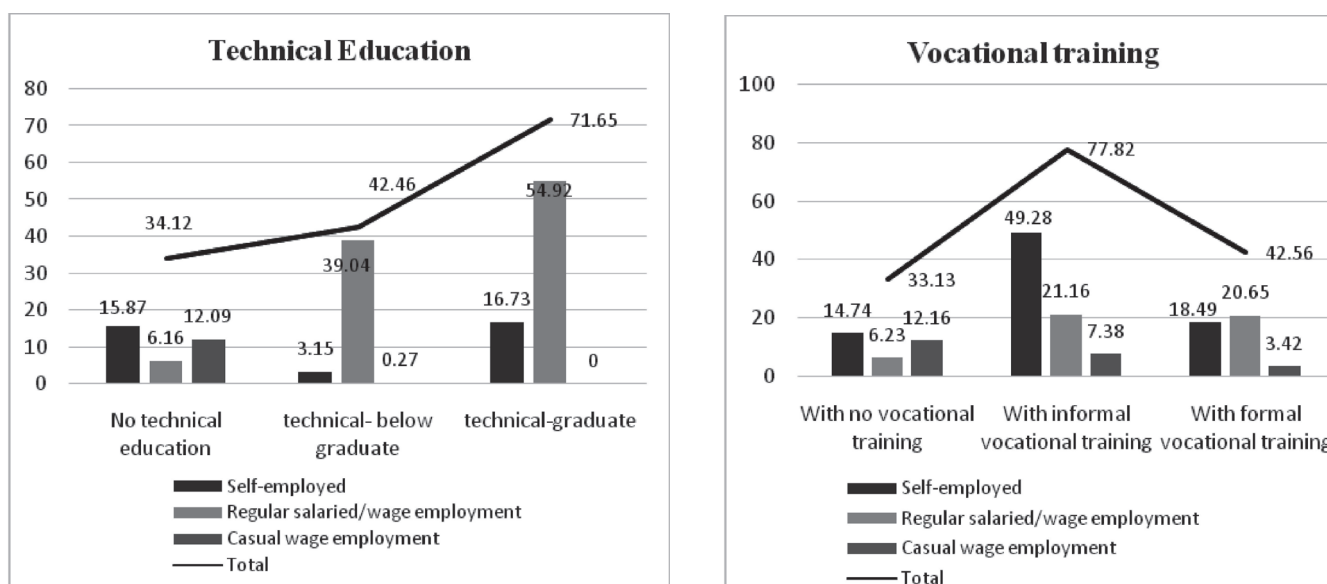
Source: Authors' estimation based on unit level data in 68th Round National Sample Survey on employment-unemployment situation in India (2011-12).

Figure-2 shows an important U-shape relationship between levels of education and female labour force participation in Karnataka. At the initial levels of education, female participation in the labour force is higher, whereas, it comes down at the middle educational level before increasing again at higher levels of education. The reasons for a U-shape relationship between levels of education and female labour force participation in Karnataka can be better understood by separating the total female labour force participation rate by participation rates in self-employment, regular salaried/wage employment and casual wage employment. Precisely, the labour force participation rate in regular employment has increased with an increase in educational level. Even regular employment after higher secondary education has increased at a much higher rate as compared to the previous educational levels. However, both self-employment and casual employment show similar types of declining trends with an increase in the educational levels. Females with below-primary educational

attainment account for the highest participation rate both in respect of self-employment and casual wage employment, before witnessing a significant decline with an increase in the educational levels.

Yet, it is interesting to note that Government of India has shown in recent years a keen interest in promoting skill development among the labour force through technical and vocational training, so as to facilitate a ready access to the job market. It would, therefore, be interesting to take a look at the present status of female labour force participation by different types of technical education and vocational training in Karnataka, as presented in Figure-3.

Figure-3: Female labour force participation rate by types of technical education and vocational training in Karnataka



Source: Authors' estimation based on unit level data in 68th Round National Sample Survey on employment-unemployment situation in India (2011-12).

Figure-3 shows that technically-educated females, both below graduate and above graduate, account for a higher share in regular salaried jobs vis-à-vis those with no technical education. Even the labour force participation rate among females with technical education-graduate and above- is 71.65, whereas, it is 42.46 for females with diploma or certificate (below graduate level) holders.

Vocational training can be formal as well as informal. Generally, formal vocational training takes place through formal education/training instructions and in the informal vocational training, people just acquire the skill through hereditary or self-learning and learning on the job. The labour force participation rate for those females with informal vocational training is much higher than for those either with formal vocational training or with no training. For instance, 77.82 percent of the working-age females with informal vocational training are found in the labour force, whereas, 42.56 percent of females with formal vocational training and 33.13 percent without any training are in the labour force. More importantly, out of 77.82

percent of working-age females with informal vocational training found in the labour force, 49.28 percent are engaged as self-employed, showing an important step towards making the campaign 'be self-employed and job creator' successful.

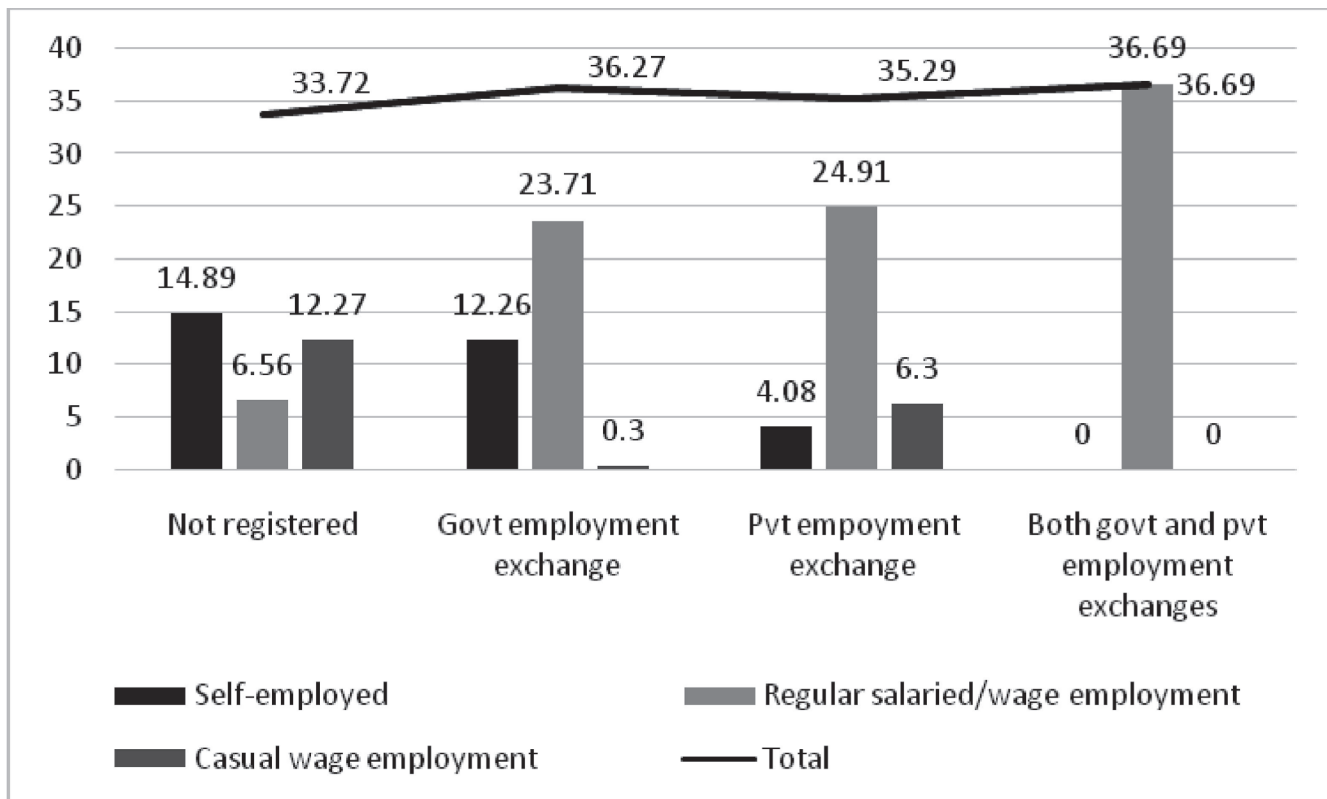
Therefore, it can be argued that promotion of both technical education and vocational training undoubtedly helps enhance female labour force participation rate in Karnataka. However, the fact that a substantial proportion of working-age females continues to be out of the labour force even after receiving technical education and vocational training (especially, formal vocational training), indicates that a mere possessing of technical education and vocational training by itself doesn't necessarily guarantee employment to a large extent. Thus, besides promoting technical education and vocational training, the government needs to focus more on job creation and demand for workers, since industries are unable to create sufficient decent job opportunities. As the proportion of technically educated and vocationally trained women is likely to increase enormously due to several special initiatives being undertaken by the

government, creation of jobs for absorbing these people should, at the same time, expand at a more rapid rate. Otherwise, it could increase the volume of technically-educated and vocationally-trained unemployment, thereby leading to a huge wastage of human capital investment.

