DESIGNING FISCAL RULES FOR PROVINCIAL GOVERNMENTS IN A FEDERAL COUNTRY

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BY

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DECLARATION

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Abbreviations

ACA	Additional Central Assistance
CAGR	Compound Annual Growth Rate
CAS	Centrally Assisted Schemes
CSO	Central Statistical Organisation
CSS	Centrally Sponsored Schemes
EMU	Economic and Monetary Union of the European Union
EU	The European Union
FC	Finance Commission
FRL	Fiscal Responsibility Legislation
GDP	Gross Domestic Product
GRP	Gross Regional Product
GSDP	Gross State Domestic Product
IMR	Infant Mortality Rate
IP-RR ratio	Interest Payment to Revenue Receipt ratio
MMR	Maternal Mortality Rate
NCA	Normal Central Assistance
NDR	Non-domestic Rates
PC	Planning Commission
PCGSDP	Per Capita Gross State Domestic Product
RBI	Reserve Bank of India
RSG	Revenue Support Grant
RTS	Representative Tax System
SGP	The Stability and Growth Pact
SSA	Standard Spending Assessment
TTR	Total Taxable Resources

Chapter 1 INTRODUCTION

1.1 Introduction:

A role of government in an economy has been increasing over a period of time. This can be seen from an increasing government spending as a percent of Gross Domestic Product (GDP) in almost all countries. One of the main reasons for such tremendous increase in government spending is growing demand for variety of public services in all growing economies. Governments mainly finance these expenditures by means of taxation. However, many countries have been witnessing that an increase in their government expenditure has not simultaneously been matched with an increase in tax revenue, resulting in growing disparities between the government expenditure and government revenue. A persistence disparity between the government's revenue and expenditure has resulted in a large accumulation of government debt over the period of time. Therefore, since last couple of decades most of the countries have been witnessing a high level of fiscal deficit and debt.

It is often argued that high levels of debt and fiscal deficit are likely to threaten sovereignty of these countries and may pose various kinds of vulnerabilities on an economy. The major risks of high levels of fiscal deficit and debt are risk of undermining the macroeconomic stability and disruption of smooth flow of public service delivery due to high interest payments. From the point of view of most of the researches, a root cause of such high level of deficit and debt lies in the discretionary power of policy makers. Policy makers try to spend more than means for electoral gain and claim higher share in federal fiscal transfers by running higher deficit.

To counter these tendencies, most of the countries have embarked on a rule based fiscal policy framework in order to impose disciplinary action on the policy makers. The fiscal rule[1]

[1] Fiscal rule broadly includes numerical fiscal rule and procedural rule (see van Eden, Emery, Khemani; 2013). Procedural rules are intended to ensure transparency in fiscal process. They includes rules like requirement of reporting of fiscal outcomes frequently within a budget year, mentioning of budget targets before budget submission, reporting of medium term fiscal policy statements, detailed discussion on how to achieve these targets etc. Numerical fiscal rule imposes quantitative restrictions on major budgetary aggregates of government. This rule helps in taking away substantial amount of discretionary power from government and requires them to set fiscal policy in predetermined boundaries.

facilitates binding of policy decision to a fiscal sustainability by means of numerically constraining major budgetary aggregates or by some procedural requirement in the domain of fiscal policy making. According to Schaechter et.al (2012), the numerical fiscal rule imposes permanent constraint on the fiscal policy by means of putting ceilings on major budgetary aggregates. The fiscal rules serve as an instrument to ensure accountability of a government towards its policy decisions and thereby constrain fiscal profligacy. These fiscal rules are often embodied in the constitution and therefore, they are not subject to frequent changes.

The intended objectives of the fiscal rule is to constraint the tendency of over spending, to ensure a sound macroeconomic management, to ensure government's long run commitment to the fiscal discipline, to ensure a predictable fiscal policy irrespective of the government in power, and to ensure an efficient management of public resources and thereby freeing resources for a productive use etc.

It is often argued that the imposition of numerical fiscal rule on governments is necessary to ensure prudent fiscal behaviour. It ensures reduction of the budgetary aggregates like revenue deficit, fiscal deficit, and government debt from very high levels to sustainable levels[2] in a time bound manner. The sustainable level of fiscal deficit further ensures the objectives mentioned above. Considering these merits of the fiscal rule, the numerical fiscal rule in particular, some federal countries and their provincial governments have adopted numerical fiscal rule.

However, the preset study argues that the design of present numerical fiscal rule has various drawbacks and therefore, gives scope for further improvement, particularly in case of provincial governments in a federal country. Provincial governments in many countries have also adopted the numerical fiscal rule in order to tackle with the problem of fiscal profligacy. The numerical fiscal rule puts numerical ceiling on actual total revenue deficit, actual total fiscal deficit, and debt to GDP ratio of the provinces. The provincial governments are required to achieve these targeted levels of deficits within a stipulated time. These numerical ceilings are more or less uniform across the provincial governments[3].

The present study argues that such arbitrarily chosen and uniformly imposed ceiling on budgetary aggregates may not be appropriate. Such ceiling on borrowing may undermine

[2] Fiscal sustainability can be seen as a government's ability to continue present fiscal policy in the distant future without undermining government solvency.

[3] For example, numerical fiscal rule adopted by the states in India. Under these rules, all states have committed to eliminate revenue deficit and contain fiscal deficit at 3 per cent of GSDP.

development prospectus of some provinces. Therefore, there is need to determine justifiable level of deficit of each state that can be allowed to finance through borrowing.

In order to determine such justifiable level of borrowing of the provinces, the present study argues that fiscal deficit or revenue deficit emanates from three different sources. The sources of fiscal deficit are classified as an inherent deficit, deficit emanates from an ill designed federal fiscal transfer system, and deficit emanates from fiscal management of provinces. The present study argues that the design of numerical fiscal rule must consider these three components of the fiscal deficit. The identification of these three components will help in determining justifiable level of borrowing need of the provinces. Ignorance of these aspects may give misleading picture of borrowing need of the provinces and therefore such ceiling may become counterproductive.

Moreover, out of these three components, some components are out of control of the provincial governments while others are not. Therefore, it would be justifiable to ask provinces to reduce only that part of deficit over which they have control. Some part of the fiscal deficit emanates from a federal fiscal arrangement where provincial governments face shortage of resources over its expenditure responsibility. On the other hand, some part of fiscal deficit is due to fiscal profligacy. Therefore, ignoring these three aspects of the fiscal deficit or revenue deficit may financially constrain provinces for delivering a standard level of public goods and services. This will further likely to result in differential achievements in economic and social development across the provinces. Therefore, consideration of these three components of fiscal deficit is very crucial from the point of view of balanced regional development. These three parts of fiscal deficit and revenue deficit is discussed below.

1.2 Components of fiscal deficit:

The inherent deficit emanates from initial constitutional assignment of revenue powers and expenditure responsibilities between the provinces and federal government. Allocation of these two functions between layers of governments is often based on an efficiency criterion. For example, the provincial governments are in better position to deliver public services as per local needs and preferences than the federal government. Therefore, in order to use scare resources efficiently, more expenditure responsibility is assigned to provincial governments. However, revenue resources are concentrated in the hands of federal government since it is better positioned to collect broad base taxes. This led to mismatch between the revenue

capacity and expenditure responsibility of the provinces. This phenomenon is quit inevitable in federal countries and also called as vertical fiscal imbalance between the federal government and provincial governments.

Moreover, the provinces also differ among themselves in terms of expenditure responsibility and revenue capacity. The constitution assigns certain revenue powers and expenditure responsibilities to all provinces. However, due to various factors, provinces differ in their revenue capacity and public expenditure need. For example, tax bases for constitutionally assigned taxes differ across the provinces and therefore resulting revenue collection also differs across the provinces. On the other hand, the constitution assigns expenditure responsibilities to provinces under different categories. The provinces differ in their population qualifying under each of these different categories of expenditure heads as well as cost of provision of public services. Therefore, expenditure need differs across the provinces based on underlying demographic and cost conditions. This mismatch between the revenue capacity and expenditure need is out of control of the provincial governments and therefore, it is inherent in nature. Therefore, in the present study, the difference between the inherent revenue capacity and expenditure need of a particular province is called an inherent deficit of that province.

Thus, factors determining constitutionally assigned revenue and expenditure differ across the provinces and they have no control on these factors. Therefore, the present study calls these factors as the inherent weakness factors. The inherent weakness factors on revenue side and expenditure side may include tax base, level of development, demographic profile, and cost of provision of public services etc. These factors determine the inherent part of the fiscal deficit. Inherent part affects the standard level of public services across the provinces if it is not fully offset by some other means of resources.

In a federal country, such inevitable mismatch between the revenue capacity and expenditure need between the federal government and provinces and also among the provinces is filled by federal fiscal transfers. The federal fiscal transfers enhance the revenue capacity of the provinces in undertaking different expenditure responsibilities. Therefore, the federal fiscal transfers, in a way, help in offsetting or reducing the inherent deficit of provinces[4]. However, due to insufficient transfers from the federal government or due to the ill-designed fiscal transfer mechanism or both, the inherent deficit on the revenue account and aggregate

[4] See Sarma (1997).

account is not totally filed by the transfers. It might happen that the federal government has made sufficient transfers to the provinces but due to the ill designed transfer mechanism some provinces end up with the unfulfilled inherent fiscal deficit or revenue deficit.

The ill-designed fiscal transfer system is explained as follows. In most of the federal countries, a formula based transfer system takes into account various factors representing the inherent weakness or the fiscal disabilities in collection of revenue or expenditure of the provinces. In largely diversified federal countries, provinces face fiscal disabilities on both revenue side and expenditure side. The fiscal disability on revenue side represents low tax revenue raising capacity due to lower tax base. Similarly, the fiscal disability on expenditure side represents higher expenditure due to factors like higher population, higher cost of provision of public goods and services etc. The transfers should be designed in such a manner that transfers are directly proportional to higher expenditure need and inversely proportional to higher tax revenue. Such design of transfers reduce inherent fiscal gap of each province to the extent available funds allows. If fiscal transfers are sufficient to fill the entire inherent fiscal gap of all the provinces then it ensures standard level of public services across the provinces. On the other hand, if transfers are insufficient, lower level of standard public services results across the provinces. Moreover, the ill-design transfer system is one which does not take in to account fiscal disabilities on both expenditure side and revenue side or one that gives improper weights to these disabilities.

An illustration of ill-design federal fiscal transfer system is as follows. In the design of fiscal transfers, if more weightage is given to the factors representing inherent weaknesses on expenditure side like population and urbanisation etc., highly populated provinces will get more shares in the fiscal transfer. However, if a particular province that has lower population but also has lower fiscal capacity, it will receive lesser transfer under this method. In this case, the fiscal deficit of that particular province is going to be higher than what it should be otherwise. The opposite is true if the fiscal transfer design puts more weightage on the fiscal capacity indicator like GSDP (Gross State Domestic Product). In this situation, provinces that have higher GSDP but also have higher expenditure need are going to receive lesser shares in the fiscal transfers and going to have higher fiscal deficit. This is called the ill-designed fiscal transfers induced fiscal deficit of the provinces. The provinces have lesser control over the federal fiscal transfers and the federal government can reduce such deficit by re-designing the fiscal transfers in more justifiable manner. Therefore, this type of fiscal deficit is not in the control of provincial governments.

Lastly, the provinces may under exploit or over exploit their available revenue base and involve in excessive or under spending on provision of public services. This kind of fiscal behaviour reflects in their actual revenue and expenditure. Out of this actual revenue and expenditure, how much should be taken into consideration for the analysis is an important question. This is because excessive spending or under utilisation of revenue base by a province claims higher share in other revenue sources like federal fiscal transfers or available savings in the country (borrowing). This type of behaviour of the province has implication on other provinces since it reduces their claims on these revenue sources. Therefore, only justifiable level of revenue and expenditure of each province must be considered while remained must be ignored from the analysis. This type of fiscal management[5] explains some part of the actual fiscal deficit. Such fiscal management induced fiscal deficit is completely in the hands of provinces. Therefore, such deficit must not be allowed to finance by borrowing.

The present design of fiscal rule does not consider these components of the fiscal deficit. Moreover, the present design puts uniform ceiling on actual fiscal deficit of provinces. Such uniformity of ceilings on fiscal deficit, revenue deficit, and debt are not justifiable since above mentioned three components of the observed fiscal deficit differs across the provinces. For example, if for some provinces, the inherent fiscal deficit is higher than the prescribed limit and they are performing well on fiscal management front and transfers are well designed but insufficient to fill the entire inherent deficit, then forcing these provinces to follow the numerical deficit targets proposed in the fiscal rule will not be justifiable. Under these circumstances, the fiscal rule will probably adversely affect the standard of public services across the provinces by constraining their borrowing requirement. In this case, the numerical ceiling on fiscal aggregates becomes arbitrary and does not have any connection with underlying economic circumstances in which provinces are functioning.

On the other hand, if the transfers are well designed and fill the entire inherent fiscal deficit then the fiscal deficit is a result of fiscal management and therefore must not be allowed to fill with borrowing.

The present design of numerical fiscal rule has not considered these aspects of the fiscal deficit and puts ceiling on the observed fiscal deficit, revenue deficit, and debt. A more proper design should be one that indentifies these three above mentioned component from the

[5] Fiscal management component can be seen as an acceptable size of the government that must be taken into consideration for justifiable distribution of resources among the provinces.

aggregate fiscal deficit. The fiscal rule should be, then, restricted only in the case of fiscal management and ill-designed federal fiscal transfers. If transfers are well designed and conducive to the numerical fiscal rule then only fiscal management induced fiscal deficit should be restricted.

Further, the inherent fiscal deficit, federal fiscal transfers and fiscal management differs across the provinces. Therefore, the present study argues that the deficit ceiling on both revenue and total fiscal account should differ across the provinces as also debt level.

Summing up, considering the drawbacks of the present design of numerical rule, an endeavour of the present study is to design numerical fiscal rule taking into account three components of fiscal deficit discussed above. The study argues that the inherent deficit and the federal fiscal transfers are not in control of the provincial governments and therefore the numerical fiscal rule must focus only on the fiscal management induced fiscal deficit. The inherent deficit should be allowed to finance by borrowing. Likewise, if the transfers have been ill-designed, then the fiscal deficit emanating from it must be allowed because provinces have no control over it. Otherwise, the federal fiscal transfers need to be corrected. On the other hand, the fiscal management induced fiscal deficit should not be allowed to fill with borrowing. The numerical fiscal rule will be justified only when above mentioned aspects are taken care of.

1.3 Current design of numerical fiscal rule:

Rigidity of numerical fiscal rule and ignorance of differential infrastructural need across the countries have resulted in various adverse effects in many federal countries and in the European Economic and Monetary Union (EMU)[6]. In case of the EMU, member countries in the union are required to reduce their budget deficit to 3 percent, debt to GDP ratio at 60 per cent, and maintaining that level thereafter. These numerical targets have been criticised by many researchers on various ground.

First, the inflexibility of the numerical fiscal rules, particularly the borrowing rule, came under criticism in the face of recent global economic developments. In the recent financial crisis, the much needed government intervention in the form of higher expenditure was constrained by the rigid borrowing ceiling under numerical fiscal rules.

[6] In case of EU, only two components should be considered namely inherent fiscal deficit and fiscal management.

Second, in case of the EMU, the uniform nature of the fiscal deficit ceiling under the fiscal rule has been criticised on the ground that the catching up economies might have needed more borrowing to fulfil their capital requirements. Such uniform fiscal rule did not take into account the country specific differences in capital requirements and might have undermined their developmental expenditure. This situation happens due to the ignorance of inherent part of the overall fiscal deficit. Catching up economies do have higher inherent deficit due to their lower levels of initial capital stock. Therefore, imposition of uniform ceiling on overall deficit may undermine their development.

Like the EMU, some federal countries as well as their provincial governments have embarked on the numerical fiscal rules to control unsustainable levels of debts and deficits. In most of the cases, rules require elimination of the revenue deficit, and reduction of the fiscal deficit to GDP ratio at 3 per cent; and the provinces have to achieve these targets by a specific year. In case of provinces, these targets are uniform across all the provinces (for example, Indian states). As in case of federal countries, provinces may differ in their initial stock of human and physical capital. Therefore, spending requirements under the capital and revenue heads differ across provinces. Uniformity in the numerical fiscal rules, particularly elimination of revenue deficit and reducing fiscal deficit to 3 per cent of GSDP, do not take into account differential borrowing need of the provinces. The problem is more acute when borrowing is used for financing the capital expenditures in order to ensure intergenerational equity. Benefits of capital expenditures spread across the generations and therefore, can be financed by borrowing. Provinces that lack behind in initial level of physical capital may have higher inherent fiscal deficit. Ignorance of this aspect may result in lower level of development in these provinces.

On the other hand, as argued by researchers, in provinces where levels of services that improves human capital (for example health and education) are very low, financing these expenditures will probably yield more benefits than spending on physical capital[7]. However, these services fall into revenue account of governments and therefore, under the present rule this may lead to inappropriate cuts in spending on these services. The problem is severe in case of low income provinces where spending on these services is lower due to their resource constraint. In this situation, the inherent deficit on revenue account of these provinces should be higher than the actual. However, the present design of numerical rule requires elimination

[7] See Landon Stuart (2003) and Agenor and Yilmaz (2006)

of deficit on revenue account by all provinces. Therefore, ignorance of this aspect of the numerical fiscal rule will probably detrimental to growth of provinces where initial level of human capital is lower.

The present design of numerical fiscal rule overlooks differences among the provinces in terms of their capital requirement (both physical and human capital). It has important implication in a federal country where provinces differ significantly in their initial level of capital stock. The differences in the initial capital stock have further resulted in wide differences in the economic and social development across provinces. The present design of numerical fiscal rule, therefore, will be detrimental to the economic development of these provinces by putting uniform ceiling on deficits and by ignoring inherent weaknesses on expenditure and revenue side.

Overall, fiscal deficit and revenue deficit are not independent of constitutional assignment of revenue power and expenditure responsibility to the provinces and the federal fiscal transfers. The differences among the provinces in terms of the inherent fiscal gap result from the initial constitutional assignment of functions and responsibilities as well as the differences in federal fiscal transfers. Therefore, determination of ceiling on the budgetary aggregates under the numerical fiscal rule should consider these components. The next section discusses the mechanism of identifying three components of fiscal deficit proposed by the present study.

1.4 Mechanism of identification of three components of the fiscal deficit:

As noted earlier, out of three components of fiscal deficit, the inherent fiscal deficit and ill-designed transfer induced fiscal deficit are out of control of the provinces. While the fiscal management induced fiscal deficit must be excluded from determination of borrowing limit.

The fiscal management of the provinces can be assessed by measuring justifiable or potential revenue receipts and justifiable or potential expenditures. The justifiable revenue and expenditure of a province can be measured in relation to revenues and expenditures of all provinces taken together in the country. For example, if on an average all provinces are collecting certain amount of revenue from given revenue base, then we should expect a particular province to show that much revenue effort, particularly from those that are below average. In other words, it should be expected from all the provinces to show at least average revenue effort of all the provinces taken together in collecting revenue. Given a revenue base,

if a particular province shows average revenue effort then the resulting revenue collection will be considered as the justifiable or potential revenue of that province. Similarly, in case of expenditure, if on an average all provinces are spending certain amount of resources on certain level of population, then we should expect same from every province. As in case of revenue collection, an average influence of population factor on public expenditure of all provinces taken together is assumed to be constant for all provinces. The resulting amount of expenditure of a particular province, given the population, will be its justifiable or potential expenditure.

Further, in order to measure the potential revenue capacity and potential expenditure need, the inherent weakness factors[8] like, for example, GSDP and population will be taken into account respectively. The provinces have little control over these factors and therefore they are inherent in nature. If we consider all the inherent weakness factors that explain revenue capacity and expenditure need of the provinces and assume average influence of these factors on revenue and expenditure constant for all provinces, then the resulting gap between potential revenue and potential expenditure will be considered as the inherent or justifiable or potential[9] fiscal gap. Thus, using potential revenue capacity and potential expenditure need, we can estimate inherent fiscal gap and the difference between inherent fiscal gap and actual fiscal gap will be considered as the fiscal management component.

Once the fiscal management component will be deduced from the overall fiscal gap, remaining inherent fiscal gap can be related with province specific transfers. If federal fiscal transfers are sufficient in amount then the entire inherent fiscal gap can be fulfilled. On the other hand, if transfers are insufficient to fill entire inherent fiscal gap of all provinces, then shares in transfers can be derived based on their inherent fiscal gap. For example, province with higher share in total inherent fiscal gap of all provinces will get relatively higher share in the transfers. In other words, transfers should be proportional to their relative position in total inherent fiscal gap.

If the present design of transfers extends higher federal fiscal transfers to provinces having low inherent fiscal gap and lower transfers to provinces having higher inherent fiscal gap, then the present study consider it as ill-designed fiscal transfer system. In case of latter

[8] These factors influences revenue and expenditure of the provinces but are not under their control. These factors also are basic and root cause for revenue and expenditure by the government.
[9] Potential, inherent, justifiable have been used interchangeably in the present study.

provinces, need of borrowing will be higher than what it should be. Comparing the share of a particular province in total inherent fiscal gap of all provinces taken together and their actual shares in fiscal transfers received from the federal government, the present study will separate ill-designed transfer induced fiscal deficit.

Thus, benchmarking[10] the revenue capacity and expenditure need in the manner discussed above and comparing existing shares in fiscal transfers with shares in total inherent fiscal gap, the present study will indentify three components of fiscal deficit.

The above mentioned framework will allow us to integrate design of numerical fiscal rule with the constituents of intergovernmental fiscal relation namely revenue assignment (revenue capacity), expenditure responsibility (expenditure need), and federal fiscal transfers resulting out of mismatch between the former two.

The present study further argues that, since the inherent components of the fiscal deficit and the federal fiscal transfers differ across the provinces, the ceiling on the fiscal accountability targets like revenue deficit, fiscal deficit, and debt to GSDP ratio must differ across the provinces. Moreover, there is need to eliminate the transfer induced fiscal deficit since it is not under control of provinces. Therefore, the federal fiscal transfer should be well designed considering the inherent weaknesses on both revenue and expenditure side of the provinces as pointed out above.

The present design of numerical rules (particularly revenue deficit and fiscal deficit ceilings) has not considered these above mentioned aspects and therefore can be criticised on these grounds. The existing literature has not focused much on an identification three components from the overall fiscal deficit. Therefore, present study tries to fill this gap in public finance literature.

The following section discusses the intergovernmental fiscal relation in a federal country. It will also focus on the interrelationship between the constituents of intergovernmental fiscal relation and further it will explain how provincial borrowings are dependent on other three constituents of the intergovernmental fiscal relation.

[10] Here, benchmark that expected to be followed by all provinces is the average influence of inherent factors of all states taken together on revenue and expenditure of all states.

1.5 Intergovernmental fiscal relations:

Most of the countries in the world accommodate a large magnitude of ethnic, religious, linguistic, and societal and economic diversity. In these countries, these diversities are concentrated in different territories or regions. Accommodating these differences is very difficult in a unitary system and often acts as an obstacle to efficient governance. It has been observed that the federal arrangements are more appropriate in accommodating these kinds of large diversities. Federal arrangement ensures the autonomy of different territorial units and thereby their diversities (Arora; 2010). In the federal setup, autonomy of the federating units is secured by extending powers and functions to them.

In order to secure autonomy of the federating units, a well defined intergovernmental structure needs to be built up. Such structure is helpful in avoiding conflict between different levels of governments over the issues arising out of overlapping jurisdiction. The intergovernmental structure defines the roles and responsibilities of different levels of governments as well as procedure to solve issues over the overlapping jurisdiction (Neumann and Robinson; 2006).

An intergovernmental finance constitutes a major part of the overall intergovernmental structure. It addresses four main issues concerning the relationship between different levels of governments. These four main issues between the federal government and the provincial governments are an assignment of revenue raising power, an assignment of expenditure responsibility, a correction mechanism for any mismatch between the expenditure responsibility and revenue capacity of provinces, and finally, borrowings of provincial governments. There are certain principles followed by the constitution in the assignment of different powers and responsibilities between the federal and provincial governments.

According to Martinez-Vazquez et.al (2006), the revenue assignments between different tiers of governments are designed to support the functions of different levels of governments. The main functions of government include stabilisation, distribution, and allocation of resources in an economy. Macroeconomic stabilisation function has been assigned to the federal government and therefore, the tax bases that serve as a tool for stabilising the economy[11] have been assigned to the federal government. For example, corporate income tax and progressive

[11] Macroeconomic stabilization by tax policy help in stabilizing aggregate demand and private income

individual income tax has been considered as effective stabilisers. The progressive taxes are also useful in distribution function of the federal government.

The expenditure assignments are based on the principle that the government services should satisfy needs and preferences of the citizens. Lower levels of governments are well positioned to deliver government services according to needs and preferences of local people. Therefore, provision of public services by the lower levels of governments ensures the efficient use of resources. Similarly, for the purpose of equitable distribution of income and stabilisation of economy, federal government also undertakes different types of expenditure programmes.

In most of the federal countries, provincial governments face shortage of the own revenue for the provision of standardized public services due to mismatch between the tax assignments and expenditure assignments. On the other hand, the federal government end up with lower expenditure responsibility and higher revenue resources as compared to the provincial governments. A federal country mainly faces following two types of imbalances, first is vertical imbalances arising between the federal government and provincial governments and second is a horizontal imbalance arising across provinces. These imbalances occur due to initial constitutional assignment of revenue and expenditure responsibilities. Therefore, provinces have little control over it and they are inherent in nature. Federal counties have developed an intergovernmental transfers system to address these two inevitable imbalances. A primarily objective of the intergovernmental transfers in most of the federal countries is to ensure comparable levels of public services with comparable levels of taxation across the provincial governments. The intergovernmental fiscal transfers help in ensuring this aspect.

Lastly, provincial governments are allowed to borrow to build physical and social infrastructure in their territory. The borrowing is expected to use for asset creations and is justifiable on the ground that the future generation also gets benefit from it and therefore should bear a part of burden of investment. However, some federal countries have imposed constitutional constraint on provincial governments' borrowings considering its adverse macroeconomic implications. In recent times, some federal countries have adopted a fiscal rule to constrain the borrowings of provincial governments. As it is argued by researchers, such borrowing constraint is expected to ensure fiscal discipline of provincial governments. In the absence of borrowing constraint, the provincial governments tend to overspend and borrow at inefficient level.

1.5.1 Interrelationship between the four pillars of intergovernmental fiscal relations

The intergovernmental relations have been evolving over a period of time in all federal countries. The intergovernmental fiscal relation mainly constitutes four pillars namely revenue assignment, expenditure assignment, federal fiscal transfers, and borrowing. These four pillars are, indeed, related to each other and have implications on each others.

As pointed out before, the constitutional assignment of revenue raising power and expenditure responsibilities determines the fiscal capacity and expenditure need of the provinces. The provinces differ among themselves in terms of fiscal capacity and expenditure mainly need due to differences in revenue base and population. Moreover, with the same revenue and expenditure assignment, the fiscal gap (difference between revenue capacity and expenditure need) of the provinces differs over a period of time depending upon changes in revenue base and demographic profile of the provinces. For example, over a period of time structure of an economy changes and therefore tax bases and the revenue capacity also changes accordingly. The dynamics of structural changes also differs across the provincial governments. Likewise, in case of expenditure, demographic profile varies over the period of time and these changes differs across the provincial governments.

Thus, the initial constitutional revenue assignment and expenditure responsibility as well as structure of revenue base and population have very important implications on a particular provincial government's potential fiscal capacity and expenditure need and thereby its inherent fiscal gap.

The differences among the provinces in terms of potential revenue capacity and expenditure need has further implication on the distribution of federal fiscal resources among them. The federal fiscal transfer system is intended to address uneven expenditure responsibilities and revenue capacity across the provinces in order to reduce the horizontal imbalances. In other words, the transfer system is intended to close the inherent fiscal gap of each province. However, the inherent fiscal gap is, most often, not fully covered through the transfers due to the inadequate funds allocated by the federal government to all provinces. This creates borrowing need for provinces in order to ensure provision of standard level of public services.

Moreover, total expenditure include revenue and capital expenditure and theoretically, revenue expenditure should be covered by current revenue like own tax, non-tax revenue of

the provincial government, and transfers. The excess amount of revenue receipts of provinces after financing revenue expenditure, called government saving, can be used for capital expenditure. However, saving of the provincial government is rarely found in the federal countries. Therefore, capital expenditures are often financed by borrowing[12]. The post-transfer total inherent fiscal gap reflects the borrowing need of the provincial governments.

It can be noted from the above discussion that changes in own revenue capacity, expenditure need, and fiscal transfers have major implication on the borrowing requirements the provinces.

However, in almost all federal countries, the provincial borrowings are constrained by the federal government in order to avoid fiscal profligacy. An unconstraint borrowing by the provincial governments leads to the burden of higher interest payments in the future if the borrowing is not used for finance productive activities. The resulting high interest payments take away resources from the productive capital expenditure leading to the lower economic development. This further result in a low tax revenue due to lower economic growth and therefore, higher need of borrowing to finance the government expenditure in the future. This kind of vicious circle is often observed in federal countries where provincial governments have unconstraint access to the market borrowings. Therefore, most of the federal countries put restriction on the provincial government borrowing. Another reason for constraining provincial borrowing is that excess borrowing by government crowd out the private investment by putting upward pressure on interest rate.

Lastly, most of the federations have restored to fiscal rules to ensure provincial fiscal discipline. One of the components of the fiscal rule imposes quantitative limits on fiscal deficit, revenue deficit, and debt to GDP ratio. It puts uniform ceilings on the fiscal and revenue deficit that can be achieved by certain uniform year by all provincial governments. However, the present study argues that such uniform ceiling is not justifiable. The borrowing ceiling should be conducive to the expenditure responsibility, own revenue sources and the fiscal transfers. Each province should have its own borrowing need since the inherent fiscal gap and the fiscal transfers differ across the provinces. Such province-specific revenue deficit and fiscal deficit ceiling or borrowing ceiling is justifiable as it takes into account province-specific fiscal need, revenue capacity, and availability of transfers.

[12] Rational behind provincial government borrowing is further discussed in the subsequent chapters.

Overall, borrowing is dependent on other three components of the intergovernmental fiscal relation. In order to determine justifiable level of borrowing of each state it is important to indentify three components of fiscal deficit. In order to do this, the study will integrate the design of numerical fiscal rule with the constituents of intergovernmental relation in a single framework. While doing so it will take expenditure assignment and revenue assignment as given by the constitution. The study will look into the transfer mechanism in relation to the expenditure and revenue assignment and then it will integrate borrowing requirement with these three. Further, it will employ same methodology on Indian case to indentify three constituents of the fiscal deficit and thereby derive state-specific revenue deficit, fiscal deficit and debt to GSDP ratio targets.

Since study is employing proposed mechanism of determining province-specific borrowing limit on Indian states, the following section focuses on the intergovernmental fiscal relation in India.

1.6 Intergovernmental Fiscal Relation in India:

In Indian federal structure, division of powers and responsibilities between different levels of governments are explicitly incorporated in the Constitution of India. The division of power between the centre and the states are separately listed in the seventh schedule of Article 246. The seventh schedule specifies the exclusive power of the centre and the states, and those powers that are held concurrently (Singh; 2004). The Article 246 provides the details of revenue and expenditure authority as well as revenue sharing and grants between the layers of governments.

Expenditure functions assigned to the central government are related to maintaining macroeconomic stability, international trade and relations, and functions that have spill over effects across the jurisdictions. On the other hand, expenditure functions assigned to the states include public order, public health, agriculture, irrigation, land rights, fisheries and industries and minor minerals. The states are also given major responsibility in expenditure functions that fall into concurrent list like education, transport, social security and social insurance.

In case of assignment of tax powers, most of the broad based taxes have been assigned to the central government while narrow based taxes have been assigned to the states and therefore,

adds little to state's revenue. All the residual taxing powers have been assigned to the central government.

The asymmetry between the assignment of tax powers and expenditure functions between the centre and the states would create the imbalances between own revenue and expenditure responsibilities of the states. Recognising this inherent imbalance, the Constitution made provision of the federal fiscal transfers from the centre to the states. The task of correcting vertical fiscal imbalance between the centre and the states and the horizontal fiscal imbalance across states has been given to the Finance Commission (FC). The President of India appoints the Finance Commission every five years. The Finance Commission is required to determine tax shares between the centre and the states and among the states. It is also required to recommend grants to the states from the central government.

Apart from Finance commission's transfers, Planning Commission (PC) makes grants and loans to the states for implementation of development plans. Various ministries also give grants to the state ministries for the specified projects.

Apart from these revenue sources, the state governments have been allowed to finance its expenditure by borrowings. However, the state governments in India have limited access to the market borrowings. According to Article 293 of the Constitution, the states if they are indebted to the centre then they have to take prior approval from the centre in case they seek to borrow from the market. However, all the States are indebted to the centre and therefore, states' market borrowing is determined by the Ministry of Finance in consultation with the Planning Commission and the Reserve Bank of India (Rao and Sen; 2004).

In addition to this indirect constitutional constraint on the state government borrowings, recently all state governments have enacted Fiscal Responsibility Legislation to constraint their borrowings. This legislature aims to ensure accountability and transparency in conducting fiscal policy and thereby reducing deficits and debt at a sustainable level. Under this legislation, the state governments have committed to eliminate the revenue deficit and contain the fiscal deficit at 3 per cent of GSDP, reduce debt to GSDP ratio around 25 to 30 per cent within the pre-specified year.

Overall, India has well established intergovernmental fiscal relation which constitutes the assignment of tax powers, the assignment of expenditure functions, the federal fiscal transfers and the provincial borrowing.

1.7 Intergovernmental fiscal transfer system in India:

The constitution of India has assigned revenue and expenditure responsibility to the state governments. However, due to differences in tax bases, composition of population, and cost of provision of services, the states differ among themselves in terms of their revenue capacity and expenditure need. These differences may lead to different levels and standards of provision of public services across the states. Considering this aspect, the intergovernmental transfers in India is aimed at enabling state governments with similar levels of service affordability with comparable level of taxes. Therefore, FC and PC, main institutions that disburse funds to the states, takes into account factors representing expenditure need and revenue capacity of the states while designing transfers.

India's intergovernmental transfer system is marked with multiple channels of distributing funds. The Finance Commission is constitutionally entrusted for the devolution of taxes and grants. Under the Article 280 of the Constitution, Finance Commission is entrusted with distribution of net proceeds of union taxes between the Union and the states and further among the states. The commission is also entitled with distribution of statutory grants-in-aid of the revenues of the states under Article 275. Thus, FC's transfers in the form of tax devolution and grants-in-aid are mainly concerned with revenue account of the states.

The Planning Commission is another body that gives grants and loans for undertaking development plans of the states. Various central government ministries also extend grants to the state level ministries.

The multiple channels of transfer system in India has been criticised by many researchers on various ground. Some studies have pointed out that these three channels lack coordination, transparency, and created complexity in the intergovernmental fiscal relations (Heredia and Rider; 2005). Some of the channels are formula based while others are discretionary and both of these types are not free from subjectivities and political factors. As a result, it is possible that states with lower inherent fiscal gap or higher fiscal management component might have received higher level of shares in the transfers than others[13].

Overall, the intergovernmental transfer system in India is marked with multiple agencies extending funds to the states. As pointed out by researchers, over a period of time, the central government has been transferring funds to the states more on discretionary basis rather than

[13] Details of federal fiscal transfers in India and its drawbacks are discussed in the chapter 6.

based on certain rule. Some researchers have also argued that the higher share of discretionary transfers have been mainly directed to the richer states and therefore, removing fiscal disability of fiscally disadvantaged states is still a distinct goal. In case of the PC and the centrally sponsored schemes, the transfer mechanism suffers from consideration of non-economic factors in the formulation of transfers.

Thus, there are some issues pointed out in the literature with regard to the intergovernmental fiscal transfer system in India. According to them the federal fiscal transfers have not well designed to correct the inherent weaknesses in the revenue capacity and expenditure need of the provinces. As pointed out earlier, the ill-designed federal fiscal transfer system has implication on borrowing requirements or fiscal deficit of the states and therefore, need to correct it.

Thus, considering above mentioned issues related to the federal fiscal transfers in India, the preset study will look into whether the transfer system is appropriately designed and conducive to the fiscal responsibility mechanism or not. With regard to the design of federal fiscal transfers, the present study argues that the revenue capacity and expenditure need should be guiding factors for design of transfers. This is because the need for fiscal transfer is not independent of weaknesses in the revenue capacity and expenditure of the states. The revenue capacity and expenditure need of each state should be estimated based on the objective criteria or certain benchmark rather than taking the actual revenue and expenditure of states. The fiscal transfers should be designed on the basis of such benchmarked revenue and expenditure of the states. The design of fiscal transfer will remove most of the drawback of the present fiscal transfer system in India. It will further help in design of fiscal accountability targets, since it will ensure justifiable transfer to each state.

1.8 Borrowings of the State Governments in India:

As pointed out earlier, state governments in India have limited access to market borrowings. According to Article 293 of the Constitution, the States, if they are indebted to the Centre, have to seek its permission to borrow from the market. However, all the States are indebted to the Centre and States' market borrowing is determined by the Ministry of Finance in consultation with the Planning Commission and the Reserve Bank of India (Rao; 2004).

Some researchers have argued that such borrowing constraint was intended to keep interest payments of states under control. This objective was met during the late eighties since states managed lower growth of interest payments. However, such constraint resulted in cutting down capital expenditure during the same period. During this period, revenue deficit of states went up due to increased responsibility in providing public services that felled into revenue account. Therefore, in order to control higher level of fiscal deficit in face of higher revenue deficit, capital expenditure was cut down (Pattnaik et al.; 2010). Thus, the borrowing constrained imposed on the state governments did not consider their borrowing need and therefore resulted in cutting down developmental expenditure.

During the late nineties, India witnessed high fiscal and revenue deficit; both at the central and the state level. Some researchers have argued that the high level of fiscal deficit led to reduction in space to carry out developmental expenditure and increase in future interest liabilities. The central and the state governments reacted to these fiscal developments by undertaking institutional reforms. Fiscal Responsibility Legislation was one of the important measures intended to help in reducing the fiscal deficit and debt-to- GDP ratio at a sustainable level. It was argued that the fiscal responsibility would reduce debt and debt servicing and thereby would create the space to undertake development activities. The ceiling on fiscal deficit would give incentive to the state governments to cut down unwanted expenditure and adequately exploit revenue base.

Under this legislation, the state government has committed to eliminate revenue deficit, contain fiscal deficit at 3 per cent of GSDP, and reduce debt to GSDP ratio around 25 to 30 per cent within the pre-specified year. By now all states have enacted the fiscal responsibility legislation.

As per the FRL, all states have to reduce revenue deficit to zero and fiscal deficit to 3 per cent of GSDP. Thus the revenue deficit and fiscal deficit targets are uniform across all states. However, the present study argues that such uniform ceiling is arbitrary and does not consider the three components of fiscal deficit namely the inherent fiscal deficit, fiscal deficit due to the ill design fiscal transfers, and fiscal deficit due to the fiscal management of the states. As discussed earlier, the state-specific borrowing need differs according to the state specific inherent fiscal deficit. The state-specific borrowing is determined by state-specific revenue capacity, expenditure need, and federal fiscal transfers. Therefore, it is only proper that deficit ceiling should reflect the revenue capacity, expenditure need and fiscal transfers

of the states. The transfer system plays crucial role in deciding upon the borrowing need of the states. The transfers system should reflect the revenue capacity and expenditure need of the states. Remaining post-transfer inherent fiscal gap i.e. borrowing need will be justifiable given that total borrowing need of all states taken together is less than available saving to the government sector in the economy. Since the inherent fiscal deficit differs across the states, it will be only proper that borrowing ceiling must differ across the states.

1.9 Scope of the Research:

Consideration of fiscal deficit into three components is rather neglected topic in the public finance literature. The present study argues that the numerical fiscal rule of provinces should be determined on the basis of these three components of fiscal deficit. The rule should focus only on the part of fiscal deficit that is resulting from the fiscal management of the provinces while allowing inherent fiscal deficit to be financed by borrowing. The present study further argues that the design of transfers also matters while deciding borrowing need of the provinces. Putting borrowing ceiling on provinces in the circumstances where fiscal transfers are not well designed or inadequate to fill entire inherent fiscal gap may lead to inappropriate cuts in the public expenditure, particularly developmental expenditure. The federal fiscal transfers should be well designed before deciding the numerical ceilings on the budgetary aggregates of the provinces. Overlooking this aspect while deriving ceiling on the budgetary aggregates may be counterproductive.

Therefore, the present study argues that the design of ceilings on budgetary aggregates should consider other constituents of the intergovernmental fiscal relation. The public finance literature on this issue has not paid sufficient attention to this kind of interrelationship. Therefore, the present study has focused on this issue.

As noted above, the transfers system in India has been criticised on several account ranging from its multiplicity of agency to ad hoc selection of indicators, formula and overall method. Therefore, the present study will look into favourability of present system of federal fiscal transfers in the designing of numerical ceilings.

In case federal fiscal transfers are not properly designed, the present study will propose its own design which will be conducive to the design of fiscal accountability targets.

In case of borrowings of the provincial governments, some researchers have argued that uniform borrowing ceiling is not justifiable. The ceiling should be the provincial-specific considering their circumstances should allow them to provide standard level of public services to citizens.

With regard to numerical fiscal rule, the European Union (EU) has applied uniform deficit ceiling on its member countries. Some studies have argued against such uniform deficit ceiling. The Union put conditionality under stability and growth pact that each country has to reduce fiscal deficit to 3 per cent of GDP and debt-GDP ratio at 60 per cent.

According to Orban and Szapary (2004), the sustainability condition depends on the GDP growth, interest rate, and rate of inflation. Therefore, the uniform fiscal rule for all countries within the union may not be justifiable. Moreover, catching up economies have higher growth potential and therefore can afford to have higher levels of deficit without affecting long term sustainability of public finance. Further, authors have argued that the countries differ in their initial stock of public capital and therefore need for infrastructural investment also differs across countries. The uniform deficit rule does not take into account the country specific infrastructural need factor.

According to Buiter and Grafe (2002), uniform fiscal accountability targets do not take into account country specific circumstances and structural economic features. Countries differ in their initial stock of debt and public capital stock. The balanced budget rule does not take into account the large public investment need of catching up economies.

Although, there are concerns regarding employing differential deficit ceilings, to the best of my knowledge, there is no such attempt made, particularly in case of provincial governments. Therefore, endeavour of the present study is to develop a method to derive province-specific deficit ceilings considering province-specific circumstances. While doing so, the present study will identify three components of actual/observed fiscal deficit, inherent fiscal deficit, fiscal deficit due to ill-designed or inadequate fiscal transfer, and fiscal deficit due to management of public finance by the provinces. The present study propose that the numerical fiscal rule should focus only on fiscal management component of overall fiscal deficit while allowing inherent fiscal deficit and correcting the fiscal deficit arising due to ill-designed transfer system.

1.10 Objectives of the Study:

Considering the scope of the study as noted above, the major objectives of the present study are as follows.

To examine the current design of numerical fiscal rule, particularly in case of states in India

To integrate design of numerical fiscal rule with other three components of intergovernmental fiscal relations

To examine whether or not current system of federal fiscal transfer is conducive to numerical fiscal rule

To propose more rational design of federal fiscal transfers that is conducive to numerical fiscal rule

To identify inherent fiscal deficit, ill-designed fiscal transfer induced fiscal deficit, and fiscal management induced fiscal deficit from the actual fiscal deficit

To propose fiscal deficit, revenue deficit, and debt to GSPD path for each state in India

1.11 Chapter scheme:

Chapter scheme of the present study is as follows. Second chapter will review literature related to the numerical fiscal rules. As pointed out earlier, there are very thin studies in the literature that have focused on the issue of determination of province-specific ceiling on major budgetary aggregates. There is also thin literature on the issue of integration of federal fiscal transfers with design of fiscal accountability target. Therefore, the present study has divided chapter second on review of literature into two parts. First part will deal with the related literature on design of fiscal accountability targets. Second part will focus on the determination of federal fiscal transfers.

Chapter three will focus on the methodology of determination of province specific fiscal accountability targets proposed in the present study. It also deals with the sources of data and definition of variables used in the study along with discussion on panel data econometrics.

Chapter four will analyse diversities in the social and economic indicators across the states in India. It will also focus on the diversity in terms of public expenditure and federal fiscal transfers across the Indian states. This chapter will mainly focus the diversities in per capita

expenditure across the states and will analyse need to allow some states to spend more than the present level.

Chapter five will focus on methodology employed in the present study for determination of justifiable level of revenue and expenditure across the Indian states. It will deal with the rational for selection of set of inherent variables that are used in the determination of justifiable level of revenue and expenditure of states. It will also discuss the econometric models used for the same purpose.

Chapter six will focus on the method of federal fiscal transfers proposed by present study. Before discussing proposed transfer scheme, the chapter will first deal with issues with the present design of federal fiscal transfers in India and its different channels and their methodology.