Besides deficiency of skill levels, a lower female participation in the labour market may

occur due to a lack of proper information related to the availability of jobs. Getting registered with different employment exchanges may reduce the extent of information asymmetry. Therefore, we estimated the female labour force participation rate based on registrations with different employment exchanges (both government and private) in Karnataka as presented in Figure-4.

Figure-4: Female labour force participation rate based on registrations with employment exchanges in Karnataka

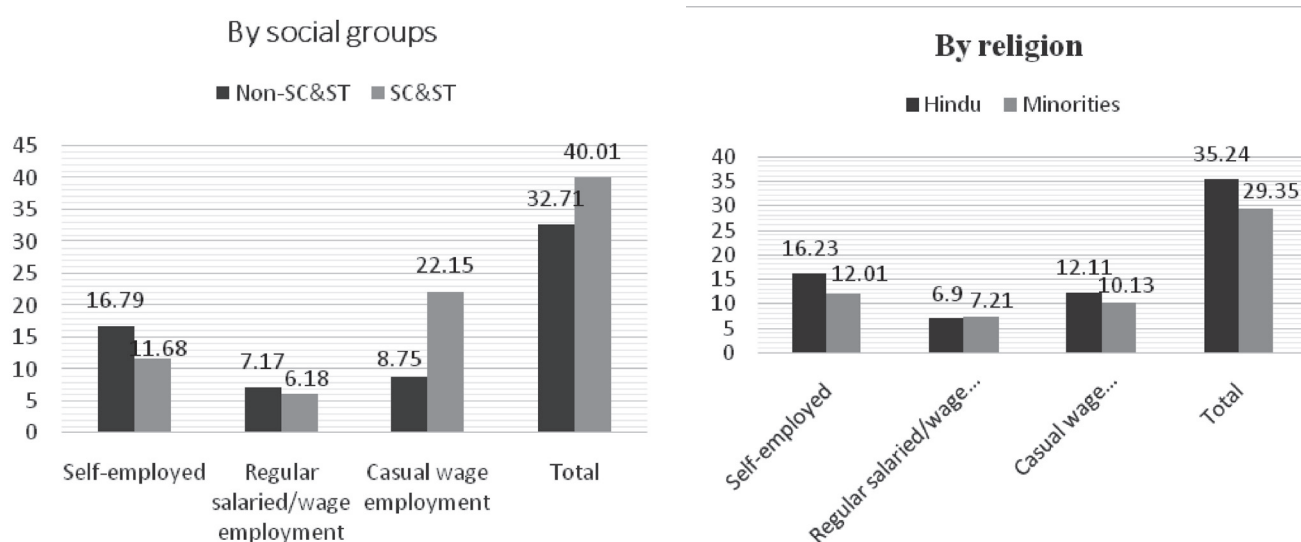


Source: Authors' estimation based on unit level data in 68th Round National Sample Survey on employment-unemployment situation in India (2011-12).

Figure-4 depicts that registering with government and private employment exchanges marginally enhances the total female labour force participation rate. However, when we separate the total labour force participation rate by participation rates in self-employment, regular salaried/wage employment and casual wage employment, females registered with government

and private employment exchanges account for a higher participation rate in regular salaried/wage employment than those not registered with any employment exchanges.

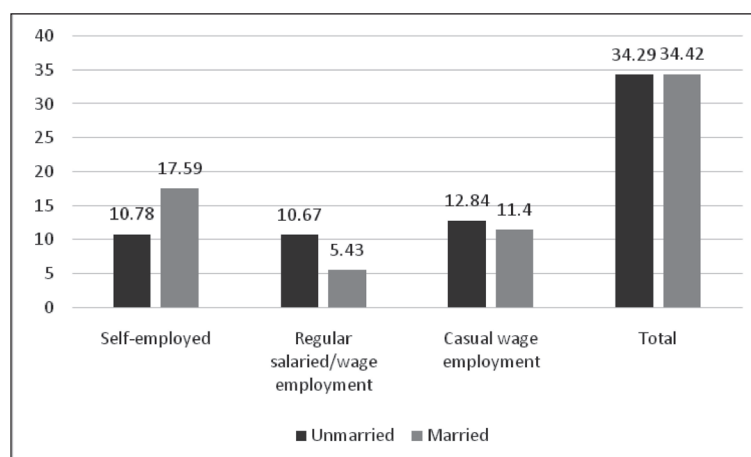
Since the labour force participation may vary by region, caste and marital status of females, our subsequent analysis provides the estimated figures based on these indicators.

Figure-5: Female labour force participation rate by religion and social-groups in Karnataka

Source: Authors' estimation based on unit level data in 68th Round National Sample Survey on employment-unemployment situation in India (2011-12).

Figure-5 shows that females belonging to the SC and ST social groups have higher participation rates in the total labour force, but heterogeneity does exist in terms of their engagement in different types of employment within the labour force. For instance, females belonging to the non-SC and non-ST categories are mostly engaged in regular salaried/wage employment and self-employment, whereas,

females belonging to ST and SC categories are mostly engaged in casual work. Keeping away females belonging to ST and SC categories from regular salaried/wage employment practically negates the very purpose of reservations for different castes and classes. Further, religion-wise, females belonging to minority communities account for a lower labour force participation rate, as compared to Hindu females.

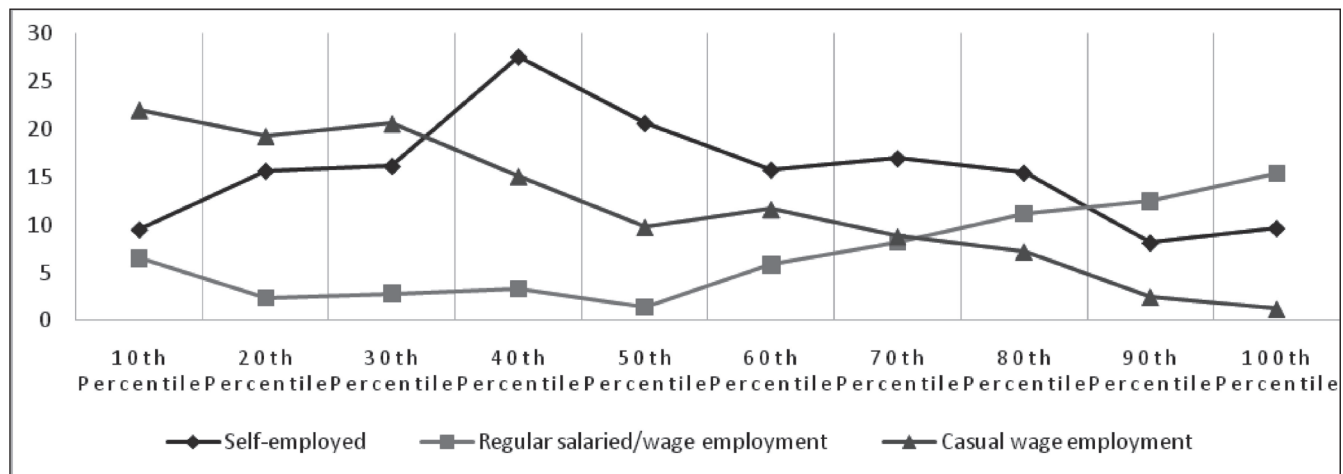
Figure-6: Female labour force participation rate by marital status in Karnataka

Source: Authors' estimation based on unit level data in 68th Round National Sample Survey on employment-unemployment situation in India (2011-12).

Figure-6 depicts that marital status does not make much difference to the total female labour force participation rate. Unmarried females are majorly engaged in wage employment (both regular salaried and casual employment), whereas married females are mostly involved in self-employment, indicating hindrances to married females joining wage employment outside of their households.

We have also examined whether there is a systematic relationship between female labour force participation rate and income of households. This is presented in Figure-7. Here, monthly consumption expenditure is used as a proxy for household income. As household size may affect the total monthly consumption expenditure of households, we have converted it to per-capita consumption expenditure (= total monthly consumption expenditure of households divided by number of household members).

Figure-7: Female labour force participation rate across different percentiles of per-capita monthly consumption expenditure in Karnataka



Source: Authors' estimation based on unit level data in 68th Round National Sample Survey on employment-unemployment situation in India (2011-12).

Although we have found a systematic U-shape relationship between educational level and female labour force participation rate, we do not find such a relationship existing between female labour force participation rate and monthly consumption expenditure. In terms of self-employment, it shows an increasing trend initially before a decline from 40th percentile. In the context of wage employment, we find a sharp contrasting trend for regular and casual employment, with regular employment showing an increasing trend with an increase in the consumption expenditure, while casual employment shows a decreasing trend with an increase in the consumption expenditure. It may not necessarily be the fact that consumption level only determines the labour

force participation unidirectionally, consumption may also be determined by the employment status of an individual, indicating the likelihood of the presence of bi-directional relationships.

3. Determinants of Female Labour force Participation

In addition to the above descriptive analysis at the macro level, the socio-economic factors responsible for the labour force participation are estimated by following the econometric approach based on the Multinomial Probit Model⁴, using unit/individual level large sample national sample survey data on employment-unemployment for the year 2011-12. The model considers four possible final outcomes for each individual: self-employed,

⁴ For details on Multinomial Probit Model, see, for instance, Cameron and Trivedi (2005).

regular salaried/wage employment, casual wage employment and not-in the labour force.

It is important to mention here that ‘unemployment’ is clubbed with the category ‘not-in the labour force’. Out of the four possible final outcomes, we have set ‘not-in the labour force’ as the base category. Therefore, our analysis provides the

coefficient of the variables for the other three outcomes (i.e., self-employed, regular salaried/wage employment, casual wage employment) and their interpretations in comparison with the base category. The estimation results of the Multinomial Probit Model at the state level are presented in Table-3.

Table 3: Multinomial Probit estimates of determinants of female participation by self-employment, regular salaried/wage employment and casual employment in Karnataka, 2011-12

Variables	Self-employment		Regular salaried/wage employment		Casual wage employment	
	Coefficients	Marginal effects	Coefficients	Marginal effects	Coefficients	Marginal effects
Age	0.258*** (0.02)	0.03*** (0.003)	0.344*** (0.026)	0.02*** (0.002)	0.277*** (0.024)	0.015*** (0.002)
Age-square	-0.003*** (0.0003)	-0.0004*** (0.00004)	-0.004*** (0.0004)	-0.0002*** (0.00003)	-0.004*** (0.0003)	-0.0002*** (0.00003)
Rural	0.851*** (0.067)	0.121*** (0.009)	-0.112 (0.083)	-0.025 (0.006)	0.552*** (0.08)	0.03*** (0.006)
Belongs to Minorities	-0.298*** (0.089)	-0.04*** (0.011)	-0.198* (0.113)	-0.01* (0.007)	0.031 (0.105)	0.008 (0.009)
Belongs to SC and ST	-0.225*** (0.081)	-0.049*** (0.01)	0.477*** (0.095)	0.04*** (0.009)	0.567*** (0.084)	0.053*** (0.009)
Married	-0.413*** (0.086)	-0.02*** (0.013)	-1.232*** (0.099)	-0.104*** (0.012)	-1.017*** (0.093)	-0.076*** (0.011)
Years of education	-0.069*** (0.008)	-0.009*** (0.001)	0.068*** (0.01)	0.007*** (0.001)	-0.145*** (0.01)	-0.011*** (0.001)
Formal vocational training	1.298*** (0.158)	0.248*** (0.042)	0.824*** (0.162)	0.035*** (0.018)	0.696*** (0.25)	0.021*** (0.025)
Informal vocational training	2.034*** (0.165)	0.382*** (0.043)	1.733*** (0.188)	0.113*** (0.031)	1.218*** (0.227)	0.026*** (0.023)
Registered with government employment exchanges only	0.066 (0.261)	0.003 (0.04)	0.495** (0.214)	0.051** (0.027)	-0.232 (0.521)	-0.02 (0.027)

Registered with private placement agencies only	-0.489 (0.3)	-0.07 (0.025)	0.336 (0.271)	0.032 (0.029)	0.481 (0.3)	0.054 (0.04)
Monthly consumption expenditure	-0.00002 (0.00002)	-0.0001 (0.00001)	0.00003*** (0.00001)	0.0001*** (0.00001)	-0.0001** (0.0001)	-0.00001** (0.00001)
Constant	-5.69*** (0.351)		-8.004*** (0.424)		-5.087*** (0.414)	
Log likelihood	-4338.63					
Number of observations	5858					
Wald Chi-square (48)	1610.82					
Probability > Chi-square	0.00					

Source: Authors' estimation.

Notes: (a) Description and summary statistics of all variables used in these estimates are given in Table-1A and Table-2A respectively in Appendix. (b) Figures in parentheses present Standard Errors. *, ** and *** denotes significance levels at 10%, 5% and 1% respectively

The positive and significant coefficients related to the variable 'age' for all the three types of employment imply that the probability of joining self-employment as well as regular and casual employment increases with an increase in the age of an individual. Females staying in the rural areas display a higher likelihood of joining casual wage employment and self-employment, while a lower likelihood of joining regular salaried employment. Moreover, females belonging to minority communities exhibit a lower probability of joining self-employment as well as regular wage employment. However, females from SC and ST social categories show a lower probability of joining self-employment, but a higher probability in the case of wage employment (both regular and casual).

The possible reason could be that owning lesser financial assets restrict them from joining self-employment. Married females show a lesser likelihood of joining all the three categories of employment and this could be due to cultural constraints and their domestic responsibilities.

It is important to note that while years of education has a positive and significant impact on regular salaried/wage employment, it has a negative impact on self-employment and casual employment, implying that educated people mainly look forward to regular employment only. Most interestingly, positive and significant signs of both formal and informal vocational training reveal that females with formal and informal vocational training are more likely to find themselves engaged in self-employment as well as wage employment (both regular and casual), as compared to females without vocational training.

Females registered with government employment exchanges possess a higher probability of joining regular salaried/wage employment only, implying that government employment exchanges play an important role in reducing information asymmetry related to the availability of regular salaried/wage jobs.

4. Conclusion

Among the labour force, a majority of females are engaged as helpers in household enterprises (unpaid family workers) and casual workers in non-public works. Within ‘not in labour force’ category, females engaged in domestic duties only account for the highest share, followed by those engaged in domestic duties along with collection of free goods, sewing, tailoring and weaving etc. for their household use, both in rural and urban Karnataka. What follows from the above analysis is that it is very crucial to recognise and value the unpaid domestic work with a view to enhancing the female labour force participation and also making the SDG-5 successful, which clearly mentions “Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate”.

We find a U-shape relationship between levels of education and female labour force participation in Karnataka. At the initial levels of education, female participation in the labour force is higher and comes down at the middle educational level before increasing again at higher levels of education. This happens mainly because of the fact that labour force participation rate in regular employment increases with an increase in educational level. However, educated females do not show interest in joining both self-employment and casual employment, supporting the argument by Bairagya (2018).

Moreover, the labour force participation among the young age group females is much lower than older age groups. Although there is not much difference in regular salaried/wage employment across age groups, a substantial difference is evident for self-employment or casual wage employment. The possible reason could be, as Bairagya (2018) identifies, with an increase in age,

people generally tend to shift towards permanent settlement either by finding a job or working as own account workers or employers in household enterprises i.e., as self-employed. One can extend the analysis for examining further the changing the economic role of women with the changes in age structure and also the underlying reasons behind it under the broad framework of National Transfer Accounts as suggested by Donehower (2017).