Chapter seventh will focus on the proposed mechanism of determination of ceiling on state-specific numerical accountability targets in India. This chapter will also focus on the methodology proposed by Twelfth Finance Commission to determine ceiling on state-specific numerical accountability targets. The chapter will give the fiscal deficit, revenue deficit, and debt to GSDP path of each state proposed by the present study.

Chapter eight will conclude the present study and followed policy implications of present study.

Chapter 2 REVEIW OF LITERATURE

2.1 Introduction:

The aim of present study is to propose a method of deriving numerical ceilings on major budgetary aggregates. The present design of numerical fiscal rule of most of the countries puts uniform ceiling on fiscal deficit, revenue deficit, and debt to GDP ratio on all provinces. It does not consider differential borrowing need of different provinces arising due to different level of economic and social development. As it is argued in the previous chapter, such uniform ceiling will be detrimental to growth of low income provinces if their justifiable borrowing need exceeds ceiling limit. In other words, the present design of numerical fiscal rule does not address differential borrowing need resulting from differential fiscal disabilities of provinces. These fiscal disabilities are inherent in nature and therefore, should be considered while designing numerical fiscal rule. Moreover, as noted before, borrowing need of provinces are not independent of their fiscal capacity, expenditure need, and federal fiscal transfers. The fiscal rule should take holist view and consider these three aspects while designing ceilings on borrowing.

Thus, the endeavour of present study is to determine province-specific ceilings on major budgetary aggregates in more rational way. For that study will try to measure three components of observed fiscal deficit namely the inherent fiscal deficit, fiscal deficit resulted from ill-designed transfer system, and fiscal management induced fiscal deficit.

However, measurement of fiscal deficit in above mentioned components for determination of fiscal accountability targets are not directly discussed in the literature. Although, there are concerns about province-specific or country-specific borrowing ceiling, these studies lack holistic view proposed in the present study. To the best of my knowledge, the proposed method of determination of province specific fiscal accountability targets is first of this kind. No study has focused on the mechanism proposed by the present study. Therefore, literature review is organised in following manner.

The present chapter on review of literature has been divided into two parts. First part will review the literature concerning borrowing of the provincial governments or countries in economic union. This part will review the rational or need for borrowing, reasons for over borrowing, consequences of over borrowing, and possible solutions to constraint over

borrowing. This section also reviews the issues associated with uniform fiscal accountability targets and possible way discussed in the literature to derive differential fiscal accountability targets considering county- specific circumstances.

Section two of this chapter deals with the review of literature related to designing appropriate transfer mechanism from the centre to the provincial governments. This part reviews the rational for considering both revenue capacity and expenditure need of the provinces for designing fiscal transfers and different methods discussed in the literature for designing transfers.

2.2 Section I- Borrowing of Sub-National Governments

In many federal countries, provincial governments have adopted fiscal rules to restrain fiscal deficit and debt at sustainable level. There are various reasons discussed in the literature why provincial government tends to borrow at unsustainable level. Before discussing reasons for over borrowing, the next section provides the rationale for provincial borrowing.

1] Need for provincial borrowings:

In a federal country, the fiscal decentralisation has transferred taxation and expenditure autonomy to provincial governments. However, over a period, the demand for capital goods and public services by citizens has increased. This increase of demand for public services made provincial governments to look for other financing sources other than its own revenue and transfers from the central government. In other words, increase in the expenditure responsibility has not simultaneously matched with the increase in own revenue as well as federal fiscal transfers. Therefore, the provincial governments are trying to expand their financial access to private credit markets for financing its increasing expenditure responsibilities. Followings are the major reasons of provincial borrowing discussed in the literature.

2] Increase in urbanisation:

Over a period of time, role of provincial governments in provision of infrastructure has been increasing. Major reasons for a large infrastructural demand at the provincial level are an increase in decentralisation and urbanisation. Under the decentralisation strategy, the provincial governments have given more expenditure responsibilities in the provision of crucial infrastructure. On the other hand, increase in urbanisation has resulted in increase in

demand for different types of public services by the urban population. This aspect has created higher demand for urban infrastructure. The provincial governments are facing increasing difficulties to finance urban infrastructure from its own resources due to insufficient decentralisation of revenue sources leading to justification for provincial borrowings (Magrassi; 2000, Liu; 2008, and Peterson; 2000).

3] Financing large infrastructure projects:

Due to inadequate revenue decentralisation, savings of the provincial government are often inadequate to finance large infrastructure projects. The provincial governments have two options to undertake large scale investment projects, first is to accumulate savings overtime until they will be able to finance all investment need of the project or they can borrow from the capital market. Considering the importance of timely provision of infrastructure for the development, financing large infrastructural project by borrowing is appropriate. In other words, borrowing ensures flexibility in the long term investment planning (Peterson; 2000, Magrassi; 2000, and Liu; 2008).

According to Liebig et. al (2008), infrastructure includes both economic infrastructure like electricity, roads, irrigation and social infrastructure like health and education. These kinds of infrastructural services have public good characteristics of non-excludability and non-rivalry. Therefore, the private sector cannot provide a socially desirable or optimal level of these services. Government should ensure the socially optimal level of provision of these services by means of direct provision or by providing subsidies. In most of these infrastructural services, government involves in direct provision. The funds available for provision of these services are often scared in developing countries and therefore, borrowing provides important means to finance infrastructure services.

4] Inadequate fiscal transfers from the central government:

According to researchers, fiscal policies at the central level are creating need for provincial government to borrow from private credit market. The central policies such as stabilisation of national budget, inflation levels and exchange rate are reducing funds available for intergovernmental transfers. Moreover, the central government's efforts to reduce budget deficit have further reduced the subsidies on infrastructure financing of the provincial governments. Inadequate transfers from the central government coupled with inadequate

savings of the provincial government for capital investment finance have resulted in increasing demand for borrowing (Freire and Petersen; 2004, Magrassi; 2000, and Liu; 2008).

5] Imposing market discipline on provincial government:

It is argued that financing a project either by tax revenue or by federal fiscal transfers gives scope for the provincial government to use these funds for unwanted or unproductive projects or purposes. On the other hand, financing the projects through market borrowing imposes market discipline on the provincial governments. Markets give the provinces incentive of improvement in project design, cost-recovery practices, budget management, and financial management. Financing capital projects by borrowing also ensures allocative efficiency. It makes provincial government to realise opportunity cost of capital and thereby incentivises them to use these borrowing funds for the projects with the highest socio-economic rate of return (Magrassi; 2000, Liu; 2008).

6] Intergenerational equity:

This is most celebrated justification for borrowing by provinces for financing capital investment. Theoretically, borrowing used for financing capital investment ensures an intergenerational equity. Benefits of a capital investment spread across the generations and therefore, the future generation benefiting from social and economic returns of investment should also contribute in financing it. If capital expenditure is financed by savings of the current generation then the cost of project is accruing to the present generation only while the future generation will also be getting benefit. On the other hand, if the current expenditure is financed by borrowing then the current generation will benefit from it while future generation will also have to pay for it. Therefore, the borrowing is justifiable only when it is used to finance capital expenditure (Magrassi; 2000, Liu; 2008, Vaillancourt; 2006, Vulovic; 2011, Liebig et. al; 2008, and Ahmad, Albino-War, and Singh; 2005).

The following section discusses reasons of over borrowing as well as need for constraining provincial borrowings discussed in the literature.

2.2.1 Reasons of over borrowing and need for constraint sub-national borrowing:

Despite several advantages of the borrowing as pointed out above, provincial governments tends to borrow at unsustainable level due to various reasons. This section reviews the possible reasons of such over borrowing by provincial governments.

1] Borrowing autonomy of the provinces:

According to Liu (2008), in a fiscal decentralisation framework, the provincial governments have given autonomy of borrowing to finance its expenditure. Such autonomy will probably lead to over borrowing by the provincial governments if not regulated properly.

Ahmad, Albino-War, and Singh (2005) have argued that while giving borrowing autonomy to provincial governments there should be constrained on overall borrowing in order to ensure macroeconomic stability and safeguard public finances. In the absence of borrowing constraint, the provincial governments tend to over borrow which may adversely affect borrowing of other jurisdictions and the future generation. Moreover, large provinces lends to over barrow if they expect the central government's debt write-off in the time of crisis. These provinces recognise their status of too big to be ignored by the central government. They realises that the cost of their default on the country as whole is large and the centre has to help them in order to safeguard other provinces. These expectations lead them to over borrow.

2] Implicit bailout policy by the central government:

According to Liu (2008), the provincial governments also tend to over borrow in a circumstance where the financial market assumes an implicit bailout from the central government in a crisis situation. The implicit guarantee on borrowing of the provincial government and resulting lack of scrutiny of financial accounts of the provincial government by the financial markets has resulted in fiscal crisis in many countries.

Tanzaniageateway (2009) has argued that the central government often act as a granter of provincial loans. It creates an expectation among creditors that if the provincial governments default on loans it will be paid by the central government. In this situation, credit institutions also extend loans to those provincial governments that are expected to be unable to repay the loans. It also creates the same expectation among the provincial government as well and they

tend to over spend and over borrow with the expectation that the central government will bail them out in the crisis or it will increase the transfers systematically.

Violeta Vulovic (2011) has also emphasised that when the central government finances most of the provincial expenditure then it creates incentive for them to over borrow expecting that the central government will bail them out in the fiscal crisis.

Peterson and Freire (2004) have argued that a "Moral Hazard" problem associated with provincial borrowings lead to over spending and over borrowing. Principally, the provincial government have to maintain the fiscal discipline to boost confidence of lenders and ensure adequate credit rating. However, due to existence of the implicit or explicit central government's bail out policy, the cost of default are transferred to the central government which further leads to overlooking of failure of borrower both by the lender and the borrower.

Landon (2003) has argued that characteristics of federation like bailout policies and debt guarantee induces lenders to charge lower premium than otherwise. This aspect leads to financing unsustainable deficit of the provincial governments by the lenders.

3] Common pool problem or existence of intergovernmental fiscal transfers or soft budget constraint:

Singh and Plekhanov (2006) have pointed out different reasons responsible for over borrowings by the provincial governments. A common pool problem arises when provincial governments fully internalise benefits of their public spending but internalise only fraction of cost. The reason behind his phenomenon is that provincial governments receive transfers from the common pool of taxes collected from all over the country. The provincial governments give signal to the central government that they are in financial need by running higher deficit or accumulating higher debt. They further expect that the central government will bail them out by arranging the transfers from the common pool of taxes. This phenomenon will be possible in circumstances where the transfers are based on an ex post financial needs rather than ex ante characteristics of provincial finance. In this situation, the provincial governments tend to under tax, over spend and default on loans expecting that the central government will finance these expenditures through transfers.

Rodden (2002) has argued that the provincial governments tends to over borrow when they expect that their fiscal burden eventually will be transferred to others by means of the central bail out from the common pool of taxes. The existence of intergovernmental transfer system

creates incentive for the provincial governments to over spend. In this situation, voters are also less likely to sanction such over spending by the government because the link between benefit and cost is distorted. The benefit of spending from the common pool accrues to a specific jurisdiction while cost is shared across jurisdictions. When intergovernmental transfers are unavoidable due to a large vertical fiscal imbalance then credibly commitment of no bail out policy is not possible.

Plekhanov and Singh (2006) have pointed out that the provincial governments face soft budget constraint when transfers are designed on discretionary basis. In these circumstances, the provincial governments tend to over borrow. The possibility of bail out from the centre steams from the transfers system based on ex post financial needs rather than ex ante characteristics. Therefore, regions that are in financial difficulties will likely to get higher transfers from the centre. The provincial governments in this circumstance may under-exploit their tax base or over-spend or default on debt expecting that centre will cover financial gap by the transfers.

4] Interregional competition:

Plekhanov and Singh (2006) have pointed out that an interregional competition also leads to over borrowing and lower tax rate. In order to attract capital and labour to their jurisdictions, provincial governments lower the tax rate and try to provide good infrastructure financed by borrowings. Moreover, if voters are failed to take into account full cost of public spending then it gives incentive to the government to cut taxes and increase spending in face of election. Such short political cycle results in the higher fiscal deficit and higher borrowing.

5] Use if borrowing for short-term or long-term expenditure:

Liebig (2008) has argued that one of the reasons for over borrowing is whether borrowing is used for short-term or long-term expenditure. If short-term loans are used to finance long-term project then the project will not generate enough revenue until the debt is due. On the other hand, if long-term debt is used to finance short-term expenditure then it leads to over borrowing.

Liu (2008) has pointed out that the borrowing used for financing capital expenditure does not result in fiscal unsustainability since it results in economic growth and therefore, higher

future repayment capacity of governments. However, borrowing is likely to be unsustainable if it is used to finance current expenditure.

6] Consideration of non-economic factors for borrowing decision:

Another reason for over borrowing is consideration of other factors rather than sound economic factors while making borrowing decisions. The over borrowing by provincial governments takes place when borrowing decision is influenced by political consideration, illusion about low level of future repayments, unrealistic revenue projections, and unsound financial management (Bahl 1981, 263; Zimmermann 2006, 293–4)[14].

7] Lack of full internalisation of cost of borrowing by provinces:

Landon (2003) has argued that the debt accumulation of one province has negative externality on other provinces. If the provincial government that generates negative externality does not bear cost fully then it passes on negative externality to other provincial governments in the federation in the form of higher interest rate. Therefore, due to lack of full internalisation of cost, the provincial governments have no incentive to take into account associated externality while borrowing. This leads to over borrowing by all provincial governments in the federation.

8] Easy access to debt financing:

Magrassi (2000) has argued that the provincial governments that own public bank have more access to debt financing. The easy access to borrowing through publicly owned bank and lack of arm-length relationship between the government and its bank results in over borrowing by the provincial governments. The public owned banks have limited capability to impose the market discipline on the provincial governments since these banks merely run on the business principles.

9] Existence of large vertical fiscal imbalances:

Ter-Minassian (1997) has argued that a large vertical fiscal imbalance in favour of the central government either results in higher gap-filling transfers to provincial governments or to deficit financing and large debt accumulation.

[14] Cited in Liebig (2008).

According to Rodden (2002) higher vertical imbalance and higher borrowing autonomy leads to higher fiscal deficit and fiscal indiscipline. On the other hand, low vertical imbalance and high borrowing autonomy creates situation where provincial governments are more accountable for voters and creditors for their fiscal behaviour.

Overall, there are large numbers of reasons that lead to over borrowing by the provincial governments. Considering these reasons, the following section discusses on the possible risks associated with over borrowing and the need for controlling provincial borrowing.

2.2.2 Need for controlling provincial borrowings:

1] Risk of provincial fiscal stress or risk of insolvency:

Liu (2008) has argued that despite benefits of allowing provincial governments to borrow, an indiscriminate borrowing may put provincial finance at risk. The imbalance between the revenue and expenditure, i.e. fiscal deficit, is feasible only when it is financed by borrowing. Therefore, control over provincial borrowing results in control over imbalance between revenue and expenditure and further have impact on fiscal sustainability. Unregulated borrowings lead to the provincial fiscal stress.

Liu and Waibel (2008) have argued that borrowing comes with risk of insolvency. The insolvency refers to an inability of provincial governments to pay back debt or short fall of resources of the provincial governments to serve entire debt stock. The insolvency has adverse impact on ability of the provincial governments to ensure minimum standard of public services over the period. The unregulated borrowing leads to insolvency and threatens the provision of public services and macroeconomic and financial stability.

Vulovic (2011) has argued that without regulatory framework for the provincial borrowing, it may lead to fiscal and debt crisis leading to unsustainable fiscal and macroeconomic policy. Overall limit on debt level and debt servicing is necessary because even if borrowing is used for capital expenditures, excessive debt serving endangers the debt sustainability.

2] High burden of debt servicing:

Moreover, excessive borrowing by the provincial governments impose burden of debt servicing on the future tax payers who are not part of today's electoral process (McKinnon and Nachyaba; 1997). Therefore, borrowing ceiling is required.

3] Risk to macroeconomic management of the economy:

According to Ter- Minassian (1997), the provincial borrowing should be controlled since it adversely affects the macroeconomic management of the economy carried out by the central government. First, when excessive provincial deficit is financed from abroad or domestic credit market, it constraints the conduct of domestic monetary policy and potentially crowd out private investment. Second, increase in expenditure over and above the balanced budget boosts aggregate demand and affects balance of payment adversely if the average multiplier for provincial expenditure significantly exceeds the average multiplier for their revenue. Third, composition of provincial government expenditure also undermines the central government's efforts to reduce aggregate demand. In this case, expenditure of provincial governments on items with higher multiplier effect, like expenditure on public work or transfers to higher propensity consumers, can boost the aggregate demand.

Ehtisham, Albino-War, and Singh (2006) have argued that the macroeconomic stability of a country or union depends on the aggregate exposure to risk. A major element of the risk comes from borrowing of the provincial governments or countries in the economic union. An uncontrolled borrowing by the provincial governments leads to free-riding problem in case of central government's effort to stabilise economy. The provincial governments can effectively pass cost of borrowing on other jurisdiction or on the future generation. The large provincial governments may demand debt write-offs and other fiscal advantages from the centre since failure of such big provincial governments may put overall nation at risk. Therefore, limit on provincial borrowing is necessary.

Thus, there are various reasons that explain why the provincial governments involve in over borrowing. Considering the adverse effects of over borrowing by the provincial government on an economy as whole, following section discusses different way by which provincial over borrowing can be restricted.

2.2.3 Methods of controlling unsustainable provincial borrowing:

Following are different approaches for controlling the provincial over borrowing discussed in the literature. They can be broadly grouped into market discipline, administrative controls, rule based controls, and cooperative arrangements.

1] Reliance on market discipline:

The provincial borrowing can be controlled by relying on capital markets. One strata of literature has argued that the provincial governments should be allowed to borrow from the capital market freely; there should not be any restriction on an amount of borrowing and use of borrowing (Singh and Plekhanov, 2006). In a situation where provincial governments are borrowing more than their means and finding it difficult to serve the debt then the lenders will demand higher interest rate in order to compensate for higher risk of default. Eventually lenders will exclude such borrowers from extending loans. Thus, the provincial government that accumulate unsustainable debt will eventually be deprived from borrowing by the capital market (Lane 1993). This gives incentive for the provincial governments to use borrowed funds for more productive use. The productive use of borrowed funds ensures higher future tax revenue resulting from higher future growth. This will ensure higher repayment capacity of the provincial governments and the capital markets will incorporate it while extending borrowings. In this manner the capital markets can impose fiscal discipline on the provincial borrowing.

There are number of pre-requisite for an efficient enforcement of the market discipline by the capital market. First, there must not be any provision or regulation that automatically makes fund available to the provincial governments like mandatory reserves and other portfolio composition requirements by the lending institutions. Second, an interest rate must reflect the risk associated with lending to the provincial governments. In order to ensure free functioning of the interest rate, the market must function freely and there must not be any regulation that encourages lending to the provincial governments. Third, the financial markets must be free and open and there must not be any restriction on access to foreign capital market (Petersen and Freire; 2004, Teresa Ter-Minassian; 1997, and Landon Stuart; 2003).

Fourth, there must be information symmetry as far as provincial government's outstanding debt position and repayment capacity is concerned. In other words, all the relevant information must be passed on to the financial markets adequately and timely. In addition, the information on off-budget activities or contingent liabilities in the form of direct or indirect guarantee must be shared with capital markets in order to ensure transparency (Petersen and Freire; 2004, and Teresa Ter-Minassian; 1997).

Fifth, the central government must credibly commit to no bail out policy. The soft budget constraint faced by the provincial government undermines the functioning of the market discipline. An ad hoc and extra-budgetary financing and the central government loans, grants,

and guarantees creates moral hazard problem that undermines functioning of the market discipline (Petersen and Freire; 2004, and Teresa Ter-Minassian; 1997).

Fifth, the provincial governments should have some kind of institutional mechanism that can help governments to react to market signals and make necessary policy changes accordingly before lenders prohibit further borrowings to them. In other words, the borrowers should show sensitivity to the market signals and act accordingly to ensure fiscal solvency. The raising interest rate on the provincial borrowing should stop borrowers from borrowing or at least induce them to review its borrowing decisions (Petersen and Freire; 2004, and Teresa Ter-Minassian; 1997).

Sixth, in most of the federation it has been observed that the financial markets have to keep some part of their resources in the form of government debt. The provincial government should be prevented from borrowing from the central bank or the state-owned bank, because these institutions do not make market driven lending decisions (Petersen and Freire; 2004, Teresa Ter-Minassian; 1997, and Landon Stuart; 2003).

However, most of the above mentioned pre-requisites are absent in case of most of the countries, particularly in developing countries. In developing countries, information related to the provincial finance suffers from coverage, accuracy and timeliness etc. Apart from the issues over availability of information, most of the countries involved in deciding the composition of portfolio of banks where government securities are placed with lower cost. Some government controls financial institutions, partly or fully, where government finds market for their bonds or borrowing. In many countries, the central government had bailed out provincial governments time and again. In some cases, provincial governments have not responded to the signals from the financial market mainly due to short electoral cycle faced by the politicians. Therefore, using market discipline as a tool for controlling the provincial borrowing has limited success in ensuring the fiscal discipline (Petersen and Freire; 2004, and Teresa Ter-Minassian; 1997).

2] Rule based approach:

Another way to control provincial borrowing is an imposition of specific numerical rules on borrowing and incorporating it in the constitution or the law. The rules can specify limits on an absolute level of indebtedness of the provincial governments or use of the borrowing for a specific purpose or specifying maximum debt service ratio and allowing borrowing up to that

level consistence with service ratio. Some rules mimic the market discipline by linking indebtedness to the projected debt service or to debt service capacity like past revenue or tax base (Teresa Ter-Minassian; 1997).

The effectiveness of the rule based approach depends on a clear and uniform accounting standards across all government entities, limitation or elimination off-budget operation, clear definition of debt constituents, making available government expenditure data timely and accurately, and making available information on financial operations of all levels of governments (Teresa Ter-Minassian; 1997).

The rule based approach of controlling borrowing will be efficient only when rules are transparent, legally binding, simple to follow, and applied across the board. The rule should specify a clear quantitative limit and procedural norms thereby imitating financial market discipline and creditworthiness indicators. The central bank should not finance provincial governments directly (Petersen and Freire; 2004).

The major advantage of the rule based approach is its transparency. However, it suffers from lack of flexibility and incentivises provincial governments to involve in creative accounting in order to circumvent rules. The major practice of circumvention includes reclassification of expenditure from current to capital account in order to escape the current budget balance requirement. Second, involving in off-budget activities where debt on this account are not subject to debt ceiling. Third, use of debt instruments that are not included in the debt limit; fourth, running arrears that are not part of debt ceiling; and fifth, use of the state owned enterprises for borrowing etc (Teresa Ter-Minassian; 1997).

In addition, the rules may induce the provincial governments to maintain large reserves instead of borrowing periodically whenever there is short fall of revenue. The rules may constraint government's consumption smoothening mechanism and may induce pro cyclical behaviour. Sometimes rules specify that the borrowing have to be used only to finance capital expenditure and therefore, in some situation government end up with spending on capital projects that yields lower return than otherwise spending on current component (Landon Stuart; 2003).

3] Direct control of the central government over provincial borrowings:

The central government can directly control provincial borrowing by using different measures. The central government can set overall annual limit on provincial debt or some of

its components like external borrowing; review and authorisation of individual borrowing operations; and centralisation of all government borrowing. The central government not only authorises provincial borrowing but it also monitors financial operations of the provincial governments after approval of borrowing. Effective administrative controls on the provincial borrowing require those controls that are transparent, easy to monitor and understand, and not arbitrary (Landon Stuart; 2003 and Teresa Ter-Minassian; 1997).

However, such direct control over the provincial borrowing interferes with the constitutional status of the provincial governments in the federation. It interferes with the autonomy of provincial governments in decision over fiscal aspects and limits decision making power of the provincial governments. Administrative approval of the provincial borrowing ultimately ensures bail out by the central government in a time of crisis. Moreover, the central agency approval, evaluation of each loan contract etc. leads to micromanagement, bureaucracy, and inefficiency. It also leads to interfere with accountability of the provincial governments in the use of borrowed funds and impediments allocation efficiency and thereby principle of fiscal decentralisation. The administrative control on borrowing is not often transparent and predictable leading to uncertainty about resources available and further implies uncertain and costly planning. The administrative limit on borrowing is not specified in law. Therefore, it gives scope for the provincial government to negotiation and therefore, they are not fully binding (Petersen and Freire; 2004 and Teresa Ter-Minassian; 1997, and Landon Stuart; 2003).

4] Cooperative arrangement:

Under this approach, the provincial and the central governments both are involved in the formulation of provincial borrowing controls. The provincial governments are involved in formulation of macroeconomic objectives where fiscal parameters are one of the variants of these objectives. In this manner, provinces share responsibility of achievement of these objectives with the centre. In the process of defining macroeconomic objectives, the target for fiscal deficit and other key components of revenue and expenditure are determined by both levels of governments. The cooperative approach provides coordination in macroeconomic policies of both the layers, it insures sufficient flexibility, it creates awareness among the provincial governments about the implication of their budgetary actions on macroeconomic stability, and finally it does not imply the central government's guarantee on provincial borrowing (Singh and Plekhanov; 2005).

However, the cooperative arrangement may induce the provincial governments and the central governments to consider short term political factors than sound macroeconomic factors while deciding upon the targets (Teresa Ter-Minassian; 1997).

Moreover, cooperative approach may not be politically feasible that the centre is forcing down decisions on provinces or provinces are refusing to cooperate without concession. In a circumstance of weak fiscal management and weak central government this system may not function effectively (Petersen and Freire; 2004).

The cooperative arrangements also fail when provincial governments involve in creative accounting like off-budget activity to evade the agreed limit (Landon Stuart; 2003).

Overall, each of the ways to control over borrowing by the provincial governments discussed above has merits and demerits of its own, especially in case of developing countries. However, most of the federal countries and its provincial governments have adopted rule based fiscal policy framework. The following section discusses the rule based approach in more detail.

2.2.4 Rule based fiscal policy:

Many countries have adopted the fiscal rule to counter fiscal profligacy of the centre and provincial governments. The aim of rule based fiscal framework is to reduce fiscal deficit and debt level in a time consistence manner and thereby making fiscal policy sustainable. The following section reviews the rationale behind adoption of fiscal rule.

1] As a support to conduct sound monetary policy:

According to Kopits (2004) the advanced economies have shifted from discretionary to rule based fiscal policy, particularly in the European Union, in order to support their monetary unification. Later on, emerging market economies have followed the same path in the face of either fiscal crisis or to cope with the potential crisis. The intended aim of the fiscal rule is to reduce fiscal debt, ensure sustainability of public policy, and to enhance credibility of macroeconomic management. Moreover, it is realised that sound fiscal policy is a pre-requisite for a sound conduct of monetary policy. The rule based fiscal policy framework provides a basis for the sound fiscal policy.

2] Investor's expectations:

Kopits (2004) has emphasised that investors demand governments to be committed to sound fiscal policy and fiscal discipline. The fiscal rule provides such commitment, especially when a country faces macroeconomic volatility and capital mobility. Apart from government's commitment to sound economic policy, fiscal policy rules can also help in keeping the macroeconomic policy framework away from the political interference in decision making.

Teresa Ter-Minassian (1997) has observed that most of the countries have relied on the fiscal rules to ensure fiscal discipline. It also helps in forming economic agent's expectation about government's commitment to the fiscal discipline. Author has further argued that in a decentralised framework, financial markets and cooperative arrangement, to the large extent, ensure fiscal discipline of the provincial governments without formal fiscal rules. However, in the absence of these set-ups, the fiscal rules are more important in ensuring fiscal discipline of the provincial governments. The extent to which the fiscal rule can impose fiscal discipline depends on the political will to the adherence on the rule and the central government's commitment to the no bail out policy.

3] Efficient size of public sector:

Sutherland, Price, and Joumard (2006) have argued that in a decentralised framework where borrowing autonomy is extended to provincial governments, fiscal rules are important to avoid fiscal crisis. The rationale for adoption of the fiscal rules lies in a coordination problem between the centre and provincial governments on overall size of public sector. The provincial governments tend to increase expenditure due to common pool problem i.e. geographical distinction between the spending benefits and the cost. This results in inefficient size of public sector at provincial level and gives motivation to adopt fiscal rule.

4] To overcome deficit bias or ensure consistency of public policy or ensure credibility of macroeconomic policies:

Drazen (2002) has argued that a credible fiscal rule makes the fiscal policy more predictable and thereby overcomes the problem of time inconsistency of public policy. The fiscal rule also helps in constraining policy makers from running higher budget deficit or in overcoming from a deficit bias. The deficit bias arises when budgets has been chosen not on the basis of social welfare maximisation but as a result of political process of budgeting. The politicians tend to increase expenditure in excess of taxes. The electoral motive of the politicians leads to higher spending in election years aiming to increase their re-election prospect.

Fiscal rules are useful to bind policymakers to a particular path that leads to the specific outcome irrespective of political pressure. In other words, the fiscal rules legally bind policymakers to achieve socially desirable outcome. Inclusion of the fiscal rule in the constitution indicates that the fiscal discipline is an important goal of the society and sends a signal that this law cannot be tempered with. The fiscal rules embedded in the constitution are considered as an extreme form of commitment and therefore it lacks flexibility.

Braun and Tommasi (2004) have emphasised that fiscal rules serve as an important instrument to overcome a deficit bias. However, the fiscal rules tend to be effective in ensuring fiscal discipline only when there is existence of a powerful external enforcer and it has ability to sanction penalty in case of deviation.

Kopits (2001) has emphasised that the fiscal rules are aimed to remove discretionary conduct of macroeconomic policies and ensure credibility of macroeconomic policies. It gains trust of economic agents that the fundamentals of economy will remain predictable and robust irrespective of government in power. The well designed fiscal rules are useful in preventing the deficit bias and helps in establishing a depoliticized framework for fiscal policy.

Wyplosz (2002) has argued that high inflation and high debt in a peace time is a result of an unconstrained discretionary fiscal policy. As per the Recardian Equivalence theory, the discretionary fiscal policy does not have any stabilisation impact. Therefore, there is need for constraining discretionary fiscal policy. In the presence of such government failure, policies that are placed to correct market failure will do more harm than good. It is observed that the government discretion over counter-cyclical fiscal policies is proved to be inefficient and misguided. Higher degree of government intervention in the form of discretionary policies is most often driven by the political interest aiming at chosen segments of electorate. Therefore, government discretionary actions should be constrained and most of the countries are relied on the fiscal rules to control discretionary fiscal policy.

5] Reduce speculative attack:

Kopits (2001) has pointed out that in the post-socialistic period of emerging market economies, as they open up while facing fiscal crisis, they are exposed to continuous and rapid movement in capital that can lead to currency crisis. In order to reduce speculative attack and to promote stability and growth, fiscal rules are useful for emerging markets.

5] Correcting underlying inadequate intergovernmental fiscal relations:

Bird and Vaillancourt (2006) have argued that the inappropriate provincial borrowing is a reflection of inadequacy of underlying intergovernmental fiscal relations. The inappropriate borrowing can be reduced by correcting the intergovernmental fiscal system. Reassignment of revenue and expenditure; revision of transfer system; introduction of transparent, timely, and reliable reporting system; and introduction of periodic review process will largely solve the problem of unsustainable borrowings by the provincial governments. In the absence of these reforms or in the process of it, rules and limit on provincial borrowing is necessary for reducing inappropriate borrowing.

Overall, the fiscal rules are likely to overcome the problem of over borrowing by the provincial governments. Especially in the developing countries where there exists large vertical fiscal imbalances, existence of federal fiscal transfers, deficit bias, common pool problem etc. The fiscal rule can serve as an instrument to overcome these sources of over borrowings and it will ensure sound macroeconomic management in developing countries. As pointed out in previous section, the fiscal rule also suffers from certain issues. However, a well design numerical fiscal rule may solve most of these issues and may serve as an effective tool to control provincial borrowing.

The following section discusses different indicators of fiscal health of provinces that are included in the design of fiscal rule discussed in the literature.

2.2.5 Indicators of fiscal health included in the design of fiscal rules:

George Kopits (2001) has argued that the outstanding liabilities of general government can be seen as a measure of country's vulnerability. The medium term debt–GDP ratio should be seen as a measure of fiscal sustainability.

Flow indicators of fiscal performance are also included in the fiscal rule like budget balance or borrowing. A medium term target on flow variable should be consistent with the medium term debt ceiling and should be amenable to monitoring and control during the budget execution. Therefore, most of the countries uses balance budget criteria, overall budget deficit, or surplus requirement of revenue account.

The numerical fiscal rule imposes ceiling on above mentioned budgetary aggregates. In most of the federation that have embarked on numerical fiscal rule, these ceiling are uniform across all provincial governments. Economic and Monetary Union (EMU) also imposes

uniform ceiling on the budgetary aggregates of countries that are part of the union. However, such uniform ceilings have been criticized by some researchers as it doesn't take into account underlying economic circumstances of the countries in the union or provinces in a federal country. Following section focuses on such criticism on the uniformity of the numerical fiscal rule.

2.2.6 Criticism on the uniform fiscal rule:

There has been wide range of criticism on imposition of uniform fiscal rules on countries in EMU. Some countries have also asked their provincial governments to enact the Fiscal Responsibility Legislation to ensure fiscal discipline. However, deficit ceiling has been uniformly and arbitrarily imposed without taking underlying economic factors into account. Such FRL of the provincial governments can also be criticised on the same ground as the numerical fiscal rules in the EMU.

The Maastricht Treaty puts condition on countries for membership the EMU. Under this condition, countries are required to contain fiscal deficit below 3 per cent of GDP in order to ensure fiscal discipline. It also requires member countries to ensure debt-GDP ratio below 60 per cent or progressively heading towards that level. An initial proposal of Stability Pact for Europe proposed by Waigel has stated that the member countries should set the medium term goal of fiscal deficit at 1 per cent of GDP in normal economic conditions so that 2 per cent margin would enable them to maintain 3 per cent fiscal deficit even in economic down turn. However, some researchers like Buti, Franco, and Ongena (1998) have criticized such uniform target of fiscal deficit of 1 per cent of GDP on the ground that such uniform ceiling does not take sufficient account of country specific requirements.

The final version of the pact after negotiation was adopted by the European Council in June 1997, called Stability and Growth Pact, considered need to take into account country specific circumstances. The pact included the country specific medium term objective of budgetary position close to balance or in surplus. This would allow the countries to deal with cyclical fluctuation within the limit of 3 per cent deficit. The member countries had to maintain balanced budget corrected for any cyclical fluctuations in economic activity.

Buti, Franco, and Ongena (1998) have criticised the obligation of member countries to maintain budgetary position close to balance or in surplus. This implies that the governments

now have to fund bulky capital expenditure out of current revenue. The deficit financing would no longer be available to ensure intergenerational equity of financing capital expenditure. Financing capital expenditure by taxes creates major problems. First, the present generation pays the capital expenditure while future generation also gets benefits without paying for it. Secondly, the present generation has to pay full cost of project and also pays interest on past debts. Because of this interest, the current government experiences higher burden on tax revenue. The tax revenue now has to finance both investment and current expenditure on services. Therefore, the opportunity cost of investment becomes higher leading to risk of reducing the government investment.

Novellis and Parlato (2004) have also emphasised the need to ensure adequate and flexible resources to finance capital expenditure of the government. Considering diversity among countries in the EMU, author is of view that the targets should be country specific. Moreover, adoption of golden rule[15] conditional on debt to GDP ratio will ensure sufficient resources to finance capital expenditures without undermining the fiscal sustainability.

Authors have argued that the fiscal rule introduced in the EU is not concerned about the heterogeneity across member countries. The accumulation of public debt depends on factors like fiscal deficit and growth in nominal GDP. In case of caching up economies, growth and inflation are likely to be high implies that they can afford higher level of deficit without jeopardising the long term fiscal sustainability. Therefore, three per cent deficit ceiling is too restrictive and tends to adversely affect their growth potential considering their higher demand for investment.

Gerald, Bergin, Cullen, and McCoy (2004) have argued that an appropriate level of debt to GDP ratio differs across the countries in the EU. Considerable variations in the demographic profile of the member states and the differential requirement of infrastructure makes uniform ceiling inappropriate. The uniform ceiling imposed on such heterogeneous countries will result in the slow convergence of living standard across countries. Moreover, imposing borrowing restriction on countries that have higher growth potential and lower level of initial level of debt to GDP ratio may hamper their potential growth if borrowing is intended for financing investment. Considering this fact author has argued that if restricted borrowing undermines the growth of catching up economies or delayed in reaching potential growth then such restriction in turn undermines the long run fiscal sustainability.

[15] It refers to balancing revenue account while allowing debt financing for capital expenditure.

Authors have further argued that the restriction of keeping structural budget position close to balance or in surplus may induce some governments to reduce investment rather than increasing taxes or reducing current expenditure. This may leads to adverse effect on the long term economic development. For developed economies where infrastructure has well developed, reduction in public investment may have little adverse effect. The developed countries may have sufficient primary surplus to reduce high debt ratio. On the other hand, less developed countries in the union often have low debt ratio, favourable demographic prospects but poor infrastructure. In this circumstance, improving structural balance close to balanced budget makes little sense from the point of view of fiscal sustainability and the economic development. The potential fast growing economies can run deficit more than three per cent from investment purpose at the same time will reduce debt ratio.

Orban and Szapary (2005) have argued that the fiscal sustainability depends on the GDP growth, inflation, and real interest rate. There are differences among the countries in these determinants and therefore, the fiscal sustainability conditions also differ across countries. Moreover, catching up economies have higher GDP growth and higher inflation, therefore they can run higher fiscal deficit without hampering fiscal sustainability.

The Stability and Growth Pact (SGP) did not take into consideration initial level of debt across the countries as well. Aiyagari and McGrattan (1998) have argued that, the optimal level of debt depends on whether or not the interest payment leads to crowding out private capital expenditure, and whether or not the disincentive effect of higher distortionary taxes that are imposed to cover the interest payments are important. In this case, the countries with lower level of initial debt will have lower level of interest payment and therefore will have lower level of distortions in the economy. Therefore they can further increase their debt in order to finance capital expenditure. Moreover, the uniform deficit target does not take into account the differential need for infrastructural investment across countries; especially where initial stock of public infrastructure is insufficient.

Another major drawback of SGP that has pointed out by the authors is that the member countries have to reduce fiscal deficit to 3 per cent of GDP, but it neglects the quality of adjustment. Lack of defining quality of adjustment, member government may try to achieve the target by taking expenditure based measures rather than revenue based measures. This may lead to cuts in the important developmental expenditures.

Authors argue that the countries with low initial debt, high prospect for faster future growth, and fiscal deficit well below 3 per cent should be given longer period of time to attain close to balance or surplus position since it may not hamper debt sustainability.

Tamborini (2011) has emphasised that different countries have different initial conditions and different debt dynamic path and therefore, they should be allowed to adopt different policies. The country-wise heterogeneity must be considered since these countries are required to ensure convergence towards attaining debt GDP ratio of 60 per cent or below. As a consequence of heterogeneity cross the countries, the debt path of each country also differs in terms of speed of adjustment and fiscal efforts. Even after attending debt level of 60 per cent of GDP, countries tends to react differently to systematic and non-systematic shocks.

Agenor and Yilmaz (2006) have argued that maintenance of existing services is as much important as creating the new infrastructure. Adequate allocation of resources are essential for maintaining quality of existing services produced by both public and private players. The maintenance expenditure ensures durability of existing capital like infrastructure, school buildings, hospitals etc.

Authors have pointed out that the cap on overall budget deficit treats capital and revenue expenditure on equal basis. Governments tend to cut in either capital expenditure or revenue expenditure considering associated political cost of reducing each. For example, if the political cost of postponing or abounding public investment projects is lower than political cost of reducing recurrent expenditure then they tend to bias against the public investment. It may hamper growth potential since there is a close link between the public capital and private investment. On the other hand, if the political cost of reducing the current expenditure is higher than reducing capital expenditure, then it is likely to affect quality of existing capital.

Authors have pointed out that the golden rule implies that the capital expenditure on infrastructure should be excluded from the measurement of fiscal deficit. Countries that are facing large infrastructural gap can prioritise public investment through golden rule and therefore may be justifiable. But in case of low income countries, investment in health and education is equally important to achieve higher growth. In this case, excluding public investment from the fiscal deficit may be biased against other types of growth enhancing expenditure like health and education.

Therefore, authors have suggested consideration of growth enhancing expenditure both on capital and revenue account while designing fiscal rule. Such fiscal rule indeed improves the prospect of sustainability if borrowing used to finance activities that are productive and efficient. However, authors further emphasised that financing all productive expenditure by borrowing is also destabilising if the initial level of debt happens to be too high or the risk premium is highly sensitive to the debt-public capital ratio, i.e. government's net liability position.

Overall, literature suggests that countries or provinces differ in terms of their requirements of capital both physical and human. The uniform fiscal rule does not consider this aspect and may undermine future growth of provinces. Therefore, ceilings under numerical fiscal should be country- specific or province –specific. The next section discusses various methods for derivation of country-specific or province-specific deficit ceiling discussed in the literature.

2.2.7 Methods of deriving differential fiscal accountability targets:

As pointed out earlier, the uniform fiscal accountability targets are inappropriate if a federal country has diversity among provincial units or countries in the union. This section provides a review of possible solution to this issue and overview possible ways to arrive at differential targets that takes into account province-specific or country-specific differential circumstances.

Casella (1999) has proposed a method based on method of environmental regulation in order to regulate the fiscal deficit in the monetary union. Just like pollution, a high fiscal deficit in one country in the union has negative externality on other countries due to failure to internalise full cost of deficit financing. Author has suggested different alternatives to mitigate this problem. One possible solution to tackle with the negative externality problem is to transfer monetary and fiscal right to the central authority. However, such arrangement is not possible either because of lack of appropriate institutions or lack of political will. An alternative way of dealing with this problem is to charge a per unit tax on a new debt equal to a social cost of their issue.

Alternative to above mentioned methods; author has proposed trading of fiscal deficit in the market just as pollution permits. If a county wants to have more fiscal deficit than the permissible level of 3 per cent of GDP then it can buy it from the market. Therefore, in order

to acquire higher deficit than 3 per cent, the country has to bear additional cost of purchase of fiscal deficit. While purchasing the fiscal deficit from the market it compares the cost and benefits of it. The market will allocate the fiscal deficit permits to those who gets higher benefits than its cost and only when it is required. In other words, countries will opt for fiscal discipline only when benefit out of it exceeds the cost of attaining it. On the contrary, they will exceed the limit only when benefit of doing so exceeds the cost of permits. Therefore, this kind of permit trading ensures fiscal discipline in most efficient way.

The markets determine the cost of permits by taking into account overall deficit ceiling and the possibility of banking the deficit by countries for the future use. Therefore, this system provides the flexibility since it does not require all countries to perform equally nor require performing same over time. This flexibility also ensures imposition of correct cost on fiscal expansion and also rewards for fiscal contraction in the form of reduced cost of not exceeding beyond the ceiling.

Countries need to have sufficient permits at their disposal at the end of each year to finance its deficit of that year. In case, it does not have sufficient permits, it has to pay fees on each required permit for financing its excessive deficit. The countries are allowed to acquire the excessive permits for the future use but not allowed to use borrowing on the future permits. Therefore, the system ensures some extent flexibility in smoothening anticipated shocks. This system also makes overall ceiling flexible according to situations like increase in overall permits in recession to avoid inefficient increase in prices and vice versa.

This scheme works in the circumstances where markets functions efficiently. An efficient market requires that supply of permits should be predictable and information on changes in supply of permits should be sent to the market smoothly.

Wyplosz (2002) has argued that the challenge that most governments face is to achieve debt sustainability at the same time ensure room for undertaking counter-cyclical fiscal policies. The counter-cyclical measures often put government off the fiscal discipline track. The fiscal rules are considered as an instrument that is required to balance the budget over time while sufficiently giving space for the counter-cyclical measures. However, these rules like debt and deficit ceiling are rigid, artificial and arbitrarily set.

Author has emphasised that in order to ensure budget discipline, public debt should not continuously grow over time and should be at comfortable level. However, author is of view

that comfortable level of debt may differ across different governments. It also does not imply that debt should be brought down in particular year, but the objective should be satisfied in the long run. In the short run, the fiscal policy may play important role in stabilising output and inflation. Therefore, main task before governments is to ensure long-term commitment to the sustainability along with the short-term flexibility.

Author has observed that countries that gave to priority for long term fiscal stabilisation have overlooked the short term flexibility. These countries have undermined role of government in stabilising output and inflation in the short run. On the other hand, some countries have used fiscal policy as an instrument to counter the cyclical movement. This policy action has resulted in growth of debt. Considering these two extremes, author has suggested that the expansionary policy in down turn should be balanced by eliminating the debt in up-tern in order to ensure the long term debt sustainability.

According to author, in order to ensure the long term debt sustainability, government should commit itself to attain budget balance over number of years. The number of years should be equal to life of a business cycle. Since different cycles have different length, the number of years to achieve budget balance should not be decided ex ante. Second, countries with initial high level of debt that may face large future commitments should be given time horizon to reduce the debt to GDP ratio. In this manner different governments will have different time path to attain sustainable level of debt and deficit. The differentiation in timing of achievement is nothing but differential targeting.