Most importantly, both technical education and vocational training have undoubtedly helped enhance female labour force participation rate in Karnataka, especially in self-employment, showing an important step towards making the campaign ‘be self-employed and job creator’ successful. Therefore, promotion of formal vocational training should be scaled up with a view to enhancing the employability of young females. At the same time, it is important to remember that a substantial proportion of working-age female population continues to be out of the labour force even with technical education and vocational training (especially, formal vocational training), implying that a mere possessing of technical education and vocational training by itself doesn’t necessarily guarantee employment. Hence, besides promoting technical education and vocational training, the government needs to focus more on creating jobs and demand for workers, since industries are unable to create sufficient decent job opportunities. As the proportion of technically educated and vocationally trained females is likely to increase enormously due to several special initiatives being undertaken by the government, creation of jobs for engaging these people should, at the same time, expand even at a much faster rate. Otherwise, it could increase the volume of technically-educated and vocationally-trained unemployment, thereby leading to a huge loss of human capital investment.

Moreover, females registered with government employment exchanges possess a higher probability of joining regular salaried/

wage employment, implying that government employment exchanges play an important role in reducing information asymmetry in the dissemination of information related to the availability of regular jobs.

Based on the above empirical analysis, the suggested employment promotional policies for females in Karnataka are as follows:

1. Policies should focus on recognising the unpaid domestic work with a view to enhancing the female labour force participation and also making the SDG-5 successful.
2. Promotion of formal vocational training should be at a massive scale with a view to enhancing the employability of young females in Karnataka.
3. Policies need to focus more on creating jobs and demand for workers for engaging educated and vocationally trained women.
4. Policies should pay special attention towards ensuring a better performance of employment exchanges in solving the search-matching problem and enhancing the female labour force participation, especially in the rural areas.

References

- Afridi, F., Dinkelman, T., & Mahajan, K. (2018). Why are fewer married women joining the work force in rural India? A decomposition analysis over two decades. *Journal of Population Economics*, 31(3), 783-818.
- Bairagya, I. (2018). Why Is Unemployment Higher among the Educated?. *Economic & Political Weekly*, 53(7), 43-51.
- Binswanger-Mkhize, H. P. (2013). The stunted structural transformation of the Indian economy: Agriculture, manufacturing and the rural non-farm sector. *Economic and Political weekly*, 48(26/27), 5-13.
- Chandrasekhar, C. P., & Ghosh, J. (2007). Recent employment trends in India and China: An unfortunate convergence?. *Social Scientist*, 35(3/4), 19-46.
- Chaudhary, R., & Verick, S. (2014). *Female labour force participation in India and beyond*. New Delhi: ILO. Downloaded from http://www.oit.org/wcm/sp5/groups/public/---asia/---ro-bangkok/--sro-new_delhi/documents/publication/wcms_324621.pdf
- Cameron, A C and P K Trivedi (2005): *Micro econometrics: Methods and Applications*, New York: Cambridge University Press.
- Donehower G., Fürnkranz - Prskawetz, A., Lee, R.D., Lee, S.H., Mason A., Miller T., Mwabu G., Ogawa N. and Soyibo A. (2017). Counting Women's Work: Measuring the gendered economy in the market and at home. *National Transfer Accounts Bulletin*, No. 11. Downloaded from <http://ntaccounts.org/doc/repository/NTA%20Bulletin%2011.pdf>
- Fatima, A., & Sultana, H. (2009). Tracing out the U-shape relationship between female labor force participation rate and economic development for Pakistan. *International Journal of Social Economics*, 36(1/2), 182-198.
- Fletcher, J. M. (2012). Adolescent Depression and Adult Labor Market Outcomes. *NBER Working Paper*, (w18216).
- Gaddis, I., & K lasen, S. (2014). Economic development, structural change, and women's labour force participation: A Re-examination of the feminization U hypothesis. *Journal of Population Economics*, 27(3), 639-681.
- Ghosh, B., & Mukhopadhyay, S. K. (1984). Displacement of the female in the Indian labour force. *Economic and Political Weekly*, 1998-2002.

- Goldin C. (2014). A grand gender convergence: Its last chapter. *American Economic Review*, 104(4), 1091-1119.
- Haghighat E. (2002). Culture, development and female labor force participation: Disaggregating different sectors. *International review of sociology*, 12(3), 343-362.
- Himanshu (2011). Employment trends in India: a re-examination. *Economic and Political Weekly*, 46(37), 43-59.
- Kucera D., & Tejani S. (2014). Feminization, defeminization, and structural change in manufacturing. *World Development*, 64, 569-582.
- Mammen K., & Paxson C. (2000). Women's work and economic development. *Journal of economic perspectives*, 14(4), 141-164.
- Mehrotra S., & Parida J. K. (2017). Why is the labour force participation of women declining in India?. *World Development*, 98, 360-380.
- NSSO (2014). Employment–Unemployment Situation in India 2011–12, 68th Round, National Sample Survey Office, Government of India.
- Premi M. K. (1980). Aspects of female migration in India. *Economic and Political Weekly*, 15(12), 714-720.
- Reddy, D. N. (1979). Female work participation in India: Facts, problems, and policies. *Indian Journal of Industrial Relations*, 197-212.
- Sharma, A. & S. Saha (2015). Female employment trends in India: A disaggregated analysis. *The NEHU Journal*, 13(2), 17- 30.
- Sudarshan R. M., & Bhattacharya S. (2009). Through the Magnifying Glass: Women's Work and Labour force participation in urban Delhi. *Economic and Political Weekly*, 59-66.
- Sundaram K., & Tendulkar S. D. (2004). The Poor in the Indian Labour Force: Scenario in the 1990s. *Economic and Political Weekly*, 39(48), 5125-5132.
- Tam, H. (2011). U-shaped female labor participation with economic development: Some panel data evidence. *Economics Letters*, 110(2), 140-142.
- Verick S. (2014). Female labor force participation in developing countries. IZA World of Labor 2014: 87 doi: 10.15185/izawol.87
- World Bank. 2011. World Development Report 2012: Gender Equality and Development. World Bank, Washington D.C.

Appendix

Table-1A: Description of variables used in the Multinomial Probit Model

Variables	Descriptions
Age	Age of the individual female
Age-square	Square of the age of the individual female
Rural	Female staying in rural areas=1; urban areas=0
Belongs to Minorities	Female belonging to minority community=1; Hindu=0
Belongs to SC and ST	Female belonging to SC and ST categories=1; Non-Sc and non-ST= 0
Married	Currently married=1; otherwise=0
Years of education	Female completed the number of years of education
Formal vocational training	Female received formal vocational training=1; otherwise=0
Informal vocational training	Female received informal vocational training=1; otherwise=0

Registered with government employment exchanges only	Female registered with government employment exchanges=1; otherwise=0
Registered with private placement agencies only	Female registered with private employment exchanges=1; otherwise=0
Monthly consumption expenditure	Monthly per capita consumption expenditure (in Indian Rupees)

Source: Authors

Table-2A: Descriptive statistics of variables used in the Multinomial Probit Model

Variables	No. of observations	Mean	Standard Deviation	Minimum	Maximum
Age	5858	33.53	11.99	15	59
Age-square	5858	1268.25	856.42	225	3481
Rural	5858	0.52	0.50	0	1
Belongs to Minorities	5858	0.17	0.38	0	1
Belongs to SC and ST	5858	0.21	0.40	0	1
Married	5858	0.71	0.45	0	1
Years of education	5858	6.59	5.06	0	17
Formal vocational training	5858	0.03	0.18	0	1
Informal vocational training	5858	0.03	0.16	0	1
Registered with government employment exchanges only	5858	0.02	0.14	0	1
Registered with private placement agencies only	5858	0.01	0.11	0	1
Monthly consumption expenditure	5858	1864.48	2234.24	307.4	67966.4

Source: Authors' calculations

Preparation of Medium-term Fiscal Plan for a Municipal City Corporation in Karnataka State: A Practitioner's Insights

Ashok Rao¹

Abstract

This aims at sharing experiences of an initiative for preparing a Medium-Term Fiscal Plan (MTFP) for Shivamogga City Corporation—a medium sized municipal corporation in the state of Karnataka, India. Medium-term fiscal planning is known to be an effective tool to foster better budget management and fiscal discipline. In India, while the central and state governments prepare MTFPs, at the municipal level, the topic is finding favour only recently. This article provides a practitioner's perspective by going into the challenges faced in preparing the MTFP for a municipality and outlines lessons learned in the Shivamogga experiment. Key pointers for similar exercises are also outlined.

1. Introduction

This article covers learnings from a recent experiment to prepare a Medium-term Fiscal Plan (MTFP) for a municipal corporation in Karnataka State (India). Shivamogga city, spread over 70 square kilometers of area and population size of about 400000 (or 0.4 million), is a medium-sized city. The City Municipal Corporation presented an annual budget in excess of ₹200 crore for the financial year 2019-20. Preparation a MTFP for Shivamogga City Corporation was an initiative of Janaagraha Centre of Citizenship and Democracy (www.janaagraha.org), a Bengaluru based not-for-profit organization working towards reforming India's city-systems. The initiative formed part of a series of reform measures to improve urban local body financial systems undertaken by the Urban Development Department, Government of Karnataka, in partnership with Janaagraha.

2. MTFP for governments – much needed, but often ignored

A MTFP enables a government to take a longer-term view in its financial planning than what is made possible through annual budgets. Financial planning over the medium to long term ensures that development plans do not suffer for want of funding owing to uncertainties during budget execution. It enables governments to manage cyclical fiscal risks as well as unexpected fiscal shocks better. Medium-term forecast of fund requirements enables the government to access financial resources at competitive rates thus reducing its overall cost of capital. Most importantly, medium-term plans demonstrate to stakeholders the government's commitment to the development priorities it has outlined and gives assurance that the priorities are backed by required financial resources. An approved medium-term fiscal plan also helps avoid last-hour rush of

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All opinions in this article are of the author and usual disclaimer applies.

expenditure at the year-end arising from a fear of “budget running out”, which is a bane of the current annual budgeting system. It thus improves overall expenditure efficiency.

To effectively cater to growing demands of city-systems, caused by rapid urbanization, an urban local government is expected to have in place, a long-term vision for city development. Thus, a municipality is expected to: (a) translate the long-term vision into medium-term development plans, (b) work out lifecycle costs of individual projects forming part of the development plans, (c) project the financial resources required over the medium-term to undertake the projects, and (d) outline a medium-term fiscal plan by bringing all the above together. Further, a municipality is expected to approve annual budgets in line with such medium-term fiscal plans and adhere to the approved budgets during execution.

In India, though higher levels of government (state and central) produce the medium-term fiscal plans, such plans are rarely prepared at local governments’ levels. This is despite the fact that many state laws (including the law in Karnataka state) contain provisions which require a municipality to submit a MTFP along with the annual budget, to its governing body².

Karnataka state has been presenting a MTFP at state level since the year 2006. The content of the MTFP and its presentation has largely remained the same over the years with improved disclosures in each subsequent version. Section 3 of the Karnataka Fiscal Responsibility (KFR) Act, 2002 requires the State Government to lay a MTFP before both houses of legislature every financial year. The provisions of the Karnataka

Local Fund Authorities Fiscal Responsibility (KLFAFR) Act, 2003 requires a preparation of MTFP by municipalities which is largely inspired by the provisions of the KFR Act. The KFR Act prescribes the constitution of a Fiscal Management Review Committee under the Chief Secretary of the State. No such committee is envisaged at the local level by the KLFAFR Act.

3. The initiative

Janaagraha took an initiative of making a beginning to prepare a MTFP for urban local bodies in Karnataka State. After holding discussions with the Urban Development Department in Karnataka, Shivamogga City Corporation was selected for undertaking a pilot project for preparing a MTFP. The pilot exercise, which took around four months, yielded a number of lessons that are discussed in the rest of this article.

3.1 KLFAFR Act –a job well begun

A primary requirement for the initiative - a statutory framework for MTFP - was in place in the form of the KLFAFR Act³. However, rules under the Act were never framed. In the absence of Rules, there was no prescribed template for the MTFP. After much deliberation, a MTFP template was developed by the Janaagraha Team. The template (see Annexure 1) requires a preparer to first estimate total receipts and arrive at an overall resource envelope available. It then leads him to progressively arrive at a fiscal balance as money is allocated against existing and new commitments over multiple stages. While the Act requires a presentation of fiscal indicators in the MTFP as well as a discussion on performance against such indicators, however, no such indicators has been prescribed in the rule. Here again, the Team had

²Business Standard, February 3rd, 2013 - Bangalore City Corporation plans medium term fiscal plan - https://www.business-standard.com/article/economy-policy/b-lore-city-corp-plans-medium-term-fiscal-plan-108040401107_1.html

³Section 3 of the Karnataka Local Fund Authorities Fiscal Responsibility Act, 2003 requires preparation of a MTFP and its submission for approval along with the annual budget. The Section goes on to elaborate the contents of the MTFP and its coverage.

to brainstorm and arrive at a set of indicators that can be representative of fiscal position of the Shivamogga City Corporation. The following fiscal indicators were included in the MTFP (see Annexure 2):

- **Own revenue to total revenue** – indicating own revenue performance
- **Operating expenses to own revenue** – indicating to what extent the municipality is able to sustain on its own revenue
- **Committed expenditure to total expenditure**—showing proportion of expenditure that goes towards existing commitments
- **Debt-servicing to own revenue** – pointing to the municipality’s ability to service its debt out of own source revenues;
- **Debt-servicing to total expenditure** – proportion of total expenditure that goes towards servicing debt
- **Fiscal space⁴ to total receipts** – indicating the room for planning new projects or programs
- **Surplus/deficit to total revenue** – pointing to financial performance of the municipality
- **Cash balance to monthly operating expenses** – indicating safety net and risk exposure of the municipality

This implies that even where the statutory requirement for MTFP is well established, more needs to be done in terms of articulating the nuts and bolts for the initiative to take off and result in a proper MTFP.

3.2 Internal Buy-in

The first task for the Team was to get the administration at the municipality to buy the MTFP story. The Municipal Commissioner and the Chief Accounts Officer not only appreciated the relevance of medium-term fiscal planning for Shivamogga city and the advantages it offered, but also fully supported the effort until finalization of the MTFP document. This was contrary to the team’s apprehension that resistance to change would pose a significant challenge to the initiative. However, to assume that municipal administrations elsewhere would welcome the initiative with open arms might be too optimistic. The need for proper sensitization to elected representatives, administration, and staff of the municipality on the need and benefits of medium-term fiscal planning before embarking upon preparing the MTFP cannot be over-emphasized.

3.3 Incremental budgeting mindset

The experience, with departmental heads and middle management turned out to be a different story. While this group understood the importance for medium-term budgeting, they found it challenging to reorient their thinking from traditional incremental budgeting⁵ to budgeting with a strategic mindset keeping the long-term vision in perspective. It took time for understanding the concept of progressively determining fiscal space and using that information to determine spending priorities and fix expenditure ceilings, which is central to the MTFP philosophy, to sink in.

3.4 Low visibility into resource inflows

Most municipalities in India are heavily reliant on grants-in-aid from the state and

⁴Fiscal space per se can be measured at different stages—after providing for establishment expenses, or after providing for establishment expenses and finance costs, or after providing for operating expenses and ongoing projects and programs, and so on.

⁵The traditional practice of adding a fixed percentage (say 10%) across the board to previous year’s receipts and expenditure figures in order to arrive at the next year’s budget allocations.

central government under various programme and schemes. Even though such grants form a significant portion of the resource pool available for a municipality, its ability to influence such revenue sources, be it scheme features, quantum of support available, timing of grants, or other parameters, is virtually nil. The visibility into cash flows from such sources is also poor, except perhaps, in the case of salary grants where the quantum is directly proportional to expenditure on salaries. Given such uncertainties, medium-term estimates of receipts and corresponding expenditure tend to become unrealistic, thus relegating medium-term fiscal planning to a theoretical exercise. This issue came up in the case of Shivamogga City Corporation which forced the team to make significant assumptions on the quantum of cash inflows from central and state schemes beyond the first year of the MTFP. This points to an important requirement for successful MTFP at local level, i.e., both the central and state government must aim to indicate the funding that will be available under different schemes with a reasonable degree of certainty, in sufficient detail, and adequately in advance, so that municipalities can base their receipt forecasts on such indication.