In order to ensure long term debt sustainability with short term flexibility to counter economic shocks, author has proposed different alternatives. First is the constitutional limit on debt and deficit. Second alternative is the establishment of separate enforcement body to control deficit and debt of the government. Third way to impose constraint is to give powers to non-elected body outside the influence of government.

According to Blanchard and Giavazzi (2004), the SGP has been criticised on the ground that it has responsible for European economy's inability to maintain demand and growth, particularly in a face of economic downturn. The pact requires the budget deficit including interest have to be balanced over a business cycle. It implies that the debt to GDP ratio will eventually reach to zero. However, it has been argued that public debt may be useful in ensuring intergenerational equity of financing the lumpy capital expenditure whose benefit spreads over the generations.

In order to account for the public investment, author suggested imposition of pact's target of budget inclusive of interest rate and depreciation but exclusive of net investment. Considering the downward trend of gross public investment in the Euro area, author has recommended to remove constraint on public investment imposed by the pact. Separation of the capital expenditure from the current budget removes cash constraints on the governments in financing investment that yield high rate of social return. Balancing the current spending and capital budgets of this form will result in a debt ratio which eventually approaches to the stock of public capital. Since different countries have different investment need, it will automatically result in differential borrowing across them.

Thus, the separation of the capital budget from the current budget enables to implement rule that allows borrowing to finance net public investment. This rule ensures that the worthwhile project will not be delayed or rejected due to credit constraints.

Eichengreen (2004) has emphasised that the fiscal deficit of 3 per cent of GDP gives sufficient room for an automatic stabiliser to work effectively provided that countries achieve fiscal deficit close to zero or in surplus during the expansionary period. However, most of the European countries were failed to achieve this requirement. In this circumstance, 3 per cent allowance of fiscal deficit becomes insufficient to undertake the counter-cyclical measures in a downturn.

Author has argued that the numerical reference values for debt and deficit are arbitrarily chosen and therefore, do not have clear economic rationale. Author has argued that the sustainability of public debt depends on the real interest rate, the real growth rate, and other variables that vary over time. This implies that, implication of exceeding 3 per cent deficit on high real growth countries and low real growth countries will be different.

The Stability Pact was based on the rationale that chronic deficit threatens the debt sustainability and force central bank to provide inflationary debt bailouts. However, author has argued that not all deficits are equally chronic. The transitory deficit born out of counter-cyclical measures in an economic downturn is part of the solution and not the problem. The chronic deficit prevails in those countries where fiscal institutions that give scope for free riding and common pool problem, and where political distortions dominate budgetary process.

Author is in favour of institutional reform to tackle with chronic deficit. According to him, numerical rules will not eliminate chronic deficit since they are prone to manipulations. The numerical restrictions should be relaxed for countries with low public debt and low state pension liabilities. These relaxations from the numerical restrictions should be based on the conditionality of the institutional reforms. The institutional reforms may include reform in budgeting process, reforms in pension scheme, and reforms in labour markets and unemployment insurance systems. The institutional reforms helps in overcoming common pool problem and political distortions that tends to have deficit even in good times. The Pact should contain index of adequacy of budgetary institutions and structure and create independent committee to design and implement such index. These kinds of reforms will secure countries from chronic deficit and therefore, there will not be any necessity for numerical restrictions.

Buiter and Grafe (2004) have argued that the sustainability and stability of the fiscal position of governments depend on a set of economic features among which some are observable, identifiable and verifiable; on the other hand, some are expectations about the future plans and the future economic developments. For the latter set of economic features, there is scope for subjective judgements and interpretations. Therefore, a straightforward test to judge the sustainability of the current fiscal policy or anticipated future fiscal stance is not possible in purely objective manner. It often involves judgement, discussion, and potential disagreement.

Authors have proposed a Permanent Balance Rule which states that inflation- and – real-growth-adjusted permanent budget has to be in balance or in surplus. In other words, the Permanent Balance Rule is defined as the constant value of the share of taxes in GDP whose present discounted value over finite future time horizon equals the outstanding stock of public debt plus the present discounted value of actual government spending minus government capital income, all taken as share of GDP.

The permanent balance rule ensures the smallest constant share of taxes in GDP that would satisfy inter temporal budget constraint. Therefore, it allows both counter-cyclical adjustments as well as minimising tax burden. The permanent balance rule allows flexibility in current real interest rate and current real growth rate from their long term values. For example, borrowing limit is relaxed when there is temporary hike in real interest rate or real growth rate is temporary low.

The fiscal sustainability depends on the current stock of outstanding debt, the permanent primary surplus, the permanent real interest rate, and the permanent real growth rate. The permanent balance rule proposed by authors take into account flexibility in rules for macroeconomic stabilisation, differences in economic structure, differences in real and nominal GDP growth rate and their impact on debt sustainability, and differences in initial conditions and future development in parameters that influences future spending and revenue.

The authors have shown that for identical outstanding debt to GDP ratio and any common deficit to GDP ratio, the country with higher growth rate of nominal GDP will experience faster fall in debt to GDP ratio. Authors have further argued that countries that are experiencing higher nominal growth in GDP will be able to run higher fiscal deficit. Moreover, the permanent balance rule allows those countries to borrow that have lower initial level of public sector capital stock and low future pension liabilities.

The countries with initial low level of public infrastructure, permanent balance rule allow borrowing to fill the investment gap. In other words, it allows government consumption and investment above its permanent values.

Overall, there are different options that take into consideration country-specific or province specific circumstances while designing ceilings on budgetary aggregates. They ranges from, trading of deficit in the open market, ensuring short-term flexibility in fiscal deficit while deriving log-term fiscal deficit which differs across the countries, separation of capital expenditure from the definition of deficit, undertaking institutional reforms rather than restricting fiscal deficit to some limit, and permanent balance rule.

The present study adds to this thin literature by proposing a different method of determination of differential fiscal accountability targets of provinces in federal countries. It incorporates intergovernmental fiscal relations, their interrelationship and province specific circumstances into the design of numerical fiscal rule. The province specific circumstances includes inherent fiscal disabilities on revenue and expenditure sides across the provinces, the design of federal fiscal transfers, and the resulting borrowing need in order to ensure standard level of public services across the provinces.

As pointed out earlier, the federal fiscal transfer is an important variant of the fiscal deficit and its role in removing fiscal disabilities of the provinces. Following section reviews various federal fiscal transfer systems discussed in the literature.

2.3 Section II- Designing Intergovernmental Fiscal Transfers

2.3.1 Introduction:

There are several competing methods, with their own merits and demerits, of derivation of the province-specific shares in the federal fiscal transfers discussed in the literature. These methods are largely based on revenue capacity and expenditure need of the provinces. In determining shares, some methods take into account only expenditure need, some take into account only revenue capacity and some takes both. The study will first review the rationale behind these three distinct methods and then, analyse more appropriate and suitable method that is conducive for the design of the numerical fiscal rule in federal countries.

Before moving to the different design of federal fiscal transfers proposed in the literature, the following section discusses briefly the need of intergovernmental transfers.

2.3.2 Need of intergovernmental transfers:

Boadway and Shah (2007) have discussed the need of equalisation transfers from the centre to provinces. According to them fiscal decentralisation insures the fiscal autonomy of the provinces over decision of types of public services that can be provided to their citizens based on their preferences. The rationale for fiscal transfers arises due to the fact that in almost all federations, provincial governments face shortage of own revenue over its expenditure responsibilities.

Moreover, the fiscal capacity differs across the provincial governments leading to differences in ability to provide standard level of public services. The provincial governments also differ in expenditure need and cost of provision of public services. These differences results in differences in net fiscal benefits across the provincial governments. The net fiscal benefit is net benefits from government that accrue to otherwise identical households residing in different jurisdictions. In other words, the net fiscal benefit is a difference between utility derived by a household by consuming public services and taxes paid for the provision of these services, standardised to take differences in preferences and tax rates into account. Thus, differences in the net fiscal benefits arising due to differences in ability to provide desired level of public services with comparable level of taxes justify intergovernmental transfers in decentralised countries. The intergovernmental transfers try to reduce the

differences in net fiscal benefits and ensure the minimum standard bundle of public services across the provincial governments[16].

According to Laporte (2007), the mismatch between expenditure responsibility and taxing power can be removed by allocating enough revenue power in accordance with expenditure responsibility. This can be done through gradual constitutional amendments. However, such periodical re-allocations of functions and revenues are difficult, and therefore, equalisation transfers are seen as an appropriate compensation for these differences.

2.3.3 Design of federal fiscal transfers discussed in the literature:

The design of federal fiscal transfers mainly deals with the issue of inclusion of revenue capacity variables or expenditure need variables or both. It also discusses inclusion of various indicators that represent capacity and need of the provinces along with their respective weight in the formula.

According to Boadway (2004) designs of fiscal transfers differs across federations depending upon their diverse circumstances. Author has discussed various circumstances in which only fiscal capacity, only expenditure need, or both revenue capacity and expenditure need can be considered for designing intergovernmental transfers. The main aim of the intergovernmental transfers is to reduce differences in the net fiscal benefit across the provincial governments. The differences in net fiscal benefits arise broadly due to differences in the revenue raising capacity, need and cost of provision of public services. The equalising transfers are considered as efficient and equitable if its designing considers above mentioned fiscal factors.

Author has argued that the design of fiscal transfers should take both fiscal capacity and expenditure need into consideration in a circumstance where provincial governments have different demographic composition, cost of provision of public services, and revenue capacities. On the other hand, if a country has higher vertical fiscal imbalance, then the fiscal transfer method should be based only on the need component. In this case, the provincial governments have limited scope to raise revenue as compared to their expenditure responsibility. If provincial governments have higher revenue raising authority then equalisation based on revenue capacity is more appropriate.

[16] See also Sarma (1997)

On the similar line Laporte (2007) has argued that, the equalisation transfer which is based only on the fiscal capacity overlooks the major variant of net fiscal benefit, which is heterogeneity of provincial governments in terms of need and cost. The differences in need rises due to differential per unit cost of public services or in number of unit needed per capita standardised public service. According to author, the intergovernmental equalisation transfers should take into account both fiscal capacity and expenditure needs in order to eliminate differences in net fiscal benefits.

Author is of opinion that the equalisation justifies in circumstances where they are caused by factors that are not in direct control of provincial governments. On expenditure side, factors like demography, high or low population density, topography etc. creates differences in expenditure need and cost of provision of public services across the provincial governments. On revenue side, factors like differences in economic development, industrial specialisation, central versus peripheral position, availability of natural resources etc. creates differences in fiscal capacities and they are also not in direct control of the provinces. Therefore, these two sets of uncontrollable factors should be taken into account while designing transfers.

Vaillancourt and Bird (2005) have emphasised that in order to remove differences in the net fiscal benefits across the provinces, the adjustment in both fiscal capacity and expenditure need is required. The provincial governments in a country considerably differ in terms of fiscal capacity and expenditure need and therefore, unable to provide standard level of public services at comparable tax rate. Provincial governments with lower tax base will not raise as much revenue as higher tax base provincial governments with same tax rate. Therefore, an individual living in the lower tax base state does not receive equal level of public services that an identical individual living in richer state, even though both of them are paying similar taxes. In other words, two identical individual staying in different part of the country should receive similar level of public services.

The equalisation of net fiscal benefit requires adjustment in two of its components namely, revenue raising capacity and provision of equivalent public services. If two provincial governments have similar fiscal capacity but they differs in their cost of public services then an individual living in the high cost region will have lower net fiscal benefit. Therefore, equalisation should take into account both revenue capacity and expenditure need.

On the similar lines Blochliger and Charbit (2008) have argued that the equalisation transfers try to minimise or eliminate differences in net fiscal benefits. In this context, the fiscal

equalisation does not deal with the equalisation of household income but the differences in access to public services in geographical sense.

The equalisation is of two types, revenue equalisation and cost equalisation. The revenue equalisation refers to the reducing differences in per capita revenue capacity across provincial governments. On the other hand, the expenditure equalisation refers to the reduction of differences in cost of provision of standard set of public services across provincial governments. According to authors, the fiscal equalisation helps in reducing regional disparities that arise not only because of differences in fiscal capacity but also from disparities in cost of provision of public services.

According to Rao (2003), the objective of intergovernmental transfer is to offset fiscal disability arising from differences in fiscal capacities and higher unit cost of proving public services. Therefore, the transfer system should consider both revenue capacity and cost of provision of public services while designing transfers.

Author has argued that if provincial governments have important tax powers then transfers should be based on need as well as revenue capacity. On the other hand, if provincial governments have limited revenue autonomy then differences in fiscal capacity will not be wide. In this case, it will be justifiable to design transfers based only on expenditure need.

According to Schroeder and Smoke (2003), revenue equalisation across provincial governments is not sufficient to ensure standard level of public services. This is because same level of expenditure on same public service across provincial governments will not ensure equal level of services. Therefore, design of transfers should take both differences in expenditure need and differences in revenue capacity into account.

According to them, considering both fiscal capacity as well as expenditure need would enable to estimate full degree of differentials in the fiscal gap across the provincial governments. The transfers are then use to fill this fiscal gap, at least partially. If the provincial governments are not expected to raise revenue then differential in fiscal capacity becomes irrelevant in measuring the fiscal gap and it can be ignored.

Overall, considering possible fiscal disabilities on revenue as well as expenditure sides; the present study takes into account both revenue capacity and expenditure need of the provinces for the analysis. This consideration is also conducive to the design of fiscal accountability targets. The inherent factors on revenue and expenditure side are determinants of potential

revenue capacity and expenditure need. The difference between the potential revenue and expenditure explained by inherent factors is nothing but inherent fiscal gap. Transfers that are designed to reduce such inherent fiscal gap are more conducive to the design of fiscal accountability targets.

There are different methods of deriving province-specific share in federal fiscal transfers proposed by researches in the literature and also actually practiced by some federal countries. The following section discusses different methods of designing intergovernmental transfers.

2.3.4 Methods of designing intergovernmental transfers:

Jun Ma (1997) has studied different methods used for design of transfers to provincial governments in nine different countries. The design of Canadian equalisation formula considers differences in tax capacities across the provincial governments. The tax capacity of each provincial government has been defined as an amount of per capita revenue it can raise if the national average tax rate is applied to its base. The benchmark for per capita tax base is set by assuming the standard per capita tax base (average of five provincial governments). A provincial government whose tax base is lower than the standard base receives equalisation amount equal to the difference between its tax capacity and standard tax capacity, multiplied by its population.

The major critic of this method is that it allows transfers only to the provinces that are below national average and equalise these provincial governments up to the national average. On the other hand, tax capacities of above average provincial governments are not brought down and therefore, their capacity remains high. Thus, this method does not fully equalise tax capacity across the provinces. The differences in fiscal capacities remain even after equalisation transfers.

In case of Australia, the Commonwealth Grant Commission designs the federal general purpose grants. The method takes into account both fiscal capacities and fiscal needs of the provincial governments. The underlying objective of transfers is to enable provincial government to provide standard level of public services with reasonable tax effort. The entitlement of specific state is given by:

Entitlement i = standard financial assistance + special revenue needs i + special expenditure needs i - assessed needs met by specific purpose transfers i

Where, standard financial assistance = an equal per capita grant

The standard financial assistance is nothing but an amount required to close the vertical fiscal gap of the states taken together subject to resource availability of the centre.

The special revenue need of a particular state is determined as follows. First, standard tax rate is calculated by dividing total tax revenue of all states taken together by total tax base of all state. The standard tax capacity is calculated by dividing total tax base of all states by county population. The state's per capita tax base is calculated by dividing tax base of state divided by population of the state. The special need of a particular state is then derived by the difference between standard tax capacity and state's tax capacity multiplied by standard tax rate and its population. If state's revenue capacity is lower than the standard capacity then it receives positive amount of transfers and vice versa.

Special need of a particular state is the sum of needs of many expenditure categories of that state. First, per capital standard expenditure is calculated as the total expenditure of all states divided by country's population. Then category disability ratio is calculated as the extent to which a particular state's need differs from the standard need. State's category disability ratio is calculated by combining individual disability factors. The individual disability factor is calculated as the ratio of measures of cost influence of a particular state to the total cost influence of all states.

For example, to calculate disability ratio in case of welfare category, factors such as relevant population, administration scale, age/sex, dispersion, input cost, and social-economic composition can be used.

Germany has direct transfer scheme known as interstate equalisation payments. These transfers try to offset the differences in tax capacities with some allowance of special burden faced by some states.

Fiscal capacity or adjusted taxable capacity is defined as the difference between taxable capacity and special burden of a particular state. Fiscal capacity is derived by adding all revenues of all taxes of a state, share in shared taxes, and share in property and trade taxes of municipalities. From this pool of revenue, special burden is deducted to take into account the special burden of expenditure faced by a particular state.

Expenditure need is calculated as a per capita standard expenditure need multiplied by population and weighted population index of a state. Per capita standard expenditure need is calculated as the national average per capita revenue, i.e. sum of tax capacities of all states divided by county population. Weight for weighted population index is determined as follows. For city states, the weight is 1.35; for municipalities, the weights are graduated between 1.0 and 1.3 (according to the population of the municipalities).

In the United Kingdom, Revenue Support Grant (RSG) is designed for the provision of general purpose grants. The formula takes into account three elements namely; Standard Spending Assessment (SSA), standard local tax income, income from non-domestic rates (NDR). These three elements represent expenditure need, revenue capacity, and other types of transfers received by states from the centre respectively.

The formula for Revenue Support Grant is as follows:

RSG = SSA - standard local tax income - income from NDR

Standard Spending Assessment (SSA) is the central government's assessment about the required level of revenue expenditure that states are required to supply appropriate level of public services. While doing so it takes into consideration differences in demographic, geographic, and social characteristics among the states. This results in differences in SSA among the authorities for same level of services. The standard local tax income is calculated by taking centrally set rates on local property tax and last year's tax base as reported by local authority.

The RSG formula, thus, measures the difference between expenditure need and revenue sources including other transfers of local authorities.

The SSA is calculated for seven field of expenditure need. These fields are education, social services, highway maintenance, police, fire, capital expenditure (debt payment for principal and interest) and other services. For each of these seven fields, total amount is calculated based on different elements that influence cost in each of these fields. The weight for each element in each field is determined either by regression analysis or by judgement or discussion with authorities.

In India, transfers channelled through Finance Commission takes into consideration indicators like population, distance of per capita income of state from highest state,

infrastructure, area, tax effort etc. The transfers from pool are then calculated by sum of each states share in respective categories mentioned above in total of all states. For example, in case of population, share of particular state's population in total population is calculated. On the other hand Planning Commission takes into consideration indicators like population, per capita state domestic product, fiscal management, and state specific special problems.

Japanese equalisation transfers, called Local Allocation Tax, aim to equalise the fiscal capacities of local governments. The local tax transfers are calculated as follows:

Transfer = Basic fiscal needs (N) - Basic fiscal revenues (R)

The basic need is the standardized amount necessary to provide the standardized level of service, and is calculated on the basis of average condition of a model local government. Public services are divided into six different categories and total fiscal need of all services is calculated as follows.

Basic fiscal need = unit of measurement * modification coefficient * unit cost

Where, unit of measurement is number of qualified units like number of police necessary for police protection and number of residents requiring fire protection etc. The unit cost is calculated for each public service and then multiplied by total number of qualified unit. This gives total fiscal need of these services. The modification coefficient takes into account factors that influence unit cost in different regions.

Basic fiscal revenue is the sum of local transfer tax and proportion of standardised local tax revenue. The standardised local tax revenue is calculated by summing the products of local tax bases and the standard local tax rates prescribed by the centre.

Korean Ordinary Local Shared Tax aims to equalise fiscal capacities across the local governments. This formula is based on the standardised fiscal need, standardised fiscal capacity, and their differences. The difference between them signifies the standardised fiscal shortage of local government and serves as a basis for the equalisation transfer.

The formula used for allocation of local shared taxes is as follows:

Fiscal Scarcity = Standard fiscal need (A) - Standard fiscal revenue (B)

where A = Standard fiscal need + Supplemental need (standard fiscal need = sum of 29 itemized measuring unit x unit cost x supplemental coefficient); B = local tax revenue x 0.8.

Martinez-Vazquez and Boex (2007) have suggested different methods of designing equalisation transfers. In their first method, both revenue capacity and expenditure need of states have been considered. Fiscal gap is then defined as the difference between revenue capacity and expenditure need of the states. When fiscal capacity is less than expenditure need; fiscal gap for a particular state exists and the transfers, are then derived relative to that fiscal gap.

Transfer to provincial government $_i$ = (Fiscal gap $_i$ / Sum of Fiscal Gap $_i$) * Fund

The extent to which such fiscal gap will be filled depends on the availability of total fund for devolution. The fiscal gap of each government will be filled in percentage as a ratio of total fund to sum of fiscal gap of all states.

Another method of equalisation transfers is Equalisation Using Two Window. In this method equalisation is carried out in two step mechanism, using separate window for tax capacity equalisation and expenditure need equalisation. This method allows equalisation of differences in revenue capacity at different level than differences in fiscal need. The use of two separate windows allows using first window for the fiscal gap equalisation and second window to stimulate fiscal effort or to provide additional transfers only to the poorest regions.

The tax capacity equalisation is given by

Transfer to provincial government $_i$ = (tax capacity gap $_i$ / Sum of tax capacity gap $_i$) * Fund

Another method for equalisation transfers is Equalisation Using Multiple Factors. This method does not need to quantify actual fiscal capacity and expenditure need like fiscal gap method. Instead, it requires proxies for the fiscal capacity and expenditure need based on which transfers are allocated. This approach requires defining weights of each of the proxies depending upon the relative importance of these factors in influencing the fiscal capacity and expenditure need. The state government will receive funds as proportion to each of that factor.

Transfer for each local government = $(x_1 /X_1) * a_1 F + (x_2 /X_2) * a_2 F + ... + (x_n /X_n) * a_n F$

where, F = available pool for transfers.

$a_1 + a_2 + ... + a_n = 1$

x /X represents the share of each factor present in local government area.

Sarma (1997) have proposed a method of federal fiscal transfers in case of India. According to the author, the prevailing design of Finance Commission's transfers is based on ad hoc selection of indicators and weights assigned to them. Therefore, author proposed to a method of identification of indicators as well as weights. The indicators should have economic and statistical relationship with the revenue and expenditure of the states and weights of each of these relevant indicators should be based on their relative importance in explaining them. According to the author, some of the factors influencing revenue and expenditure are common to all states, some are specific to the states, and some are random in nature. Using panel data econometric model, revenue and expenditure of the states can be related to these common factors while allowing for state-specific factors. Once these factors that are statistically related are determined then weight of each factor can be determined on the basis of their respective coefficients. Based on these indicators and weights, share of each state can be determined.

Overall, there are different methods of design of the fiscal transfers practiced in different federal countries. Most of these mechanisms consider both revenue capacity as well as expenditure need. The difference between these competing mechanisms lies in the measurement of the revenue capacity and expenditure need. These methods require rich data set to measure the revenue capacity and expenditure need and often involve in subjective selection of indicators and weights. However, apart from issues of measurement of revenue capacity and expenditure need, the transfers are designed proportion to the fiscal gap resulting in reduction of fiscal disabilities of the provinces.

Chapter 3 will discuss another set of different competing methods to measure revenue capacity and expenditure need of the provinces.

As it is noted earlier, the federal fiscal transfers have different incentive effect on the provincial government in terms of their fiscal profligacy, particularly on borrowing. The next section discusses the possible effects of federal fiscal transfers on the borrowing of the provincial governments.

2.4 Provincial fiscal borrowing and transfers:

The intergovernmental fiscal transfers affect the provincial borrowing in different ways. The fiscal transfer is one of the determinants of fiscal deficit of the provincial governments. It

helps in reducing gap between revenue capacity and expenditure need of the provincial governments and thereby fiscal deficit or need for borrowing. This section reviews the possible link between the fiscal transfers and borrowing of the provincial governments.

According to Barrios and Martínez (2012), differences in fiscal capacities across regions influence the demand for borrowing across region and fiscal equalisation transfers plays important role in its determination.

Authors have showed that rich and poor provinces both may incur a higher fiscal deficit depending on the design of transfers and national policy objectives. Using fiscal reaction function approach, the paper tried to assess the relationship between differences in the per capita income and regional borrowings. Authors have argued that, theoretically, any region, regardless of its per capita income, will borrow in the period first if the equalisation guarantees sufficient resources in the period two for provision of public services and for paying back borrowed amount with interest.

Authors analysed the regional borrowing behaviour under different equalisation schemes for three countries, Canada, Germany, and Spain. Germany's equalisation transfer is largely based on the fiscal capacities of the regions. These make the poor regions to expect higher equalisation transfers to fill the future fiscal gap and therefore, the poor regions likely to run higher deficit. In case of Spain, the fiscal equalisation transfers are largely based on the fiscal need rather than fiscal capacity. The richer provinces in this country are most populated and therefore, the equalisation focusing on fiscal need creates expectation among the rich region that they will receive higher transfers. Therefore, the richer provinces in Spain tend to run higher deficit than poorer provinces. The fiscal equalisation in Canada is formula based and therefore, gives little scope for strategic behaviour by the regions. Therefore, the rich and the poor provinces do not have significant different borrowing pattern. Thus, the equalisation transfers pays important role in determination borrowing decision of the provincial governments.

Padovano (2013) has interlinked the intergovernmental transfers and fiscal deficit in his study. Author has argued that the central government extends an implicit bailout to fiscally imprudent provincial governments in the form of ex ante higher levels of transfers. The provincial government design their fiscal policy, particularly expenditure and thereby deficit, in accordance with anticipated transfers from the central government.

Ahmad, Albino-War, and Singh (2005) have emphasised interlink between four pillars of the intergovernmental relation. According to author, need for provincial borrowing depends mainly on expenditure responsibilities, transfer system, and revenue arrangement between different levels of governments.

Authors have further argued that a possibility of bail out from the centre steams from the transfers system based on the ex post financial needs rather than ex ante characteristics. Therefore, regions in financial difficulties receive higher transfers from the centre. This is a case for soft budget constraint faced by provincial governments. The provincial governments in this circumstance may under-exploit their tax base or over-spend or default on debt expecting that the centre will cover financial gap by transfers.

Ter-Minassian and Craig (1997) have argued that an inappropriate design of the intergovernmental relation often leads to growth of provincial debt. In most of the federal countries, provincial governments are assigned rigid expenditure responsibilities and inadequate revenue raising power. These imbalances, in some cases, led to large structural deficit and unsustainable borrowings. Author has further argued that the design of intergovernmental transfers also has implications on provincial government debt behaviour. The ad hoc transfer system based on the ex post financial need of provincial government creates incentive for provincial government to accumulate higher debt. Likewise, unexpected cuts in the transfers increase the provincial deficit as it is difficult for them to adjust expenditure accordingly. The transfers also serve as collateral for loans and therefore, give incentive for future borrowing.

Rodden and Wibbels (2002) have mentioned that the higher dependence on the central transfers also leads to unsustainable over borrowings by provincial governments. Higher transfer dependence undermines the non- bailout policy of the central government in case of troubled provinces. Provincial governments that are financing most of their spending obligations out of their own resources are more accountable and subject to punishment by voters and creditors if they involved in over spending and imprudent borrowing.

The fiscal responsibility of provincial government can be ensured by designing appropriate transfer system that fills the ex ante gap between assigned expenditure and revenue raising capacity of provincial governments.

Overall, high vertical imbalances along with the inappropriate design of transfer mechanism based on ex post consideration gives incentive for provincial governments to over spend and over borrow. Thus, to give right incentive of fiscal prudence, the transfer system should be based on ex ante consideration in the federal countries that faces large vertical fiscal imbalance.

Chapter 3 METHODOLOGY AND DATA SOURCES

3.1 Introduction:

Aim of the present study is to develop a more rational method of determining ceilings on the major budgetary aggregates of the provinces. In order to illustrate the proposed method, the present study is taking case of Indian states that have embarked on such numerical fiscal rule. The existing numerical fiscal rule adopted by the state governments in India puts uniform ceilings on the budgetary aggregates for all provinces. Under this rule, the state governments are required to reduce the fiscal deficit to 3 per cent of GSDP, elimination of revenue deficit, and debt to GSDP ratio around 30 per cent. However, the present study argues that the uniform ceilings on the budgetary aggregates across the states has been arbitrary adopted and also lack sound economic reasoning behind it. Uniformity in the fiscal accountability targets may undermine an objective of balanced regional growth. Especially in case of resource constraint low income states where expenditure responsibilities are higher; they may need higher borrowing than the prescribed limit. However, under the current rule, these states are not allowed to cross the prescribed limit.

The present study argues that the ceiling on the budgetary aggregates must consider the justifiable levels of expenditure, own revenue, and transfers while determining borrowing ceilings. The actual expenditures, revenues, and transfers may not give true picture of the fiscal balance or position of the states. This is because the state governments involve in over spending or under taxing available revenue base or under spending or over taxing. Therefore, there is need to consider only justifiable level of expenditure and revenue of the states for the determination of borrowing limit. The present study proposes that the justifiable level of expenditure or revenue is one which is explained by basic factors that are largely out of the control of the states. The basic factors are those that form the basis for public expenditure or government's revenue. For example, population can be considered as a basis for public expenditure and state's income for government's revenue. These factors are basic cause of the public expenditure and revenue and also form base for the public expenditure and revenue in the first place. Moreover, these are out of the control of the states and therefore, they are inherent in nature. Therefore, the present study is taking only that part of actual expenditure which is explained by these inherent factors. In the present study, the fiscal gap explained by the inherent factors is called as the inherent fiscal gap.

As pointed put in previous chapters, revenues of states not only constitute own revenue of the states but also the federal fiscal transfers from the centre. Therefore, the federal fiscal transfer is also an important variant of the fiscal deficit or borrowing need of states. A well design federal fiscal transfer is pre-requisite for implementation of the numerical fiscal rule in a federal country. It has been argued in the public finance literature that the federal fiscal transfer system should be responsive to the inherent fiscal disabilities on both revenue and expenditure side of provinces. The transfers should be designed in such a manner that it should eliminate or minimise the fiscal disabilities of the provinces caused by basic inherent factors.

Lastly, the fiscal deficit or borrowing need also depends on the fiscal management of the states. The state governments often spend more than their means and thereby, claim more on the federal fiscal transfers and also claim higher share in available savings in the country in the form of higher borrowings. On the other hand, some states may under tax and claim higher share in both federal fiscal transfer and available savings. In both of the above mentioned situations, these states able to attract more federal fiscal transfers and borrowing at the cost of other states. Therefore, it is important to exclude part of higher expenditure in case of former and include higher revenue in case of latter for the determination of borrowing need. In the present study, the fiscal deficit as a result of such fiscal behaviour is called fiscal management induced fiscal deficit.

Similarly, it may possible that some states spend less than desirable due to their low revenue base or ill-designed transfer system. It is also possible that some states over-exploit their available revenue base in order to provide higher standard of public services. In both of the above situation, the actual revenue and expenditure will not be justifiable. Therefore, extra expenditure should be considered in the case of former while lower revenue should be considered in the case of latter.

Thus, the justifiable level of revenue capacity, expenditure need, and federal fiscal transfers are important variants of the borrowing need of provinces, and therefore, should be taken into account while designing the numerical fiscal rule.

As pointed out in the previous chapters, the justifiable levels of revenue capacity and expenditure need of the states can be used as the basis of federal fiscal transfers as well. One of the main objectives of the federal fiscal transfer is to enable states to provide standard level

of public services at comparable tax rate. If some states finds difficult to finance provision of standard level of public services then the central government ensure it by giving the fiscal transfers. For the design of such fiscal transfer system, it is important to assess potential or justifiable revenue capacity and expenditure need of the states. In case of design of the federal fiscal transfer also basic inherent factors should be taken into account on the similar reasoning discussed above.

The following section discusses the measurement of the potential or justifiable revenue and expenditure of the states discussed in the literature and approach of the present study.

3.2 Measurement of potential revenue and potential expenditure of the states:

There are different methods discussed in the literature for measurement of the potential revenue and expenditure based on inherent factors. In some methods, the revenue capacity has been quantified by measuring the actual tax base of each tax category and with certain benchmarked tax rate; the potential revenue of each state is measured. On the other hand, in case of measurement of the potential expenditure need, population qualified under different headings of expenditure and benchmarked per capita cost of public service under each category has been considered. In this method, average tax rate and average per capita expenditure under different headings of expenditure of all provinces are considered as the benchmark for the revenue capacity and expenditure need respectively. However, such method requires timely, precise, and accurate data which is rarely available in the developing countries.

Due to high data intensity of this method, some researchers have suggested using proxies for the revenue capacity (tax base) and expenditure need instead of measuring the actual base and total number of persons qualified under each of expenditure head. However, selections of proxies in this method are subjectively determined and lacks in establishing any statistical relationship with the revenue capacity or expenditure need.

Considering this drawback, some researchers have proposed the regression based method for calculating the potential revenue capacity and potential expenditure need of the provinces. This method establishes the statistical relationships between the actual revenue and expenditure and the inherent factors affecting them.

A review of methods of calculating potential revenue and potential expenditure of the provinces discussed in the literature are as follows.

3.2.1 Measurement of potential expenditure need of the provinces:

Expenditure need of a province depends upon various expenditure responsibilities assigned to it, population covered under each of expenditure head, cost of provision of each service, and desirable standard of services. Measurement of expenditure of each province accurately requires measurement of cost of each service and population covered under. However, this exercise requires very precise data which may not be available in most of countries. Moreover, measurement of justifiable level of expenditure under each category also requires setting certain standard of public services under each of these categories. However, as pointed out by Boex and Martinez-Vazquez (2004), desirable standard level of services have not explicitly been set or even if it is set it may lead to unaffordable high level of expenditure.

The most important determinant of the level of expenditure under each category is certain desirable standard of public services that should be provided to people. Considering the difficult task of setting the standard level of services for each of the public services and then quantifying expenditure need, an alternative approach is required. An alternative approach is to compare observed expenditure level, population qualified under each of the expenditure head, and cost of provision across all provinces. The comparison of these factors of all provinces helps in avoiding setting up of the standard of public services beforehand. Instead, by comparing these factors across all states, certain level of public expenditure is set as a benchmark, given other two factors. If the states achieve that level of expenditure then it will be considered that the desirable standard of public services is achieved.

Apart from the standard of public services, other important factors explaining expenditure are composition of population, cost of provision, and various types of public services etc lead to differences in the potential fiscal need across the provincial governments. The government provides different types of public services to different population groups and the extent of expenditure determined by total population in that particular group. For example, total number of infants, number of school age children and elders determines expenditure on post-natal care, schooling and healthcare respectively. On the other hand, the states also differ in the cost of provision of public services. Cost differences arise due to various natural factors like, nature of climate, frequency of natural disaster, topography and distance leads to

difference in the cost of production of public services (Dafflon Bernard; 2012). Therefore, due to differences in the types of public services, composition of population, and cost of provision of public services etc. the potential expenditure need also differs across the states.

There are broadly two methods discussed in the literature to assess the potential expenditure need of the states. First method has made use of actual expenditure data and further classified as a regression based approach and a representative expenditure system. The second method does not make use of the actual expenditure data and assesses expenditure need on the basis of ad hoc variables.

3.2.2 The representative expenditure system using direct imputation methods:

In this method, total expenditure of the provincial governments is divided into different functions, and then total expenditure of all provinces taken together for each function is derived. For example, total expenditure on the primary education of all states is determined as follows. First, school age population of all provinces is measured and then the average per capita expenditure on primary education of all states is calculated by dividing total expenditure of all states on primary education by the school age population. Secondly, using the average per capita expenditure on primary education and total number of school age population, total acceptable expenditure on primary education of all state is determined. Further, relative cost or need factors of each jurisdiction are identified, and relative weights are assigned to these factors by using direct imputation methods or regression analysis. Finally, allocation of total acceptable expenditures of all jurisdictions on each function among the provinces is carried out on the basis of their relative costs and needs factors for each function. In short, it calculates the total acceptable expenditure for each function and allocates among the provinces on the basis of indicators of need and costs.

The drawback of this method is that the selection of need and cost variables and assignment of weights to them are highly subjective matter (Shah; 2007).

3.2.3 Representative expenditure system:

This method calculates a standardized expenditure per work load factors. Here, work load factor is total number of population qualified for a particular service. The standardized expenditure is derived by the national average expenditure on that service or some kind of

normatively defined necessary expenditure (Dafflon Bernard 2012). The standardised expenditures under each category of expenditure are derived by multiplying the average spending per work load units with total number of workloads observed in the province. The aggregate expenditure need of each state is calculated by adding expenditure need across all services.

The representative expenditure system discussed above requires huge and accurate data base on various variables. Therefore, some researchers have used representative expenditure system using regression method for measuring expenditure need. The data requirement under this method is very minimal. In this method, the data on the actual expenditure, proxies for expenditure need factors, and indicators of cost factors are required.

3.2.4 Ad hoc variables approach:

In ad hoc variable approach, selection of indicators and weights are arbitrarily defined. In this approach, the assumption is being made that the variables under consideration has economic relationship with expenditure need. For example, if population is selected as an indicator then it is assumed that higher the population, higher will be public expenditure. The statistical association between these inherent factors and the expenditure or revenue is not established under this method. The indicators are generally chosen from the social and economic characteristics of population. A major criticism to this approach is that it does not consider actual expenditure of the provinces and therefore, it is not helpful in assessing the potential expenditure need of each province (Dafflon; 2012). This method designs the transfer by considering the proportion of inherent factors of a province compared to others and gives transfers according to that proportion. For example, if a particular province has 30 per cent of total population then it receives 30 per cent of total transfer under total transfers allocated under population. Therefore, this method does not consider fiscal efforts of the provinces in the collection of revenues and in expenditure activities. This may lead to adverse incentives to the provinces.

3.3 Measurement of revenue capacity:

There are different indicators and methods used for assessment of the provincial revenue capacity. Broadly, they can be classified as a macroeconomic approach and a microeconomic approach. The macroeconomic approach includes indicators like actual revenue collection,

per capita income, Gross Regional Product (GRP), total taxable resources, and provincial factor income. In the microeconomic approach, revenue capacity is measured for individual tax or all taxes taken together. The microeconomic approach includes Representative Tax System (RTS) by direct imputation or by regression method (Yilmaz et.al; 2006).

3.3.1 Macroeconomic indicators:

In some countries, the current revenue collection of provinces is used as a proxy for revenue capacity. However, this measure takes only the current collection of revenue and ignores important dimension of tax effort and thereby potential revenue collection of each province.

The most widely used indicator of the revenue capacity is the per capita personal income. This indicator reflects the taxable income of citizens and therefore, considered as an ability of government to raise resources. Apart from simplicity of this measure, its main drawback is that it does not consider the ability of government to tax income of non-residence of their provinces. This method also ignores the fact that with the same tax base different provinces raise different level of tax revenue reflecting differences in fiscal efforts across the provinces (Yilmaz et.al; 2006).

Another most widely used indicator of tax capacity is Gross Regional Product. This indicator reflects the income that can be potentially taxable. Unlike per capita personal income, this indicator includes income of non-residence that can be taxable. However, this measure is a crude measure of the taxable capacity since different tax base can be taxed at different levels. This measure does not reflect the true taxable resources of the provinces.

Total Taxable Resources (TTR), on the other hand, measures the total tax base and hence effect of government tax policy will be reflected in this measure. However, this measure suffers from high data requirement.

3.3.2 Microeconomic approach:

Since past few years, most of the federal countries have been relying on Representative Tax System for measurement of the revenue capacity. It measures the amount of resources that can be generated if a state puts the average tax efforts in collection of revenue and uses all standard tax bases. In this method, data on tax base is collected for each of the tax source.

Considering the national average of tax effort for each of the standard taxes, total potential tax collection is calculated for each of the taxes.

Although, the Representative Tax System is most accurate measure of tax capacity, it requires rich data set. Therefore, Representative Tax System using regression method is desirable form the point of view of data requirements. This method requires data only on the aggregate revenue and the proxies for tax base (Martin-Vazquez and Boex; 1997).

3.4 Methodology used in the present study:

The above mentioned methods have merit and demerits of their own. Some of them are simple but not so accurate while others are accurate but are more data intensive. Considering these issues, the regression based approach to derive potential revenue and expenditure of the provinces is more suitable form the point of view of its less data requirement and reasonable accuracy. It uses the actual data on revenues and expenditure and uses inherent factors or proxies representing inherent factors that influence them.

The actual data on the revenue and expenditure of the provinces will be regressed on the inherent factors or their proxies. It will gives us how much of these variations in the revenue and expenditure are explained by their respective inherent factors. As pointed out earlier, the present study will be using only those variables that are very basic cause of revenue and expenditure and the provinces have little control over them. Other factors that influence revenue and expenditure are excluded from the analysis. The states will be compared on the basis of these inherent factors that are common to all states. The resulting potential revenue and expenditure will be justifiable because it derived on the basis of the inherent factors that are not in control of the provinces.

Moreover, this method also establishes the statistical relationship between the variables. This approach establishes the association between the inherent factors and their relative importance in explaining revenue or expenditure capacity. Therefore, subjectivity in deriving weights can be removed by using this method.

Another advantage of using the regression based method is that it can be used for benchmarking revenue raising capacity and expenditure need. The average influence of inherent factors on the revenue and expenditure of all provinces taken together can be kept constant for each province. In other word, the average fiscal efforts on revenue and

expenditure sides can be expected from all provinces. Given the average influence of inherent factors on the revenue and expenditure, the provinces differ in their revenue capacity and expenditure need due to the differences in the inherent factors. In other words, it measures how much a province can raise revenue and incur expenditure if it puts average fiscal efforts on the revenue and expenditure side. The average fiscal effort on revenue side indicates that a province is imposing nationwide average tax rate on nationwide standard tax base (Yilmaz et.al; 2006). Similarly, the average fiscal effort on expenditure side indicates the required expenditure in provision of average level of public services by a province to its residents.

The most appropriate data set to estimate the potential revenue and expenditure of provinces is panel data. The panel data allows for observing the fiscal behaviour across the provinces and over the time. The analysis of fiscal behaviour across the provinces facilitates estimation of the average fiscal behaviour for the benchmarking. The benchmark in this case is the coefficients of inherent factors which represent average influence of these factors on revenue or expenditure of all provinces taken together. Further, the fiscal behaviour of the provinces changes over the time in order to cope with changing structure of economy, demography etc. Structure of the economy largely determines the revenue capacity while changes in demographic structure determine the expenditure need of the provinces. Therefore, the panel data is more appropriate for estimating the potential revenue and expenditure of the provinces.

The panel data model also allows for isolating effects of factors that are specific to individual provinces that have influence on its expenditure and revenue. In other words, the province specific characteristics such as structure of economy, demography, and cost structure may have profound influence on their revenue capacity and expenditure need. For example, as pointed out by Yilmaz et.al. (2006), inherent factor GSDP on revenue side treats all income equally taxable. However, certain income is not easily taxable due to various reasons. If a province has a higher share of such income in its GSDP then such measure does not reflect true fiscal capacity of that province. On the expenditure side, inherent factor population assumes that each person in the province require same amount of public service. However, certain age group population require more expenditure than others. If a province has such population higher within its territory then such measure not likely to capture the true expenditure need of that province.

Inclusion of such province specific economic, geographic, and demographic factors into the model is desirable but not so feasible due to the data constraint. The panel data model allows accommodating such province specific factors into the model. These province specific heterogeneities are accommodated in province specific constant in the panel data model. Therefore, the present study uses panel data model for deriving province wise potential revenue capacity and potential expenditure need.

3.5 Panel data regression model[17]:

The panel data econometric model takes the following form.

$$y_{it} = \propto + x_{it}^{'}\beta + u_{it} \qquad i = 1, 2, \dots\dots, N;\ t = 1, 2, \dots\dots, T$$

where, y is dependant variable, x's are explanatory variables, i represents cross section unit and t represents time. $\propto$ is constant, β is slope coefficient, and x_{it} is the itth observation on k explanatory variables.

Further, one way error component model for the disturbance is given by

$$u_{it} = \mu_i + \vartheta_{it}$$

where μ_i is the unobservable individual specific effect and ϑ_{it} is reminder disturbances. μ_i is time-invariant individual-specific effect that is not included in the model. The remaining disturbance ϑ_{it} varies with individuals and over time. It is nothing but the usual disturbance term in the regression.

If μ_i is assumed to be the fixed parameter to be estimated then it is called fixed effects. In this case, inference is conditional on the behaviour of specific set of cross-sections that are under consideration. The fixed effect model, thus, is appropriate when we consider specific set of the cross-sections, like countries in the OECD or states in a particular country.

Here, the stochastic disturbance term ϑ_{it} is independent and identically distributed IID $(0,\sigma_v^2)$. The x_{it} are assumed to be independent of ϑ_{it} for all $i\ and\ t$.

On the other hand, if μ_i are assumed to be random then it is called random effects model. In this case, both $\mu_i \sim IID\ (0, \sigma_\mu^2)$ and $\vartheta_{it} IID\ (0,\sigma_v^2)$ and the μ_i are independent of ϑ_{it}. The x_{it}

[17] See Baltagi Badi H. (2005) Econometric analysis of panel data, 3rd ed. John Wiley & Sons Ltd.

are assumed to be independent of ϑ_{it} and μ_i , for all $i\ and\ t$. The random effects model is appropriate when N individuals are drawn randomly from a large sample. In this case, individual effect is characterised as random and inference pertains to the population from which a sample was randomly drawn.