3.5 Reactive development planning

Medium-term planning requires a proactive approach in determining development needs of the city and designing programs/ projects to address such needs. The problem of low visibility into resource inflows discussed in the earlier point gives scope to the incorrect practice of conceptualizing projects and costing them only after the quantum of funding under a central or state programme or scheme becomes more or less certain. This problem surfaced in the case of Shivamogga City Corporation also. It was convenient for the municipal administration to conceive projects under a scheme once the funds available under that scheme became known, obtain approval of the municipal council on the action

plans, and proceed with project execution. The entire sequence of activities underlying medium-term fiscal planning starting with preparing of development plans, moving on to conceptualizing projects under such plans, costing them over their lifetime (including operating and maintenance costs), and identifying resources to finance such projects turned out to be contrary to the prevalent practice. This is likely to be the case in most municipalities across the country. Changing the status quo would require rigorous sensitization, training, and most importantly, a change of mindset among municipal staff as well as elected representatives.

3.6 Lack of a programmatic approach to budgeting

In most municipalities, the traditional annual budgeting process itself is broken. Lack of a programmatic approach to budgeting implies that related items of expenditure, which one would normally expect to be budgeted at one place, tend to be budgeted under different departments within the municipality. There is no single unit or office responsible for budgeting all lines of expenditure under a particular municipal program or project. For instance, in the case of Shivamogga City Corporation, for a typical infrastructure project, civil work component, expenditure on salaries of supervisory staff, and related debt servicing spend appear under different functional heads in the annual budget document. Reasons for such presentation could be the ease of exercising budgetary control or the way the departments are administratively organized in the municipality. Such grouping, however, makes it unsuitable for medium-term planning and budgeting, where the focus is on matching expenditure with resources and accordingly deciding spending priorities. A MTFP prepared purely on a functional (or departmental) grouping might end up setting aside money for certain components of a program or project and ignoring others. That would defeat

the very purpose of preparing the MTFP. Thus, it is very important to streamline the budget classification and presentation and give it a logical structure before attempting MTFP.

3.7 Data challenges

Availability of timely and reliable data is crucial for a meaningful medium-term fiscal planning exercise. Unsurprisingly, the quality of data in most municipalities across the country is poor including Shivamogga City Corporation. One of the reasons for poor data quality could be that the underlying data recording systems, financial or non-financial, are broken. For instance, in the absence of a complete and accurate Demand-Collection-Balance register, it is difficult to project inflows from tax revenues over the medium-term. In other cases, the culture of data-driven decision making may be absent. MTFP demands a tight integration between financial and operational plans– the financial-operational data inter-dependencies are also larger. Therefore, data gaps in one data set (say status of works, list of beneficiaries, list of taxable properties and so on) affect related financial projections and render them inaccurate.

Certain other data related issues arise because the municipal personnel may not be attuned to data-based planning. For example, in order to allocate money for a multi-year infrastructure project, it is important to establish, reasonably accurately, the extent of physical progress planned in each year. Many municipal engineering departments are not equipped with scientific project planning tools to be able to provide such inputs for medium-term fiscal planning. It is therefore important to chalk out the key data elements required for producing the MTFP, identify the data sources, and assess the extent of data maturity before commencing. This can avoid a lot of trouble later in the process. Where genuine data issues exist, the MTFP assumptions must clearly acknowledge the fact and outline how the municipality intends to go about addressing the gap in the coming years.

4. Conclusion and Lessons for future experiments

Overall, the Shivamogga City Corporation experiment on preparation of the MTFP offers valuable lessons. Key learnings for future replication include:

- a. Determine, right at the commencement of the exercise, that the statutory framework requiring medium-term fiscal planning is in place. Presently, the incentive to produce the MTFP within the system at the municipal level is weak - in the absence of regulatory push, the project may not succeed.
- b. In addition to the overall mandate, it is important to work out the process to be followed, the timelines, the MTFP template, the fiscal indicators that will be presented and other such details.
- c. Sensitize senior administration and middle management at the municipality on the concept and benefits of medium-term fiscal planning and how it is an improvement over annual budgeting. Such sensitization should happen at the commencement as well as midway into the MTFP preparation.
- d. Fix defects in the annual budgeting process in terms of the format and level of detail of budget inputs, budget document presentation format, and classification of budget line items, before undertaking MTFP preparation. Attempting to prepare MTFP without first fixing annual budgeting would result in confusion at multiple levels.
- e. Identify the key data requirements and assess the data readiness. Where data gaps exist, outline how such gaps will be disclosed in the MTFP.

- f. In terms of timing, align the MTFP preparation process with the ‘budget season’⁶ (as is popularly known). This helps in ensuring that:
- process gets the required attention and priority from the administration as well as elected representatives,
 - municipal staff are in the right frame of mind to undertake the process,
 - data for MTFP preparation is readily available, and
 - MTFP can be presented to the governing body, discussed and approved by it along with the annual budget.
- g. Keep it simple. Make the right compromises between the level of detail in the MTFP and the cost-benefit of collecting the information. It is not necessary that the MTFP be presented at the same level of detail as the annual budget.
- h. Establish fiscal rules at the commencement of the MTFP preparation process. Fiscal rules act as checks to ensure fiscal prudence and avoid overenthusiastic budgeting. They can also help ensure that conditions attached to certain revenue sources (such as grant conditions) are adhered to. Examples of such rules are:
- (i) non-fungibility of tied grant resources,
 - (ii) maintenance of adequate closing cash balance to cover a specified number of months of administrative expenditure, and
 - (iii) restrictions on availability of specific grants for particular items of expenditure.
- i. Get the entire municipal administration involved in the MTFP exercise. Often, MTFP preparation is mistaken to be a financial jugglery exercise and therefore handled within closed doors by the Finance department of the municipality. However, for a meaningful medium-term planning exercise, it is important to consult with all municipal departments. This will ensure that only necessary and eligible proposals find place in the MTFP and they are properly costed.

Acknowledgements

The author would like to acknowledge Janaagraha Centre for Citizenship and Democracy (www.janaagraha.org) for the initiative and Shivamogga City Corporation for agreeing to be part of the pilot. The author was a part of the Janaagraha Team that worked on preparing a Medium-Term Fiscal Plan for Shivamogga City Corporation in Karnataka State.

References

- 1) The Karnataka Local Fund Authorities Fiscal Responsibilities Act, 2003
- 2) Jason Harris, Richard Hughes, Gosta Ljungman, and Carla Sateriale (2013). Medium Term budget Frameworks in Advanced Economies: Objectives, Design, and Performance, IMF e Library.

⁶The municipal ‘budget season’ in India starts around November and the fervor of activity reaches its peak around February/March, given that the financial year runs from April to March.

Annexure 1: MTFP Template

**Municipal Corporation/ Municipality Medium Term Fiscal Plan
20xx-xx to 20xx-xx**

Part A – Receipts and Expenditure

(₹ in Lakhs)

	Particulars	20xx-xx	20xx-xx	20xx-xx	20xx-xx
A	Revenue				
A1	Tax Revenues				
A2	Non-Tax Revenues				
A3	Grants				
1^{A3.}	Tied Grants				
2^{A3.}	Untied Grants				
A4	Others				
	<i>Total for A</i>				
B	Borrowings				
	Total Receipts				
C	Expenditure				
C1	Committed Expenditure				
C1.1	Operating Expenses				
C1.1.1	Salaries & Pension				
C1.1.2	Administrative Expenses				
C2	<i>Total for C1.1</i>				
	Debt-servicing				
C2.1	Interest on loans				
C2.2	Repayment of loans				
C3	<i>Total for C2</i>				
	Provision for Unforeseen Expenditure 5%				
C4	Discharge of Pending Bills				
	<i>Total for C3 to C4</i>				
	Total Committed Expenditure				
	Balance				

	Particulars	20xx-xx	20xx-xx	20xx-xx	20xx-xx
C5	Allocation for Projects/Programs/Schemes out of Tied Grants				
	Total for C5				
	Balance				
C6	Allocation for O&M expenses				
C7	Allocation for ongoing Programs/Schemes (untied grants and own sources)				
	Total for C6 to C7				
	Balance				
C8	Allocation for New Capital Projects (Untied grants and own sources)				
C9	Allocation for new Programs/Schemes (Untied grants and own sources)				
	Total for C8 to C9				
	Total Expenditure				
	Surplus/(Deficit)				
D	Cash Balance				
D1	Balance at the beginning of the year				
D2	Balance at the end of the year				

Annexue 2: MTFP Template

Municipal Corporation/ Municipality Medium Term Fiscal Plan
20xx-xx to 20xx-xx
Part B - Key Fiscal Indicators