In the present study, provinces of a federal country are cross section units that are observed over some period of time. The revenue and expenditure of the provinces are assumed to be influenced by some inherent factors that are common across the provinces. It is further assumed that there are certain inherent factors that are specific to the provinces that affect expenditure and revenue of an individual province. It is also assumed that there are some random factors that affect the revenue and expenditure of the provinces.

3.6 Expenditure need function:

In order to estimate the potential expenditure need of the provinces, the actual expenditure will be regressed on its inherent factors. This method statistically verifies the existence and strength of association between the expenditure and various inherent need factors like demographic profile and cost of provision.

3.6.1 Expenditure need factors:

The expenditure need factors differ across the provinces and result in the differences in required level of expenditure to maintain the standard level of public services. The differentials in the need factors arises due to the differences in the demographic profile, differences in the geographical condition, and differences in the cost of provision of public services.

The demographic profile may include variables like total population, proportion of population above 65 years and proportion of population below 18 years. The geographical conditions and cost conditions may include variables like population density, hilly areas, proportion population living in rural areas etc.

These factors are inherent in nature and some of them are specific to some provinces. As pointed out earlier, the present study is considering only those factors that are very basic reason for public expenditure. In the subsequent chapters the study will discuss this issue of the actual selection of variables for the analysis. Moreover, using panel data model, the

present study will identify factors among the above mentioned factors that have significant impact on the expenditure of the provinces.

3.7 Revenue capacity function:

The revenue capacity of a province depends on the initial assignment of revenue powers, tax base, and tax effort. In order to quantify the potential revenue capacity of the provinces, the actual own revenue collection will be regressed on the inherent factors like tax base, composition of GSDP etc. Revenue of the provinces also includes non-tax revenue. Non-tax revenue includes user charges on variety of social, fiscal, and economic services, repayment of past loan etc. In the present study, combined amount of the tax and non-tax revenue of states is called income of the provinces. In chapter six, the study has discussed in detail reasons for this.

3.7.1 Revenue capacity factors:

The fiscal capacity of the provinces is the potential level of tax revenue that they will collect if they uses their entire taxing power, tax base, and puts the average fiscal efforts of all provinces taken together. The provincial governments have raised different revenue due to differences in the tax base, tax rate, differences in allowance and exemptions, and different tax enforcement efforts. The present study assumes that given their tax base the provinces should put the national average tax effort to generate tax revenue. In this case, the provinces' autonomy in deciding upon tax rate and allowance and exemption will be preserved.

Widely used proxy for the tax base is Gross State Domestic Product. In this approach, overall tax base, which is proxy by the GSDP, is related to the overall revenue collection. The population growth rate can be used in explaining revenue mobilisation since higher the population rate it takes time to move new population into the tax base. Therefore, the relationship between them we expect to be negative (Bhal and Wallance; 2007).

Overall, the present study is measuring revenue capacity and expenditure need of the states in India using Representative Revenue and Expenditure System using Regression. The details of the actual panel data econometric models, variables used, their rationale for inclusion, and functional form of model will be discussed in the Chapter Six.

3.8 Data Sources:

The present study has employed the proposed method of deriving the fiscal accountability targets on Indian case. The study has considered 28 major states in India for the present analysis. Since the fiscal situation of the states varies over the time, the present study has considered latest five year period for the analysis. This will reflect the present scenario of fiscal activities across the Indian states. It will also reflect recent development in the basket of public services that states are providing to its residence. Similarly, it will also reflect the changing resource base of the states. Therefore, the present study has considered the period for analysis form the year 2007-08 to 2011-12.

The data on fiscal variables like own revenue receipts (both revenue and capital receipts), revenue expenditure, capital expenditure, total federal fiscal transfers have been collected from the Reserve Bank of India's annual publications "State Finances : A Study of Budgets of Budgets" of various years. The variables like population, literacy, urbanisation, population density have been taken form Census of India 2001 and 2011. Data on Gross State Domestic Product (GSDP) has been collected form "Data Tables, Planning Commission", Government of India (2014) collected from the Central Statistical Organisation (CSO).

The social indicators used in the chapter four namely poverty, Infant Mortality Rate (IMR), Maternal Mortality Rate (MMR) are taken form Data Tables, Planning Commission, Government of India (2014), Ministry of Health and Family Welfare, Government of India, General of India, Ministry of Home Affairs (SRS Estimates) respectively.

Year wise total population and number of literates and illiterates is calculated using Compound Annual Growth Rate (CAGR) using the Census of India data in 2001 and 2011.

3.8.1 Definitions of variables:

Data on fiscal variables are collected form RBI which has compiled these data from the budget documents of the states. The definitions of the fiscal variables are as follows.

Own revenue receipts- it includes own tax revenue, own non-tax revenue, and non-debt capital receipts.

Non-debt capital receipts- it includes recovery of loans and advances and miscellaneous capital receipts.

Total revenue receipts – it includes own revenue receipts and total federal fiscal transfers from the centre.

Revenue expenditure is the recurrent expenditure of the states on various public goods and services.

Capital expenditure is the expenditure of the states on generation of new capita assets. It includes capital outlays and loans and advances given by the states.

Urbanisation is defined as the proportion of urban population to total population in a state.

Literacy rate is defined as the proportion of number of literates in total population of above 7 years.

Before moving to the estimation of potential or justifiable own revenue, expenditure, and derivation of federal fiscal transfers; the next chapter will focus on the level and pattern of public expenditure, revenue, and federal fiscal transfer of the states. The study will first, compare socio-economic achievements among the states and then compare the actual public expenditure, own revenue capacity, and transfers of the states. This exercise will enable us to decide whether there is need to enhance public expenditure of states or not. It will also enable us to see how the present restriction on borrowing of the states will further restrict ability of some states in providing standard level of public services.

CHAPTER 4 INTER-STATE VARIATIONS IN THE FISCAL STATUS

4.1 Introduction:

The present study is taking case of Indian federation to illustrate the proposed method of deriving numerical ceilings on the budgetary aggregates. India is a vast country spread across 28 major provinces marked with diversities in culture, languages, society etc. The states in India also differ largely in their economic and social achievements. Particularly since last two decades, after adoption of liberalisation policies in early nineties, some states have shown significant improvement in the social and economic indicators. However, some states have not able to take advantage of the new economic opportunities and lagged behind in terms of social and economic development. It is also observed that states with initial well developed economic and social infrastructures have become destination of private investments and showing significant growth over time. On the other hand, states marked with lower level of initial economic and social infrastructure have not able to attract the private investments and continue to grow slowly.

Public investment has been considered as a major provider of much needed social and economic infrastructure in India. However, low income states face resource constraint in provision of standard level of public goods and services. Therefore, these states lack in adequate level of social and physical infrastructures. Inadequate level of these services can be seen from their differential achievements in socio-economic indicators. Considering the importance of public expenditure in provision of these services, public expenditure patter across the states will be analysed. Moreover, since the federal fiscal transfer enhances states' revenue capacity for provision of these services, pattern of fiscal transfer will also be analysed. Under the circumstances of differential achievement of states in terms of social and economic indicators, arbitrary numerical fiscal rule may not be appropriate.

The next section discusses about the regional disparities among the states in terms of the social and economic indicators.

4.2 Regional disparities in India:

India has not been witnessing homogeneous development across the states for decades. Some states have been showing remarkable improvements in their development indicators, particularly since last couple of decades, while others are still lacking behind the expected standard. Uneven development across the states has been reflected in considerable differences in human development indicators. Well recognised indicators of the development like per capita income growth, poverty, literacy, life expectancy, and child mortality rate have shown considerable differences across the states. Lower values of these indicators can be seen in low income level states where they have created a vicious circle of low level income and low level of indicators of development.

The economic diversities among the states can be seen from the observed differences in per capita GSDP and growth rate of it across states. The per capita GSDP at 2004-05 prices and its growth rate has been compared for the years 2004-2005 to 2012-2013. Bihar, Uttar Pradesh, Assam, Madhya Pradesh, and Jharkhand are continued to be at the bottom of the states' ranking in terms of real per capita GSDP. However, Sikkim and Uttarakhand have show considerable improvement in the real per capita GSDP for the period 2004-2005 to 2012-2013.

In order to compare growth rates across the states, the semi-log trend equations of GSDP for each state have been estimated. The estimated results show that over the period under consideration, all states have experienced significant positive growth rate of the real per capita GSDP. The states like Sikkim, Uttarakhand, and Goa have reported double digit growth rate and shown marked improvement in the per capita GSDP for the same period. Bihar and Madhya Pradesh have continued to be at the bottom of the real per capita GSDP ranking but have grown at the significant annual compound rate of 7.52 per cent and 6.52 per cent respectively. On the other hand, states like Manipur, Assam, and Uttar Pradesh have reported low level of real per capita GSDP as well as lower level of growth rate. This implies that these states, including Bihar and Madhya Pradesh, need to grow at much higher space than their present growth in order to achieve real per capita GSDP of middle income countries.

The dispersion of the real per capita GSDP across states for the period 2004-2005 to 2012-2013 has been measured as the standard deviation of the logarithm of per capita GSDP (Rao, Shand, and, Kalirajan 1999). The dispersion coefficient indicates that dispersion of the per

capita GSDP has been increased over the period of time. The linear time trend has been fitted on the coefficients of dispersion in order to examine the trend of disparities (Dasgupta et.al 2000). The result indicates that the dispersion has been increasing over the period of time. This indicates that the inequality in real per capita GSDP across the Indian states has been increased over the period under consideration.

Moreover, recent studies have pointed out that Indian states have shown the divergence in their income instead of expected convergence. It means that poor states have not been showing an indication of closing the differences in the level of income between the richer states and them by growing faster (Kumar and Subramanian 2012, Kochhar et al 2006). In other words, initial richer states have managed to grow faster than low income states.

Table 4:1 Per Capita Gross State Domestic Product (PCGSDP) at Constant (2004-05) (in Rs)

States	2005	2006	2008	2009	2010	2011	2012	2013	CAGR
Andhra Pr	28282	30666	37406	39564	40927	45218	48110	50035	7.44
Arunachal Pr	28960	29077	32743	34787	37128	37652	39460	40559	4.86
Assam	18809	19144	20349	21177	22721	23989	24873	25968	4.39
Bihar	8560	8382	9796	10741	11128	12505	13396	15067	7.52
Chhattisgarh	21174	21417	26486	28128	28503	30888	30716	32371	5.63
Goa	91397	97517	111454	121658	133015	154256	186869	201108	10.56
Gujarat	37403	42243	49065	51476	56266	60818	64332	68236	7.62
Haryana	42133	45182	52553	55824	61245	64600	68379	71527	6.99
Himachal Pr	37732	40418	46713	49571	52933	56892	60311	63238	6.76
J& K	24728	25608	27669	28838	29504	30515	31725	32769	3.58
Jharkhand	20453	19403	22991	22137	23893	27128	29082	30741	6.09
Karnataka	29773	32430	39012	41183	41117	44639	45446	47169	5.80
Kerala	36744	40257	46796	49161	53411	56831	61060	65776	7.35
Madhya Pr	17376	17963	19794	21854	23503	24529	26412	28493	6.52
Maharashtra	40415	45134	55343	55935	60237	65425	69040	72872	7.32
Manipur	22125	23132	24161	25309	26594	25992	27655	29672	3.45
Meghalaya	25630	26985	28925	31871	33133	35097	36972	38366	5.34
Mizoram	27741	29056	32390	35945	39551	45379	46029	46921	7.83
Nagaland	29409	32435	37564	39969	42750	46773	49475	53092	7.50
Odisha	20038	20900	25488	27103	27966	29811	30535	32574	6.31
Punjab	37739	39450	46183	48253	50625	53227	55843	57713	5.59
Rajasthan	20926	21898	24736	26468	27700	31084	32067	32875	6.15
Sikkim	30631	33220	36993	42537	72959	78352	83006	87777	16.69
Tamil Nadu	33115	37193	44178	45915	50154	55916	59200	60766	7.81
Tripura	26333	27483	31176	33649	36722	39160	41977	45001	7.17
Uttarakhand	27251	30626	39697	43955	51037	55191	59318	63559	11.59
Uttar Pradesh	14580	15245	17042	17900	18730	19834	20728	21472	5.08
West Bengal	24709	25926	29345	30386	32403	33835	35447	37533	5.33

Source: GSDP-Central Statistical Organisation, India, Data Book for Planning Commission.

Population Figures: Census 2001 and 2011 interpolated and extrapolated using compound annual growth rate.

In terms of the social achievements, the states differ drastically in terms of indicators of social development. In case of poverty, states reported large disparities in poverty ratio during the year 2011-12 (Table 4.2). Chhattisgarh has reported highest proportion of people living in poverty (39.93 per cent) while Goa has reported the lowest of 5.09 per cent. States like Chhattisgarh, Jharkhand, Manipur, Arunachal Pradesh, Bihar, Odisha, Assam, Madhya Pradesh, and Uttar Pradesh reported more than thirty per cent of their population living in poverty in 2011-12. These states have together constituted 62 per cent of poor in the country and the largest share has been attributed to Uttar Pradesh that has highest number of poor in the country (22 per cent). On the other hand, bottom five states in terms of per capita real GSDP have constituted almost fifty per cent of poor in the country (48.61 per cent of total poor in the country). The two states that have reported highest per capita real GSDP and highest growth rate, Goa and Sikkim, have reported lowest ratio of poverty.

Compound annual growth rate of poverty rate for the years 2004-05 to 2011-12 indicates wide variations in achievements of poverty reduction across states (Table 4.2). In fact, states like Nagaland, Mizoram, and Arunachal Pradesh have reported increase in poverty during the period under consideration. States like Goa, Sikkim, Andhra Pradesh, Uttarakhand, Tripura, Kerala, and Himachal Pradesh have shown drastic reduction in poverty (more than 15 per cent per annum). On the other hand, Jharkhand and Chhattisgarh had started with higher level of poverty in initial years (more than 45 per cent) reported very slow reduction in poverty. Tripura had started with 40 per cent of poverty and managed to reduce it at remarkable pace of 16 per cent per year.

Another important indicator of development is literacy rate. On literacy front, Indian states have reported wide variation ranging from 63.82 per cent of Bihar to 93.91 per cent of Kerala (Table 4.2). All states showed improvement in literacy rate during the last decade. Among the states Kerala, Mizoram, and Goa continued to be on the top of the ranking during 2001 to 2011. On the other hand, states like Bihar, Jharkhand, Uttar Pradesh, Jammu & Kashmir, and Arunachal Pradesh continued to be at the bottom of the literacy rate ranking. The fact is that these states have reported highest improvement in the literacy since 2001 to 2011. However, the reported pace of improvement in literacy rate of these states is not enough to catch up with other states.

Uttar Pradesh is home for largest number of illiterate in the country (19.32 per cent of total illiterate) followed by Bihar (12.02 per cent) Andhra Pradesh (8.73 per cent). The bottom six

states in terms of per capita real GSDP ranking together constitutes 44.40 per cent of total illiterates in the country (Jharkhand, Manipur, Madhya Pradesh, Assam, Uttar Pradesh, and Bihar).

Other important indicators of the development in the health sector are Infant Mortality Rate (IMR)[18] and Maternal Mortality Ratio (MMR[19]). These indicators also differ widely across the states. Most of the states reported significant decline in IMR during the period 2001 to 2012 (Table 4.3). However, some of the states still have very high level of IMR as compared to other states. Mizoram has, on the contrary, reported increase in IMR during the same period from 19 to 35 at compound growth rate of 9.34 per cent. Kerala and Nagaland have reported marginal increase in the IMR. The states like Kerala, Goa, and Manipur reported lowest IMR in the country during 2012 while Madhya Pradesh, Assam, Odisha, and Uttar Pradesh have reported the highest.

Lowest per capita real GSDP states like Madhya Pradesh, Assam, Uttar Pradesh, and Bihar reported highest level of IMR during 2012. On the other hand, Manipur that reported one of the lower per capita real GSDP but also reported the lowest IMR (10) in 2012. The states like Nagaland (18), Kerala (12), Goa (10), and Manipur (10) have reported lowest IMR in the country while Tamil Nadu (7.45), Punjab (5.18), Maharashtra (5.32), and Goa (6.10) have shown highest pace of reduction in IMR.

In case of MMR, during the period 2001-03 to 2010-12, all states reported decline in the MMR (Table 4.3). However, despite high pace of decline reported by most of the states, Uttar Pradesh and Rajasthan have reported higher level of MMR. Kerala (66) and Maharashtra (87) have witnessed the lower MMR in the country and achieved these targets with much higher pace. Thus, there is disparities in both level and decline rate of MMR across the country.

Overall, the economic and social indicators improved in almost all the states in India during the last decade. Both, low income and high income states have shown improvement in their per capita real GSDP. The increase in per capita income has further reflected in increase in standard of living and poverty reduction of most of states. Except for few states, most of the states reported reduction in poverty during the years 2004-05 to 2011-12. The states have also reported commensurate improvement in other indicators of the social development. In case of

[18] Infant Mortality Rate is the number of deaths of children less than one year of age per 1000 live births.
[19] Maternal Mortality Ratio is the number of women who die as a result of complications of pregnancy or childbearing in a given year per 100,000 live births in that year

literacy, all the states reported improvement during 2001 to 2011. In case of crucial health indicators like IMR and MMR, most of the states reported improvement since 2001 to 2012.

Although, all states have shown improvement in both economic and social development indicators, there is wide variation observed across the states. There are disparities observed in the level of these economic and social indicators. Not only in level but also in pace of improvement states differ widely. For example, in case of per capita real GSDP, some states had started at very low level but because of low growth rate they ended up again at the bottom of the ranking (Uttar Pradesh and Assam). While some states had started with very low level of per capita real GSDP but reported high level of growth but still lied at the bottom (Bihar). On the other hand, states like Goa and Sikkim have reported both higher level and growth of per capita real GSDP.

In case of poverty, except for three states, all other states reported decline in the poverty since 2004-05 to 2011-12. However, just like per capita real GSDP, the level and rate of reduction of poverty widely differed across the states. Bihar and Odisha had started with higher level of poverty rate but also managed to reduce poverty at relatively faster pace and improved its ranking in terms of poverty. On the other hand, Chhattisgarh and Jharkhand reported higher poverty in 2004 and have continued to be on the top of the poverty ranking due to lower rate of decline. Tripura reported very fast decline in poverty from 40 per cent to 14.05 per cent during the same period at the compound annual rate of -16.0 per cent. On the other hand, Kerala reported lower poverty in 2004 (19.6 per cent) and reduced it to 7.05 per cent in 2012 at the compound annual rate of -15.67 per cent. Thus, irrespective of the initial level of poverty, the states have shown different patterns of reduction in the poverty.

Further, in case of literacy, states with low initial literacy have shown the highest pace of improvement but not able to achieve the level of literacy of other states (Bihar, Jharkhand, Uttar Pradesh, Jammu & Kashmir, and Arunachal Pradesh). States like Tripura, Sikkim, Manipur have shown considerable improvement in literacy rate for the years 2001 to 2011 and also shown higher pace of improvement in terms of number of literates. Andhra Pradesh, on the other hand, had lower literacy rate in 2001 (60.46 per cent) and reached to 67.66 per cent in 2011 as a result of lower growth in number of literates during the period (2.48 per cent).

Table 4:2 State wise poverty ratio, literacy rate, number of illiterate and literates (in crore)

States	Proportion of Population below Poverty Line (Per Cent) 2004–05	2011–12	Literacy Rate 2001	2011	No of Illiterates 2011	Proportion of Total Illiterates	No of Literates 2011	2001	CAGR
Andhra Pr.	29.6	9.2	60.47	67.66	2.74	8.73	5.10	3.99	2.48
Arunachal Pr.	31.4	34.67	54.34	66.95	0.05	0.15	0.08	0.05	4.93
Assam	34.4	31.98	63.25	73.18	0.84	2.67	1.94	1.40	3.33
Bihar	54.4	33.74	47	63.82	3.77	12.03	5.42	3.11	5.71
Chhattisgarh	49.4	39.93	64.66	71.04	0.74	2.36	1.55	1.12	3.36
Goa	24.9	5.09	82.01	87.4	0.02	0.06	0.11	0.10	1.54
Gujarat	31.6	16.63	69.14	79.31	1.25	3.99	4.18	2.98	3.42
Haryana	24.1	11.16	67.91	76.64	0.59	1.89	1.68	1.21	3.36
Himachal Pr.	22.9	8.06	76.48	83.78	0.11	0.36	0.51	0.40	2.35
J &K	13.1	10.35	55.52	68.74	0.39	1.25	0.72	0.48	4.17
Jharkhand	45.3	36.96	53.56	67.63	1.07	3.41	1.87	1.18	4.71
Karnataka	33.3	20.91	66.64	75.6	1.49	4.76	4.08	3.04	2.97
Kerala	19.6	7.05	90.86	93.91	0.20	0.65	2.81	2.55	0.99
Madhya Pr.	48.6	31.65	63.74	70.63	2.13	6.81	4.37	3.16	3.29
Maharashtra	38.2	17.35	76.88	82.91	1.92	6.13	8.21	6.40	2.53
Manipur	37.9	36.89	69.93	79.85	0.05	0.17	0.20	0.14	3.62
Meghalaya	16.1	11.87	62.56	75.48	0.07	0.23	0.18	0.12	4.57
Mizoram	15.4	20.4	88.8	91.58	0.01	0.03	0.09	0.07	2.55
Nagaland	8.8	18.88	66.59	80.11	0.04	0.13	0.14	0.11	1.79
Odisha	57.2	32.59	63.08	73.45	1.11	3.56	2.70	1.98	3.11
Punjab	20.9	8.26	69.65	76.68	0.65	2.07	1.89	1.48	2.51
Rajasthan	34.4	14.71	60.41	67.06	2.26	7.21	3.88	2.77	3.43
Sikkim	30.9	8.19	68.81	82.2	0.01	0.03	0.04	0.03	3.50
Tamil Nadu	29.4	11.28	73.45	80.33	1.42	4.53	5.20	4.05	2.52
Tripura	40	14.05	73.19	87.75	0.05	0.14	0.28	0.20	3.39
Uttar Pr.	40.9	29.43	71.62	79.63	0.21	0.66	0.70	0.51	3.13
Uttarakhand	32.7	11.26	56.27	69.72	6.05	19.32	11.78	7.57	4.52
West Bengal	34.2	19.98	68.64	77.08	2.09	6.68	6.22	4.72	2.80

Source: Poverty ratio- Planning Commission, Government of India.
Literacy- Census 2001 and 2011, Government of India.

In case of IMR, states like Madhya Pradesh, Odisha, Uttar Pradesh, and Rajasthan have continued to have higher IMR in the country. However, these states have shown relatively better improvement in IMR, but not sufficient to achieve the level of developed states. On the other hand, Meghalaya and Jammu and Kashmir have reported lower pace of improvement despite high level of initial IMR (Table 4.3).

Table 4:3 State-wise IMR and MMR

	Infant Mortality Rate (IMR)	
States	2001	2012
Andhra Pr	66	41
Arunachal Pr	39	33
Assam	74	55
Bihar	62	43
Chhattisgarh	77	47
Goa	19	10
Gujarat	60	38
Haryana	66	42
Himachal Pr	43	36
J&Kashmir	48	39
Jharkhand	62	38
Karnataka	58	32
Kerala	11	12
Madhya Pr	86	56
Maharashtra	45	25
Manipur	20	10
Meghalaya	56	49
Mizoram	19	35
Nagaland	NA	18
Odisha	91	53
Punjab	52	28
Rajasthan	80	49
Sikkim	42	24
Tamil Nadu	49	21
Tripura	39	28
Uttar Pradesh	48	34
Uttarakhand	83	53
West Bengal	51	32

	MMR[20]	
State	2004-06	2010-12
Andhra	154	110
Assam	480	328
Bihar/Jharkhand	312	219
Gujarat	160	122
Haryana	186	146
Karnataka	213	144
Kerala	95	66
Madhya Pr/Chhattisgarh	335	230
Maharashtra	130	87
Orissa	303	235
Punjab	192	155
Rajasthan	388	255
Tamil Nadu	111	90
Uttar Pr/Uttarakhand	440	292
West Bengal	141	117

Source: IMR- Ministry of Health and Family Welfare, Government of India.
MMR- Registrar General of India, Ministry of Home Affairs (SRS Estimates)

Thus, the states in India differ widely in terms of the economic and social development indicators; mainly in terms of the pace of improvement. Some states where initial value of indicator was low but have shown remarkable pace and still not able to match with level of developed states. On the other hand, some states had started with low initial value of indicator and also reported lower pace of improvement. Therefore, the current pace of improvement is not sufficient for these states to catch up with the level of developed states.

[20] Maternal Mortality Ratio (per 1,00,000 live births)

4.3 Role of government in explaining economic and social disparities across the states:

The concentration of development only to some regions of the country while other regions stay backward for long period of time may result in unsustainable overall development of a nation (World Bank; 2009). As it has argued by Kalirajan, Bhide, and Singh (2009), there are two important players that are responsible for a pattern of development across regions. First is the market, which operates on the business perspective and does not concern about the regional equitable growth. Second is the government, particularly state governments for the present analysis, where the government try to allocate its resources in an equitable manner and thereby aims at regional equitable growth. Therefore, instead of relying on the market, the government explicitly designs its policies, particularly public expenditure policy, in order to ensure the regional equitable development.

State governments try to ensure the equitable regional development through its policies that determines levels of economic and social infrastructures. Government's expenditure policies on creation and maintenance of public capital goods and various other programmes directed towards the improvement of quality of life of the citizens determines the level and quality of social and economic infrastructures in states. Public expenditure on creation of public capital, which determines the stock of physical infrastructure, gives positive incentive for the private investment in the states. Similarly, the public expenditure on various social services like health, education improves the quality of life of the citizens and ensures the effective participation in the labour force. Therefore, states that have high level of government expenditure on creation of both physical and human capital attract the private investment more than states with low level of public expenditure.

In India, as emphasised by Kurian (2007), a role of government in undertaking the capital investment diminished after the adoption of deregulation, liberalisation, and globalisation during early 1990s. The private investment took charge of stimulating the growth while the government took the responsibility of crating physical and social infrastructure. The private investment in a particular region is conditional upon availability of the social and physical infrastructures. The state governments in India play vital role in providing social services and physical infrastructure and direct huge public expenditure in providing these goods and services. Moreover, the state governments also make huge public expenditure on social services like education and health that directly affect the social development. The access to

education and health are considered to be important from the point of view of the labour productivity and thereby overall growth prospects. These services are considered as the social infrastructure and along with physical infrastructure, they stimulates the growth. Therefore, the state government expenditure influences growth indirectly by influencing the private investment decision (Rao, Shand, and Kalirajan; 1999).

Thus, states that provides adequate social and physical infrastructure has higher chance of achieving higher growth by incentivising the private investment. On the other hand, better social infrastructure also helps in improving quality of life of the citizens. Therefore, the state governments' expenditure on the social and physical services is very critical to remove high diversities in both the social and economic development across the states.

Considering huge diversities in the social and economic development across the states in India, the following section focuses on the level and pattern of the public expenditure of the states in India.

4.4 State-wise public expenditure in India:

As discussed above, the states in India play important role in providing the social and economic infrastructure for stimulating growth via incentivising the private investment. Total government expenditure indicates the level and quality of social and economic infrastructure provided by different states; given the efficiency and cost of providing services. In this section, the comparison of per capita real total expenditure across the states has been carried out. This analysis will enable us to look broadly into diversities in provision of the social and economic infrastructure across the states.

In India, there are total 28 major states out of which 17 states are considered as general category states while 11 states are considered as special category states. The special category states differ from the general category states on different dimensions. The special category states are situated in hilly and difficult areas. They are also characterised by high tribal population and low population density. These factors make demand for different set of public goods and services. The hilly and difficult area makes cost of provision of public goods and services much higher than the general category states. On the other hand, low economic activities and low resource base makes it more difficult to raise tax revenues. Therefore, direct comparison of the revenue and expenditure between the special and general category

states is not desirable. The present section compares the per capita real public expenditure of the special and general category states separately.

As it can be seen from the Table 4.4, that per capita real total expenditure differs very widely between the special category states and general category states. The average per capita real total expenditure of the special category state is Rs. 17633 whereas that of general category is Rs. 8131 during 2011-12. This wide difference is an indication of differential cost conditions in the provision of public good and services between the special and general category states. These differences can be attributed to the differences in the factors like hilly areas, low population density [21]etc. in the former. It is also evident that there are wide differences prevailing within the special and general category states. In case of special category states, per capita real total public expenditure ranges from Rs. 5766 (Assam) to Rs. 39561(Sikkim) during 2011-12. Two special category states, Sikkim and Arunachal Pradesh, have reported highest per capita real public expenditure in the country. In terms of growth rate, Arunachal Pradesh, and Nagaland have reported the highest per capita real public expenditure among the special category states.

Sikkim and Mizoram have reported one of the highest level of per capita public expenditure in the country during 2004-05 to 2011-12, but their growth in public expenditure has come down (compound annual growth rate is 1.68 per cent). Arunachal Pradesh and Nagaland are rapidly catching the level of public expenditure of the top states in special category states. On the other hand, low public expenditure states like Himachal Pradesh, Jammu & Kashmir, Tripura, Uttarakhand, and Assam have reported lower pace of improvement. These states will take more time to catch with top states with the current pace of adjustment. There is also huge difference in the public spending observed between top three states and rest of the states in the special category states. The average per capita public spending in these top three states is Rs. 30713 while for rest of the states it is Rs. 12728 during the period under consideration.

The states in general category have also reported wide differences in the per capita public spending. Goa has reported very high level of per capita public spending (Rs.28502) during 2011-12 followed by Kerala (Rs. 9518), Haryana (Rs. 9243), and Tamil Nadu (Rs. 9060) etc. On the other hand, states like Jharkhand (Rs. 4544), Uttar Pradesh (Rs. 4516), and Bihar (Rs. 3375) continue to report lowest per capita public expenditure in the general category and their

[21] Population density is defined as the number of persons per square kilometre.

per capita public expenditure is less than half of Kerala (Rs. 9518). In terms of annual growth rate, Chhattisgarh (9.17 per cent), Tamil Nadu (8.24 per cent), and Goa (8.21 per cent) are on the top of ranking in the general category states.

Table 4:4 State wise per capita real total, revenue, and capital expenditure

States	Per Capita Real Total Expenditure (Rs) 2004-05	2011-12	CAGR	Per Capita Real Revenue Expenditure (Rs) 2004-05	2011-12	CAGR	Per Capita Real Capital Expenditure (Rs) 2004-05	2011-12	CAGR
Special Categ.									
Arunachal Pr.	15701	28759	(10.21)*	12537	19583	(7.65)*	3164	9177	(17.94)*
Assam	4714	5767	(5.15)**	3603	5253	(6.82)*	1111	514	(-4.15)
Himachal Pr.	10140	14635	(5.90)*	9078	12555	(5.24)*	1062	2080	(10.54)*
Jammu Kashmir	9759	14036	(4.98)*	7415	11114	(5.09)*	2343	2923	(4.31)
Manipur	9450	16091	(7.28)*	7116	12016	(6.15)**	2334	4074	(10.04)*
Meghalaya	7337	11854	(7.58)*	6237	9980	(7.54)*	1100	1874	(7.72)*
Mizoram	18183	23819	(4.19)*	14419	20860	(5.89)*	3764	2960	(-3.33)
Nagaland	10400	19453	(8.46)*	8487	15478	(8.21)*	1913	3975	(9.55)*
Sikkim	36588	39561	(1.68)#	30349	32808	(1.56#	6240	6754	(2.08)
Tripura	8345	10482	(4.36)**	6456	8104	(4.47)**	1889	2378	(3.71)
Uttarakhand	6975	9506	(4.30)*	5537	7937	(5.87)*	1439	1569	(-2.10)
General Categ.									
Andhra Pr.	4822	8014	(7.30)*	3940	6641	(7.86)*	882	1374	(4.83)
Bihar	1868	3375	(8.05)*	1611	2741	(7.31)*	257	634	(11.79)*
Chhattisgarh	3758	6730	(9.17)*	3142	5448	(9.69)*	616	1282	(7.22#
Goa	17085	28502	(8.21)*	13969	23407	(8.25)*	3116	5095	(7.99)*
Gujarat	5360	7568	(5.42)*	4469	6096	(6.00)*	890	1471	(3.00)
Haryana	5503	9243	(7.94)*	5017	7784	(6.80)*	486	1459	(15.80)**
Jharkhand	3755	4544	(3.10)**	2882	3914	(5.04)*	873	630	(-4.25)
Karnataka	5395	8348	(5.95)*	4452	6594	(5.23)*	944	1754	(8.98)*
Kerala	5560	9518	(7.47)*	5290	8611	(6.55)*	271	907	(19.79)*
Madhya Pr.	4045	6576	(6.91)*	2774	4471	(7.11)*	1271	2105	(6.25)
Maharashtra	5999	7830	(4.39)*	4966	6800	(5.25)*	1034	1030	(0.15)
Odisha	3514	5871	(8.20)*	3189	5116	(7.26)*	325	755	(16.33)*
Punjab	7006	7776	(2.18)**	6702	7380	(2.42)*	304	396	(0.72)
Rajasthan	3937	5558	(4.85)*	3261	4819	(6.04)*	676	739	(-1.74)
Tamil Nadu	5263	9060	(8.24)*	4409	7189	(7.62)*	854	1871	(11.27)*
Uttar Pr.	2845	4516	(7.42)*	2493	3821	(7.02)*	351	695	(9.68)#
West Bengal	3709	5196	(5.78)*	3333	4978	(6.78)*	376	218	(-7.45)**

Source: Total, revenue, and capital expenditure- Handbook of Statistics on State Government Finances – 2010, and State Finances; A Study of Budgets, RBI, India.

CAGR is estimated by regressing semi log trend equation for real per capita GSDP

* Significant at 1 per cent level; ** Significant at 5 per cent level; # Significant at 10 per cent level.

Two states, Bihar and Odisha, have reported the lowest per capita public expenditure during 2004-05 but have reported one of the highest growth in the general category states (8.05 per cent and 8.20 per cent respectively). However, Bihar still lies at the bottom in term of level of spending and therefore, need more growth than the present to catch with other states. On the other hand, Jharkhand and Rajasthan have reported both lower levels of per capita public expenditure as well as lower growth in it. It is also evident that the growth rates of per capita public expenditure of middle public expenditure states like Maharashtra, Gujarat, and Punjab have slowed down.

The average per capita public spending of the general category states in 2011-12 was Rs.6858 (excluding Goa) and eight out of seventeen states are below average. For the period under consideration, the public expenditures of these eight states were below the national average. These are the states that have also reported lower per capita real GSDP for the period 2004-05 to 2011-12.

Total expenditure of the state governments can further be divided into revenue expenditure and capital expenditure.

In case of the special category states, the share of per capita real revenue expenditure in per capita real total expenditure ranges from 68.10 per cent (Arunachal Pradesh) to 91.10 per cent (Assam) during 2011-12. There are wide variations observed in terms of per capita real revenue expenditure ranging from Rs. 5252.9 (Assam) to Rs. 32808 (Sikkim) in 2011-12 (Table 4.4). The average per capita revenue expenditure of the top three states (Sikkim, Mizoram, and Arunachal Pradesh) is Rs. 24417 whereas for rest of the states it is Rs. 10305. In terms of compound annual growth rates, Nagaland has reported highest growth rate (8.21 per cent) followed by Arunachal Pradesh (7.65 per cent) and Meghalaya (7.54 per cent). Sikkim which has already reported high level of revenue expenditure, its growth has come down. Tripura and Jammu and Kashmir have reported lower growth despite their low level of revenue expenditure during the same period. On the other hand, Assam and Meghalaya having lower per capita revenue expenditure have reported relatively higher growth rate.

In case of the general category states, all states have witnessed significant increase in their real per capita revenue expenditure during the period 2004-05 to 2011-12. Share of per capita real revenue expenditure in per capita real total expenditure varies widely across the general category states, ranging from 67.94 per cent (Madhya Pradesh) to 95.80 per cent (West Bengal).

The average per capita real revenue expenditure of the general category is Rs. 6812.4 in 2011-12 and eleven out of seventeen states in this category are below the average (Table 4.4). Tamil Nadu has able to increase its revenue expenditure above average since 2004-05 to 2011-12 while Gujarat has come down from above average in 2004-05 to below average in 2011-12. Jharkhand, Uttar Pradesh, and Bihar have per capita real revenue expenditure below Rs. 4300 (i.e. less than half that of Kerala). Out of these three states, only Jharkhand has reported lower growth rate (5 per cent) while others have shown more than 7 per cent. Chhattisgarh has increased revenue expenditure faster in the general category states (9.69 per cent) followed by Goa (8.52 per cent), Andhra Pradesh (7.86 per cent) during the period under consideration.

The per capita real capital expenditure varies widely across the special category states from as high as Rs. 9177 (Arunachal Pradesh) to as low as Rs. 514 (Assam) (Table 4.4). The average of top three states (Arunachal Pradesh, Sikkim, and Manipur) in the year 2011-12 is Rs. 6668 while rest of the states it is Rs. 2284. Uttarakhand and Assam have low level of per capita capital expenditure and also reported negative growth during the period 2004-05 to 2011-12, however, their growth rate is insignificant. On the contrary, Meghalaya and Himachal Pradesh have reported lower per capita capital expenditure in 2004-05 but have shown relatively higher and significant growth. In spite of their higher growth, Meghalaya and Himachal Pradesh still lie at the bottom in 2011-12. Over the same period, Mizoram has reported negative but insignificant growth rate of per capita capital expenditure. Only five states out of eleven special category states have reported positive and significant growth rate during the period. It is also worth mentioning that all the special category states have higher per capita capital expenditure than all state average (Rs.2168) during 2011-12, except Uttarakhand.

In case of general category states, seven out of seventeen states have reported insignificant growth during the period under consideration. The average per capita real capital expenditure has increased from Rs. 796 to Rs. 1319 in the same period. The states like Odisha, Rajasthan, Uttar Pradesh, Bihar, Punjab, and West Bengal have reported per capita real capital expenditure below the average for the years form 2004-05 to 2011-12 (Table 4.4). On the other hand, states like Maharashtra and Jharkhand were above average in 2004-05, became below average states in terms of per capita real capital expenditure. In total ten out of seventeen states have reported below average per capita capital expenditure. The below average state West Bengal has reported significant negative growth (-7.45 per cent) during

the same period. On the other hand, the below average states like Odisha, Bihar, and Uttar Pradesh have reported higher growth in capital expenditure in per capita terms; While states like Rajasthan and Jharkhand have reported insignificant growth. High income states like Maharashtra, Kerala, and Punjab have witnessed below average per capita capital expenditure, although, Kerala has reported one of the highest growth while latter two has reported insignificant growth. Among the low income states, only Madhya Pradesh has reported above average per capita capital expenditure (rank second in general category states) during 2004-05 and 2011-12.

The states like Goa and Chhattisgarh that have witnessed impressive growth in per capita total expenditure is mainly due to their drastic growth in per capita revenue expenditure. On the other hand, states like Odisha and Bihar that have reported higher growth rate in per capita total expenditure is mainly due to their higher growth in per capita capital expenditure.

Overall, real total public expenditure as well as real revenue and capital expenditure differs largely in per capita terms and also in terms of growth across the states in India. Per capita expenditure differs largely between the special category states and general category states. The average real total public expenditure of the special category states in the year 2011-12 was Rs. 17633 while that of general category states was Rs. 8131 indicating 117 per cent higher expenditure in per capita terms. This is likely to reflect the cost differential in the provision of public services between these two categories. However, within the general and special category states, there are wide variations in per capita public expenditure is observed during 2004-05 to 2011-12.

Wide differences in socioeconomic indicators may have resulted because of large differences in public expenditures across the states. States like Uttar Pradesh, Rajasthan, Orissa, West Bengal, Bihar, Jharkhand, Assam, Meghalaya, and Jammu and Kashmir have reported lower per capita public expenditure and also reported lower improvement in social and economic indicators.

Considering differences in public expenditure across states, the following section focuses on own resource positions of the state governments.

4.5 Own revenue of state governments:

Resource position largely differs between the special and general category states. The average per capita real total own revenue receipts[22] of the general category state for the year 2011-12 is Rs. 4894 whereas that of special category state it is Rs. 3788. Except for Sikkim and Himachal Pradesh, all other special category states remain below the national average of Rs. 4459.

Within the special category states, Sikkim has reported highest per capita real total own revenue receipts (Rs. 14024) which is second highest in the country, followed by Himachal Pradesh (Rs.5464) and Uttarakhand (Rs.4185). These are the high income states in the special category in terms of per capita income. However, next high income states in the ranking, namely Tripura and Nagaland, have reported one of the lowest per capita total receipts in this category (Rs. 1810 and Rs. 1712 respectively). Manipur, which is also low income state in this category, has reported lowest per capita total receipts (Rs.1636) in 2011-12. However, Manipur has witnessed highest growth in per capita total receipts during the period under consideration. On the other hand, Mizoram, Assam, and Tripura are among the lowest per capita total receipts states, have also reported lower growth rate (2.7 per cent, 2.5 per cent and 5.9 per cent respectively). Low income state Jammu and Kashmir, on the contrary, has reported higher per capita total receipts (Rs. 3389) and higher growth rate (7.3 per cent). Moreover, most of the sates remained below average of the special category states (eighth out of eleven states).

In case of the general category states, low per capita real GSDP states like West Bengal, Chhattisgarh, Rajasthan, Jharkhand, Odisha, Madhya Pradesh, Uttar Pradesh, and Bihar have witnessed lower per capita total receipts (below average of Rs. 3898, excluding Goa). However, most of these states (Bihar, Chhattisgarh, Uttar Pradesh, Orissa, and Madhya Pradesh) have reported higher growth rate in per capita total receipts than the high total receipts states. On the contrary, high per capita total receipts states like Tamil Nadu, Gujarat, Maharashtra, Karnataka, Haryana, and Punjab are witnessing slowdown in the growth. However, considering the lower level of total receipts of low income states, such growth will likely to be insufficient to catch up with the high income states.

[22] Total own revenue receipts includes own tax and non-tax revenue, and non-debt capital receipts.

With regard to own revenue receipts[23] of the states, almost all special category states have reported significant positive growth, except for Arunachal Pradesh that has reported insignificant growth rate and Sikkim that has reported significant but negative growth rate during 2004-05 to 2011-12. The share of revenue receipt in total receipt is very high and share of capital receipts are almost negligible in case of special category states. The lowest per capita own revenue receipts states like Manipur and Nagaland have reported highest growth in per capita own revenue receipt. On the other hand, Sikkim has reported highest per capita own revenue receipts but now showing declining trend. In case of per capita real non debt capital receipts, Meghalaya, Mizoram, Nagaland, and Assam have reported significant decline in growth rate. Rest of the states have reported positive but insignificant growth in per capita real non debt capital receipts. Thus, growth of capital receipts in most of the special category states is either stagnant or declining during the period.

In case of the general category states, all states have reported significant positive growth rate in per capita revenue receipts during the 2004-05 to 2011-12, except Haryana and Punjab that have reported positive but insignificant growth rate. The share of capital receipts as compared to revenue receipts for all states is negligible, except for Madhya Pradesh whose share of capital receipt in total receipts is 79 per cent. Therefore, total receipts of the general category states are mainly driven by the revenue receipts. In case of per capita real non debt capital receipts, Chhattisgarh, Karnataka, and Goa have reported significant positive growth while Odisha has reposted significant negative growth. Rest of the states have reported insignificant growth rate and most of them have reported negative growth rate. Thus, revenue receipts are the important source of finance for the general category states. However, low income states have continued to remain below average in terms of per capita revenue receipts.

Thus, there are huge differences in terms of receipt position and expenditure position among the states, where most of the states in special as well as general category states lie below average in their respective categories. Considering these differences in own revenue resources and expenditure across the states, the following section examines the gap between own revenue and expenditure across states.

[23] Own revenue receipts includes own tax and non-tax revenue receipts of the states.

Table 4:5 State wise per capita total, revenue and non-debt capital receipts

States	Per Capita Real Total Receipts (Rs) 2004-05	2011-12	CAGR	Per Capita Real Own Revenue Receipts (Rs) 2004-05	2011-12	CAGR	Per Capita Real Non Debt Capita Receipts (Rs) 2004-05	2011-12	CAGR
Special Category									
Arunachal Pr	1840	3017	(10.17)	1818	3007	(9.32)	22	10	(23.27)
Assam	1822	2084	(2.51)#	1333	2080	(5.23)*	489	4	(-36.35)**
Himachal Pr.	2960	5463	(9.58)*	2920	5441	(8.92)*	40	22	(14.52)
J&Kashmir	1891	3389	(7.32)*	1888	3306	(7.13)*	3	83	(16.42)
Manipur	653	1636	(13.24)*	651	1632	(13.25)*	2	5	(8.57)
Meghalaya	1405	2247	(6.29)*	1333	2200	(6.71)*	72	47	(-5.02)**
Mizoram	1431	2098	(2.73)*	1200	1942	(3.86)#	231	156	(-6.03)*
Nagaland	818	1712	(9.48)**	786	1704	(9.98)*	33	8	(-(18.31)*
Sikkim	19530	14024	(-4.09)**	19534	13595	(-4.34)**	-4	429	(68.45)
Tripura	1245	1810	(5.93)**	1233	1807	(5.99)**	12	3	(-15.51)
Uttarakhand	2286	4185	(7.67)*	2190	4130	(7.47)*	96	55	(8.95)
General Category									
Andhra Pr.	2691	4784	(7.82)*	2518	4772	(8.91)*	173	12	(-32.46)
Bihar	415	797	(10.99)*	414	796	(11.09)*	2	1	(-12.30)
Chhattisgarh	1985	3866	(9.72)*	1978	3556	(8.58)*	7	310	(69.56)**
Goa	11442	20831	(9.22)*	11402	20765	(9.22)*	40	67	(9.24)*
Gujarat	2986	5072	(6.26)*	2951	5054	(6.95)*	34	18	(-20.14)
Haryana	4460	6182	(1.93)	4391	6108	(2.46)	69	74	(-11.13)
Jharkhand	1247	1868	(7.05)*	1242	1863	(7.07)*	5	4	(-1.62)
Karnataka	3677	5154	(3.99)*	3668	5120	(3.90)*	8	33	(22.08)**
Kerala	3043	5308	(8.27)*	3014	5294	(8.35)*	29	13	(-6.98)
Madhya Pr.	1891	3699	(8.52)**	1883	2923	(7.79)*	8	776	(25.61)
Maharashtra	3576	5327	(5.62)*	3378	5271	(6.04)*	199	56	(-4.73)
Odisha	1531	2955	(8.85)*	1424	2935	(9.81)*	107	19	(-26.80)**
Punjab	4847	4542	(0.37)	4795	4520	(0.28)	52	22	(-1.22)
Rajasthan	1750	3215	(7.23)*	1730	3103	(7.28)*	20	112	(3.87)
Tamil Nadu	3379	5864	(6.72)*	3261	5591	(6.67)*	118	273	(5.22)
Uttar Pr.	1045	1940	(8.89)*	1029	1936	(9.13)*	16	4	(-14.66)
West Bengal	1423	1789	(4.73)**	1335	1784	(5.23)*	88	5	(-22.40)

Source: Total, revenue, and capital receipts- Handbook of Statistics on State Government Finances, 2010, and State Finances; A Study of Budgets, RBI, India.

CAGR is estimated by using semi log trend equation

* Significant at 1 per cent level; ** Significant at 5 per cent level; # Significant at 10 per cent level.

4.6 Resource gap of state governments:

The gaps between own revenue receipts and revenue expenditure (revenue gap), non-debt capital receipts and capital expenditure (capital gap), and overall revenue receipts (own revenue and non debt capital receipts) and total expenditure (revenue and capital expenditure) are called fiscal gap, all in current prices and in per capita terms, are being examined across the states in the present section. This will indicate shortfall of own revenue over expenditure in each of above mentioned accounts and thereby indicate the extent of dependency on the federal fiscal transfers and borrowing. Since the unfulfilled gap is either filled by the federal transfers or by borrowings.

In case of the special category states, as it can be noted from the Table 4.6, most of the fiscal gap is being explained by the gap on revenue account. The share of revenue gap in the fiscal gap of Mizoram, Assam, and Meghalaya is more than eighty per cent; on the other hand, Arunachal Pradesh has the lowest of 64.4 per cent. The lowest revenue gap observed in Assam (Rs. 5055) and Uttarakhand (Rs. 6065) while the highest found in Sikkim (Rs.30608) and Mizoram (Rs.30137) during 2011-12. Revenue gap of all the special category states have increased significantly during 2004-05 to 2011-12.

It is also interesting to point out that low revenue gap states like Himachal Pradesh, Manipur, Jammu and Kashmir, Meghalaya, Tripura, Uttarakhand and Assam also have less than average per capita revenue expenditure in the special category states. On the other hand, Sikkim, Mizoram, Arunachal Pradesh, and Nagaland have above average per capita revenue expenditure. This indicates that the low revenue deficits of former states are mainly due to their lower per capita public spending.

In case of the general category states, there are disparities observed in terms of share of revenue gap in the fiscal gap in per capita terms. It ranges from 34.45 per cent (Goa) to 93.76 per cent (West Bengal) during 2011-12. Most of the low income states have higher share of revenue gap as compared to high and middle income states. The high and middle income states like Haryana, Tamil Nadu, Maharashtra, Karnataka, and Gujarat have reported lower per capita fiscal gap. On other hand, other high income states like Kerala, Punjab, and Goa reported high level of revenue gap in 2011-12. Most of the below average income states like Orissa, Jharkhand, Bihar, Chhattisgarh, and Uttar Pradesh have reported relative higher fiscal gap. Almost all states have witnessed sharp increase in growth of their revenue gap over the

period under consideration except for Maharashtra that has reported insignificant positive growth rate.

Table 4:6 State wise revenue, capital and fiscal gap

States	Per Capita Revenue Gap (Rs) 2004-05	2011-12	CAGR	Per Capita Capital Gap (Rs) 2004-05	2011-12	CAGR	Per Capita total Fiscal Gap (Rs) 2004-05	2011-12	CAGR
Special Category									
Arunachal Pr.	10719	26407	(14.83)*	3142	14603	(25.53)*	13861	41010	(17.88)*
Assam	2271	5055	(15.49)*	622	812	(7.71)#	2892	5866	(14.17)*
Himachal Pr.	6159	11333	(10.30)*	1022	3278	(15.67)**	7180	14611	(11.33)*
Jammu Kashmir	5527	12438	(11.61)*	2341	4524	(11.35)*	7868	16962	(11.62)*
Manipur	6465	16544	(12.62)*	2331	6484	(17.71)*	8797	23027	(14.21)*
Meghalaya	4904	12394	(15.32)*	1028	2910	(15.92)*	5932	15304	(15.44)*
Mizoram	13219	30137	(13.52)*	3534	4467	(3.57)	16753	34604	(11.61)*
Nagaland	7701	21943	(15.54)*	1880	6320	(17.40)*	9581	28263	(15.93)*
Sikkim	10815	30608	(17.00)*	6244	10075	(8.60)**	17059	40682	(14.47)*
Tripura	5223	10032	(11.36)*	1877	3783	(11.00)*	7100	13815	(11.33)*
Uttarakhand	3347	6065	(11.79)*	1343	2411	(3.80)	4690	8476	(9.46)*
General Category									
Andhra Pr.	1422	2976	(13.06)*	709	2169	(15.88)*	2131	5146	(14.07)*
Bihar	1197	3099	(13.39)*	255	1008	(19.72)*	1452	4107	(14.77)*
Chhattisgarh	1164	3014	(19.91)*	609	1549	(10.29)**	1773	4563	(16.05)*
Goa	2567	4210	(8.93)#	3076	8010	(15.51)*	5643	12220	(13.16)*
Gujarat	1518	1661	(10.14)#	856	2315	(12.25)*	2374	3976	(11.34)*
Haryana	626	2670	(40.62)***	417	2206	(34.24)**	1043	4877	(36.90)*
Jharkhand	1640	3268	(10.62)*	868	996	(2.42)	2508	4264	(8.01)*
Karnataka	783	2348	(17.96)*	935	2741	(16.35)*	1719	5089	(17.10)*
Kerala	2276	5283	(10.95)*	241	1424	(29.59)*	2517	6707	(13.82)*
Madhya Pr.	891	2465	(13.67)*	1263	2118	(12.43)**	2154	4583	(12.59)*
Maharashtra	1588	2436	(14.45)	835	1552	(8.52)**	2423	3988	(9.81)
Odisha	1766	3474	(11.97)*	217	1172	(31.73)*	1983	4646	(15.13)*
Punjab	1908	4556	(14.58)*	251	597	(6.24)	2159	5153	(12.95)*
Rajasthan	1531	2733	(11.46)*	656	999	(4.55)**	2187	3732	(9.50)*
Tamil Nadu	1148	2546	(18.50)*	736	2546	(19.61)*	1884	5092	(19.14)*
Uttar Pr.	1464	3003	(12.57)*	336	1101	(18.05)*	1800	4105	(13.88)*
West Bengal	1998	5088	(15.22)*	287	339	(1.66)	2286	5427	(13.75)*

Source: Total, revenue, and capital gap is own calculation of author – data from Handbook of Statistics on State Government Finances – 2010, and State Finances; A Study of Budgets, RBI, India.
CAGR is estimated by using semi log trend equation
* Significant at 1 per cent level; ** Significant at 5 per cent level; # Significant at 10 per cent level.

Unlike special category states, below average revenue expenditure states have reported higher revenue gap. It may indicate that the lower own revenue raising capacity on the part of low income states as compared to their revenue expenditure.

In case of capital account gap, the average per capita capital gap of special category states (Rs.5424) is much higher than that of general category states (Rs. 1932) (Table 4.6). Most of the states have reported sharp increase in the capital gap in special category states; Arunachal Pradesh (25.53 per cent) being highest followed by Manipur (17.71) and Nagaland (17.4). Uttarakhand and Mizoram reported insignificant but positive growth during 2004-05 to 2011-12. The below average states in terms of per capita capital expenditure in the current prices reported lower per capita fiscal gap in 2011-12. These are the states that have lower per capita capital receipts. On the other hand, higher capital spending states also have higher capital receipts in the special category states.

In case of general category states, states with low per capita capital expenditure reported lower fiscal gap in 2011-12 and also have lower capital receipts. States like Haryana, Orissa, and Kerala reported growth rate of per capita capital gap of more than 30 per cent during 2004-05 to 2011-12 (Table 4.6). The high capital expenditure relative to the lower capital receipts have resulted in sharp increase in capital gap of almost all states.

Overall, all states have witnessed sharp increase in the fiscal gap. In special category states, per capita fiscal gap varies from Rs. 5866 (Assam) to Rs. 41010 (Arunachal Pradesh) during 2011-12. On the other hand, in case of general category states it varies from Rs. 3733 (Rajasthan) to Rs. 12220 (Goa) (Table 4.6). In case of special category states, low per capita public expenditure states like Jammu and Kashmir, Meghalaya, Tripura, Uttarakhand, and Assam have higher fiscal gap, indicating their resource constraints. Similar situation is observed in case of general category states where low public expenditure states like Orissa, Madhya Pradesh, Chhattisgarh, Jharkhand, Bihar, Uttar Pradesh, and Rajasthan have lower fiscal gap. On the other hand, Maharashtra and Gujarat have reported lower fiscal gap and also have higher level of both expenditure and revenue, indicating their better fiscal position.

Thus, invariably all the states, both in the special category and general category, have incurred the level of expenditure, both on revenue and capital account, that exceed their own revenue resources. This can be further seen from how much own revenue receipts, capital receipts, and overall receipts can finance their revenue expenditure, capital expenditure, and total expenditure. As it can be seen from the Table 4.7 that the special category states are

more constrained on revenue account and proportion of own revenue to revenue expenditure varies from 9.88 per cent (Mizoram) to 59.04 per cent (Sikkim), on an average over the period 2004-05 to 2011-12. This makes this category of states to heavily rely either on the federal transfers or on market borrowing.

On the other hand, the proportion of own revenue to revenue expenditure varies, on an average, from 25.96 per cent (Bihar) to 86.43 per cent (Goa) during the same period. States like Orissa, Uttar Pradesh, Jharkhand, West Bengal, and Bihar are able to finance less than fifty per cent of their revenue expenditure out of their own resources.

The proportion of capital expenditure financed by capital receipts is very less for all states in the country, especially in case of the special category states and low income general category states. In case of total expenditure, most of the special category states (seven out of eleven) are able to finance less than 20 per cent of their total expenditure only out of their own resources. Sikkim has reported the highest proportion (49.34 per cent) while Nagaland reported the lowest (8 per cent). In case of general category states, Bihar has reported lowest proportion (21.04 per cent) while Haryana has reported the highest (72.09 per cent). Most of the low incomes states have reported less than fifty per cent of total expenditure is being financed by their own finance. These states (Rajasthan, Madhya Pradesh, Orissa, Uttar Pradesh, West Bengal, Bihar, and Jharkhand) also have reported lower total expenditure.

Thus, the analysis of the resource position revels that low income states in the country have lower expenditure as well as lower revenue resources. Most of the low fiscal deficit states are also those that have lower level of expenditures. Further, most of the low expenditure states are not able to finance its existing level of expenditure and therefore, rely more on the federal transfers or borrowings. Considering the constraint on their revenue raising capacity due to lower economic base, if these states increase their expenditure closer to high income states, then they have to rely more on the transfers or borrowing.

Considering huge resource gap in financing expenditure of the states, the following section examines the extent of fiscal transfers from the central government in reducing the fiscal gap.

Total transfers of resources from the central government to states include the Finance Commission’s transfers, the Planning Commission’s transfers and transfers by various ministries. Table 4.7 represents proportion of transfers of resources to the fiscal gap of the states, average for the period 2004-05 to 2011-12.

Table 4:7 State wise proportion of own resources and fiscal transfers to expenditure

States	Average Proportion of Own Revenue to Revenue Expenditure	Average Proportion of Capital Receipts to Capital Expenditure	Average Proportion of Total Revenue Receipts to Total Expenditure	Average Proportion of transfers to fiscal gap
Special Category				
Arunachal Pradesh	21.11	2.24	16.08	31.51
Assam	41.07	7.06	37.36	22.41
Himachal Pradesh	39.48	6.21	34.75	30.79
Jammu & Kashmir	27.18	0.42	20.04	18.46
Manipur	12.61	0.12	8.81	26.99
Meghalaya	22.79	4.49	20.05	37.94
Mizoram	9.88	4.99	8.94	30.49
Nagaland	10.02	0.61	7.96	31.51
Sikkim	59.05	0.87	49.24	36.25
Tripura	17.78	0.45	13.66	15.21
Uttarakhand	44.80	6.07	36.93	32.74
General Category				
Andhra Pradesh	69.06	11.54	58.41	50.32
Bihar	25.96	0.39	21.04	30.39
Chhattisgarh	66.54	13.74	55.97	54.06
Goa	86.43	1.09	69.26	35.15
Gujarat	74.35	6.42	61.60	36.28
Haryana	81.83	17.74	72.09	37.88
Jharkhand	44.53	0.39	34.81	19.30
Karnataka	77.93	2.15	62.69	47.98
Kerala	61.40	3.87	56.82	48.97
Madhya Pradesh	61.04	10.29	48.30	45.58
Maharashtra	78.64	5.48	66.04	46.97
Orissa	51.74	13.83	46.80	48.50
Punjab	67.96	24.33	64.35	37.51
Rajasthan	57.92	8.61	50.41	39.58
Tamil Nadu	75.79	15.21	65.43	47.84
Uttar Pradesh	48.43	2.87	39.83	32.39
West Bengal	36.95	27.35	36.39	33.56

Source: the proportions are own calculation of author – data from Handbook of Statistics on State Government Finances – 2010 and State Finances; A Study of Budgets, RBI, India.

In case of the special category states, most of the fiscal gap is covered by the federal fiscal transfers. The proportion of transfers to the fiscal gap varies from 71 per cent (Uttarakhand) to 97.5 per cent (Tripura). In case of the general category state, there is wide variation observed and the proportion varies from 45.15 per cent (Punjab) to 102.33 per cent (Odisha)

(Table 4.7). High income states like Maharashtra, Kerala, Gujarat, Goa, and Punjab have reported lower share of transfers in total fiscal gap in general category states.

In case of the special category states, most of the fiscal gap has been financed by the central fiscal transfers but this level of transfer may not be sufficient if we consider the low level of expenditure of some of the low income states. States like Tripura, Meghalaya, Jammu & Kashmir, Manipur, and Assam have reported lower per capita GSDP that has reflected in lower revenue receipts of these states. Such lower receipts have further constrained their spending ability as reflected in their lower per capita expenditure. In order to provide the standard level of public services of high income states in the special category states, they need to incur more spending than their existing level. Considering their lower tax base, if these states had provided the standard level of services it would have resulted in higher fiscal gap than existing one. Therefore, the present level of the central transfers will be inadequate for these states. In order to overcome disability of these states on both expenditure and revenue side, more transfers must be needed than merely closing the existing fiscal gap.

The general category states have also witnessed the same aspect. States like Chhattisgarh, Madhya Pradesh, Odisha, Rajasthan, West Bengal, Jharkhand, Uttar Pradesh, and Bihar have reported lower per capita GSDP, lower expenditure, and lower revenue raising power. However, transfers are still insufficient to fulfil the existing fiscal gap of West Bengal (56.1 per cent), Jharkhand (65.5 per cent) (Table 4.7). Therefore, these states may require more transfers to ensure standard level of public services in the general category states.

Considering these aspects of public finance of Indian states, some states should be allowed to incur higher public expenditure in order to enable them in providing the standard level of public services. Therefore, the next chapter will focus on the issue of how much public expenditure of the states that can be allowed. The next chapter will also focus on the issue of how much revenue that should be expected from the states. For this reasons, benchmarking of the revenue and expenditure of the states will be carried out in the next chapter. As pointed out earlier, the justifiable revenue and expenditure have implication on deciding upon share in federal fiscal transfers and borrowing limit of the states. Further, this exercise will enable us for identify three constituents of overall observed fiscal deficit or revenue deficit.

CHAPTER 5 SETTING OF NORMS FOR STATE LEVEL FISCAL BEHAVIOUR

5.1 Introduction:

Endeavour of the present study is to derive province specific ceilings on the major budgetary aggregates. In order to derive justifiable ceilings on these major budgetary aggregates, the present study proposes a method of indentifying three components of the fiscal deficit or revenue deficit, namely the fiscal deficit due to inherent factors, fiscal deficit due to non conducive federal fiscal transfer mechanism, and fiscal deficit due to fiscal management of the provinces.

Moreover, as pointed out earlier, state governments often involve in overspending and under exploit available revenue base. They also involve in under-spending and over exploitation of revenue base. Therefore, how much revenue and expenditure of each state should be considered for the determination of ceiling on the major budgetary aggregates is an important question. The present study is arguing that this can be done by using certain benchmark based on which justifiable level of revenue and expenditure of each state can be determined. The justifiable level of expenditure and revenue of each state will be also useful for the determination of shares of states in the federal fiscal transfers. In this manner, benchmarking of revenue and expenditure of the states will further help in identifying three components of observed fiscal deficit or revenue deficit discussed earlier.

The next section focuses on the method used for benchmarking of revenue and expenditure of the states in India.

5.2 Benchmarking of revenue and expenditure of Indian states:

As pointed out in the previous chapters, there are wide variations observed in the actual revenue collection and the public expenditure across the states. As pointed out earlier, some of these wide variations can be attributed to the under or over exploitation of available revenue base and under or over spending by the states. Therefore, using the actual revenue and expenditure of the states for the analysis will give misleading picture of state governments' fiscal balances. Therefore, revenue and expenditure of each state should be

assessed on the basis of certain benchmark. The present section focuses on the method of benchmarking of revenue and expenditure of the states proposed by the present study.

The benchmark proposed by the present study is relative performances of the states. As pointed put earlier, deciding upon the standard level of each of the desirable public services and converting it in terms of required expenditure is a difficult task. An easier and fairly accurate method is the comparison of expenditure and revenue across the states. Based on such comparison, certain benchmark level that each state should be expected follow can be set.

The benchmarking can be viewed as a certain level of fiscal effort[24] that each state is expected to put on collection of revenue and expenditure. States differ in terms of their fiscal effort in collection of revenue and expenditures. Some states put relatively higher fiscal effort while other put very low. The benchmark, therefore, can either be the fiscal effort of the highest performing state or states or the average performing state. However, the fiscal effort of the highest performing states may not be appropriate since these states are likely to be high income states with developed infrastructural and institutional arrangement for the collection of revenue and for undertaking expenditure. Below average states may find it difficult to perform at the level of fiscal effort of the high performing high income states. Therefore, putting benchmark of the average fiscal effort is appropriate since it puts lower burdens on low income states and fairly justifiable.

Therefore, the present study will use the average fiscal effort of all states as a benchmark against which the justifiable level of expenditure or revenue of each state will be assessed. The benchmarking of revenue and expenditure will ensure the average fiscal efforts by each state in raising revenue from the available revenue base and in public spending given the basic factors affecting expenditure like population, urbanisation etc. In case of revenue effort, different states have different revenue base, and the benchmarked revenue will be potential revenue that a state will collect if it shows average effort in raising revenue on available revenue base. The average revenue effort can be defined as an average elasticity of revenue collection with respect to the inherent factors like revenue base (GSDP as proxy) of all states

[24] Here, differences in fiscal efforts refer to the differences in amount of public expenditure given the inherent factors like population, cost of provision etc. In other words, two otherwise identical states in terms of inherent factors differ in fiscal effort on expenditure side when their amount of public expenditure differs. The higher expenditure of one state, in this case, is either a result of over or inefficient spending or an additional provision of public services than the latter. Same is with fiscal effort on revenue side.

taken together. In case of expenditure, the expenditure need differs across the states. The benchmark of expenditure will be an average elasticity of the public expenditure with respect to the inherent factors like population, urbanization, cost of provision, population density etc of all states taken together.

Thus, the benchmark used in the present study is the average elasticity of expenditure or revenue with respect to their basic inherent factors of all state taken together. Each state has its own elasticity of revenue and expenditure with respect to its inherent factors. However, as pointed out earlier, use of these elasticities may give misleading picture of true fiscal situation. However, if we apply the average elasticity of expenditure or revenue on inherent factors of each of the provinces then we are expecting the average fiscal effort from all states. The resulting amount will be justifiable revenue and expenditure of each state.

The following section discusses the empirical strategies of deriving the benchmarked own revenue and expenditure of each state.

5.3 Benchmarking own revenues receipts and revenue expenditure of states:

The empirical analysis of benchmarking own revenue receipts and revenue expenditure of the states is based on the panel data set consisting of yearly data on 28 states and for the period from 2007-08 to 2011-12. The details of data set like definition of variables, their sources, method of interpolation etc. have given in the methodology chapter.

As noted in the previous chapter, 28 states in India are divided between the two groups, special category states and general category states. The states under these groups functions in a different fiscal space and differences in the fiscal space arises mainly due to differences in their revenue raising capacities, population density, and cost of provision of public goods and services. The states in special category share more or less same cost structure of provision of public goods and services since they share, more or less, same types of territorial characteristics. Similarly, economic activities in these areas are comparable within the group and therefore, the revenue collection effort can be comparable only within them. Similar is the case for the general category states, where the revenue collection effort and the cost of provision of public goods and services are comparable within the group.

Considering these differences between these two groups, the study has used two separate equations for these two groups for benchmarking the own revenues receipts and revenue expenditure.

5.3.1 Own revenue receipts equation:

The economic, social characteristics largely differ between the special and general category states. As far as fiscal issues are concerned, higher expenditure per capita and lower revenue base can be observed in the special category states due to its remote location. Low revenue base in the remote areas is a result of low levels of income and employment in these areas (Kitchen and Slack; 2006). The available revenue base of the special category state cannot be comparable with revenue base of the general category states. Even though, some of special category states and general category states share similar level of revenue base, special category states may find it difficult to generate similar level of revenue as compared to their counterparts. This is because due to remoteness administration of tax is difficult in these areas. Moreover, as pointed out by Saxena (1999), some of these states do not impose sales tax which is major source of own revenue of the states. The reason for this is that due to transport and communication bottlenecks, prices of goods are generally high in these regions as compared to the general category states. Therefore, in order to avoid higher burden on consumers by imposing sales tax; these states do not imposing it or impose it at very low level. Therefore, the revenue base of the special category states cannot be comparable with that of general category states. It implies that the benchmark for the special category states should be different from the general category states. Considering the above mentioned factors, the present study has estimated separate own revenue function for the special and general category states.

As pointed out in the methodology chapter, the most celebrated proxy for state level tax base is Gross State Domestic Product. The own revenue collection that constitutes both tax revenue and non tax revenue is regressed on the GSDP of the states. The panel data model for this relationship takes the following form

$$RR_{it} = Y_{it}^{\beta} . e^{\alpha+\gamma_i+\varepsilon_{it}} \qquad .....(5.1)$$

Where the variables are

RR = Own Revenue Receipts; Y = Gross State Domestic Product

The parameters are

$\alpha, \beta, and\ \gamma_{i,}$ = constant, coefficient of GSDP, and unobservable state-specific effect respectively,

and ε_{it} is the error term.

Equation (1) is separately estimated for the special and general category statutes. The error term is estimated using Prais-Winsten regression (correlated panels corrected standard errors) for the special category states. For general category states it is autocorrelation and heteroskedasticity clustered standard errors. By taking natural log of the equation (1), the coefficient on GSDP gives the average elasticity of own revenue with respect to GSDP of all states taken together. This can be seen as the average revenue collection effort across the states given the level of GSDP.

The state- specific effects, $\gamma_{i,}$control for time-invariant omitted variables and represent the effect of slowly changing variables like structure of economy, composition of economy etc.

5.3.2 Revenue expenditure equation:

Revenue expenditures of the states largely depend on the factors like population, population density, urbanisation, and cost of provision of public services etc. The revenue expenditure of the states constitutes recurrent expenditure on social services like education, public health, family welfare, water supply and sanitation and economic services like agriculture and allied activities, rural development, special area programme, irrigation and flood control, energy, industry and minerals. The share of expenditure on social services is higher than the economic services. Considering this aspect, population, population density, and urbanisation may explain much of the variations in the revenue expenditures of the states. Population may express the extent of demand for the public services under the social and economic heads. Other factors that may affect spending needs are urbanisation, population density, and cost of provision of public services. It is often argued that types of public services differ largely between urban and rural areas. As degree of urbanisation increases, the government tend to provide more and different public services to the urban population than the rural population. Such wide range of provision of the public services to the urban population tends to increase as degree of urbanisation increases. Therefore, urbanisation is likely to have positive influence of level of revenue expenditure (Slack; 2006).

Population density is another factor that is likely to affect the level of public expenditure of the states. In India, the population density of special category states is much lower than the general category states. The special category states have marked with non-concentration of population, hilly territorial, remoteness etc. Thus, low density population in India also overlapped with other factors that influence the level of public expenditure and the cost of provision. Economic activities in these low population density areas are lower than the general category states. This aspect may result in higher unemployment rate and thereby higher dependency on public services. Low population density increases cost of provision of public services in these states as population is concentrated in large distance from each other and harsh geographic territorial (Kitchen and Slack; 2006). Therefore, the present study estimates different expenditure functions for the special category states and the general category states in order to accommodate the above mentioned differences.

$$RE_{it} = P_{it}^{\xi}.e^{\phi+\psi_i+\upsilon_{it}} \qquad .....(5.2)$$

$$RE_{it} = P_{it}^{\xi}.U_{it}^{\tau}.e^{\phi+\psi_i+\upsilon_{it}} \qquad .....(5.2)'$$

Where variables are

RE = revenue expenditure; P = population; and U = urbanisation

Where parameters are

ϕ, ξ, τ, and ψ_i = constant, coefficient of population, coefficient of urbanisation and unobservable state-specific effect respectively

and υ_{it} is the error term.

Equation (5.2) has been estimated for the special category states and while equation (5.2)' has been estimated for the general category states. In case of the general category states, urbanisation variable has turn out to be significant in explanation of revenue expenditure while in case of the special category states it is not. In case of both the groups, the error term is estimated using autocorrelation and heteroskedasticity clustered standard errors. The coefficients on population in the equation (5.2) and (5.2)' and coefficient on urbanisation in the equation (5.2)' gives the average elasticity of revenue expenditure with respect to population and urbanisation respectively. Moreover, the state-specific effects, ψ_i, control for

time-invariant omitted variables and indicates the effect of variables like composition of population, cost of provision of public services etc.

Table 5.1 and Table 5.3 depicts the estimated own revenue and revenue expenditure of the special and general category states along with the actual own revenue and revenue expenditure respectively.

Table 5.1 shows that estimated own revenue of most of the special category states exceeds the actual own revenue for most of the years under consideration. If states had put average fiscal efforts in collection of revenue then they would have generated higher level of revenue than the actual levels.

The difference between the estimated own revenue and the actual own revenue indicates the fiscal effort of the states in collection of revenue. During the period under consideration, some states have shown lower fiscal effort in some years while higher in other years. The fiscal effort also differs across the states in terms of revenue collections.

For example, high per capita income states in special category states, namely Sikkim and Arunachal Pradesh, have shown less fiscal efforts in collection of revenue in most of the years under consideration since their estimated own revenue is higher than their actual own revenue. In general, the special category states have shown considerable improvement in revenue collection as gap between the estimated and actual own revenue has narrowed down. For some states, the actual estimated own revenue have exceeded their actual own revenue, although marginally. Therefore, in case of most of the special category states, their actual own revenues are justifiable considering the average fiscal effort in revenue collection.

The revenue efforts of the special category states have shown variation during the year 2007-08 to 2011-12 (Table 5.1). States like Arunachal Pradesh and Mizoram showed more than average performance in revenue collection in 2007-08 to 2008-09 and latter on it has deteriorated. On the other hand, states like Assam, Himachal Pradesh, Manipur, Meghalaya, Nagaland, and Tripura have shown the reverse trend. These states have shown improvement in revenue collection efforts in the latter period.

On revenue expenditure side, estimated revenue expenditure of most of the states is higher than the actual during the period under consideration. This indicates a lower level of revenue expenditure as compared to level of expenditure if these states put average fiscal efforts on revenue expenditure side.

Table 5:1 Estimated and actual own revenue and revenue expenditure of special category states (in Rs. Crore)

	Estimated Own Revenue of Special Category States					Actual Own Revenue				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Arunachal Pr	596	653	759	841	920	755	908	685	745	678
Assam	6410	6890	7559	8256	8771	5495	6422	7740	8303	10505
Himachal Pr	3857	4305	4674	5148	5507	3780	3998	4358	5338	6023
J&Kashmir	3827	4114	4428	4895	5240	3284	3820	4369	4576	6747
Manipur	411	431	458	484	522	312	423	436	527	680
Meghalaya	630	694	730	787	840	518	594	719	873	1066
Mizoram	218	241	260	290	309	208	254	234	277	347
Nagaland	311	339	360	382	407	250	337	307	410	537
Sikkim	1008	1159	1648	1829	1986	1612	1390	1579	1417	1339
Tripura	593	641	687	745	814	486	592	652	754	1072
Uttarakhand	3661	4086	4644	5103	5546	3407	3744	4191	5084	6752
	Estimated Revenue Expenditure of Special Category State					Actual Revenue Expenditure				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Arunachal Pr	2206	2702	3310	4054	4965	2260	2872	3699	3744	4418
Assam	14259	16371	18797	21582	24780	12744	14243	21232	22952	26529
Himachal Pr	8882	9882	10995	12233	13610	8292	9438	11151	13246	13898
J&Kashmir	10744	12941	15586	18773	22610	11685	12447	15100	18467	22680
Manipur	2419	2809	3263	3790	4403	2293	2622	3014	4078	5005
Meghalaya	2122	2634	3269	4058	5036	2254	2683	3182	4013	4835
Mizoram	1885	2268	2728	3282	3949	1908	2314	2703	3400	3724
Nagaland	3492	3474	3457	3439	3422	2572	2890	3252	4188	4876
Sikkim	2168	2411	2681	2982	3316	2349	2294	2738	2908	3230
Tripura	2999	3385	3822	4315	4871	2794	3129	4214	4602	4809
Uttarakhand	7360	8561	9957	11582	13471	7255	8395	10657	11621	12975

Source: Author's own calculation and State Finances: A Study of Budgets, RBI, India.

Therefore, in order to ensure the average standard level of public services, these states need to spend more than their actual level. States like Arunachal Pradesh, Assam, Mizoram, and Himachal Pradesh have reported higher actual spending than the estimated during the most of the years under consideration indicating the less than average fiscal effort on expenditure side (Table 5.1).

Assam and Nagaland have reported very high gap between the actual spending and the estimated level in recent years. On the other hand, other states have reported relatively lower gap between the actual expenditure and the estimated during few years of period under consideration. The states like Arunachal Pradesh, Jammu and Kashmir, and Meghalaya have witnessed lower actual spending than the estimated in recent years.

Meghalaya has reported higher fiscal effort than the average in revenue collection while reported lower actual spending than the estimated. On the other hand, states like Sikkim and Arunachal Pradesh have reported lower fiscal effort on revenue account as well as lower spending.

The positive difference between the actual revenue expenditure and estimated revenue expenditure as well as difference between the estimated own revenue and actual own revenue indicates the less than average fiscal efforts of the states on both accounts. Therefore, the difference between them is attributed to fiscal management of the states on these accounts. If these states put the average fiscal effort in generating revenue and expenditure then the resulting revenue gap will be considered as the inherent revenue gap. As pointed out earlier, only inherent part of the revenue gap has been considered for the present analysis.

Overall, on the revenue side, most of the special category states have performed well in generating revenue from the available revenue base in recent years. On the other hand, in most of the cases, their spending has fallen short that of required to ensure comparable standard of public services. This underlies the constraint on their own resources in providing the standard level of public services.

Table 5.2 represents the estimated revenue gap and the actual revenue gap of the special category states. The estimated revenue gap represents the gap between estimated or potential revenue expenditure and own revenue. States like Arunachal Pradesh, Jammu and Kashmir, and Meghalaya have reported relatively higher estimated revenue gap than the actual revenue gap during the period under consideration. On the other hand, states like Assam, Sikkim, and Uttarakhand have reported higher estimated revenue gap than the actual. In case of latter two, the higher estimated revenue gap than actual is mainly due to below average fiscal efforts on revenue collection. On the other hand, Manipur, Assam, and Nagaland have higher revenue gap than the actual in recent years mainly due to their higher spending because they have performed well on revenue collections.

Since the estimated revenue gap is derived using inherent factors on both own revenue and revenue expenditure side and benchmarking their influence on own revenue and revenue expenditure, the estimated revenue gap represents the inherent revenue gap. As pointed out in previous paragraphs, this inherent revenue gap varies across the states and likely to differ with respect to actual revenue gap depending upon the fiscal efforts.

Table 5:2 Estimated and actual revenue gap of special category states (in Rs. Crore)

	Estimated revenue gap					Actual revenue gap				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Arunachal Pr	1610	2049	2551	3213	4045	1505	1964	3014	2999	3740
Assam	7849	9481	11238	13326	16009	7249	7821	13493	14649	16024
Himachal Pr	5025	5577	6321	7085	8103	4512	5440	6793	7908	7875
J&Kashmir	6917	8827	11158	13878	17370	8401	8627	10731	13891	15933
Manipur	2008	2378	2806	3306	3880	1981	2199	2579	3551	4326
Meghalaya	1492	1939	2540	3271	4197	1736	2089	2463	3140	3769
Mizoram	1666	2026	2468	2992	3639	1700	2060	2469	3124	3377
Nagaland	3181	3136	3097	3057	3015	2322	2553	2946	3777	4339
Sikkim	1160	1252	1033	1153	1330	737	904	1159	1491	1892
Tripura	2405	2745	3135	3570	4057	2308	2537	3561	3848	3737
Uttarakhand	3700	4475	5313	6478	7925	3848	4651	6467	6538	6224

Source: Author's own calculation and State Finances: A Study of Budgets, RBI, India.

Table 5.3 shows the estimated own revenue and revenue expenditure of the general category states. It can be seen from the table that the revenue collection effort varies over the period and across the states. States like Andhra Pradesh, Chhattisgarh, Madhya Pradesh, Punjab, and Uttar Pradesh have reported higher actual own revenue than the estimated indicating the above average performance in revenue collections. On the other hand, high income states like Haryana and Maharashtra did not put average fiscal effort in collection of revenue during the period 2007-08 to 2011-12. Their actual revenue collection was below the estimated own revenue in most of the years under consideration. During the last two years of the study period, states like Chhattisgarh, Goa, Kerala, Madhya Pradesh, Odisha, and Uttar Pradesh have shown improvement in their revenue collection effort as their actual own revenue exceeds their estimated own revenue. Two states, namely Madhya Pradesh and Uttar Pradesh, have performed very well since their actual own revenue exceeds significantly than the estimated in most of the years. On the other hand, states like, Haryana, Karnataka, Maharashtra, and Tamil Nadu have higher level of estimated own revenue than the estimated indicating higher degree of underperformance during most of the priod under consideration. Low per capita income states like, Uttar Pradesh, Odisha, Madhya Pradesh, and Chhattisgarh have reported more than average fiscal effort in collection of revenue.

On revenue expenditure side, there are wide variations between the actual and estimated revenue expenditure over the period 2007-08 to 2011-12 and also across the states. Most of the states have reported higher actual revenue expenditure than the estimated. States like Andhra Pradesh and West Bengal have reported higher actual expenditure than estimated in most of the years.

On the other hand, states like Bihar, Chhattisgarh, Karnataka, Madhya Pradesh, Punjab, and Uttar Pradesh have reported lower actual expenditure than the estimated. This indicates that these states need to increase spending in order to ensure the comparable standard level of public services in their region. However, the inadequacy of expenditure as compared to estimated was higher in case of Bihar and Madhya Pradesh.

The comparison between the own revenue collection efforts and revenue expenditure efforts reveals that the states have performed differently on these two accounts. For example, Chhattisgarh, Madhya Pradesh, and Uttar Pradesh have performed well on revenue collection front in most of the years while underperformed in case of spending. This indicates resource constraints faced by these states as their inherent expenditure is higher than their potential own revenue. On the other hand, Haryana have performed below average on both revenue and expenditure account. States like Maharashtra and West Bengal have underperformed on revenue front while above the average fiscal performance on expenditure account (Table 5.3).

Thus, most of the states in general category states have underperformed in the revenue collection while spent more than the amount when we consider the average fiscal efforts of all states. Thus, the actual revenue and revenue expenditure of the general category states cannot be taken for the analysis. Higher revenue and lower expenditure have to be considered in case of those states that have not performed at the average of all states. The differences in the performances of the states have further resulted in differences in the actual revenue gap and estimated revenue gap.

Table 5.4 depicts the estimated and actual revenue gap of the general category states for the years 2007-08 to 2011-12. The estimated revenue gap is the difference between the potential or estimated own revenue and revenue expenditure if states puts average fiscal efforts on both account. It is evident from the table that all general category states have incurred higher actual revenue gap than the estimated revenue gap at least twice during the period under consideration.

Table 5:3 Estimated and actual own revenue and revenue expenditure of the general category states (in Rs. Crore)

	Estimated Own Revenue of General Category States					Actual Own Revenue				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Andhra Pr	34881	41011	45987	56668	64583	35858	43041	42979	55859	64978
Bihar	6015	7583	8722	11016	13419	5612	7326	9760	10855	13502
Chhattisgarh	8045	9780	10029	12125	13538	7638	8796	10166	12840	14771
Goa	2410	3157	3634	4212	4526	2402	2930	3494	4408	4863
Gujarat	25784	28911	34064	41446	47451	26495	28656	32192	41254	49529
Haryana	12563	15217	18764	21979	25586	16715	14893	15961	20211	25121
Jharkhand	6127	6417	7387	9415	10685	5149	7279	8575	9097	9992
Karnataka	27896	32128	35044	42908	48114	29345	30805	33912	41831	50563
Kerala	15163	17639	20268	23140	27147	14879	17549	19477	23652	28311
Madhya Pr	15737	19350	22466	26077	31024	14756	16957	23655	27139	34456
Maharashtra	56278	62154	70833	86204	100377	64476	61820	67459	83252	95776
Orissa	10145	11705	12883	15715	17117	9510	11171	12195	15973	19886
Punjab	13937	16002	18233	20974	23873	15153	16934	17692	22158	20241
Rajasthan	15971	19036	22011	28234	33856	17329	18831	20972	27052	34552
Tamil Nadu	32344	37162	44678	54821	62617	32923	39396	41574	52434	65201
Uttar Pr	32617	38050	45021	51853	58899	30775	35426	47479	52531	62759
West Bengal	15031	17236	20206	23460	27529	14599	19385	19338	23509	26278
	Estimated Revenue Expenditure of General Category State					Actual Revenue Expenditure				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Andhra Pr	53563	60558	68465	77405	87513	53984	61854	63448	78534	90415
Bihar	22465	27211	32961	39925	48360	23565	28512	32584	38216	46499
Chhattisgarh	11141	13452	16243	19613	23683	10840	13794	17265	19356	22628
Goa	3243	3612	4024	4482	4993	2778	3425	4227	4784	5482
Gujarat	33473	39443	46478	54767	64536	33540	38741	48638	57440	59744
Haryana	16864	20187	24164	28926	34626	17527	20535	25257	28310	32015
Jharkhand	12130	14424	17151	20393	24249	13096	15479	17227	20243	20992
Karnataka	36479	41936	48210	55422	63712	37375	41659	47537	54034	65115
Kerala	23212	27362	32255	38021	44819	24892	28224	31132	34665	46045
Madhya Pr	26858	31288	36449	42461	49464	25601	29514	35897	45012	52694
Maharashtra	70123	79729	90652	103070	117190	64780	75694	94916	106459	123554
Orissa	19458	22033	24950	28252	31992	17723	21190	25292	29368	34660
Punjab	21864	24695	27892	31504	35583	23061	24569	27408	32897	33045
Rajasthan	28554	33596	39530	46511	54725	29128	34296	40132	44873	53653
Tamil Nadu	46732	53337	60874	69477	79296	42975	53590	59375	72916	83838
Uttar Pr	65718	76910	90007	105334	123272	65223	75969	89374	107676	123885
West Bengal	43314	49221	55933	63561	72229	38314	51613	58500	64538	73326

Source: Author's own calculation and State Finances: A Study of Budgets, RBI, India.

The states like Andhra Pradesh, Bihar, Madhya Pradesh, Odisha, and Rajasthan have reported higher estimated revenue expenditure than the actual in most of the periods. It indicates that these states are under spending on provision of public services as compared to other states during most of the years under consideration if we consider the average standard of public services. On the other hand, two states, Goa and West Bengal had been continuously spending more than the average benchmark during these years.

Table 5:4 Estimated and actual revenue gap of general category states (Rs. Crore)

	Estimated Revenue Gap of General Category State					Actual Revenue Gap				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Andhra Pr	18683	19547	22478	20738	22930	18126	18813	20469	22675	25438
Bihar	16450	19628	24239	28909	34941	17953	21186	22824	27361	32998
Chhattisgarh	3096	3672	6214	7488	10145	3202	4998	7099	6515	7857
Goa	833	455	390	270	467	376	495	734	376	619
Gujarat	7689	10531	12414	13322	17085	7045	10085	16446	16186	10216
Haryana	4300	4970	5400	6947	9040	812	5642	9296	8099	6894
Jharkhand	6003	8007	9764	10979	13564	7947	8200	8652	11146	10999
Karnataka	8583	9808	13166	12514	15598	8030	10854	13625	12202	14552
Kerala	8049	9723	11986	14881	17673	10013	10675	11655	11012	17734
Madhya Pr	11121	11938	13982	16384	18440	10845	12557	12242	17872	18238
Maharashtra	13844	17575	19819	16866	16814	304	13874	27457	23207	27778
Orissa	9313	10328	12067	12538	14875	8213	10019	13097	13395	14775
Punjab	7926	8693	9659	10529	11710	7908	7635	9716	10739	12804
Rajasthan	12583	14560	17519	18277	20869	11799	15465	19160	17821	19101
Tamil Nadu	14388	16174	16197	14657	16679	10052	14194	17802	20483	18637
Uttar Pr	33101	38859	44986	53481	64373	34448	40543	41895	55144	61126
West Bengal	28283	31985	35727	40101	44700	23715	32228	39162	41029	47048

Source: Author's own calculation and State Finances: A Study of Budgets, RBI, India.

Overall, many of the general as well as special category states are involved in under exploitation of revenue base and over spending when we analysed them under certain norm or benchmark. However, some states have shown improvement in their performance on revenue account recently. Some low income states in both categories have reported lower revenue expenditure than the average of all states. The estimated revenue gap represents the inherent revenue gap since it is derived by taking the inherent factors affecting the own

revenue and revenue expenditure of the states. The benchmarking of own revenue and revenue expenditure have been done by using the average influence of these inherent factors on own revenue and revenue expenditure. Thus, this gives the normative or potential level of own revenue and revenue expenditure of the states under this norm. Therefore, the estimated own revenue and revenue expenditure derived from the proposed model has been used for the proposed analysis.

5.4 Benchmarking total revenue receipts and total expenditure of the states:

The empirical analysis of estimating total revenue receipts and total expenditure function of the states is based on the panel data set of 28 states for the period from 2007-08 to 2011-12. As pointed out earlier, the revenue base largely differs between the special category states and the general category states due to factors like level of economic activity, composition of GSDP, high cost of provision of goods and services in harsh territorial etc. Therefore, the present study is estimating total revenue function separately for the special and general category states for benchmarking total revenue receipts. Similarly, cost structure and population density differs between the special category states and the general category states mainly due to harsh territorial. Therefore, separate total expenditure function has been estimated for these two groups.

5.4.1 Total revenue receipt equation:

Total revenue receipts of the states include own revenue receipts as well as non-debt capital receipts. The non-debt capital receipts comprises of "Recovery of Loans and Advances" and "Miscellaneous Capital Receipts" of the state governments. The share of non-debt capital receipts in total revenue receipts is very low (ranging from 0.24 per cent to 10.60 per cent across the states). The non-debt capital receipts also largely varied across the time. Therefore, total revenue receipts of states is more or less explained by the variation in own revenue receipts.