Fiscal Indicators	Baseline	20xx-xx	20xx-xx	20xx-xx	20xx-xx
Own Revenue to Total Revenue					
Operating Expenses to Own Revenue					
Committed Expenditure to Total Expenditure					
Debt-servicing to Own Revenue					
Debt servicing to Total Expenditure					
Fiscal Space (Overall) – Balance revenues after knocking off committed expenditure to Total Receipts					
Surplus/(Deficit) to Total Revenue					
Cash Adequacy (number of months)					

BOOK REVIEW

Y.V. Reddy & G.R. Reddy. Indian Fiscal Federalism, Oxford University Press, New Delhi. 2019: ISBN-13 (Print edition): 978-0-19-949362-3: ISBN-13 (eBook): 978-0-19-909704-3

In the context of the Terms of Reference (ToR) prescribed by the Government of India to the Fifteenth Finance Commission, the controversies generated by some of those terms and the extension of time recently given to the Commission, the arrival of a book on Indian Fiscal federalism is quite timely and most welcome. In a federal system, tax-raising powers and expenditure responsibilities are to be shared between the Union and the States and this book rightly views fiscal federalism in India as a game between the Union and the States in politics, economics and public finance. While the Union has a larger share of the revenue, the States under the Constitution of India have greater responsibilities in economic and social services. How the Indian Federalism manages the resultant vertical and horizontal imbalances in collecting the revenue and incurring the expenditures within the Constitutional mandates forms the central theme of this book.

A large part of the book is devoted to the working of the various Finance Commissions constituted for this purpose and their recommendations. Co-authored by Dr Y.V. Reddy, a former Governor of the Reserve Bank of India who also headed the Fourteenth Finance Commission and another expert in public finance, the book provides a chronological account of the economic and political considerations that went into the recommendations of different Finance Commissions. The narratives in many chapters indicate the range of instruments available to manage vertical and horizontal imbalances. They are in considerable details, user friendly and supported by adequate data.

Four distinguishing features of this book deserve a special mention.

Firstly, though the sixteen chapters are arranged in such a manner that one seamlessly flows into the other, they are independent of each other. Each chapter deals with a specific theme and at the end of each chapter the issues discussed therein are meticulously summarized for the benefit of the reader.

Secondly, while recording the working of the institutions like the Planning Commission, NITI Aayog and the Finance Commissions, the authors refrain from commenting on the role of the individuals. The comments are largely objective.

Thirdly the authors are very fair and realistic in their analysis. For instance, the book disagrees with the manner in which the Union had circumvented the States' authority through the enactment of entitlement-based legislations without proper consultations with the States even though these enactments may be justified on social security considerations. The authors also do not approve of the ever increasing surcharges and cesses levied by the Union Government as they do not form part of the divisible pool and are therefore not sharable with the States. The authors in the Introduction chapter acknowledge the relative shares of Finance Commission and non-Finance Commission grants becoming a bone of contention between the Union and the States. Later in the chapter on Asymmetric Federalism they are realistic enough to justify the need for special dispensation to certain States to ensure that those States do not feel alienated from the main stream.

Finally while giving the historical and analytical account of the developments in fiscal federalism in India as it evolved since independence, the book explores the likely developments in the future as well. Pointing out the heavy tilt in favour of the Centre in the Fifteenth Finance Commission's ToR, the authors also state that those are not insurmountable and the Commission is not bound by all the considerations listed out in the ToR. The book concludes with the hope that the Fifteenth Commission would have the courage and wisdom to be guided by the letter and spirit of the Constitution of India.

It is in the interest of the future Finance Commissions both in the States and in the Centre to make the best use of this book as a reference volume. This book on Indian Fiscal federalism on the whole is a very valuable addition to the literature on the financial management not only in India but also in any federal system.

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BOOK REVIEW

Luca Zamparini and Ubaldo Villani-Lubelli. (Eds). **Features and Challenges of the EU Budget: A Multidisciplinary Analysis**. Edward Elgar Publishing (Cheltenham, UK). 2019: ISBN 978 1 78897 191 1 (Cased): ISBN 978 1 78897 192 8 (eBook)

This book is an edited volume and aims to explain the processes of preparation and implications of implementation of budget for the Economic Union (EU). The methodology of this explanation is descriptive and multidisciplinary (i.e. historical, political, legal and economic). The book contains two parts and 13 chapters (or profiles). Part I include 7 chapters and focuses on historical and political perspectives. Part II contains 6 chapters on legal or juridical and economic analyses including a separate chapter on economic implications of Brexit (i.e. United Kingdom (UK) exit from EU).

Historically, the present EU has evolved from the European Economic Community (founded in 1957 with 6 country-members) with the main goal of economic integration through free movement and socio-economic cohesion and harmonization. At present, EU comprises 28 member countries (including UK or before the Brexit). Thus, unlike the budget of General Government anywhere in the world, the EU budget is essentially an inter-governmental budget.

EU budget has distinct structure and processes. The annual budgets are prepared by Multiannual Financial Framework (MFF). This framework represents a medium/long term perspective of EU finances for a period of not less than 5 years. The current MFF is for the period 2014-2020. Next MFF covers 2021-2027. Advance negotiation and bargaining among Member-States, based on opinion of political decision-makers and experts, are the key strategies for preparation of MFF. In addition, EU citizens (as tax payers) also have a role in discussions on the EU budget. Thus, EU budget is not a mere financial accounting exercise.

EU budget is unique on both revenue and expenditure sides. Major sources of revenues are (a) national contributions of Member-States (about 70%), and (b) EU's own sources of revenue, such as, customs duties (13%), national transfers of a share of VAT (12%), and others (5%). On the expenditure side, the largest share goes to capital account items to finance long term common investment programmes in sectors such as energy, transport, ICT, climate change and research. However, the budget must be balanced or does not allow deficit. The current size of EU budget is about 1% of GDP of EU countries.

The multidisciplinary analysis EU budget has many useful lessons for non-EU countries, especially federal economies including India. These lessons are related to: (i) Political necessity of budgetary flexibility without compromising on budgetary stability and predictability. (ii) Regional development policies for socio-economic cohesion by financially assisting the poorest regions with a GDP of less than 75% of EU average. (iii) Resolving community funding conflicts due to disproportion between what is paid and the amount received back in budget. (iv) Bargaining tools and negotiation procedures for budgetary rights. (v) Understanding citizens' attitude or ways to ensure citizens' participation in budget preparations (especially, on proposals to increase in taxes) through public opinion polls or budget referendum. (vi)

Building intergovernmental architecture in budget policy. (vii) Design and implementation of a budget for growth and competitiveness objectives when Member-States are different by levels of development. (viii) Resolving serious conflicts among Member-States on issues, such as, migration policies. (ix) Effectiveness of golden rule of balanced budget (or principle of equilibrium) from the point of view of EU budget and Member-States.

In addition, lessons from framework for monitoring and control of budget through three principles of sound financial management (economy, efficiency and effectiveness) and external scrutiny (financial, compliance and performance auditing) in Chapter 9 are of special importance for officers in accounting, auditing and financial advisory services in Central and State governments in India. Further, lessons from accounting principles for structural balancing of budget in Chapter 11 are equally interesting and important for these officers.

The book gives due importance for historical details but focuses on experiences with the current Multiannual Financial Framework (2014-2020). At the same time, the book includes a forward-looking fiscal policy for the EU because much of the analyses are related to the design and implementation issues on next MFF (2021-2027).

At the same time, the book is very timely for contemporary issues in EU budget, especially in the context of Brexit. UK is the third largest contributor to the EU community funding. Chapter 12 (“Brexit and the EU Budget”) is an excellent background to foresee post-Brexit EU including reforms to restructure the revenue and expenditure sides of budget.

This book is a contribution to international economics and open macroeconomics from multidisciplinary perspectives. It is a useful academic reference for teaching-learning process at colleges and universities and a policy reference for decision makers on budget and fiscal policy in General Government.

At the time of writing this review on 16th December 2019, UK parliament election results were announced with historic victory for the Conservative party lead by Prime Minister Boris Johnson. What happens next for UK in EU is obvious: No second referendum on EU membership and inevitable exit from the EU. On the part of EU budget, the challenge is to fill in permanent “Brexit gap” in MFF 2021-2027. Thus, the book is most important to be read now because it links the past (EU without Brexit) with the future (EU with Brexit).