The total revenue of the states is regressed on the GSDP. The panel data model for this relationship takes the following form

$$TR_{it} = Y_{it}^{\delta}.e^{\sigma+\varphi_i+\omega_{it}} \qquad .....(5.3)$$

Where the variables are

TR = Total Receipts; Y= Gross State Domestic Product

The parameters are

$\sigma,\ \delta, and\ \varphi_i$ = constant, coefficient of GSDP, and unobservable state-specific effect respectively,

and ω_{it} is the error term.

Equation (5.3) has been estimated separately for the special category states and the general category states. For special category states, the error term is estimated using Prais-Winsten regression (correlated panels corrected standard errors) and for general category states, autocorrelation and heteroskedasticity clustered standard errors. The elasticity of total revenue receipts with respect to GSDP is estimated by taking natural log of equation (5.3).

State- specific effects $\varphi_i$control for time-invariant omitted variables and likely to represent effects of slowly changing variables like structure of economy and other unobservable variables affecting total revenue receipts.

5.4.2 Capital expenditure equation:

Total expenditure of the states includes both revenue expenditure and capital expenditure. The capital expenditure of the states consists of "Total Capital Outlay" and "Loans and Advances by State Governments". The expenditure under these heads creates stock of physical capital therefore considered as the capital expenditure. The total capital outlay includes expenditure on social and economic services, and general services. The capital expenditure also includes the loans and advances given by the states under the above mentioned heads. Considering diversities in the actual capital expenditure across the states, the capital expenditure equation has been estimated.

As pointed out earlier, the present study is taking into consideration basic inherent factors for the explanation of public expenditure. Variations in the capital expenditure are likely to be explained mainly by basic inherent factors like the population, urbanisation, population density, and cost structure. If population is high, the demand for public services will be higher. Higher demand for public services implies higher need for creating capital assets. Secondly, as pointed out earlier, public services for urban population differs from rural

population and therefore, need for capital assets also differs. Expenditure on capital assets in urban areas is expected to be higher than that of rural areas. Thirdly, cost of creation of capital assets also differs across regions, especially in hilly territories. The hilly region in the country also marked with low population density which further has implications on amount and cost of creation of capital assets. Considering these factors, separate capital expenditure equation has been estimated for the special category states and the general category states to accommodate differential cost structure and population density.

The panel data model for capital expenditure function takes following form

$$CE_{it} = P_{it}^{\eta} . e^{\theta+\lambda_i+\kappa_{it}} \quad .....(5.4)$$

$$CE_{it} = P_{it}^{\eta} . U_{it}^{\emptyset} e^{\theta+\lambda_i+\kappa_{it}} \quad .....(5.4)'$$

Where the variables are

CE = Capital expenditure; P = population; U = urbanisation

The parameters are

$\theta, \eta, \emptyset, and\ \lambda_i$ = constant, coefficient of population, coefficient on urbanisation and unobservable state-specific effect respectively

and κ_{it} is the error term.

Urbanisation variable turns out to be insignificant for the special category states while it is significant in case of the general category states. Therefore, equation (5.4) represents the capital expenditure function for the special category states while equation (5.4)' is for the general category states.

For special category states and general category states, the error term is estimated using heteroskedasticity clustered standard errors. Elasticity of capital expenditure with respect to population is estimated by taking natural log of equation (5.4) in case of special category states. While in case of general category states, elasticity of capital expenditure with respect to population and urbanisation is estimated by taking natural log of equation (5.4)'. Moreover, the state-specific effects,λ_i, control for the time-invariant omitted variables and indicates the effect of variables like composition of population, cost structure etc.

Table 5.5 shows the estimated and actual total receipts and capital expenditure of the special category states. Majority of the states in special category have reported higher estimated total revenue receipts than the actual. However, since 2009-10, states have shown improvement since gap between the estimated and actual total receipts was narrowed. In the year 2011-12, most of the states have reported higher actual total receipts than the estimated indicating more than average performance in the revenue collection. Over the period under consideration, Manipur, Mizoram, Nagaland, and Tripura have performed well in collection of revenue resources since their actual total receipts are closer to the estimated. On the other hand, Assam, Himachal Pradesh, Uttarakhand have witnessed large fluctuation between the actual and estimated total receipts. Jammu and Kashmir has reported lower actual total receipts than estimated actual during most of the years under consideration.

In case of capital expenditure, the estimated and actual total expenditure varies across the states and over period of time (Table 5.5). Arunachal Pradesh, Jammu and Kashmir, Mizoram, Sikkim and Himachal Pradesh have reported higher actual total expenditure than the estimated in most of the years under consideration. Assam, Meghalaya, Uttarakhand, and Nagaland, on the other hand, have reported lower actual total expenditure than the estimated in most of the years. Meghalaya and Mizoram have performed well on expenditure side since the difference between actual and estimated total expenditure is lower in most of the years. Assam, Uttarakhand and Jammu and Kashmir have witnessed higher level of inadequacy in total expenditure as compared to estimated in few years.

Table 5.6 represents the estimated and the actual total expenditure, comprises of the revenue expenditure and capital expenditure of the special category states. During the years 2007-08 to 2011-12, most of the states in the special category reported higher estimated total expenditure than the actual. Mizoram is the state that has consistently reported high level of actual total expenditure than the estimated. The fluctuation between the estimated and actual total expenditure is higher in case of Assam and Jammu and Kashmir. On the other hand, gap between estimated and actual total expenditure is lower in case of Meghalaya.

Table 5:5 Estimated and actual total receipts and capital expenditure of special category states (in Rs. Crore)

	Estimated Total Receipts of Special Category States					Actual Total Receipts				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Arunachal Pr	623	684	796	883	967	758	911	887	745	681
Assam	6425	6912	7591	8299	8822	5535	6457	7773	8331	10526
Himachal Pr	3947	4411	4794	5285	5658	3806	4019	4392	6056	6048
Jammu&Kashmir	3840	4131	4450	4925	5277	3287	3823	4371	4577	6916
Manipur	412	433	460	486	525	314	424	439	528	681
Meghalaya	646	713	749	809	863	534	612	736	900	1089
Mizoram	240	266	287	320	342	236	279	259	303	375
Nagaland	313	341	362	385	411	253	340	311	413	539
Sikkim	1011	1164	1662	1846	2007	1612	1390	1580	1417	1381
Tripura	596	644	691	751	821	489	595	670	755	1074
Uttarakhand	3772	4216	4799	5279	5742	3475	3798	4746	5168	6842
	Estimated Capital Expenditure of Special Category States					Actual Capital Expenditure				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Arunachal Pr	1055	1186	1332	1497	1682	731	1317	1299	1669	2070
Assam	1965	2127	2303	2494	2700	1831	2462	2729	2072	2594
Himachal Pr	1724	1834	1950	2073	2204	1427	2169	2013	2016	2303
J&Kashmir	4678	5207	5795	6449	7177	4828	5692	6681	6135	5964
Manipur	1283	1398	1524	1661	1810	1116	1468	1595	1922	1697
Meghalaya	459	519	588	666	754	418	581	508	616	908
Mizoram	446	496	551	613	682	550	458	598	645	528
Nagaland	1004	1002	999	996	993	824	855	993	1127	1252
Sikkim	490	521	554	588	626	415	612	686	457	665
Tripura	1051	1127	1209	1296	1389	924	1220	1561	1059	1411
Uttarakhand	1892	2064	2252	2456	2679	2447	2138	2167	1915	2564

Source: Author's own calculation and State Finances: A Study of Budgets, RBI, India.

Table 5:6 Estimated and actual total expenditure of special category states (in Rs. Crore)

	Estimated Total Expenditure of Special Category States					Total Expenditure of Special Category States				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Arunachal Pr	3261	3888	4642	5551	6647	2991	4189	4998	5413	6488
Assam	16223	18499	21100	24076	27480	14575	16705	23961	25024	29123
Himachal Pr	10606	11715	12944	14306	15815	9719	11607	13164	15262	16201
J&Kashmir	15423	18147	21381	25221	29787	16513	18139	21781	24602	28645
Manipur	3701	4207	4787	5451	6213	3409	4090	4609	6000	6702
Meghalaya	2581	3153	3857	4723	5790	2672	3264	3690	4629	5742
Mizoram	2331	2763	3279	3895	4631	2458	2772	3300	4046	4252
Nagaland	4497	4476	4455	4435	4414	3396	3744	4246	5315	6128
Sikkim	2657	2931	3235	3570	3942	2764	2906	3424	3364	3895
Tripura	4050	4512	5030	5611	6261	3718	4350	5775	5662	6220
Uttarakhand	9252	10625	12209	14037	16150	9702	10533	12824	13536	15539

Source: Author's own calculation and State Finances: A Study of Budgets, RBI, India.

Overall, the special category states differ in their actual total revenue and estimated total revenue as well as actual capital expenditure and estimated capital expenditure. These differences have further resulted in differences between the actual fiscal gaps and estimated fiscal gaps. The estimated fiscal gap is measured as the estimated total expenditure minus estimated total revenue receipts. The states that are under exploiting the revenue base or over spending, the resulting fiscal gap is not justifiable as far as average benchmark is considered. For these states, their actual revenue and expenditure should not be the base for the analysis. Therefore, the present study excludes expenditure that is above the benchmark and adds the revenue where it is below the benchmark.

Table 5.7 shows the estimated fiscal gap and actual fiscal gap of the special category states. The actual fiscal gap has exceeded the estimated fiscal gap for all states at least twice during the period under consideration. During 2009-10, most of the states have reported higher fiscal gap than estimated however, latter on the gap reduced by 2011-12 and some states have even shown lower actual fiscal gap than estimated.

Thus, the special category states have reported the actual fiscal gap that is either higher or lower than the inherent fiscal gap. The lower actual fiscal deficit than the inherent can be seen as a result of lower level of actual public spending. Therefore, in order to enable them to deliver standard level of public services the transfers should fill the inherent fiscal gap of these states.

Table 5:7 Estimated and actual fiscal gap of special category states (in Rs. Crore)

	Estimated Fiscal Gap of Special Category States					Actual Fiscal Gap of Special Category States				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Arunachal Pr	2675	3317	4084	5019	6150	2346	3475	4342	4907	6061
Assam	11156	13264	15637	18354	21500	9868	11642	18215	19364	22515
Himachal Pr	7359	8349	9476	10711	12111	6483	8455	9917	11147	12404
J&Kashmir	12155	14932	18235	22139	26815	13717	15141	18549	21492	24304
Manipur	3330	3864	4476	5179	5984	3142	3758	4285	5641	6275
Meghalaya	2070	2624	3310	4144	5164	2218	2784	3146	4017	5059
Mizoram	2146	2573	3082	3684	4401	2258	2554	3109	3840	4017
Nagaland	4246	4218	4193	4167	4142	3181	3478	4016	5034	5789
Sikkim	1703	1937	2130	2429	2767	1393	1815	2256	2401	3028
Tripura	3557	4022	4544	5126	5777	3302	3883	5280	5149	5546
Uttarakhand	6062	7338	8797	10523	12528	6747	7556	9316	10024	11245

Source: Author's own calculation and State Finances: A Study of Budgets, RBI, India.

Table 5.8 represents the estimated and actual total revenue receipts and capital expenditure of the general category states. The revenue raising effort of most of the states have fallen short of the average effort in case of the general category states. As shown in Table 5.8, total revenue receipts of states like Andhra Pradesh, Bihar, Goa, Haryana, Jharkhand, Karnataka, Kerala, Maharashtra, Odisha, Rajasthan, and West Bengal have reported consistently lower actual total revenue than the estimated. On the other hand states like, Chhattisgarh, Gujarat, Madhya Pradesh, Punjab, Tamil Nadu, and Uttar Pradesh have performed well in generating total revenue during most of the years under consideration. The extent of under performance is higher in case of Andhra Pradesh, Haryana, West Bengal, and Maharashtra since their actual total revenue is much lower as compared to the estimated in most of the years.

Table 5:8 Estimated and actual total receipts and capital expenditure of general category states (in Rs. Crore)

	Estimated Total Receipts of General Category States					Actual Total Revenue Receipts				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Andhra Pr	36466	42730	47799	58643	66651	42607	43411	43122	56032	65143
Bihar	6079	7626	8745	10992	13334	5638	7337	9773	10867	13524
Chhattisgarh	8656	10480	10742	12935	14408	8102	9331	11161	13404	16057
Goa	2437	3174	3643	4209	4516	2408	2940	3506	4422	4879
Gujarat	26153	29255	34350	41622	47518	26803	28858	32479	41628	49704
Haryana	12853	15505	19035	22223	25788	16939	15252	16183	20452	25424
Jharkhand	6171	6456	7410	9397	10637	5163	7290	8590	9114	10016
Karnataka	28325	32525	35413	43176	48299	29643	31043	34538	42065	50892
Kerala	15304	17747	20333	23149	27067	14931	17594	19565	23721	28382
Madhya Pr	16713	20462	23683	27403	32484	14872	17035	23700	27539	43601
Maharashtra	57129	62961	71557	86727	100664	65209	62398	67999	83909	96791
Orissa	10398	11961	13139	15960	17353	9865	11407	12551	16007	20018
Punjab	14580	16690	18966	21753	24693	16599	17013	18969	22756	20338
Rajasthan	16604	19718	22729	29005	34647	19111	18924	21093	27384	35797
Tamil Nadu	33903	38840	46515	56831	64733	33936	41330	44161	53204	68382
Uttar Pr	33181	38584	45492	52240	59180	31224	36204	47772	53016	62892
West Bengal	16145	18460	21569	24964	29196	15096	25001	19725	23882	26357
	Estimated Capital Expenditure of General Category States					Actual Capital Expenditure				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Andhra Pr	13985	14729	15513	16339	17208	15695	13780	15383	14438	18705
Bihar	6666	7461	8351	9348	10463	6376	6987	8229	10299	10758
Chhattisgarh	3146	3482	3854	4265	4720	3631	3431	3642	3518	5325
Goa	941	979	1018	1059	1101	713	926	1122	1237	1193
Gujarat	8338	9102	9937	10847	11842	7230	10574	8474	10372	14417
Haryana	4166	4559	4990	5462	5978	3712	4834	6048	4753	5999
Jharkhand	3513	3885	4296	4751	5255	4746	4391	4412	4715	3376
Karnataka	11070	11898	12788	13744	14772	9406	10602	13118	15093	17321
Kerala	3116	3191	3268	3347	3428	2368	2679	2936	4125	4851
Madhya Pr	9988	10952	12009	13168	14439	7988	8575	11742	12515	24816
Maharashtra	15197	16362	17615	18965	20418	12715	20154	18690	18922	18716
Orissa	3596	3839	4099	4376	4672	3276	3990	3760	4600	5117
Punjab	2005	2140	2283	2435	2598	2226	2913	2195	2452	1775
Rajasthan	5305	5840	6430	7078	7792	6843	6240	5673	5513	8228
Tamil Nadu	11329	12177	13088	14068	15121	9244	11934	10863	14688	21819
Uttar Pr	18283	20037	21961	24068	26379	17692	23153	26033	21241	22550
West Bengal	3085	3291	3510	3744	3994	3750	4465	3764	2634	3212

source: Author's own calculation and State Finances: A Study of Budgets, RBI, India.

In case of the capital expenditure, Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Tamil Nadu, and Uttar Pradesh have witnessed lower actual capital expenditure than the estimated. On the other hand, Goa, Haryana, Jharkhand, Karnataka, Odisha, Punjab, Rajasthan, and West Bengal have reported actual expenditure much higher than the estimated. However, the issue of lower capital expenditure is likely to be more severe in case of lower income of the state like Bihar, Chhattisgarh, Madhya Pradesh, and Uttar Pradesh as compared to other states.

Table 5:9 Estimated and actual total expenditure of general category states (in Rs. Crore)

	Estimated Total Expenditure of General Category States					Actual Total Expenditure				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Andhra Pr	67548	75287	83978	93744	104721	69679	75634	78831	92972	109121
Bihar	29131	34673	41312	49272	58823	29941	35499	40813	48515	57258
Chhattisgarh	14287	16934	20097	23878	28403	14471	17225	20907	22874	27953
Goa	4184	4591	5042	5541	6095	3491	4351	5350	6021	6675
Gujarat	41810	48545	56414	65615	76378	40770	49315	57113	67812	74161
Haryana	21029	24746	29155	34388	40604	21239	25369	31306	33063	38014
Jharkhand	15643	18309	21447	25145	29504	17842	19870	21639	24958	24368
Karnataka	47549	53834	60998	69166	78485	46781	52261	60655	69127	82436
Kerala	26328	30553	35523	41368	48247	27260	30903	34068	38790	50896
Madhya Pr	36846	42240	48458	55629	63904	33589	38088	47639	57526	77509
Maharashtra	85320	96091	108267	122035	137609	77495	95848	113606	125382	142270
Orissa	23054	25873	29049	32628	36664	20999	25180	29052	33968	39777
Punjab	23869	26834	30175	33939	38181	25287	27482	29603	35350	34820
Rajasthan	33859	39437	45959	53589	62518	35971	40536	45805	50386	61882
Tamil Nadu	58061	65513	73963	83545	94417	52219	65525	70239	87604	105657
Uttar Pr	84001	96947	111967	129403	149650	82915	99122	115407	128917	146435
West Bengal	46399	52512	59443	67305	76223	42064	56078	62263	67172	76538

source: Author's own calculation and State Finances: A Study of Budgets, RBI, India.

Table 5.9 depicts estimated and actual total expenditure of the general category states. The total expenditure comprises of revenue expenditure and capital expenditure of the states. The states like Bihar, Karnataka, Madhya Pradesh, Rajasthan, and Uttar Pradesh have reported lower actual expenditure than the estimated in most of the years. In last two years of period under consideration, states like Bihar, Chhattisgarh, Haryana, Jharkhand, Rajasthan, and

Uttar Pradesh have relatively higher gap between estimated and actual total expenditure. Importantly, most of these states fall into lower income category.

Table 5:10 Estimated and actual fiscal gap of general category states (Rs. Crore)

	Estimated Fiscal Gap of General Category States					Actual Fiscal Gap				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Andhra Pr	31082	32557	36179	35101	38070	27072	32223	35709	36940	43978
Bihar	23052	27046	32567	38280	45489	24303	28162	31040	37647	43733
Chhattisgarh	5630	6454	9355	10943	13995	6369	7893	9746	9470	11896
Goa	1747	1417	1399	1332	1579	1083	1411	1843	1599	1797
Gujarat	15658	19290	22064	23993	28860	13966	20457	24634	26184	24457
Haryana	8177	9241	10119	12165	14815	4300	10117	15122	12611	12590
Jharkhand	9472	11852	14037	15748	18867	12680	12580	13049	15844	14353
Karnataka	19224	21309	25585	25990	30186	17138	21218	26118	27062	31544
Kerala	11024	12806	15190	18219	21181	12328	13309	14504	15069	22514
Madhya Pr	20132	21778	24775	28226	31420	18716	21054	23939	29987	33908
Maharashtra	28192	33129	36710	35308	36944	12286	33449	45607	41472	45479
Orissa	12656	13912	15910	16669	19311	11134	13773	16501	17961	19760
Punjab	9289	10144	11209	12186	13488	8689	10469	10634	12593	14482
Rajasthan	17255	19719	23230	24585	27870	16860	21611	24711	23002	26084
Tamil Nadu	24158	26673	27447	26714	29684	18283	24194	26078	34401	37275
Uttar Pr	50820	58363	66476	77163	90470	51692	62918	67635	75900	83543
West Bengal	30254	34051	37874	42341	47027	26968	31077	42538	43290	50182

Source: Author's own calculation and State Finances: A Study of Budgets, RBI, India.

Table 5.10 represents estimated and actual fiscal gap of general category states. There are wide differences in estimated and actual fiscal gap of all the states. All states have higher actual fiscal gap than estimated for some years as well as lower in some other years. The states like, Andhra Pradesh, Bihar, Kerala, Madhya Pradesh, and Tamil Nadu have lower level of actual fiscal gap than estimated. This is likely to be result of lower level of actual public spending particularly in case of low income states. On the other hand, Maharashtra and

West Bengal have very high levels of actual spending than estimated. In last couple of years, Bihar, Chhattisgarh, Rajasthan, and Uttar Pradesh have reported very lower actual fiscal gap than the estimated.

To sum up, revenue and expenditure of the states estimated by the present study widely differ from their actual level. The estimated revenue and expenditure of the states is measured using the benchmark of average influence of the basic inherent factors on the revenue and expenditure of all states. In other words, we consider only that part of revenue and expenditure of the states that is the result of consideration of the average fiscal effort from each state. Under this benchmark criterion, some states have reported higher or lower amount of the actual revenue and expenditure than the estimated amounts. The present study is considering only estimated or the level of expenditure and revenue of the states associated with the benchmark for the analysis. Consideration of estimated revenue and expenditure for the analysis will ensure level of public services across the states associated with the benchmark.

The next chapter will focus on the issues related to the federal fiscal transfers in India. It will analyse whether or not the existing federal fiscal transfer system is appropriate or not from the point of view of determination of numerical fiscal rule. The study will propose method and design of federal fiscal transfer which will be more appropriate for the design of numerical fiscal rule. In order to determine state-wise shares in federal fiscal transfers, the present study will take into account the estimated own revenue and expenditure of the states derived in the present study.

Chapter 6 PROPOSED FEDERAL FISCAL TRANSFERS TO STATES

6.1 Introduction:

This chapter focuses on issues regarding the present design of intergovernmental fiscal transfers in India as well as mechanism of the federal fiscal transfers proposed by the present study. As it is noted previously, the intergovernmental fiscal transfer is an important determinant of borrowing needs of the states in a federal country where vertical and horizontal imbalances prevails. This is because federal fiscal transfers add to revenues of the states that determines their total revenue. Therefore, the design of intergovernmental fiscal transfer is an important determinant of borrowing need of the states. In the absence of an appropriate federal fiscal transfers system, borrowing ceiling derived from any method will be misleading. While determining borrowing ceiling of the states, it is important to determine first justifiable shares of the states in total available federal fiscal transfers. The borrowing ceiling and ceilings on other budgetary aggregates will be appropriate if such justifiable shares of the states are taken into account. This chapter takes up this important issue of the federal fiscal relation in India.

In the previous chapter, the study has estimated the revenue gap and fiscal gap of the states in India. As mentioned earlier, these estimated revenue and expenditure represents the potential revenue and expenditure of the states if they put the average fiscal efforts. The potential or estimated revenue and expenditure can serve as a basis of determination of the shares of the states in the federal fiscal transfers as well as determination of ceilings on the fiscal accountability targets. The resulting justifiable fiscal gap or revenue gap would be justifiable for the determination of shares in the fiscal transfers and ceilings on the budgetary aggregates. This approach excludes excess of revenue and expenditure that are above the benchmark as well as adds revenue and expenditure in case of below benchmark states. Since availability of the total transfers and savings for government borrowing are limited, the above mentioned consideration will avoid the possibility of some states claiming higher shares on these resources at the cost of others. It will also helps below benchmark states to spend more. Therefore, the present study considers only benchmarked revenue and expenditure of the states for the proposed analysis.

This method also allows us to specify a level of revenue and expenditure of the states that the states should achieve, particularly in case of below average states. As Rangarajan and Subbarao (2007) have pointed out, the same level of fiscal deficit can be achieved at different level of revenue and expenditure. Therefore, stand alone deficit target is not sufficient and therefore, there is need to specify level of revenue and expenditure as well. Therefore, the potential revenue and expenditure used in the present study gives the direction to the states to achieve a particular level of revenue and expenditure, particularly for below average states. Moreover, this approach will also avoid the long debated issue of quality of adjustment to achieve the targets. This is because the justifiable revenue and expenditure of each state has been determined in the present study. Therefore, states may not have to reduce their expenditure on crucial public services in order to achieve the targets.

Before moving on to the mechanism of deriving the shares in the fiscal transfers proposed by the present study, it is important to look into the present design of federal fiscal transfers in India. The next section discusses different channels and their methods of determining the fiscal transfers from the central government to the state governments and its implication on reducing the inherent fiscal gap.

6.2 Federal fiscal transfers in India:

Federal fiscal transfers in a federal country broadly address the vertical and horizontal imbalances. The vertical imbalance is a result of an asymmetry between revenue powers and expenditure responsibilities among different levels of governments. The horizontal imbalance is a result of differences in fiscal capacities among provincial governments that further result in differences in the level and standard of provision of public services. The federal fiscal transfers are designed to address these two inherent imbalances in a federal country.

Apart from these two main justifications for the federal fiscal transfers, another important reason is inter-jurisdictional spill-over effects of certain public goods. Such public goods have externalities on other jurisdictions and unlikely to be taken into consideration by producers jurisdictions of such goods and services. Ignorance of externalities in the production of goods and services leads either to an under production or over production of these public goods. This phenomenon is called inefficient and non-cooperative equilibrium in the provision of public goods with externalities. Specific purpose, open ended, and matching

grants are often provided by the central government in order to ensure the optimal production of such goods (Bagchi and Chakraborty; 2005).

In india, the federal fiscal transfers from the central government to the states takes broadly two forms, first, devolution of taxes and second, distribution of grants. The Finance Commission determines the share of devolution of the central taxes to the states on the basis of a formula. The FC also recommends the general purpose grants to the states under the Article 275 of the Constitution and also, special purpose grants to the state governments. Apart from FC's grants, plan grants and centrally sponsored schemes are provided by the Planning Commission and various Central Ministries (Mohan and Shyjan; 2009).

6.3 Formula-based transfers:

The Finance Commission gives the transfers to the states in the form of formula based tax devolution and grants.

6.3.1 Finance commission's formula-based tax devolution:

Article 280 mandates the setting up of Finance Commission every five year or at early as the President of India considers necessary. Under this article, the FC is required to recommend on the distribution of the net proceeds of taxes between the Union and the States which are to be, or may be, divided between them and the allocation between the states of the respective shares of such proceeds (Commission on Centre-State Relations; 2010).

As far as criteria for tax devolution is concerned, successive FC's have considered different variables as criteria for the tax devolution. Variables used by the past few FCs are population, per capita income distance, area, tax effort, and fiscal discipline. These indicators along with their respective weights are supposed to reflect relative fiscal capacities of the states along with incentive for efficiency, and cost disadvantages across the states (Srivastava and Rao; 2009).

Among the indicators used by the successive FCs, population variable is used to represent need for various public goods and services. Population is a basic factor that creates demand for various public goods and services and thereby influences the level and composition of the public expenditure. This criterion provides equal per capita transfers to all states. The population was considered as the main criterion for the distribution of taxes for initial FCs,

reflected in the higher weight attached to it in their formula. However, from the Eight Finance Commission onwards; FCs have started putting more emphasis on an equity consideration. For this, the FCs have included variables like inverse income criteria and distance income criteria in their formula with progressive weights attached to them. On the contrary, the weight attached to the population indicator has reduced considerably over the period.

Among the equity indicators, the per capita income distance variable has been incorporated to reflect wide differences in the fiscal capacities among the states. This indicator ensures that the resources will be diverted to relatively lower fiscal capacity states. The per capita income distance is measured as the distance in per capita income of a particular state from the highest per capita GSDP state or the average of the top three per capita GSDP states.

Apart from the equity consideration, the successive FCs have also considered area indicator in order to reflect differences in cost disadvantages across the states. The Tenth Finance Commission had adopted area criteria mentioning that the administrative cost of delivering public services in a larger area is high. However, the commission had given small weight to this criterion because even small states have to incur certain minimum cost in providing public services. It has also realised that the cost of services in the bigger states increases at decreasing rate.

In order to give incentive to the state to make appropriate effort on collection of tax revenue, the tax effort indicator is included in the formula by the successive FCs. It is measured as the ratio of per capita own tax revenue of a state to its per capita income. This ratio is then weighted by inverse of per capita income. This indicator takes into account poorer tax base of some states and directs extra resources to them if it exploits its available tax base as much as richer states.

In order to give incentive for prudent fiscal management, the Eleventh Finance Commission included fiscal discipline indicator in the formula. The indicator is measured as follows. First, the ratio of own revenue receipts of a state to its total revenue expenditure is calculated. Then such ratio is compared with similar ratio of all states taken together. Then the improvement in this ratio over the past base period to reference period is assessed. The improvement in this ratio is rewarded by giving additional tax devolution to such states.

Fiscal capacity distance is another indicator used by the Thirteenth FC in place of per capita income distance[25]. This indicator measures the distance in tax capacities among the states. The weighted average of tax to GSDP ratio is calculated separately for the general category and special category states. These group averages are then applied to each state in that particular group in order to calculate the per capita tax revenue for each state. Then, this estimated per capita tax revenue of each state is compared with the estimated per capita tax revenue of Haryana and the fiscal distance is obtained.

The per capita distance variable has gained importance as main criteria to ensure horizontal equity among the states. The revenue deficiencies across the states arise due to systematic and identifiable factors. The guiding principle of horizontal equity lies in the need to even out such differences in order to provide standard set of public services under normative revenue efforts.

Moreover, this criterion aims to ensure higher per capita transfers to low per capita fiscal capacity states. The highest weight has been given to the distance indicator as compared to other variables by the successive FCs. This criteria reduces the differences in tax bases across states by means of progressive transfers to low income states (Srivastava and Rao; 2009). Thus, high weight attached to the distance criteria indicates the intention to introduce high level of progressivity in the transfer system and thereby reduce differences in the tax bases across the states.

Criteria and weights used by the Thirteenth Finance Commission for Tax Devolution (in per cent)

Criteria	Weight
Population (1971)	25.0
Area	10.0
Fiscal Capacity Distance	47.5
Fiscal Discipline	17.5

Source: Thirteenth Finance Commission Report

[25] See report of the Thirteenth Finance Commission

However, there are different issues pointed out by researchers regarding FC's section of indicators and their weights. The following section discusses these issues.

6.3.2 Issues with section of indicators and their weights:

Equity consideration and inclusion of the income distance criteria ensure that low income states receive higher transfers than the rich states. However, Sen and Trebesch (2004) have pointed out that there is a positive link associated with the income and demand for public services. High income states are also associated with higher need for the provision of public services. Therefore, the actual fiscal capacities of these high income states after taking care of increased demand for public services become unclear in the distribution formula. Therefore, inclusion of the income distance criteria alone while ignoring the fiscal need may result in an inappropriate transfer design.

On the same issue of degree of progressivity introduced in the formula, Godbole (2005) has pointed out that over the years the shares of low income states has been increasing rapidly while that of high income states reduced. Author has argued that the justifiable level of progressivity has not been assessed by the successive FCs and therefore, overemphasis on the progressivity has reached at such an absurd level in FCs devolution. Overemphasis on equity consideration may result in a situation where high income states contribute more to the common pool of tax revenue on order to sustain profligacy of other states. This is likely to happen in case of FC devolution since it is based on ex-post financial need of the states.

With regard to the population criteria, the successive FCs have used this criterion as an indicator of expenditure need of the states. It is assumed that the expenditure need of states increases proportionately with increase in population. However, Srivastava and Sen (2000) have argued that the use of only population criteria ignore the important aspect of differences in fiscal capacities across the states. Moreover, authors have also pointed out that the use of 1971 population by the FCs tends to penalise states for immigration and achievements in reducing mortality rate. Also, the successive FCs have attached weight to the population on an arbitrary basis and therefore, fails to capture the extent of influence of the population on the expenditure need.

Some FCs have used infrastructural index as a criteria for the devolution in order to foster development of backward regions. However, Srivastava and Sen (2000) and Sarma (1997)

have argued that the use of this indicator may give wrong incentive to state governments to remain backward in infrastructure in order to ensure higher shares in the future and discourage development effort.

Tax effort is another criterion used by the successive FCs. Inclusion of this criterion aims for rewarding better performing states in collection of tax revenue. However, McLure (1997) has argued that the constitution extends tax autonomy to the states. Under this autonomy, the state governments have power of taking decisions regarding selection of tax basket and tax rate. Therefore, degree of tax exploitation by each state depends on its own political and ideological stand. If some states exploit more tax base in order to provide above average public services then these states should not be rewarded for their additional tax effort. Moreover, the tax effort criterion is suitable when some states are not putting enough tax effort. However, if states are constrained by inherent factors then use of this indicator may be counterproductive.

McLure (1997) has further pointed out that the use of tax effort criteria may result in wasteful use of scare resources. If high income states receive additional transfers based on their better performance on the tax collection side then these states may use these additional resources to finance wasteful projects at the cost of other needy states. This criterion also penalise states that attract the private capital by providing public services at efficient level and therefore, manage to keep the tax rate at low level.

With regard to use of the fiscal discipline criteria, McLure (1997) has pointed out issues with regard to the measurement of this criterion. Fiscal discipline is measured as a ratio of state's own tax revenue to its revenue expenditure compared with all state average and compared over time. If some states have higher deficits in the past then they can improve their position relatively easily and for that the commission gives reward in the form of higher shares. It implies that FC is rewarding the states for its past fiscal mismanagement. Moreover, the ratio is compared with other states, if all states are doing badly then a state that maintain the ratio or improves marginally would be rewarded. Therefore, the intended objective of this criterion to incentivise the states for better fiscal performance may not be achieved. On the contrary, states may improve this ratio by increasing distortionary taxes or by reducing developmental expenditure. This indictor also ignores the fact that for some states deficit is inevitable due to factors outside their control.

Gulati (1977) has pointed out implications of use of an indicator of backwardness on the redistributive objective. The Sixth Finance Commission had defined backwardness for the distribution of excise duties as a distance of a particular state in terms of per capita income from the highest per capita income state. This method had entitled all other states, except the highest per capita income states, share in the excise duties. Therefore, all above average per capita states, except one, were entitled with share in excise duties. This had resulted in reduction of pie available for the redistribution to below average states. This resulted in lower degree of redistribution among the low income states and above average states ultimately got benefited from the use of backwardness indicator.

Overall, the main issues with the FC's fiscal transfer are selection and assignment of weights, appropriate level of progressivity in the formula, use of population of 1971 etc.

Moreover, the FC takes into account expenditure need factors and revenue capacity indicators separately. However, it is important to consider these two factors simultaneously in order to ensure justifiable transfers to the states that have relatively high fiscal imbalance. Ignorance of this aspect and overemphasis on the equity consideration may result in an inappropriate transfer system and may not be suitable for the determination of the ceilings on the fiscal accountability target.

6.4 Grants under Article 275 and Article 282:

Apart from FC's devolution of taxes, the Union Government also extends the resources to the states under Article 275 and Article 282. Finance Commission, under Article 275 (1), is required to recommend unconditional grants to the states aiming to augment their revenues. However, subsequently the scope of FC has been enlarged to cover non-pan revenue deficit, extend plan grants, up gradation grant, grants for special problems of the states, and grants for local bodies (Valluri; 2010). Apart from the FC's grants, the union government can also make grants to the states under Article 282. Using this article, the union government has been extending all developmental grants to the states (Vittal; 1997).

6.4.1 Finance Commission's Grants:

With reference to the Sixth Finance Commission, Gulati (1977) had mentioned two types of grants, first, grants that are intended to cover deficit on non-plan revenue account, and

second, up-gradation grant for enhancement of administrative services and basic social services.

Finance Commission gives grants-in-aid to the states under Article 275 of the Constitution. These grants are often referred as gap filling grants. The grants are determined on the basis of assessed expenditures and projected own revenues of the states. The gap between assessed expenditure on revenue account and sum of projected own revenue and tax devolution is filled by the grants by FC. Thus, the assessment of the gap on revenue account (or non-plan revenue account) is a crucial determinant of this type of grants. Recent FCs have used a normative approach to determine tax revenue, non-tax revenue, and some of the expenditure heads for the assessment of the non-plan revenue gap. However, the normative assessment by FC is not free from criticism since the norms are arbitrarily defined (Srivastava and Rao; 2009).

With regard to other grants given by FC, the First Finance Commission had put forward certain principles. As per the principles, the commission should give grants on the basis of following considerations; any unforeseen expenditure or revenue accrued to states, state's fiscal effort, aim of equalisation of standard of basic public services across the states, and in case where a state faces higher expenditure due to a special burden or obligation of national interest (Valluri; 2010). These kinds of grants are earmarked to specific state or sector and therefore, ensure minimum standard of these services across the states.

However, researchers have pointed out certain issues with regard to FC's grants. Rao (1997) has argued that the approach of FCs to upgrade certain general and social services while leaving other economic services out of scope of grants is not appropriate. Since, states differ not only in terms of social but also in terms of economic services. The commission should try to remove financial constraints of the states by extending block grants equivalent to the gap between revenue capacity and expenditure need. This approach will enable to remove the disparities in public services among the states rather than just removing it for some selected social services.

Gulati (1977) has pointed out issues regarding the FC's grants that are used for filling non-plan revenue account gap. Author argues that the FC mechanically fills the gap on non-plan revenue account which is a result of present level of efficiency in the tax collection and expenditure management. Therefore, if a state reports a higher non-plan revenue account gap then it does not necessarily means that its expenditure on administrative and social services

constantly exceeds its increasing tax effort. The increasing gap may be attributed to the efficiency. The state will continue to get higher deficit grants if it has higher estimated non-plan revenue deficit irrespective of its tax effort.

In case of grants given for the up-gradation of administrative and social services, author has emphasised on the need for monitoring that these funds are being used for the intended purpose by the states. These special purpose grants are although earmarked for certain expenditure items, states may divert these funds for alternative use. However, this does not undermine the role of specific grants in a federal country where wide differences in basic services prevails across states.

Overall, FC's mechanism of distribution of the grants suffers from partial consideration of overall fiscal need since only certain public services qualify for the consideration of grants. It also has drawback in design non-plan revenue grant in that it does not consider potential revenue and expenditure of the states.

6.4.2 Planning Commission's Grants:

The Planning Commission was established in order to ensure public sector led plan economic development and thereby creating environment for socialist pattern of economy (Kannan and Mohan; 2003). The PC gives grants to the states for financing their plan by considering their inadequate own revenue position to finance the plan. Such plan assistance was project based till 1969. The First and Second Plan had allocated assistance to the states based on the projects while revenue expenditure requirements of the plan was taken care of by the Finance Commission, both on plan and non-plan revenue expenditure account. It was only after 1969; Gadgil formula was introduced for the distribution of plan assistance. Under the Gadgil formula, apart from loans given to finance capital expenditure, grants were given to the states to finance current expenditure to maintain assets created during the plan. Considering this aspect, the successive FCs have restricted themselves to finance only non-plan revenue account of the states.

Moreover, Gadgil formula gives plan assistance in the form of loans and grants in the ratio 70:30. It was assumed that the current and capital expenditure components of the plan assistance would be of same ratio. The idea was that the revenue component should be financed through grants and the capital expenditure by borrowing. However, over the period

of time, the current expenditure of plan increased remarkably leading to use of borrowed funds to finance the current component of plan expenditure. This resulted in the higher non-plan revenue expenditure after the completion of the plan period and thereby lead to increase in demand for higher tax devolution by FC.

The Planning Commission allocates normal plan assistance to the states in following manner. First, it keeps aside 30 per cent of the total assistance for the special category states. These resources are then distributed among the special category states based on their plan size and past plan expenditure. Therefore, the normal pan assistance to the special category states is determined not on specific criteria but largely on discretion. Remaining 70 per cent is then distributed among the general category states based on Gadgil-Mukherjee Formula.

Table 6:1 Gadgil-Mukherjee Formula

Criteria	Weight
Population (1971)	60.0
Per Capita Income	25.0
Of which	
Deviation Criteria	20.0
Distance Criteria all states have been considered.	5.0
Performance	7.5
Of which	
Tax Effort	2.5
Fiscal Management	2.5
National Objectives	2.5
Special Problems	7.5

Source: Planning Commission

Under the deviation criteria, 20 per cent assistance is given exclusively to those states whose per capita income falls below the national average. Under the distance method, the distance

of per capita income of each state from the highest per capita income state is measured. This distance is then multiplied by respective population of the states. Finally, the ratio of resulting value so arrived and sum of all states' value multiplied by 100 is calculated. The resulting ratio is the share of each state in case of the distance criteria. In case of Tax Effort criteria, tax-GSDP ratio is considered. In case of Fiscal Management, the difference between the estimates of own revenue resources as provided at the time of Annual plan for the approval of state plan outlay and the actual own revenue resources has been considered. Moreover, performances of the states in those programmes that are considered to be as national priorities are considered. They include population control, elimination of illiteracy, on-time completion of externally aided projects, and success in land reform (Planning Commission; 2010 and Dandavate; 1997).

However, there are some issues pointed out by some researchers with regard to the selection of indicators and the weights assigned to them.

Some researchers have pointed out that inclusion of the fiscal effort criteria into the transfer formula may be counterproductive. According to Martinez-Vazquez and Boex (2002) even if some states able to put desirable fiscal efforts they might find it difficult to finance all their desirable expenditure. Therefore, these states have need for fiscal transfers. As pointed out earlier, giving extra resources to the states on the basis of fiscal effort may result in use of resources for unproductive activities. Moreover, the fiscal effort criterion is measured on the basis of performance of the states as compared to their performance in the previous year. Therefore, those states that have already achieved desirable fiscal effort they may not get reward under the present measurement of fiscal effort. On the contrary, this method rewards to those states that had lower fiscal effort in past years.

Some researchers have pointed out some issues on the mechanism of determination of the plan assistance. According to Rao and Singh (2001), there is no link between the investment requirement of states and plan assistance received by them. Plan assistance is given on the basis of Gadgil formula based on certain economic and social indicators that do not reflect the investment requirement of states. The plan assistance should take into consideration the difference between states' investment need and its own revenue position to finance such investment. Authors have also argued that loan and grant components of the plan assistance (70:30) is not accordance with differential requirements of the states. The grant component of the plan assistance was kept at 30 per cent because recurrent expenditure of capital outlay

was around 30 per cent when Gadgil formula was introduced. However, according to authors, the current component of the plan outlay differs across the states and over the period.

The Gadgil formula gives high weight to the population criteria for determining transfers to individual state. However, Planning Commission (2012) argued that since the population ensure equal per capita shares to all states, high weight on the population result in mildly progressive transfer system. The study has further argued that the use of tax effort and fiscal discipline criteria ignores the fiscal need and fiscal capacities of the states. The indicators used for the Gadgil formula may not reflect difference between requirement of resources for plan project and actual plan assistance.

Division of total plan assistance between the special category states and general category states is arbitrary. According to Raipura (1992), out of total plan assistance, 30 per cent is kept aside for the special category states on an arbitrary basis without taking into account factors like population, cost structure, and cost of maintenance.

Ramalingom and Kurup (1991) also criticised the use of fiscal effort and fiscal management criteria in the Gadgil formula. The fiscal effort criterion gives equal shares to two states that have reported same fiscal effort irrespective of their expenditure need and revenue capacity. This aspect may undermine the equity objective of the transfers in case of a state that has high need of transfers but has shown little lower fiscal effort.

Authors further criticized the fiscal management criteria used in the modified Gadgil formula. According to this criterion the fiscal management is assessed on the basis of state's actual resource mobilisation for the plan as compared to the target submitted to the Planning Commission initially when plan was to be approved. Authors argue that this might create incentive to states to understate resource position in the approval phase and acquire higher share. It is also possible that low income states end up getting lower share considering their limited manoeuvrability due to lower resource base. Therefore, poor states may adversely hit by this criterion as compared to high income states.

Overall, the main drawback of use of Gadgil formula is that it does not take into account investment need of the states. Also, the indicators used on the formula like population, fiscal discipline, and tax effort do not take into account fiscal capacity of the states. Ignorance of this aspect might leads to unwarranted distribution of resources.

6.4.3 Grants by Ministries:

Apart from FC's and PC's grants to the states, Central Ministries also extends grants. The FC's transfers mainly consider the requirement of states on the non-plan component of the budget while the plan transfers are designed to finance plan component. The plan assistance given by the centre to the states is supposed to be given on the basis of Gadgil formula with mediation of the Planning Commission. Use of the formula for determination of assistance avoids discretion of the centre over the resources.

However, substantial portion of plan assistance has been given to the states for execution of centrally controlled schemes. The funds under the Central and Centrally Sponsored Schemes are dispensed by various central ministries under strict guidelines over the use of the resources (EPW 2004). The central sector schemes are entirely funded by the central government by means of central grants. On the other hand, Centrally Sponsored Schemes are cost sharing programmes and the central assistance has been given in terms of grants or loans decided for each programme. Centrally Sponsored Schemes (CSS) are specific purpose discretionary plan expenditure undertaken by the central government on the developmental schemes that are preliminary in the state domain. Under this heading, the central government provides additional resources to the states to undertake those expenditures that central government considers as national priorities. Funds under these two schemes are determined on the basis of formula derived by the relevant ministries. The allocation of funds under the CSS is not based on certain objective criteria but they are scheme-specific. The performance of the states under these schemes is considered while determining actual release. Thus, funds distributed under this head are based on discretion of the central ministries. These schemes are often supported on the ground that they ensures outlays on the national priority items, like health and education, and therefore, earmarked outlays have been adopted in the form of the central sector scheme and centrally sponsored schemes (Rao and Singh; 2001, Garg; 2006).

In addition to the CSS, the central government has introduced Additional Central Assistance (ACA) for specific purpose schemes. The ACA is a part of the assistance under state plan that is supposed to be given on the basis of Gadgil formula. The CSS, ACA, and Normal Central Assistance (NCA) based on Gadgil formula together comprise of the central government grants to the states (Garg; 2006).

Although, the SSC and ACA have enabled the central government to ensure adequate expenditure on sectors that are considered to be the national priority, these schemes are not

free from criticism. Garg (2006) has argued that the special purpose conditional grants, SSC and ACA, have grown substantially and thereby increasing central discretion over the matters that are predominantly in state's domain. A large number of these schemes implies that it interfere with the state's autonomy in designing expenditure priorities. Funds under these schemes bypass the state budget and given direct to implementation agencies. Considering these schemes' interference with the state's autonomy, states governments are demanding reduction of these schemes and prefer funds to be distributed as share in central taxes or as block grants. However, the central government prefer these schemes since they ensure better targeting and ensure smooth flow of funds to the implementation agencies.

Rath (2013) have argued that increasing number of Central Sponsored Schemes (CSS) and Centrally Assisted Schemes (CAS) implies increasing centralisation of the social sector expenditure. Increasing centralisations of the social sector expenditure interferes with state priorities, their unique requirements, and undermine state level planning process. It further interferes with efficiency aspect of the fiscal federalism where public policy innovations by lower level of governments, especially in case of expenditure, considered as an efficient way of resource utilisation. Uniformity of policies by the central government under CSS overlooks this aspect. It has also resulted in reduction of funds available for the state plan. Moreover, matching requirement of most of the CSS resulted in blocking of budgets for CSS in order to avail funds under these schemes. This condition puts natural constrain on poor states in availing these funds. Further, some SSC bypasses the state budgets and funds are transferred directly to the implementation agencies. It has implication on effective monitoring and utilisation of resources.

According to Twelfth Finance Commission's report, states should be given an opportunity to choose between different CSS. Different ministries should come up with different schemes among which states will be asked to choose those policies that are more suitable for them. This will ensure competition among different schemes or ministries resulting in reduction of unnecessary schemes. For this, states should be given total entitlement of grants and within the limit of grants they have to choose different mix of schemes proposed by the different ministries.

Heredia-Ortiz and Rider (2005) has pointed out that CSS provides a tool for the federal government to micro manage decisions that is the sole responsibility of state governments. Therefore, CSS distorts the decision making and priorities of the states. Therefore, author has

suggested replacing existing central schemes with specific purpose grants with very few guideline and rules. This would ensure reduction of line ministries' interference with state autonomy. These grants should be confined only to those programmes that are in national interest like improved administration and management. The state should have autonomy to design their programmes keeping in view the objectives of the grant.

Overall, different channels of the federal fiscal transfers in India have major issues with regard to their method of deriving state-wise fiscal transfers. The formula based fiscal transfers mechanism is criticised on the basis of its selection of indicators and weight assigned to it. In case of formula based transfer channels, FC and Gadgil formula, objective of equity is ambiguous. In some case, equity is over emphasised neglecting fiscal balance of the states while in some cases, inclusion of other criteria undermines the equity objective. Moreover, the indicators used as proxies of revenue capacity and expenditure need of the states are considered in isolation. This gives scope to states with higher value of need indicator to claim higher transfers even though they have higher fiscal capacities. Both formula based transfers consider one factor at a time completely overlooking other factors and therefore may interfere with the equity objective of the transfers. Therefore, the expenditure need and revenue capacity should be considered simultaneously, i.e. transfer to a particular state should reflect its fiscal gap or difference between the revenue capacity and expenditure need.

In case of grants by different channels, the central government's interference in state domain has been increasing over a time which is not according to the principles of federalism. The discretionary element of this type of transfers often undermines either equity objective or neglects fiscal balance. Specific purpose grants like SSC and ACA, although, ensures desired level of expenditure in national priority sector; it interferes with the state autonomy. The efficient use of resources requires that the expenditure responsibility should be undertaken by lower level of governments. This is because the lower level of governments are better informed about the local need and preferences and therefore, they are in better position in delivering public goods and services that suits better to their locality. However, in case of SSC and ACA, the concerned ministries exercises control over the selection and design of schemes.

In case of FC's grants, the grants for up-gradation of certain social services neglect the need for up-gradation of other economic services. The states in India not only differ among

themselves in terms of the social services but also in terms of the economic services as well. On the other hand, FC's gap-filling transfer does not give any incentive for states to improve their tax effort or expenditure management or increase their current low level of public expenditure.

Therefore, we can say that fiscal transfer system in India is not accordance with the principles of federal fiscal transfers. The current system of transfer may give transfers to more affluent states by means of discretionary transfers. On the other hand, low income states may not be receiving justifiable level of transfers. Therefore, the actual transfers received by the states may not be appropriate while deriving ceiling on the fiscal accountability indicators. This gives scope to formulate another design of the federal fiscal transfer system which overcomes the issues related to the present system. Such transfer system will be appropriate for the determination fiscal accountability target in more justifiable manner. The present study is going to propose a transfer system which will be more appropriate and suitable for derivation of the fiscal accountability target.

6.5 Conditional transfers vs unconditional transfers:

Before moving to the proposed mechanism of deriving federal fiscal transfers in India, the present study first focus on a long debated question in the domain of federal fiscal transfer namely conditional vs unconditional transfers. In Indian context, FC's tax devolution and general purpose grants and grants based on Gadgil formula are considered as unconditional transfers from the centre. This is because these types of transfers do not put any conditionality on the use of finds under these headings. On the other hand, FC's specific purpose grants and grants by various ministries under the different schemes are considered as conditional grants due to guidelines regarding use of these finds. As pointed out earlier, states prefers the unconditional grants over the conditional grants due to interference with state's autonomy in latter's case. On the other hand, the central government prefer and promote former over latter in order to full fill national objectives by ensuring sufficient funds to these activities.

The conditional or specific purpose grants are given to the states to take care of spill-over effects of the public services produced by the states. As emphasised by Breton (1961), the spill-over effect occurs when benefits of a good is not been exhausted within the boundaries of the jurisdiction. In other words, the benefits of the good spill over the boundaries of the

jurisdiction who is buying that good. Such spill-over occurs due to misallocation of goods to a particular level of jurisdiction. Ideally, a good should be allocated to a jurisdiction which exhausts all its benefits. Another reason for spill-over is that some levels of jurisdictions do not exist at all and therefore, some public goods are not the explicit responsibility of a particular level of government. In both of these cases, the optimal level of public good will not be purchased by the concerned jurisdiction since it cares only about the benefits incur within its own jurisdiction. In this situation, since all the benefits and cost are not taken into account, the optimal quantities are not purchased by the jurisdiction.

Under the circumstances of spill-over, the central government encourage state governments to produce or purchase these goods or services at optimal level by the means of conditional grants. With the help of conditional grants, the state governments allocate sufficient amount of resources on these goods and services in order to produce it at optimal level.

The conditional grants with matching requirement incentivise state governments to spend more on those goods that have spill-over effect since in order to avail for the grants they have to match certain proportion of total cost of these goods. Thus, with the help of matching requirement, the central government incentivise the states to spend on those services or goods that are considered by the central government as desirable (Spahn; 2007, Bird and Smart; 2002).

Moreover, the rate of matching requirement by state governments in such cost sharing spending activities is determined by the value of the spill-over or degree of preference by the central government for these services. The matching rate or the proportion of cost shared by the central government should decline as externalities declines. The central government is often willing to finance to these services up to certain level where the standard of services are achieved. Since matching rate depends on the externalities, it should vary with different localities since externalities produced from a particular service differ across the localities. It also differs when we find a higher local price elasticity of demand for services in some regions than others. Matching rate is sometimes inversely proportional to the revenue capacity or income of the local government. Lastly, not all services purchased by the state governments have spill-over effect and among spill-over services, the degree of spill-over may not be equal (Bird and Smart; 2002). Considering the above mentioned aspects of the spill-over it is clear that not all services should get conditional grants, it should differ across the public services and across different jurisdiction for same services.

On the other hand, unconditional grants avoid the central government's interference with state's priorities. This type of grants is used to achieve purely redistributive objectives. Therefore, unlike the conditional grants that have an income effect as well as substitution effects, the unconditional transfers have only income effect since it do not alter state's spending behaviour. The unconditional grants ensure adequate resources to lower level of governments in providing minimum standard of all public services. Local governments have autonomy in deciding their own spending priorities as perceived by them as best for their jurisdiction. Therefore, the approach of giving transfers in the form of unconditional grants have more federalist aspect and therefore, called federalist approach (Spahn; 2007). As pointed put by Oates (1999), unconditional grants are best suitable over conditional grants if the objective of the transfer to achieve fiscal equalisation across provinces.

Although, conditional grants are desirable form the point of view of addressing spill-over effect or ensuring adequate spending on services of national importance, there are certain criticism, particularly on the actual design of conditional grants. As pointed out by Spahn (2007) conditional transfers overlook need on account of general local expenditure need and focuses on only few services.

According to Slack (2007), the conditional transfers often overlook equity aspect of the fiscal transfers. Matching conditional grants tends to favour richer states since they can avail more grants due to their ease of full filling matching requirement and poor state my find it difficult to do so. Further, richer states that has been already spending substantial amount on services desired by the central government; in this scenario they may not use funds for specified services or they may reallocate their own resources to other uses. In this case, poor states may be at disadvantageous position as resources are being diverted to the richer states.

Apart from its design issues, conditional transfers in general reduce accountability since two levels of governments are involved in funding of the same public service. When lower level of government makes the decision regarding spending while the higher level of government funds it then it results in the loss of accountability by both the levels of government. In case of the conditional transfers when the matching requirement is not necessary, lower level of government losses its incentive to become efficient in spending and thereby losses its accountability. On the other hand, when local government shares part of the cost of funds for services then local government are not likely to be fully accountable for its service provision.

Overall, both the conditional as well as unconditional grants are necessary to achieve two different objectives of the federal fiscal transfers. The objective of ensuring minimum standard of public services across the jurisdictions with comparable level of taxes can be best achievable with the help of the unconditional grants. On the other hand, the conditional grants are suitable to internalise the benefits of spill-over. In case of conditional grants, the matching rate should reflect the extent of spill-over, degree of preferences of the central government, willingness of provinces in provision of such goods, and income capacity of the states. As pointed out by Kitchen (2007), the conditional grants should be considered only to fund spill-over effects while equalisation objective can be best taken care of by unconditional transfers.

Based on the principles of conditional and unconditional grants, next section compares these principles with actual practice of conditional and unconditional grants in India.

6.6 Conditional and unconditional grants in India:

The federal fiscal transfers from the central government to the states in India can be divided into two broad categories, conditional and unconditional transfers. Unconditional transfers include Finance Commission's formula based tax devolution, grants-in-aid for the projected revenue expenditure gap on the non-plan revenue account. It also includes the Planning Commission's grants based on Gadgil formula. Other grants by FC for maintenance of certain services and Centrally Sponsored Schemes by various central ministries are conditional in nature.

As discussed above, a transfer system in a federal country needs both unconditional as well as conditional transfers. Unconditional transfers ensure the standard level of public services to all its citizen, irrespective of place of reside, at comparable tax level. On the other hand, conditional transfers are justified on the basis of the spill-over effect of certain public services and national objectives.

Unconditional transfers in India have major issues, as discussed earlier, right from selection of appropriate formula, indicators, assignment of weights etc. In case of conditional grants, there are too many programmes sponsored by the central government and bulks of transfers, as a result, are given to the states on the discretionary basis. The conditional transfers in this manner may undermine the autonomy of the states. However, to take care of spill-over effect and to full-fill national objectives, the conditional grants are necessary.

As argued by many studies, the unconditional grants should be given to states on the basis of certain objective criteria in order to avoid fiscal profligacy as well as discretionary power of the central government. Some studies have argued that the formula should take into consideration gap between the potential revenue capacity and the potential expenditure need, measured on the basis of certain normative criteria. The unconditional transfers, then, fills the fiscal gap measured on the basis of certain level of normative fiscal effort. The transfers given on the basis of this method ensures normative level of public services across all the states irrespective of their fiscal capacity. The formula based unconditional transfers, thus, ensures equitable distribution of resources among the states.

On the other hand, the conditional transfers are designed on the basis of extent of spill-over effect of a particular service to other jurisdictions. The conditional grants are also given to the states for those services that are considered as a national priority. In case of the conditional transfers, the central government is required to measure the degree of spill-over. The degree of spill-over depends on the factors like type of public service, location, etc. The transfers are given to a particular state for a particular public service on the basis of extent or degree of spill-over. In case of the national priorities, the central government try to ensure minimum standard of certain public services that are viewed as important from the point of view of national interest and cut across jurisdictions. The factors that are considered in the design of these transfers include extent of importance perceived by the central government, degree of willingness of states in spending on these services, the fiscal capacity of states etc. As a result, the conditional transfers differ across different public services and different regions. Therefore, distribution of funds under conditional transfers on the basis of formula dealing with equity consideration, just as unconditional transfers, is not appropriate.

However, it has been argued for long in public finance literature that conditional transfers, in practice, often interfere with the state autonomy. National priorities may not always coincide with state's priorities. Matching requirement of the conditional transfers diverts resources from state priorities to national priorities. It is particularly true in case where there are many programmes introduced by the central government and specific purpose transfers are assigned to them.

In India, there are many schemes proposed by the central government, also called CSS and ACA, which gives transfers to the states for underlying specific purpose. In some of these schemes, states have to share the cost of scheme with the centre. The central government has

decided upon matching rate for these services. These matching rates are decided arbitrarily, lack any economic meaning, and mainly based on performance rather than objective criteria[26]. The matching rate should ideally reflect the extent of spill-over, the degree of willingness by state in provision of particular service of national importance, or fiscal capacity of state. The actual matching rate proposed by the central government is not based on these principles.

Overall, unconditional as well as conditional transfers in India lack appropriate theoretical rational. Both of these channels of fiscal transfers are more or less arbitrarily designed. Under these circumstances, the federal fiscal transfers distributed among the states lack connection with its intended objectives. It may possible, under this situation, that some states receive more transfers than they actually deserves while others get lesser. As pointed out earlier, such transfer system is inappropriate form the point of view of deriving borrowing need of the states. An inappropriate transfer system gives lower transfers to those states that actually deserves it resulting either in lower level of spending on public services or forcing state to borrow to maintain desired standard level of public services.

Considering above mentioned issues with the federal fiscal transfers in India, the next section focuses on the proposed federal fiscal transfers by the present study.

6.7 Federal fiscal transfers proposed by the present study:

Considering issues regarding conditional as well as unconditional transfers in India discussed above, the present study proposes an alternative federal fiscal transfer system keeping in the mind the objective of deriving fiscal accountability targets. The present study proposes that the shares of each state in total transfers (both conditional and unconditional) should be determined first and then out of share received by each state some part can be given to respective states in the form of conditional transfers to take care of spill-over benefits as well as national priority. In other words, the present study determines the overall transfer that each state should receive in order to distribute available limited resources equitably and justifiably. This will avoid the possibility of central government's use of discretionary transfers to divert resources from poor to rich states. This overall transfer will be justifiable level of transfer that each state should receive and therefore, can be considered for the determination of borrowing limit for each state.

[26] For details of matching rates see "Report of the Committee on Restructuring of CSS; 2011".

Determination of the overall transfers before hand and then earmarking part of it to specific purpose only to take case of spill-over effects and limited national priority spending will ensure better autonomy of the states. Restricting conditional transfers to only spill-over part of the expenditure will give sufficient room for states to design their own spending activities according to their priorities. States differ in their priorities and therefore, offer variety of public services based on local preferences and need. On the other hand, large amount of conditional transfers restrict state's autonomy in decision making over spending. The central government can reduce resources available for unconditional transfers by increasing conditional component in total transfers. This aspect can be avoided by making use of the proposed transfer system.

Moreover, under the existing system of conditional transfers, need for the granted services are determined on the basis of existing stock of capital. For, example, grant to maintenance of roads considers existing length of road for need assessment. Therefore, more affluent states with large road length receive higher grant than low income states that has low road length. In these circumstances, the central government can managed to divert the resources to more affluent states at the cost of poor states. Likewise, if the central government introduces more and more public services under the conditional grants then low developed countries will be at disadvantageous position. However, if an amount of resources that states are going to receive are decided beforehand, then the state will receive the predetermined total amount, either in the form of the conditional or unconditional transfers. The central government cannot use its discretion to divert the resources to the high income states. Therefore, deciding the total amount of resources that each state must receive avoids the possibility of resources being directed in a regressive manner. However, if the component of conditional grant in total transfers is very high then it may undermine state's autonomy, although it receives equitable transfers. Therefore, the conditional transfers should be restricted to those services that have spill-over effect with grant amount equal to the portion of spill-over and also to very few public services that are of national importance.

6.7.1 Public services with spill-over effects:

Before moving to the proposed mechanism of federal fiscal transfers, this section discusses some of the issues related to the design of conditional grants given to internalise the spill-over effects of public services purchased by the state governments. If conditional transfers are

not designed properly then it often undermines equity objective of the fiscal transfers. The present section focuses on this issue.

The spill-over can be viewed in two ways. In first case, some states are producing higher level of those services that have spill-over benefits to other states. In this case, it will be efficient to give incentive to these states to produce at optimal level by giving matching conditional grant and matching rate will be the degree of spill-over. The conditional transfers, in this case, are based on the existing stock of capital (both human and physical capital) that has resulted in higher level of public service in these states. In other words, if a particular state is able to produce higher level of public services that have spill-over effects then that state gets higher level of conditional transfer. For example, if a particular state is producing more educationally qualified persons and if these persons move to other states for employment then that state is creating the positive spill over effect for other states. The conditional transfers to this state for education purpose is justified on the ground that the centre should share cost with the state equivalent to the amount of spill over it generates. However, the conditional transfer of this type does not address equity aspect of the transfers. This is because high income states are able to produce higher level of merit services because of their adequate infrastructure for these services at disposal.

In second case, some public services are believed to have spill-over effect, but some states do not have enough resources to finance these service. In this case, the conditional grant can be given to these states so that the standard level of these services can be achieved in these states. In this case, the matching rate by the central government should be higher considering lower fiscal capacities of these states. For other states, that are producing theses services at desirable level and also have relatively higher fiscal capacity, the matching rate should be lower i.e. the central government should share cost of these services at relatively lower rate.

On the other hand, if more resources are being diverted by means of a higher matching rate to those states that are producing relatively higher level of service and also have relatively higher level of fiscal capacities then such transfer may not be desirable. In this scenario, the central government should share cost of services up to a certain level. If these states are willing to produce more than the desirable level then the central government should not share cost beyond desirable level. Therefore, the central government should ensure standard level of all those public services that have spill-over effect across the states by giving conditional grants based on their fiscal capacities. While designing such conditional grant, the central

government should first identify public services with spill-over effect or of national priority. Then, it should set the standard level of these services and assess expenditure requirements to achieve these standards. Out of total share of transfers that a particular state has received, expenditure on these categories of public services should be earmarked.

Ensuring certain level of public services that have spill-over effects across all states while considering their fiscal capacity takes care of distributional aspect of the fiscal transfer. Therefore, consideration of only spill-over effects while ignoring fiscal capacities of states may result in diverting the scare resources to well-off states at the cost of poor states that are unable to produce these services due to their fiscal constraints. Therefore, form equity point of view the conditional grants only on the basis of spill over benefits from prevailing level of infrastructure while ignoring fiscal capacity of the states are not desirable. This issue is more relevant where states have achieved different standard of basic public services that have spill-over effect mainly because of differential fiscal capacities. In case of poorer states, the matching rate should be higher considering their lower fiscal capacity and lower standard of these services.

On the similar line, if a state has higher willingness to produce such merit public services and also has sufficient fiscal capacity to finance it then the conditional transfers to that state should be lower.

However, the present study is focusing only on the share of states in the total federal fiscal transfers that pools both conditional as well as unconditional transfers. Since the present study is dealing with design of numerical fiscal accountability of the states, in order to derive ceilings total fiscal transfer is required. The following section focuses on the mechanism of deriving state-specific shares in the total transfers proposed by the present study.

6.7.2 Determination of state-specific share:

In the previous chapter, the study has estimated expenditure need and fiscal capacity of the states. The expenditure need is considered to be a function of basic factors like population, urbanisation, population density, and cost of provision of public services. These factors have major influence on the pattern of public expenditure. Moreover, these factors are out of control of the state governments and therefore cannot be tampered with. On other hand, factors like poverty can give adverse incentive to states to remain in the high level of poverty

in order to attract more resources[27]. Moreover, government expenditure on poverty reduction is one aspect of public expenditure. There may be other aspect of public expenditure specific to states. Therefore, states should be given autonomy to prioritise their expenditure on the basis of local preferences. For that the fiscal transfer should be design based on the basic inherent factors rather than including one item of public expenditure.

Further, basic factors like population and urbanisation do not reflect the existing level of infrastructure and institutional arrangements available for the provision of public services. The differences on these kind of infrastructure across the states results in differences in provision and efficiency in provision of public services. Low income states likely to face lower level of infrastructural as well as institutional arrangements for the provision of public services as compared to developed states. Therefore, these states often witnesses lower level of both level of provision as well as efficiency in provision of public services. Therefore, the differences in initial infrastructure and institutional arrangements can be considered in the design of fiscal transfers. The fiscal transfer can be designed in such a manner that it considers lower initial infrastructure of states and gives some extra resources to them. In order to take care of the differences in infrastructure across the states, the study has used "income distance" criteria. This is because levels of both public and private infrastructure as well as level of institutional arrangements are likely to reflect in total income produced in the states. If some states have low income produced in their territory, then we can say that the public and private infrastructure and other required institutional arrangements are lower in those states. Therefore, for these states some extra transfer can be designed.

Moreover, there are certain public services demanded by all people in a jurisdiction like water supply, sanitation, roads etc. Likewise, there are specific public services that are being provided to specific group of people like educational facility for school going children, social security services for elderly people. Population covered under each of these specific services differs across the states. For example, a particular state may have lower number of school going children than others. Therefore, the expenditure required under each specific public service differs across the states and varies over time. Some states may have higher population that qualifies for one specific service but has lower population for other specific services. This implies that the expenditure requirement under each specific public services differ across the states. Assessing expenditure requirement under each specific category of public

[27] See Sarma (1997)

services and giving the fiscal transfers according to the assessed expenditure will reduce flexibility of the states in deciding upon expenditure priorities. This is because such transfers will force states to follow a certain expenditure pattern desired by the centre which may not coincide with states' priorities. The states prefer to spend resources based on their own priority and local preferences and it is efficient as well. Therefore, it is appropriate to take population as whole for the assessment of expenditure need and states will be allowed to spend under different categories of public services based on local preferences and priorities. The total population will reflect a degree of demand for overall public services; higher the population higher will be demand for overall public services and vice versa.

Likewise, while estimating the revenue capacity, GSDP of the states has been considered as an important determinant of the revenue. The revenue capacity of states includes both tax as well as non-tax revenues. For the tax revenue, GSDP serves as a proxy for the tax base and therefore, considered as an important determinant of the tax revenue. However, the non-tax revenue does not directly depend on GSDP but it might reflect a level of economic and social services provided by governments. Higher level of social and economic services provided by the governments is likely to be reflected in GSDP of the states. Non-tax revenue includes user charges on variety of social, fiscal, and economic services, repayment of past loan etc. As level of these services increases, GSDP should also increase and simultaneously government revenue from these services should also grow accordingly. Thus, the non-tax revenue should also grow as GSDP grows. Therefore, both the tax and non-tax revenue should increase as GSDP increases.

Moreover, the present study considers combined own tax and non-tax revenue of the states as "income" of the state governments which is the function of GSDP. Overall economic activity, including that of government's economic activity, is being reflected in GSDP. Form this total economic activity; the governments derive their "income" either in the form of tax revenue or non-tax revenue. We can compare the economic activities across the states as well as their "income" in order to determine the justifiable level of income of each state. The question of whether to raise a particular level of revenue from the tax or non-tax revenue will be left to the states. This implies the autonomy will be given to the states in deciding its mode of generating revenue. Asking state to follow the prescribed path of raising revenue or follow the pattern of revenue generation of other states may interfere with their autonomy. Therefore, in the present study, the justifiable level of total own revenue or income of the states has been measured based on the comparison of GSDP among the states.

Total expenditure need of the states includes both the revenue as well as capital expenditure. The estimated total expenditure in the previous chapter reflects the need of a particular state on both revenue and capital account. The present study is considering total expenditure for the design of the federal fiscal transfers. This will give extra weightage to those states that have relatively higher expenditure needs on both account and thereby give higher transfers to them. Further, since the study has pooled all transfers for the analysis, the total transfer includes both transfers for the revenue as well as for the capital expenditure. Therefore, it will be appropriate to use the total expenditure for determination of the total transfers of the states.

The present study is considering the difference between estimated own revenue and total expenditure for the design of federal fiscal transfers. The difference between estimated own revenue capacity or income and the total expenditure need is called the inherent fiscal gap. The present study is using the inherent fiscal gap for determination of the state-specific shares in total federal fiscal transfers.

6.7.3 Formula for state-specific share:

The formula proposed by the present study is different from the formula used by the FC and the Gadgil formula. The proposed formula is based on states' inherent fiscal gap measured using the method discussed earlier.

The inherent fiscal gap is out of control of the state governments and therefore, need to be filled by means of the federal fiscal transfers in order to maintain the standard level of services across the states. Filling this gap will ensure standard level of public services across the states associated with benchmark or norm at comparable level of taxation. In other words, the transfers will ensure that the states don't have to over exploit their available revenue base above the benchmarked level in order to ensure the standard of public services.

Ideally, the entire inherent gap should be filled by the federal fiscal transfers. However, the central government does not allocate sufficient funds so that the entire fiscal gap of all state can be full filled. Therefore, total transfers from the central government fall short of the total inherent gap. As a result, there arises a need for deriving the state-specific share in the total transfers.

The shares based on the inherent fiscal gap can be derived by a proportionate method i.e. measuring the total inherent fiscal gap of all states taken together and then shares of states

would be proportion of a particular state's inherent fiscal gap in the total. The formula for proportionate share is as follows

$$S_{it} = \frac{IFG_{it}}{\sum_{i=1}^{n} IFG_{t}} \quad \text{...(6.1)}$$

Where,

S_{it} is share of i^{th} state in t^{th} period

IFG_{it} is estimated inherent fiscal gap of i^{th} state in t^{th} period

and n is number of state (28) and t is equal to 2007-08 to 2011-12

Using this formula, the state will receive the transfer based on its share in total inherent fiscal gap. If a particular state has relatively higher inherent fiscal gap as compared to other states then it will receive relatively higher level of transfers.

However, this method has a major issue. If a higher income state and a lower income state have same level of fiscal gap, this method treats these gaps equally and ignores the differences in the initial infrastructural and institutional arrangement. This is because fiscal gap represents the difference between revenue and expenditure and the same difference can be achieved with varying levels of revenue and expenditure. Therefore, it is possible that higher income states spending at high level have similar level of fiscal gap that of low income states spending at lower level. Therefore, the fiscal gap of high income states and low income states should be treated differently with high weight is attached to the latter as compared to the former while designing transfers. This will allows us to take into account the differences in initial levels of infrastructural and institutional arrangements across the states.

The same inherent fiscal gap of low income states and high income states has different reflection of the fiscal health of them. The inherent fiscal gap of the low income states is more severe than that of high income states. This is because lower income states have that level of fiscal gap along with the lower level of infrastructural and institutional factors while the high income states have the same level of fiscal gap but with higher level of these factors. Therefore, if two states have similar level of inherent fiscal gap then the lower income state among them should receive the higher level of transfers. The use of income distance criteria ensures the same.

Moreover, this approach ensures the equity objective of the federal fiscal transfers at the same time does not undermine the fiscal balance aspect. The present federal fiscal transfer in India has put tremendous importance on the equity aspect leading to likely situation where high income states may find it difficult to ensure the standard of services because most of them are also most populated states. In other words, high income states may find it difficult to finance all its legitimate expenditure through its own resources, also called fiscal balance[28] of state. Consideration of a standalone equity indicator like "income distance" directs more resources towards backward states. The equity consideration in this manner compares states on the basis of income and completely overlooks whether or not these states are strong enough in terms of fiscal balance. Therefore, there is need to take into account both the equity and fiscal balance aspects of the states. Use of income distance criteria long with inherent fiscal gap allows us to tackle this issue. This approach will allow us to ensure equity objective, while ensuring that the fiscal balance of the states will not be overlooked. Thus, the present study integrates equity both in terms of fiscal balance as well as income of the states.

Following formula is used for the derivation of state-specific shares.

$$S_{it} = \frac{IFG_{it} W_i}{\sum_{i=1}^{n} IFG_{it} W_i} \qquad ...(6.2)$$

W_i is weight of ith state

W_i is ith state's distance of per capita GSDP from highest per capita GSDP (excluding Goa) for the period 2007-08 to 2011-12. It is measured as follows

$$W_i = \frac{\bar{y}_T - y_i}{\bar{y}_T} + 1 \qquad ...(6.3)$$

Where,

$\bar{y}_T$ is per capita GSDP of top state (excluding Goa), average for the period 2007-08 to 2011-12

y_i is per capita GSDP of ith state, average for the period 2007-08 to 2011-12

W_i gives more weight to those states that are relatively away from the top per capita GSDP state (Sikkim). In other words, if a state has lower per capita income as compared to other

[28] It can be seen as an ability of state in financing all its expenditure out of its own revenue. The lack of such ability results in fiscal gap of the state.

states then the weight will be higher and therefore, it will receive relative higher amount as compared to others. In this manner, if two states have similar inherent fiscal gap but have different level of per capita income then the lower income state gets higher amount of transfers than other state. Thus, states those have lower per capita GSDP would get additional resources based on their relative distance from the benchmarked per capita income; in this case, the top per capita GSDP state.

In extreme case, where all states are closer to the benchmarked per capita income, i.e. the infrastructural differences are minimal then all states will receive transfers based only on their inherent fiscal gap. In this situation, the design of fiscal transfers will be more equitable. However, if states differ in their initial infrastructure and not able to provide the standard level of public service with maximum efficiency then the income distance criteria becomes as important as the inherent fiscal gap.

Sikkim is the top GSDP state and for this state, (W_i) is equal to one. For this state, the inherent fiscal gap will be taken as it is. Since its inherent fiscal gap is positive, this state will receive positive shares based only on its relative position in total fiscal gap of all states. On the other hand, all other states' positions in the total fiscal gap of all states are improved based on their relative income.

6.7.4 State-specific shares derived from the proposed mechanism:

The state-specific shares derived from the proposed mechanism are depicted in Table 6.1. Table 6.1 also shows the actual shares received by each state from the centre when we consider total transfers. The actual share of a state in total transfers from the centre includes Finance Commission Transfers, Planning Commission Transfers based on Gadgil Formula, and Transfers from various ministries in the form of schemes. The present study has pooled all these transfers from different channels and derived share of each states as a ratio of total transfers a state receives to sum of total transfers of all states taken together.

Table 6.1 report yearly shares as well as average share of all states for the period 2007-08 to 2011-12; both the proposed shares as well as the actual shares received by the states. In case of the proposed shares, yearly shares are derived by considering the yearly inherent fiscal gap of the states in the sharing formula mentioned above (6.2). While for average shares, the

average of the inherent fiscal gap of the states for five years (2007-08 to 2011-12) has been considered.

Share of a particular state in the actual total transfers is not constant for period under consideration. In case of the actual transfers, considering the fixed shares derived by the two formula based transfers, namely FC and PC, the year wise variation in the actual shares may be a result of the discretionary transfers from various central ministries. The share of a particular state derived from the proposed mechanism is also not constant for all the years in the study period. This is because the inherent fiscal gap of states has changed over the time depending upon changes in inherent factors affecting both the expenditure need and revenue capacity of the states. This has resulted in changes in the relative position of the states in total inherent fiscal gap leading to changes in the shares derived from the model.

As it can be seen from the Table 6.1, there are wide differences between the actual shares of states received from the centre and the shares derived from the proposed mechanism. As compared to the total actual transfers received by the states form the centre, the model shares are lower in case of some of low income states while it is higher for some of high income states. As pointed out earlier, the transfers from the centre constitutes both formula based unconditional transfers as well as discretionary conditional transfers. Under both of these types of transfers, the equity consideration has gain more importance over the time. Higher actual total transfers received by the low income states can be considered as an indication of overemphasis on the equity aspect of the transfers. Overemphasise on equity may undermine state governments' efforts in the collection of revenue and the expenditure efficiency. The present study's approach differs to the great extent from the existing approach in deriving shares.

As pointed out earlier, the present study has considered both the inherent fiscal gap as well as income distance while deriving the state-specific shares. The difference between the shares derived by the proposed model and the actual transfers lies primarily in the consideration of these two factors. A particular state, although, is considered to be high income state but may not be strong enough in terms of its ability to finance all of its legitimate expenditure from its legitimate revenue capacity. In this case, the inherent fiscal gap of that state would be higher. If a particular state has higher inherent fiscal gap then it qualifies for higher transfers. Higher income states have received the higher share in the present model because of this aspect.

Table 6:2 State-wise share derived from the model and derived from total transfers from the centre

	Yearly Shares in Total Transfers by the Centre						Yearly Shares in Total Transfers derived from the model					
States	2008	2009	2010	2011	2012	AVG	2008	2009	2010	2011	2012	AVG
Andhra Pr	7.03	6.81	6.87	6.56	6.47	6.71	7.79	7.18	6.96	6.12	5.77	6.64
Arunachal P	0.86	1.01	1.14	1.22	1.09	1.08	0.69	0.73	0.77	0.85	0.89	0.80
Assam	3.78	4.01	3.84	3.84	3.83	3.86	3.02	3.14	3.20	3.38	3.47	3.27
Bihar	8.69	8.82	8.15	8.79	8.56	8.60	7.78	8.03	8.44	9.00	9.28	8.61
Chhattisgar	2.40	2.36	2.53	2.58	2.51	2.49	1.62	1.63	2.06	2.18	2.43	2.04
Goa	0.21	0.21	0.19	0.27	0.21	0.22	0.33	0.23	0.20	0.17	0.18	0.21
Gujarat	3.54	3.44	3.00	2.90	3.04	3.15	3.44	3.73	3.72	3.67	3.83	3.70
Haryana	1.17	1.22	1.59	1.40	1.23	1.32	1.56	1.55	1.48	1.62	1.71	1.59
Himachal Pr	2.06	1.82	1.90	1.93	1.93	1.92	1.50	1.45	1.41	1.42	1.38	1.43
J & K	4.08	4.12	4.81	4.61	4.08	4.34	3.35	3.57	3.76	4.09	4.29	3.87
Jharkhand	2.49	3.03	3.57	2.87	2.81	2.95	2.88	3.17	3.28	3.34	3.47	3.26
Karnataka	4.54	4.29	4.82	4.28	4.35	4.44	4.85	4.73	4.95	4.56	4.60	4.72
Kerala	2.40	2.39	2.10	1.92	2.19	2.18	2.52	2.57	2.66	2.89	2.92	2.74
Madhya Pr	6.13	5.71	5.61	6.45	6.37	6.10	6.17	5.87	5.83	6.02	5.82	5.93
Maharashtr	5.81	6.68	6.16	5.91	5.77	6.04	5.84	6.03	5.83	5.09	4.62	5.40
Manipur	1.23	1.19	1.09	1.28	1.13	1.18	1.00	1.01	1.01	1.05	1.05	1.03
Meghalaya	0.74	0.76	0.86	0.88	0.81	0.82	0.54	0.60	0.67	0.77	0.84	0.70
Mizoram	0.70	0.82	0.86	0.81	0.83	0.81	0.56	0.59	0.62	0.67	0.70	0.64
Nagaland	1.06	1.05	1.08	1.20	1.14	1.11	1.10	0.96	0.83	0.74	0.64	0.83
Orissa	4.79	4.62	4.51	4.52	4.61	4.60	3.66	3.54	3.53	3.35	3.37	3.47
Punjab	1.57	1.30	1.41	1.42	1.36	1.41	2.08	2.00	1.92	1.90	1.82	1.93
Rajasthan	5.17	5.03	4.56	4.93	5.08	4.95	4.94	4.97	5.11	4.90	4.82	4.94
Sikkim	0.42	0.44	0.53	0.43	0.53	0.47	0.31	0.29	0.22	0.22	0.22	0.25
Tamil Nadu	5.61	5.38	4.52	4.64	4.53	4.86	5.59	5.43	4.87	4.30	4.15	4.77
Tripura	1.24	1.20	1.57	1.15	1.22	1.27	0.98	0.96	0.94	0.96	0.93	0.95
Uttarakhan	1.72	1.68	1.68	1.70	1.57	1.66	1.25	1.29	1.30	1.39	1.44	1.34
Uttar Pr	14.6	14.6	15.5	15.3	15.4	15.1	16.2	16.3	16.23	17.08	17.39	16.72
West Beng	5.99	6.02	5.56	6.20	7.35	6.32	8.49	8.41	8.16	8.27	7.98	8.23
Total	100	100	100	100	100	100	100	100	100	100	100	100

Source: Author's calculation

However, the proposed shares also takes into account the income distance factor (per capita GSDP distance) that is likely to indicate existing level of public and private infrastructure.

Because of this aspect, higher income states has received lower transfers than what they would have got if only inherent fiscal gap had considered. On the other hand, lower income states have received relatively higher transfers than that indicated by their inherent fiscal gap due to inclusion of the distance criteria.

Moreover, shares derived from the model have considered the potential or estimated revenue and expenditure of the states. States performing below the benchmark are required to improve their fiscal effort. If a particular low income state is performing below the benchmark in revenue collection, then while calculating inherent fiscal gap the study has considered that level of revenue which is corresponding to the benchmark. This has resulted in lower fiscal gap of that states and therefore, received lower shares. This is one of the main reasons of the lower share received by the low income states. Another reason of lower shares to these states is that of lower benchmarked or inherent expenditure need. The combined effect of lower benchmarked or inherent fiscal need and higher benchmarked revenue capacity has resulted in the lower inherent fiscal gap of these states and therefore lower shares.

Therefore, the shares derived from the model are justifiable from the point of view of both equity and fiscal balance. These shares in the total fiscal transfers from the centre can be used for the derivation of ceilings on the major budgetary aggregates.

The state-specific shares derived above are share in total transfers from the centre inclusive of both the conditional and unconditional or formula and discretionary based transfers. This is the overall transfer that the states should receive in order to ensure equitable and justifiable distribution of the federal fiscal transfers among them. Out of this total transfer, a certain amount can be earmarked for the provision of specific services in order to take into accounts spill-over effects and achievement of national objectives. However, how much conditional grants a state should receives for public services that have spill-over effect or of national importance is out of scope of the present study. As pointed out earlier, it depends on the extent of spill-over, willingness of states in provision of these services, and the fiscal capacity of the states. For the objective of the present study, the focus is on the overall transfers that each state should receive.

The state-wise total fiscal transfers using the shares derived from the model is presented in the second panel of Table 6.2. The table also shows the actual total transfers received by the states form the centre. The table shows yearly transfers using yearly shares derived from the

model presented in second panel of Table 6.1. As pointed put earlier, the state-wise and year-wise amount presented in the second panel of table is the total transfers that each state should receive in order to distribute available resources justifiably. The actual total transfer received by the states differs from the total transfers derived from the model on account of reasons pointed out earlier.

Table 6:3 State-wise total transfers by the centre and by the study (in Crores)

	Yearly Total Transfers by the Centre					Total Transfers by using Yearly Shares (Model)				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Andhra Pr	18284	19817	21699	25137	28576	20264	20895	22007	23457	25494
Arunachal Pr	2248	2948	3610	4677	4821	1786	2136	2430	3240	3950
Assam	9831	11655	12145	14702	16950	7852	9140	10100	12959	15357
Bihar	22598	25655	25767	33677	37818	20242	23380	26680	34455	41029
Chhattisgarh	6240	6867	7987	9879	11097	4200	4739	6510	8367	10722
Goa	542	599	607	1034	916	845	675	632	661	785
Gujarat	9195	10019	9480	11110	13430	8946	10850	11761	14051	16937
Haryana	3036	3559	5032	5352	5436	4057	4514	4685	6187	7551
Himachal Pr	5361	5309	5988	7373	8520	3907	4219	4462	5425	6121
J &K	10616	11991	15184	17658	18036	8720	10388	11892	15662	18954
Jharkhand	6463	8828	11266	11005	12427	7496	9233	10363	12774	15336
Karnataka	11807	12486	15243	16375	19243	12607	13757	15654	17471	20335
Kerala	6228	6963	6632	7338	9700	6543	7483	8412	11085	12914
Madhya Pr	15932	16620	17740	24715	28148	16041	17082	18417	23052	25715
Maharashtra	15107	19451	19451	22616	25510	15176	17557	18438	19483	20428
Manipur	3196	3449	3437	4903	4974	2607	2945	3200	4034	4631
Meghalaya	1923	2216	2728	3387	3589	1416	1759	2123	2938	3705
Mizoram	1832	2400	2729	3098	3665	1468	1726	1960	2573	3093
Nagaland	2745	3064	3413	4590	5050	2868	2790	2617	2845	2819
Orissa	12458	13439	14236	17303	20381	9509	10289	11153	12837	14903
Punjab	4084	3779	4464	5450	5995	5402	5808	6082	7264	8058
Rajasthan	13452	14637	14413	18876	22459	12845	14450	16134	18759	21311
Sikkim	1088	1281	1675	1631	2334	797	842	710	855	961
Tamil Nadu	14597	15646	14270	17754	20001	14530	15793	15402	16469	18338
Tripura	3212	3485	4968	4414	5405	2545	2806	2983	3671	4117
Uttarakhand	4484	4891	5295	6525	6940	3252	3743	4102	5327	6343
Uttar Pr	37897	42405	48942	58653	68111	42024	47511	51287	65405	76845
West Bengal	15568	17519	17584	23755	32477	22082	24467	25792	31678	35258
Total	260024	290976	315986	382986	442008	260024	290976	315986	382986	442008

Source: Author's calculations

Overall, considering the differences between the total transfers derived from the proposed model and the actual transfers by the centre, we can say that the actual federal fiscal transfers are not justifiable. The actual transfers do not reflect equity and fiscal balance aspect properly

and therefore cannot be used for determining the numerical ceilings on budgetary aggregates. Therefore, the present study is going to consider state-wise federal fiscal transfers derived from the proposed model. The next chapter focuses on the proposed design of numerical fiscal accountability targets using the federal fiscal transfers proposed by the present study.

CHAPTER 7 SETTING FISCAL ACCOUNTABILITY TARGETS FOR STATES

7.1 Introduction:

In the previous chapter, the study has derived the state-wise share in the total transfers from the central government. The total transfer derived in the present study can be viewed as an amount a state should receive in order to ensure inter-jurisdictional equity in terms of both the income and the fiscal balance. If a state receives higher transfers than the proposed, either in the form of conditional or unconditional transfers, then it gets that an extra amount at the cost of some other state. The central government may use its discretionary power and give more transfers to some states in the form of conditional grants. This may undermine the inter-jurisdictional equity. Therefore, determination of the total transfers that states should receive is important in order to avoid the central government's discretion. Once state-wise total transfer is determined, then some part of it can be transfer to the states in the form of conditional transfers in order to take care of the spill-over effect and national objectives. Remaining part will be, then, distributed as unconditional or general purpose transfers. Thus, the states will be entitled to a specific amount of resources from the centre, distributed either in the form of conditional or unconditional transfers. This type of transfer system will be more equitable from the point of view of fiscally disadvantageous and low income states. The state-specific transfers derived from the model discussed in the previous chapter can be, therefore, used further for the determination of state-specific fiscal accountability targets.

As pointed out earlier, the federal fiscal transfers augment state governments' revenue which is then used for undertaking different expenditure activities. The constitutional arrangement in India leaves states with more expenditure responsibilities than their revenue capacities. Therefore, the federal fiscal transfers to each state is justified since invariably all states happen to be in deficit. The federal fiscal transfers help in reducing the fiscal gap of the states arising due to such inevitable mismatch. Therefore, the design of federal fiscal transfers, justifiable level of revenue collection, and expenditure need have important implications on the intergovernmental fiscal relations in general and fiscal position of states in particular. The justifiable need of borrowing by the states depends on the justifiable level of expenditure need, justifiable level of revenue capacity, and justifiable share in the federal fiscal transfers.

If the federal fiscal transfers are sufficient enough to fill entire inherent or justifiable fiscal gap[29] then there is little need for borrowing.

The extent to which the federal fiscal transfers can reduce the fiscal gap and thereby reduce borrowing need of states depends on many factors. To start with, first, it primarily depends on how the fiscal gap is measured. If the fiscal gap is measured on the basis of setting certain benchmark on revenue collection and expenditure then the resulting fiscal gap can be justifiable. If the measurement of fiscal gap is based on the actual expenditure and actual revenue then it gives adverse incentive to the states. States may undermine their fiscal effort to show themselves in a fiscally distress situation in order to attract higher transfers from the centre. In this case neither the federal fiscal transfers nor the borrowing need is justifiable since it will be an outcome of fiscal profligacy.