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Highlight on Government of Karnataka's INNOVATIONS & BEST PRACTICES IN FISCAL POLICY MANAGEMENT

CHILD BUDGET STATEMENT 2020-21

Government of Karnataka (GoK) has decided to prepare the Child Budget Statement (CBS) from 2020-21 onwards vide Government Order No. FD 434 Exp-10/2019, dated 27th August 2019. Within the framework of State's fiscal policy, the CBS is useful to analyse the overall budgetary resources that GoK allocate to programmes and schemes that benefit children in 2020-21 as well as a comparison of expenditures on similar programmes and schemes over time. Further, CBS is useful to the Line Departments who design, implement and monitor the programmes and schemes on children within the framework of GoK's budget. This usefulness include assessment of (a) adequacy of resources for programmes and schemes for children, (b) efficient and effective utilisation of budgetary resources for defined objectives, and (c) budgetary needs and rights of children within the current design of programmes and schemes for children.

The CBS is a new policy initiative for the fiscal management by GoK. This initiative is financially supported by UNICEF and facilitated and coordinated by Fiscal Policy Institute (FPI). The innovative practices for preparation of CBS 2020-21 by GoK are as follows.

1. Child Budget Circular has been issued to all departments by Finance Department (Circular No. FD 05 BPE 2019 Dated 16.11.2019). As per this Circular, all administrative Departments are required to furnish the required information in prescribed formats for all Child Centric Programmes/Schemes and Child Centric Non-Programmes/Non-Schemes under revenue and capital accounts, latest by 30th December 2019. In addition, a separate letter from Additional Chief Secretary and Development Commissioner is sent to all Departments (No.ACS& DC/244/2019, dated 07.12.2019) with instructions to provide the prescribed budgetary data and information available in DSS (Decision Support System) software up to Object Heads.
2. To guide and enable the concerned officers in the administrative departments to identify and categorize Child Centric Programmes as per the details sought in prescribed formats in Child Budget Circular, FPI has designed and conducted the capacity and perspective building General and Department-specific Orientation Programmes. Up to 30th December 2019, 100 officers from 20 departments have been oriented on preparation of CBS.
3. FPI has designed the Validation Workshops with all departments to officially validate the data and identification and classification of child centric programmes, as per details sought in Child Budget Circular. The validation workshops are planned to be in January 2020.

4. The entire preparation of CBS is supported by scientific research on public finances for children in Karnataka. First, preparation of a Background Paper on Child Budget Statement for Government of Karnataka by FPI with inputs from (a) members of Technical Advisory Group (comprising eminent experts, such as, Professors Arnab Mukherji, Hema Swaminathann, K.Gayithri, Vinod B. Annigeri and Mona Khare) and (b) technical papers by Dr Jyotsna Jha on *Economic Approaches to Child Budgeting in India* and Ms Jayna Kothari on *Legal Approaches to Child Budgeting in India*. Second, preparation of a Final Project Report on Karnataka State Child Budget 2020-21 by FPI. The Final Report includes the research results on identification of child development indicators and construction of child development index for Karnataka in order to develop a need based and outcome-based budget for children.
5. Within FPI, a research team is built to provide with policy support to GoK on preparation and policy analyses of CBS 2020-21 and beyond. Policy analyses aim at determining (a) departments and their programmes which are child centric in terms of their budgetary allocation and expenditure; (b) current priorities in budgetary policy for child development; (c) scope to reprioritize current and future allocation and expenditure on children based on needs and outcomes; (d) budgetary rights for children backed by Constitutional, legal and statutory frameworks; and (e) monitoring indicators for UN-SDGs relating to children.
6. The above practices of Karnataka's CBS are expected to be a model for preparation of CBS by other state governments in India.

SUBMISSION GUIDELINES TO AUTHORS

Aarthika Charche – FPI Journal of Economics & Governance is a bi-annual journal published by Fiscal Policy Institute, Government of Karnataka, Bengaluru (India). The Journal invites original and unpublished research articles on Indian economy and economic governance at national, state and local levels. Articles focusing on macroeconomics, public finance, fiscal policy, financial decentralization, public financial management, public project management and evaluation, gender budget and audit and e-Governance with special reference to Karnataka State are of special importance for the Journal.

Manuscript for consideration for publication shall be sent (a) in duplicate and by post to the Director, Fiscal Policy Institute, Bangalore-Mysore Road, Kengeri Post, Bengaluru 560060, India; or (b) by email attachment to: director[at]fpibangalore[dot]gov[dot]in and journal[at]fpibangalore[dot]gov[dot]in

The preferred size of manuscript (including references, tables, figures and annexures) is 4000 to 6000 words.

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Title page shall contain title of manuscript, name of author/s including their position, affiliation and contact details (postal address, telephone number and e-Mail), abstract of article (about 100-150 words) and acknowledgments, if any.

Text

Text to be in MS word document format [Times New Roman font with 12 size, 1.5 line spacing and justified alignment]. Headings to be in lower case and bold. All tables and figures to be in editable format and placed in running text. All equations to be sequentially numbered and inserted in text using equation editor. Abbreviations to be defined at first mention and used consistently thereafter. No footnotes to include any tables, graphs and reference list. All annexures to be given at end of text.

References

This journal follows reference style of American Psychological Association (APA) 6th Edition. Cite references in text by name and year in parenthesis. The list of reference to include those cited in text and annexures.

Editorial Review Process

All submitted manuscripts undergo a preliminary review by the Editor-in-Chief and those found suitable for the Journal are reviewed by experts by a double blind review process. Manuscripts are acceptable for publication subject to (a) reviewers' recommendation for publication and (b) author's/ authors' satisfactory revisions based on the reviewers' comments and suggestions, if any. All accepted manuscripts are copy-edited and sent for authors' approval. Print page proofs are read by the Journal's editorial team to avoid delay in communications and speed up publication. Print and soft copies of Journal's issue are sent to all authors.



Release of 7th Edition of 'Aarthika Charcha' by Sri. Ajay Seth, IAS, Managing Director, BMRCL on 30.07.2019 at FPI



Release of the FPI's Publication 'Facilitating Gender Audit - A Guide for Auditors, Trainers & Researchers' in the 'Cross-Learning Workshop on Gender Responsive Budgeting for India and Sri Lanka' held on 11.09.2019 at Goa



First Technical Advisory Group Meeting of the UNICEF Project on Child Budget at FPI on 18.09.2019



General Orientation Programme on Child Budget Statement for Administrative Departments of GoK held on 11.12.2019 at FPI



Ms.E.P. Nivedita, PAG(G&SSA) delivered valedictory address in the Valedictory Function of 'Training Programme on Public Finance for the Officers of KSA&AD' held on 02.08.2019 at FPI



Participation of Director of FPI at the Panel Discussion in CBPS ECCE Dissemination Workshop on 18.12.2019 at New Delhi

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Vision :

The resources invested through FPI enhance quality of human capital engaged in public service delivery, the outcome of which enhances their efficiency, promotes a habit of adherence to macro-prudential fiscal norms and ensures value for money to citizens for all time.

Mission :

The mission of FPI is 'to position itself as the first point of reference for consultancy and handholding by all the public sector administrative units by imbibing the sense of fiscal responsibility and by infusing the matching practices w.r.t the legislative objective of the Fiscal Responsibility and Budget Management Act of 2003 as also the Fiscal Responsibility and Budget Act of 2003 as the Karnataka Fiscal Responsibility Act, 2002, more particularly in line with the fiscal management principles enunciated under Sec 4 of KFRA up to Taluka level by 2015, and thereafter efficiently continue those operations all the time' while converting itself into a profit centre by 2016 by providing its services and outputs at reasonable and affordable costs to users and the government.

GOVERNMENT OF KARNATAKA

ಕರ್ನಾಟಕ ಸರ್ಕಾರ

ANNUAL FINANCIAL STATEMENT
(BUDGET)

FOR THE YEAR 1974-75



(As presented to the Legislature in March 1974)

(1974ನೆಯ ಇಸವಿ ವಾರ್ಷಿಕ ತಿಂಗಳಲ್ಲಿ ವಿಧಾನ ಮಂಡಲದ ಮುಂದೆ ಮಂಡಿಸಿದಂತೆ)



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