Secondly, an extent of reduction in fiscal gap due to the transfers also depends on the design of transfers. The transfers are often designed in such a way that it either overlooks the equity consideration and thereby gives higher transfers to the richer states or it over-emphasis the equity consideration and completely overlook the fiscal balance aspect of states. In both of these situations, the transfers are not properly designed and therefore, the extent of reduction of the fiscal gap or borrowing need of the states becomes unjustifiable and misleading. In former case, poor states end up with more borrowing need or fiscal deficit and in latter case, rich states that also have higher expenditure need also end up with higher borrowing need.

Thirdly, the type of transfer, i.e. in the form of conditional or unconditional transfers, is likely to affect extent to which the fiscal gap of states will be reduced. Particularly, in case of conditional transfers, they are discretionary in nature and likely to be bias against low income states or fiscally disadvantageous states[30].

Thus, determination of the borrowing need of states heavily depends on the measurement of justifiable expenditure needs and revenue capacities of states as well as the design of federal fiscal transfers. The design of federal fiscal transfers has been discussed in the previous chapter. Therefore, the next section focuses on the need for determining justifiable revenue and expenditure for the determination of fiscal accountability targets.

[29] Fiscal gap includes both revenue as well as capital account.

[30] Since conditional transfers like maintenance transfers are based on the current capital stock. In this case rich states have advantage in attracting more transfers under maintenance due to higher capital stock in their jurisdictions.

7.2 Use of benchmarked revenue and expenditure of the states:

Borrowing need of states emanates from their inability to finance all legitimate expenditure out of their revenue receipts[31]. Therefore, for the determination of borrowing ceilings of the states it is important to assess the justifiable level of expenditure and revenue collection and thereby fiscal gap of each state. In this context, this section deals with the question of whether the actual or the benchmarked revenue and expenditure should be used for the derivation of state-specific ceiling on borrowing.

As previously mentioned, use of the actual revenue collection and expenditure of the states for the determination of ceiling on deficits has various issues. The states are likely to under exploit the available revenue base or over spend as compared to the other states leading to the fiscal profligacy. In this situation, if we consider the actual revenue and expenditure then the resulting fiscal gap (own revenue and total expenditure) of these states would be higher. The use of actual expenditure also affects those states that are spending lower than a desirable or standard level. In this case the actual fiscal gap of these states would be lower. In case of former where the actual fiscal gap is higher than justifiable, these states may demand higher shares in both transfers as well as borrowing. In this case, these fiscal profligacy states would attract higher shares in transfers and borrowing at the cost of those states that have lower fiscal gap than the justifiable. Therefore, the use of actual expenditure and revenue collection in determination of the borrowing ceiling is not appropriate.

Considering the adverse implication of use of the actual values of revenue and expenditure while determining the borrowing ceilings, the present study is going to use benchmarked[32] revenue and expenditure of the states. Use of benchmarked revenue and expenditure helps in overcoming the problems associated with the use of actual revenue and expenditure. Consideration of the benchmarked level of revenue and expenditure avoids rewarding fiscal profligacy of the states as well as it allows low spending states to spend at the level of benchmark.

The use of benchmarked revenue and expenditure along with the shares in fiscal transfers based on these benchmarks helps in determination of the justifiable level of fiscal deficit or borrowing need of each state. The resulting level of deficit after considering the benchmarked

[31] Revenue receipts include state's own revenue receipts and federal fiscal transfers.
[32] The benchmark is also called in the present study as justifiable or inherent or potential revenue and potential expenditure.

level of revenue and expenditure and justifiable share in federal fiscal transfers is inherent in nature. Therefore, the states have little control over it. The states should be allowed to borrow up to the inherent fiscal deficit[33] in order to ensure the standard level of public services in their jurisdiction.

Finally, borrowings of the state governments in a federal country depend on the availability of savings in the county. The availability of saving is mainly determined by the saving of the household sector in financial assets. There are mainly two agents that have claims on these savings namely, the private sector and the government sector. The share of government in the available saving would be the remaining savings after demand of private sector. Therefore, the availability of total saving to the government sector or state government is limited. In this situation, if some states claim higher shares on these available savings by running higher deficit then it will affect borrowing capacity of the other states. The use of actual revenue and expenditure leads to this possibility where fiscally imprudent states claim higher share in the available borrowing at the cost of other states. On the other hand, use of benchmarked revenue and expenditure avoids such possibility. Therefore, benchmarking the revenue and expenditure ensures both justifiable share of each state in total transfers as well as justifiable share in borrowing or available savings in the country.

In chapter 5, the study has derived benchmarked revenue and expenditure of each state in India. This benchmarked revenue and expenditure has been used for determining the federal fiscal transfers of each state. The study will use the same benchmarked revenue and expenditure for the determination of ceilings on budgetary aggregates of the states.

Fiscal deficit is determined on the basis of total expenditure and total revenue including the transfers. So far we have arrived at benchmarked own revenue receipts of the states, benchmarked revenue expenditure, benchmarked total expenditure, and justifiable fiscal transfers based on proposed model of the study. All these factors are required to determine ceilings on the major fiscal accountability targets like revenue deficit, fiscal deficit, and debt to GSDP ratio. In order to arrive at revenue deficit and fiscal deficit of the states, the study has adopted Reserve Bank of India's (RBI) methodology of measurement of these fiscal variables.

[33] Inherent fiscal deficit is the inherent fiscal gap plus transfers

The following section focuses on Reserve Bank of India's (RBI) methodology of measuring the revenue and fiscal deficit.

7.2.1 Measurement of deficit indicators:

RBI defines revenue deficit as the difference between the revenue receipts and the revenue expenditure.

$$Revenue\ Deficit = Revenue\ Receipts - Revenue\ Expenditure$$

Here, revenue receipts includes both own revenue of the states as well as total transfers received from the central government by the states. The total federal fiscal transfers from the centre include transfers from FC, PC, and various central ministries.

$$Revenue\ Deficit = (Own\ Revenue\ Receipts + Fiscal\ Transfers\ form\ the\ Centre) - Revenue\ Expenditure$$

Gross fiscal deficit is defined as follows

$$Gross\ Fiscal\ Deficit = Revenue\ Deficit - Capital\ Outlay + Loans\ and\ Advances\ by\ State\ Governments\ NET\ of\ Recovery$$

The present study has used the above mentioned definition of the gross fiscal deficit but with some accounting modification. However, the measurement of the gross fiscal deficit by this method is same as that of above mentioned formula. The method of measurement of revenue deficit and fiscal deficit used in the present study is as follows.

$$Gross\ Fiscal\ Deficit = Total\ Receipt - Total\ Expenditure$$

$$Total\ Receipt = Own\ Revenue\ Receipts + Non\_Debt\ Capital\ Receipts + Fiscal\ Transfers\ form\ the\ Centre$$

$$Non - Debt\ Capital\ Receipts = Recovery\ of\ Loans\ and\ Advances + Miscellaneous\ Capital\ Receipts$$

$$Total\ Expenditure = Revenue\ Expenditure + Capital\ Expenditure$$

$$Capital\ Expenditure =$$
$$Total\ Capital\ Outlay + Loans\ and\ Advances\ by\ State\ Governments$$

Thus, while measuring the revenue deficit, all transfers from the central government from the different channels are added to the revenue receipts of the states. Further, the revenue deficit or surplus is then combined with capital expenditure net of non-debt capital receipts gives the fiscal deficit.

Using these accounting definitions and revenue receipts, expenditure and transfers proposed by the model, borrowing need of each of state can be determined. Resulting borrowing need differs across the states and therefore, we get differential borrowing ceilings across the states.

Moreover, if states are allowed to borrow up to the level proposed by the study, then it is important to know that at what level debt of each state will be stabilised. In order to find out the stabilised level of debt, the debt sustainability equations need to be taken into account. The Twelfth Finance Commission (12FC) had discussed the debt sustainability equations in detailed. The commission in their report also proposed the differential fiscal deficit targets across the states based on the debt sustainability equation. Therefore, the present study first discusses methodology of differential fiscal deficit target proposed by the 12FC.

7.3 Differential fiscal accountability targets proposed by the Twelfth Finance Commission:

Before moving to the differential ceilings on budgetary aggregates proposed by the 12FC, the next section focuses on the debt sustainability equation discussed in the report of 12FC.

7.3.1 Debt sustainability equation[34]:

The 12 FC in their report recommended state-specific fiscal accountability target based on the fiscal and macroeconomic indicators. The commission had used debt sustainability condition to derive the state-specific fiscal deficit and debt-GSDP targets. The equation of debt sustainability condition is as follows.

Let D is outstanding debt, Y=GDP at market prices, g=nominal growth rate, i=effective rate of interest, P=primary deficit, I=interest payment, F=fiscal deficit, and I=interest payment.

[34] For more details of debt sustainability equation see Appendix A.

$b_t = D_t/Y_t$ and $p_t = P_t/Y_t$ are debt-GDP ratio and Primary deficit to GDP ratio.

The long run equilibrium value or stabilised level of debt to GDP ratio is given by

$b^* = p\ (1 + g)/(g - i)$ ...(7.1)

Similarly, long run value of fiscal deficit can be derived

$f^* = p.g/(g - i)$ ...(7.2)

Equations (7.1) and (7.2) imply that for given values of g and i and targeted level of p i.e. primary deficit to GDP ratio, long run sustainable values of debt to GDP ratio(b^*) and fiscal deficit to GDP ratio (f^*) are given by these two equation. The relationship between f^* and b^* is given by

$f^* = b^*\ g/(1 + g)$ ...(7.3)

Equation (7.3) implies that given g and with long run stabilised value of b^*, the long run stabilised value of f^* is given by (7.3). Thus, once the long run target for primary deficit to GDP ratio is set then, given values of g and i, the corresponding values of b^* and f^* can be derived by equations (7.1) and (7.2). The relationship between them is given in equation (7.3).

The above mentioned equations can be written in the form of interest payment to revenue ratio (IP_t/RR_t) or$(ip)^*$.

$f^* = (ip)^*\ r.g/i$ ...(7.4)

$b^* = (ip)^*\ r.(1 + g)/i$ ...(7.5)

Equations (7.4) and (7.5) are expressed in terms of interest payment to revenue receipts $(ip)^*$ while equations (7.1) and (7.2) are expressed in terms of primary deficit. However, debt sustainability conditions under these two set of equations are equivalent.

In the Indian context, the ratio of interest payment to revenue receipts $(ip)^*$ and the ratio of revenue receipts to GSDP differ across the states. This implies that the debt sustainability conditions for the states should differ from each other. Thus, debt sustainability conditions suggest that the stabilised level of both fiscal deficit as well as debt-GSDP ratio should very across the states.

7.3.2 State-specific deficit targets proposed by the 12FC:

Using equations (7.4) and (7.5), 12 FC had recommended method of determining differential fiscal deficit target for the states. First, the commission has assumed the fiscal deficit target for all states taken together at 3 per cent of GDP. Then derived interest payment to revenue receipt ratio for all states taken together in order to achieve overall 3 per cent fiscal deficit to GDP ratio of all states. Finally, keeping the required ratio of interest payment to revenue receipt that ensures 3 per cent fiscal deficit of all states taken together constant for each state, differential fiscal deficit target is derived. The differences in fiscal deficit with same interest payment to revenue receipt ratio occurs due to state wise differences in growth rate, revenue receipt to GSDP ratio, and interest rates.

Before going to the details of differential fiscal deficit targets, the next section discusses the rational given by 12FC to limit fiscal deficit of all states taken together at 3 per cent of GDP.

7.3.3 Rational for 3 per cent deficit target for all states considered together:

The 12FC argued that 3 per cent fiscal deficit target for all states considered together is justifiable on account of the availability of the savings of household sector in the financial assets in the country. Historically, the household savings in the financial assets has been 10 per cent of GDP. Considering the availability of saving in the form of current account deficit at acceptable level of 1.5 per cent of GDP, the total availability of savings turns out to be 11.5 per cent. There are three stake holders that claim on these savings are, combined government sector (the centre and the states), private corporate sector, and non-departmental public enterprises. Historically, out of 11.5 per cent available savings, private corporate sector absorbs 4 per cent, non-departmental public enterprises absorb 1.5 per cent, and 6 per cent of GDP is left for the combined government account.

Therefore, 12FC supported the 6 per cent fiscal deficit target for the combined account of the centre and the states. Since, the central government has already committed to reduce fiscal deficit to 3 per cent of GDP under the FRBM Act, 3 per cent target for all states taken together is justifiable on the account of availability of savings.

7.3.4 Methodology of deriving state-specific fiscal deficit and debt to GSDP target proposed by 12FC:

The 12FC had recommended targets for all the major fiscal indicators, namely revenue deficit, fiscal deficit and debt. In case of revenue deficit, the 12FC had recommended all states to eliminate revenue deficit by certain stipulated year. In case of fiscal deficit, the commission had recommended the states to reduce fiscal deficit to sustainable level. The commission argued that the sustainable level of fiscal deficit differs across the states. The commission recommended individual states to achieve its sustainable level of fiscal deficit, achievable in the form of interest payments to revenue ratio. The 12FC had derived a method of distributing overall 3 per cent of fiscal deficit among the states based on ratio of interest payment to revenue and consistent with sustainability condition.

The sustainability condition for the fiscal deficit and debt to GDP ratio in terms of interest payment to revenue receipts ratio and revenue receipts to GSDP ratio is

$$f^* = (ip)^* r.g/i$$

$$b^* = (ip)^* r.(1+g)/i$$

The above equation can be written in the form of target level of interest payment to revenue receipts ratio as

$$(ip)^* = f^*.i\ /r.g$$

The above equation implies that the required level of interest payment to revenue receipts ratio will be higher if the targeted fiscal deficit is higher and an average nominal interest rate is higher. On the contrary, the interest payment to revenue receipts ratio will be lower if revenue to GSDP ratio and nominal growth rate is higher.

The required primary deficit or interest payment to revenue ratio that will stabilise overall fiscal deficit at 3 per cent of GDP can be calculated using the sustainability equations. Moreover, as per the debt sustainability equation, as long as growth exceeds the interest rate, this level of primary deficit can be maintained in the stabilised phase. In this scenario, excess of growth over interest rate will absorb part of deficit being translated into debt GDP ratio. In a circumstance where growth rate is equal to the interest rate, according to sustainability equation, debt to GDP ratio will be outcome of accumulated primary deficit only and there will not be any effect of nominal interest rate and growth on debt. On the other hand, if

growth rate is less than that of interest rate then debt to GDP ratio will increase due to both increases in primary deficit as well as growth-interest rate differential. This results in unsustainably high level of debt to GDP ratio (12FC).

Considering the sustainable fiscal deficit to GDP at 3 per cent, interest rate at 7 per cent, revenue receipt to GDP ratio at 13 per cent, the target level of interest payment to revenue receipts ratio for all states taken together will be 13.5 per cent. In other words, if interest payment to revenue receipt ratio of all states will be achieved at 13.5 per cent then the fiscal deficit of all states taken together is going to stabilise at 3 per cent of GDP.

Moreover, there will be different growth rates and interest rates that that can be assumed while deriving the interest payment to revenue receipts ratio consistent with sustainability condition. The 12FC had assumed 15 per cent of interest payment to revenue receipts ratio, achievable by 2009-10, for determining this ratio for individual state. The commission had proposed decomposition of all states interest payment to revenue receipt ratio into individual state ratio.

First it assumes all states are required to achieve same interest payment to revenue receipts which is same as that of all state interest payment to revenue receipts.

For an individual state j, the sustainable debt to GDP ratio is given by

The stabilised level of debt to GDP ratio is given by

$$b^*_j = b^*_a \left[\left(\frac{i_a}{i_j}\right)\left(\frac{r_j}{r_a}\right)\right][(1+g_j)/(1+g_a)] \quad ...(7.6)$$

Similarly, stabilised level of fiscal deficit is given by

$$f_j^* = f_a^* [i_j r_a g_a / i_a r_j g_i] \quad ...(7.7)$$

Where subscript j denotes the all state required target.

The sustainability conditions in above two equations implies that if every state attains the all state required IP-RR ratio, then the corresponding stabilised level of fiscal deficit and debt for individual state, expressed as proportion of GSDP, is given in these equation. Since all states are going to achieve required IP-RR ratio required to stabilise fiscal deficit at 3 per cent of GDP, the individual target determined form above equation also ensure the targeted stabilised level of fiscal deficit and debt at the aggregate level of all states. In other words, the required

IP-RR ratio of all states if attended by each individual state then it will lead to the required IP-RR ratio that will stabilise the fiscal deficit and debt level at targeted and sustainable level of all states.

The required IP-RR ratio to stabilise over fiscal deficit of all states at desirable level can be considered as the IP-RR ratio of the 'average' state with corresponding fiscal deficit. From above equation, if a particular state has higher interest rate, lower revenue to GSDP ratio, and lower growth rate of GSDP then that sustainable level of fiscal deficit to GSDP ratio and debt to GSDP ratio of that state would be lower than that of average state. The states with higher level of initial debt and IP-RR ratio have to make higher adjustment than others.

7.4 State-specific fiscal accountability targets proposed by the present study:

The 12FC had recommended state-specific fiscal deficit and debt target that is consistent with overall 3 per cent target for all states put together. In other words, if all states achieve the IP-RR ratio that is consistent with the required IP-RR ratio, then it will stabilise the overall fiscal deficit to GDP ratio of all states at 3 per cent. The reason to limit overall fiscal deficit target of all states at 3 per cent of GDP is the consideration of available savings in the country.

The present study's approach differs from that of 12FC. The present study keeps the overall target of 3 per cent fiscal deficit to GDP ratio for all states taken together. This will reduce the possibility of putting upward pressure on interest rate. Interest rate will rise whenever there is higher demand for savings more than its supply. Therefore, the combined fiscal deficit of all states should be less than or equal to 3 per cent of GDP in order to avoid macroeconomic instability emanating from fiscal activities. The study further proposes a method to decompose the overall 3 per cent target into targets for different states.

The present study proposes that the fiscal deficit target for an individual state should take into account the inherent fiscal deficit of the states. The present study argues that this overall 3 per cent cap should be distributed among the states based on their inherent fiscal deficit[35]. The proposed distribution of overall fiscal deficit or available savings in the economy will ensure that the funds will be directed towards the states which are in more need than others. Since

[35] Inherent fiscal deficit of a state is arrived at by adding total transfers in the inherent fiscal gap of a state.

inherent fiscal deficit differs across the states, the targets will also differ between them. The present uniform numerical ceiling ignores this inherent aspect of fiscal deficit.

Moreover, the present numerical targets are in terms of per cent of GSDP. Therefore, high income states claim higher share in overall fiscal deficit or available savings. If a lower GSDP state has higher inherent fiscal deficit then such uniform ceiling may result in lower level of public services in these states. In the proposed design, a state will have higher share in overall fiscal deficit if its inherent fiscal deficit is higher. Unlike, uniform fiscal deficit target of 3 per cent where high income states gets higher shares in overall fiscal deficit, the proposed method has considered the inherent fiscal deficit for decomposition of overall 3 per cent of fiscal deficit among the states and therefore more justifiable.

Further, the inherent fiscal deficit includes both revenue account deficit and capital account deficit of the states. As pointed out earlier, 12FC's recommendation of achieving zero revenue deficit may undermine provision and maintenance of public services in low income states. States may face high inherent revenue deficit due to higher expenditure responsibility than their revenue. These states, in this case, should be allowed to borrow to finance expenditure on revenue account. However, this argument is in contrast to 'Golden Rule' argument where it is argued that all revenue expenditure should be financed through current revenue while capital expenditure should be financed by borrowing.

The Golden Rule in this form ensures the intergenerational equity in capital expenditure in the sense that as future generation gets benefits form capital expenditure they should contribute to the cost while revenue expenditure benefits only to the present generation and therefore cost on revenue account should not be shared. Financing capital expenditure by borrowing ensures cost sharing with future generation in the form of future payment of interest. However, most of the expenditure on revenue account like health and education helps in improving human capital. The investment in human capital of the present generation not only benefits present generation but also benefits future generations. The future generations' human capital largely depends on the present generation's level and quality of human capital. Therefore, financing revenue expenditure by borrowing in case where current revenue falls short of total revenue expenditure is justifiable. It will also help in ensuring sufficient funds for the maintenance of existing capital assets. Therefore, justifiable level of revenue deficit should be allowed to finance by borrowing.

The next section discusses the inherent revenue deficit and inherent fiscal deficit derived from the proposed model.

7.5 Inherent revenue deficit and inherent fiscal deficit of the states:

Using the inherent revenue gap and shares in overall transfers derived from the model, the study has derived revenue deficit for each state[36]. State-wise inherent revenue deficit is depicted in Table 7.1. Positive amount represent revenue deficit while negative represents surplus on revenue account. The inherent revenue deficit is a difference between the potential revenue expenditure and potential own revenue including proposed transfers. In order to achieve this level of revenue deficit, the states has to perform up to the benchmarked i.e. they need to achieve the average elasticity in revenue collection and revenue expenditure with respect to inherent factors.

As it can be noted form the Table 7.1, there are wide fluctuations in the inherent revenue deficits of the states over the period under consideration. The reason behind it is that the 'relative' inherent fiscal gap is taken into account for the determination of overall transfers. Since a state's position in total inherent fiscal gap of all states taken together differs over the period of time, the share of transfers based on it also differ over the period of time. The fluctuations in transfers resulted in fluctuations in the inherent revenue deficit over the period of time. Moreover, the inherent revenue gap of states has reported increasing trend because of increase in the inherent factors influencing the inherent expenditure need and revenue capacity. Therefore, wide fluctuations in the revenue deficit over the period of time are mainly due to fluctuations in the transfers.

Table 7.2 represents the inherent revenue deficit of the states as a percent of GSDP. In the table, negative figures represents surplus and positive figures represents deficit on revenue account. As can be noted from the table, the inherent revenue surplus/deficit as a per cent of GSDP differs from -7 to +8 per cent on an average for the period under consideration. The lower per capita income states like, Bihar, Uttar Pradesh, Madhya Pradesh, Manipur, and Jharkhand have surplus of more than one per cent on their revenue account.

[36] As pointed out earlier, all transfers from the central government to the states are included on revenue account and revenue deficit is derived. Gross Fiscal Deficit is then revenue deficit or surplus plus capital outlay plus Net Lending (loans and advances by states governments net of recovery).

Table 7:1 Estimated revenue deficit of the states derived from the proposed model (Rupee in Crores)

Estimated revenue deficit derived from the model (Rupee in Crores)					
States	2008	2009	2010	2011	2012
Andhra Pr	-1581	-1349	472	-2719	-2564
Arunachal Pr	-176	-87	121	-27	94
Assam	-3	341	1138	367	652
Bihar	-3792	-3751	-2441	-5547	-6088
Chhattisgarh	-1104	-1067	-297	-879	-577
Goa	-12	-220	-242	-390	-317
Gujarat	-1257	-318	653	-729	148
Haryana	243	456	716	760	1488
Himachal Pr	1118	1358	1859	1660	1982
J& K	-1802	-1561	-733	-1784	-1584
Jharkhand	-1492	-1226	-599	-1795	-1772
Karnataka	-4024	-3949	-2489	-4957	-4736
Kerala	1506	2240	3574	3796	4759
Madhya Pr	-4919	-5144	-4434	-6668	-7274
Maharashtra	-1332	19	1381	-2617	-3615
Manipur	-599	-567	-395	-727	-750
Meghalaya	76	181	417	333	492
Mizoram	199	300	507	419	546
Nagaland	314	346	480	212	196
Orissa	-196	39	914	-299	-28
Punjab	2524	2885	3577	3265	3652
Rajasthan	-262	110	1385	-483	-442
Sikkim	363	410	323	298	368
Tamil Nadu	-141	382	795	-1813	-1660
Tripura	-139	-61	152	-101	-60
Uttarakhand	448	731	1211	1151	1582
Uttar Pr	-8922	-8651	-6301	-11924	-12472
West Bengal	6201	7518	9935	8423	9443

Source: Author's own calculations

Note that the revenue deficit is derived from the model that considers shares in total transfers derived by considering relative positions of the states in terms of fiscal gap and the income distance, and revenue gap of each state. The inherent revenue deficit is, therefore, inversely proportional to shares in the transfers which in turn directly proportional to the relative fiscal gap and income distance. The transfers plays important role in determining the level of

inherent revenue deficit. Although a state has lower fiscal gap it will receive higher share on the basis of income distance criteria if it has relatively lower income than other states. This will lead to lower revenue deficit as well as fiscal deficit of that state. Moreover, since transfers derived from the proposed model depend on the fiscal gap and not on revenue gap, it further adds to the variability in the inherent revenue deficits of the states. Therefore, states will receive higher transfers if they have higher fiscal gap (which also includes revenue gap) and relatively lower income. If these states have relatively lower revenue gap in this case, then it will result in relatively higher revenue surplus that can be used to finance capital expenditure (Table 7.2).

Table 7:2 Estimated revenue deficit of the states as per cent of GSDP derived from the model (in per cent)

Estimated Revenue Deficit as per cent of GSDP					
States	2008	2009	2010	2011	2012
Andhra Pr	-0.43	-0.32	0.10	-0.47	-0.39
Arunachal Pr	-3.66	-1.52	1.62	-0.30	0.89
Assam	0.00	0.42	1.19	0.33	0.52
Bihar	-3.34	-2.64	-1.50	-2.72	-2.46
Chhattisgarh	-1.38	-1.10	-0.30	-0.74	-0.43
Goa	-0.06	-0.86	-0.83	-1.16	-0.88
Gujarat	-0.38	-0.09	0.15	-0.14	0.02
Haryana	0.16	0.25	0.32	0.29	0.49
Himachal Pr	3.29	3.27	3.86	2.89	3.05
J&K	-4.86	-3.69	-1.52	-3.07	-2.41
Jharkhand	-1.78	-1.40	-0.60	-1.41	-1.23
Karnataka	-1.49	-1.27	-0.74	-1.21	-1.03
Kerala	0.86	1.10	1.54	1.44	1.55
Madhya Pr	-3.05	-2.61	-1.94	-2.53	-2.33
Maharashtra	-0.19	0.00	0.16	-0.25	-0.30
Manipur	-8.83	-7.66	-4.78	-7.96	-7.14
Meghalaya	0.78	1.56	3.28	2.28	3.00
Mizoram	5.21	6.55	9.65	6.56	7.59
Nagaland	3.88	3.66	4.56	1.80	1.48
Orissa	-0.15	0.03	0.56	-0.15	-0.01
Punjab	1.66	1.66	1.81	1.44	1.42
Rajasthan	-0.13	0.05	0.52	-0.14	-0.11
Sikkim	14.48	12.70	5.27	4.02	4.28
Tamil Nadu	-0.04	0.10	0.17	-0.31	-0.25
Tripura	-1.18	-0.45	0.99	-0.57	-0.29
Uttarakhand	0.98	1.31	1.71	1.37	1.62
Uttar Pr	-2.33	-1.95	-1.20	-1.99	-1.84
West Bengal	2.07	2.20	2.49	1.83	1.75

Source: Author's own calculations

Relatively higher income states like Karnataka, Goa, Andhra Pradesh, and Maharashtra have surplus on revenue account (Table 7.2). This aspect is explained by the fiscal balance of these states. Although these states have relatively higher income, due to their relatively higher expenditure need, particularly on capital account, these states have received relatively higher share in the transfers. Therefore, these states have revenue surplus while other lower income states have revenue deficit.

Table 7:3 Actual revenue deficits of the states as percentage of GSDP (in per cent)

Actual revenue Deficit					
States	2008	2009	2010	2011	2012
Andhra Pr	-0.04	-0.24	-0.26	-0.42	-0.47
Arunachal Pr	-15.45	-17.30	-7.98	-18.62	-10.18
Assam	-3.63	-4.73	1.40	-0.05	-0.74
Bihar	-4.09	-3.14	-1.81	-3.09	-1.95
Chhattisgarh	-3.79	-1.93	-0.89	-2.82	-2.44
Goa	-0.85	-0.41	0.44	-1.96	-0.83
Gujarat	-0.65	0.02	1.62	0.97	-0.54
Haryana	-1.47	1.14	1.91	1.05	0.48
Himachal Pr	-2.50	0.32	1.67	0.93	-0.99
J&K	-5.97	-7.95	-9.20	-6.49	-3.20
Jharkhand	1.77	-0.72	-2.60	0.11	-0.99
Karnataka	-1.40	-0.53	-0.48	-1.02	-1.02
Kerala	2.16	1.83	2.17	1.39	2.61
Madhya Pr	-3.15	-2.06	-2.41	-2.60	-3.18
Maharashtra	-2.16	-0.74	0.94	0.06	0.19
Manipur	-17.91	-16.89	-10.40	-14.80	-6.17
Meghalaya	-1.92	-1.09	-2.08	-1.70	1.10
Mizoram	-3.46	-7.43	-4.96	0.40	-4.00
Nagaland	-5.24	-5.42	-4.44	-6.91	-5.38
Orissa	-3.28	-2.30	-0.70	-1.98	-2.61
Punjab	2.51	2.22	2.66	2.34	2.66
Rajasthan	-0.85	0.36	1.79	-0.31	-0.83
Sikkim	-14.00	-11.70	-8.42	-1.89	-5.14
Tamil Nadu	-1.30	-0.36	0.74	0.47	-0.21
Tripura	-7.66	-6.98	-9.13	-3.17	-7.95
Uttarakhand	-1.39	-0.43	1.66	0.02	-0.73
Uttar Pr	-0.90	-0.42	-1.35	-0.58	-1.03
West Bengal	2.72	4.30	5.41	3.75	2.71

Source: State Finances: A Study of Budgets, RBI, India.

Table 7.3 depicts the actual revenue deficit of the states as per cent of GSDP. Most of the states are in revenue surplus during the period under consideration. Relatively high income states like Punjab, Kerala, Haryana, and Gujarat have actual revenue account in deficit while

most of the lower income states are in surplus. This indicates lower level of public services in low income states as compared to high income states considering their lower level of expenditure.

Further, there are wide differences between revenue deficit derived from the model and the actual. The model followed the benchmarked method in arriving at potential revenue capacity and expenditure need and transfers based on benchmarked total expenditure need and revenue capacity. While actual revenue deficit is based on the actual revenue capacity and expenditure need which may, in some cases, result of fiscal profligacy or as a result of lower public expenditure or more exploitation of available revenue base. For example, Arunachal Pradesh has reported actual revenue surplus of 10 per cent of GSDP in 2012 (Table 7.3). However, according to the proposed model if it follows the benchmark expenditure and revenue collection and is entitled to the total transfers derived from the proposed model then it should have revenue deficit close to one per cent of GSDP.

Table 7.4 depicts the estimated fiscal deficit of the states derived from the proposed model of the present study. Unlike the estimated revenue deficit, the fiscal deficit of the states is fairly stable over the period. The main reason behind this is that the shares in the total transfers are derived on the basis of inherent fiscal gap. The method of 'shares' implies that if availability of total transfers are not sufficient to fill entire inherent fiscal gap of all states then all states will be in deficit. In other words, in this case, shares of the states in total fiscal deficit are equivalent to the shares in the total transfers. Therefore, it is not possible that some states are in fiscal surplus while others are in fiscal deficit in a given year.

As it can be seen from the Table 7.4, the inherent fiscal deficit has been increasing over the period under consideration for almost all states. The reasons can be attributed to the increase in inherent expenditure factors more than that of increase in inherent revenue capacity factors and inadequate increase in total transfers from the centre.

Table 7:4 Estimated fiscal deficit of the states derived from the proposed model (Rupee in Crores)

Estimated Fiscal Deficit					
States	2008	2009	2010	2011	2012
Andhra Pr	10818	11662	14173	11644	12576
Arunachal Pr	852	1069	1417	1428	1730
Assam	1947	2447	3410	2818	3301
Bihar	2810	3667	5886	3825	4460
Chhattisgarh	1431	1715	2845	2576	3272
Goa	902	742	768	672	794
Gujarat	6712	8441	10303	9942	11923
Haryana	4119	4727	5434	5977	7264
Himachal Pr	2752	3086	3689	3596	4036
J&K	2863	3629	5039	4634	5557
Jharkhand	1977	2619	3673	2974	3531
Karnataka	6617	7552	9930	8519	9851
Kerala	4480	5323	6778	7134	8267
Madhya Pr	4092	4696	6358	5174	5706
Maharashtra	13016	15573	18273	15825	16516
Manipur	682	829	1127	931	1057
Meghalaya	518	682	985	977	1222
Mizoram	623	772	1032	1003	1196
Nagaland	1316	1345	1476	1204	1185
Orissa	3148	3622	4758	3832	4408
Punjab	3887	4336	5127	4921	5430
Rajasthan	4410	5268	7096	5825	6559
Sikkim	850	926	863	869	974
Tamil Nadu	9628	10880	12045	10245	11345
Tripura	909	1062	1356	1189	1323
Uttarakhand	2229	2665	3308	3432	4065
Uttar Pr	8796	10853	15189	11758	13625
West Bengal	8172	9584	12082	10663	11769

Source: Author's own calculations

Table 7.5 depicts the estimated and actual fiscal deficit as per cent of GSDP of the states. The actual deficit of most of the states was below 3 per cent of GSDP during the period 2007-08 to 2011-12. In case of special category states, almost all the states have reported fiscal deficit more than 3 per cent of GSDP. On the other hand, most of the general category states have reported fiscal deficit below 3 per cent of GSDP. This aspect can be attributed to the Fiscal Responsibility Legislation adopted by the states wherein they have committed to reduce fiscal deficit to 3 per cent of GSDP.

Table 7:5 Estimated and actual fiscal deficit of the states as per cent of GSDP (in per cent)

	Estimated Fiscal Deficit as per cent of GSDP					Actual Fiscal Deficit				
State	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Andhra Pr	2.97	2.73	2.97	1.99	1.90	2.41	2.91	2.94	2.02	2.32
Arunachal Pr	17.71	18.79	18.95	15.85	16.29	-0.32	5.81	6.70	-0.10	9.29
Assam	2.74	3.02	3.55	2.50	2.62	-1.11	-1.74	4.21	1.77	1.31
Bihar	2.47	2.58	3.61	1.87	1.80	1.50	1.76	3.24	1.94	2.39
Chhattisgarh	1.78	1.77	2.86	2.16	2.46	0.16	1.06	1.77	-0.34	0.60
Goa	4.61	2.92	2.64	2.00	2.21	2.76	3.20	4.25	1.68	2.44
Gujarat	2.04	2.29	2.39	1.91	2.01	1.45	2.84	3.51	2.89	1.85
Haryana	2.72	2.59	2.43	2.29	2.41	0.83	3.59	4.51	2.79	2.37
Himachal Pr	8.10	7.44	7.66	6.26	6.21	1.63	5.49	5.78	3.19	2.51
J&K	7.72	8.58	10.41	7.98	8.45	7.03	5.50	4.60	4.08	5.62
Jharkhand	2.35	2.98	3.65	2.34	2.45	7.41	4.27	1.77	3.80	1.34
Karnataka	2.44	2.43	2.94	2.07	2.15	1.97	2.81	3.22	2.60	2.68
Kerala	2.56	2.63	2.92	2.70	2.68	3.48	3.13	3.39	2.93	4.16
Madhya Pr	2.53	2.38	2.79	1.96	1.83	1.72	2.25	2.72	2.00	1.85
Maharashtra	1.90	2.07	2.14	1.53	1.38	-0.41	1.86	3.06	1.82	1.66
Manipur	10.05	11.21	13.65	10.19	10.06	-1.50	2.94	8.88	6.22	9.97
Meghalaya	5.33	5.87	7.75	6.70	7.45	2.21	3.75	1.78	2.34	6.49
Mizoram	16.32	16.86	19.63	15.69	16.62	10.24	2.04	5.92	10.10	2.95
Nagaland	16.30	14.25	14.02	10.24	8.97	4.93	3.61	4.95	2.66	4.08
Orissa	2.43	2.44	2.92	1.94	2.05	-1.02	0.23	1.39	0.33	-0.29
Punjab	2.55	2.49	2.60	2.18	2.12	3.02	3.84	3.12	3.16	3.31
Rajasthan	2.26	2.28	2.67	1.72	1.63	1.75	3.02	3.87	1.22	0.90
Sikkim	33.92	28.68	14.07	11.73	11.30	2.56	7.24	2.75	4.27	2.09
Tamil Nadu	2.74	2.71	2.51	1.75	1.71	1.05	2.13	2.46	2.85	2.60
Tripura	7.70	7.83	8.80	6.66	6.30	0.14	1.99	0.89	2.75	-1.23
Uttarakhand	4.86	4.76	4.68	4.09	4.16	3.80	3.29	3.94	2.19	1.80
Uttar Pr	2.30	2.44	2.90	1.96	2.01	3.60	4.61	3.57	2.87	2.27
West Bengal	2.73	2.80	3.03	2.31	2.19	3.81	3.97	6.26	4.24	3.29

Source: Author's own calculation and State Finances: A Study of Budgets, RBI, India.

However, the estimated fiscal deficit by the proposed model differs widely from the actual fiscal deficits of the states. The estimated fiscal deficit by the model suggests that if all states are asked to spend and collect revenue up to the benchmarks and if the transfers are not sufficient to fill entire fiscal gap then these states need to borrow up to the level of estimated fiscal deficit in order to ensure standard level of public services associated with the benchmarked level of spending. Restricting these states to 3 per cent fiscal deficit will undermine the provision of public services in these states. Particularly in case of special category states, where estimated fiscal deficit is very high as per cent of GSDP.

The comparison between the actual and estimated fiscal deficit is not straightforward. This is because one of the main variant of fiscal deficit, i.e. federal fiscal transfers, is very different in both the cases apart from the use of benchmarked revenue and expenditure need in the proposed model. Therefore, some of the lower income states have lower estimated fiscal deficit because they have received higher transfers. On the other hand, some of the high income states have lower estimated fiscal deficit because they have lower fiscal gap mainly due to their higher benchmarked revenue capacity. Allowing states to borrow up to the estimated fiscal deficit proposed by the present study will ensure the standard level of public services[37] in all states. However, in order to allow states to borrow up to the proposed level is justifiable only when they are expected to perform at the benchmark level and also transfers are determined as per the proposed design of the present study.

7.6 Feasibility of allowing states to borrow up to the level of inherent fiscal deficit:

However, whether it is possible to allow all states to borrow as per their estimated fiscal deficit depends on the availability of savings in the country. The total estimated or inherent fiscal deficit of all states taken together should be within the limits of the availability of savings for the government sector. If total inherent fiscal deficit of all states crosses the available saving then it will crowd out the private investment by putting upward pressure on the interest rate. Therefore, ensuring macroeconomic stability condition requires that the total inherent fiscal deficit of all states should be less than or equal to 3 per cent of GDP. As pointed out earlier, the 12FC proposed that historically availability of the savings of the

[37] Here, standard level of public services is that level which is associated with the benchmark. Since some of the states are spending below the benchmark level, this will ensure higher level of public services in these states up to the benchmark level.

household sector in financial assets in the country and manageable current account deficit have been 11.5 per cent of GDP. Out of this total available savings, 3 per cent of GDP is assumed to be available for the states taken together. The present study has also assumed that the availability of the savings for all states taken together is 3 per cent of GDP.

Table 7.6 shows the total inherent fiscal deficit and actual fiscal deficit as per cent of GDP. The total inherent fiscal deficit of all states taken together is much lower than their share in available savings, i.e. 3 per cent of GDP. Same is the case with the actual fiscal deficit (Table 7.6). The total estimated fiscal deficit is lower than that of actual fiscal deficit in most of the years. The reason for this can be attributed to the use of benchmarked revenue collection. Under the benchmarked revenue, every state is considered to be performing at benchmarked level in collection of revenue. Therefore, the resulting inherent fiscal gap and thereby the inherent fiscal deficit is lower for most of the below average states.

Since the total inherent fiscal deficit is lower than the maximum desirable fiscal deficit of 3 per cent of GDP, state wise inherent fiscal deficit shown in Table 7.5 is feasible. Therefore, the states could be allowed to borrow up to the level of inherent fiscal deficit.

Table 7:6 Total inherent and actual fiscal deficits of all states as per cent of GDP

Total inherent and actual fiscal deficit as per cent of GDP					
Year	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Estimated FD	2.41	2.45	2.69	1.98	1.94
Actual FD	1.65	2.54	3.09	2.23	2.01

Source: Author's own calculation and State Finances: A Study of Budgets, RBI, India.

However, the inherent fiscal deficit of all states taken together is lower than 3 per cent or the available savings to the state governments in the country. If we allow all states to exhaust the limit of fiscal deficit of 3 per cent then what would be the fiscal deficit and debt situation. In other words, what would be the fiscal deficit of each state if they are allowed to use 3 per cent of overall ceiling and what would be their corresponding debt level? In the next section the study discusses this issue.

7.7 State-wise share in total fiscal deficit of 3 per cent of GDP:

Considering the maximum 3 per cent GDP ceiling on total fiscal deficit of all states taken together, there is further scope to allow more borrowing to each state over and above their

estimated fiscal deficit. The present section discuses a methodology proposed by the present study to allocate overall fiscal deficit of 3 per cent of GDP among the states.

The total estimated fiscal deficit by the present study and fiscal deficit 3 per cent of GDP are shown in the Table 7.7. The difference between the estimated fiscal deficit and maximum allowed fiscal deficit is shown in Table 7.7. This extra borrowing difference can be allocated among the states along with their estimated fiscal deficit.

Table 7:7 Estimated fiscal deficit and maximum allowed fiscal deficit of all states (in Rs. Crore)

Year	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
Estimated FD	110557	129772	164421	143585	162941
FD 3 % of GDP	137463	159107	183267	217466	251751
Difference	26906	29335	18846	73880	88810

Source: Author's own calculation

The present study proposes that this difference can be distributed among the states based on their respective share in the total fiscal deficit of all states. States having higher share in total fiscal deficit will receive higher share in the difference. On the other hand, states having lower share in total fiscal deficit will get lower share in extra available fiscal deficit or available savings. In short, all the states will be allowed to have higher fiscal deficit than the estimated based on their relative position in the total estimated fiscal deficit.

$$S_{FD\ (i,t)} = \frac{FD_{it}}{\sum FD_{it}} \qquad \ldots (7.8)$$

Where, $S_{FD\ (i,t)}$ is a share of i^{th} state in t^{th} year in total estimated fiscal deficit of all states,

FD_{it} is estimated fiscal deficit of i^{th} state in t^{th} year.

Table 7.8 shows state-wise share in the estimated total fiscal deficit of all states. Distribution of extra total deficit among the states on the basis of above formula will ensure their relative position in terms of fiscal deficit remains unchanged. Note that estimated fiscal deficit is a result of estimated fiscal gap and federal fiscal transfers proposed in the study. Under the proposed scheme, states having low need of borrowing will get relatively lower extra borrowing. On the other hand, states with higher need of borrowing will be allowed to borrow little more. In other words, states having higher total expenditure and lower total receipts (including federal fiscal transfers) will receive higher share in extra borrowing. It

implies that the higher expenditure need states will be allowed to borrow a little more than their counterparts.

Table 7:8 State-wise share in estimated total fiscal deficit of all states (in per cent) and fiscal deficit using these shares (in crores)

	Shares in Estimated Fiscal Deficit					Fiscal Deficit (Share) (in Crore)				
States	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Andhra Pr	9.79	8.99	8.62	8.11	7.72	13451	14298	15797	17635	19430
Arunachal Pr	0.77	0.82	0.86	0.99	1.06	1059	1310	1579	2163	2673
Assam	1.76	1.89	2.07	1.96	2.03	2421	3000	3800	4268	5100
Bihar	2.54	2.83	3.58	2.66	2.74	3494	4496	6561	5793	6890
Chhattisgarh	1.29	1.32	1.73	1.79	2.01	1779	2102	3171	3902	5056
Goa	0.82	0.57	0.47	0.47	0.49	1122	910	856	1017	1227
Gujarat	6.07	6.50	6.27	6.92	7.32	8345	10349	11484	15057	18422
Haryana	3.73	3.64	3.31	4.16	4.46	5122	5795	6057	9053	11223
Himachal Pr	2.49	2.38	2.24	2.50	2.48	3422	3783	4112	5446	6235
J&K	2.59	2.80	3.06	3.23	3.41	3560	4449	5617	7019	8586
Jharkhand	1.79	2.02	2.23	2.07	2.17	2458	3211	4094	4504	5455
Karnataka	5.98	5.82	6.04	5.93	6.05	8227	9259	11068	12902	15221
Kerala	4.05	4.10	4.12	4.97	5.07	5571	6526	7555	10805	12772
Madhya Pr	3.70	3.62	3.87	3.60	3.50	5088	5758	7087	7836	8815
Maharashtra	11.77	12.00	11.11	11.02	10.14	16183	19093	20367	23968	25518
Manipur	0.62	0.64	0.69	0.65	0.65	848	1017	1256	1410	1633
Meghalaya	0.47	0.53	0.60	0.68	0.75	645	836	1098	1480	1888
Mizoram	0.56	0.59	0.63	0.70	0.73	774	946	1151	1518	1848
Nagaland	1.19	1.04	0.90	0.84	0.73	1637	1649	1645	1824	1831
Orissa	2.85	2.79	2.89	2.67	2.71	3914	4441	5303	5803	6811
Punjab	3.52	3.34	3.12	3.43	3.33	4833	5316	5715	7453	8390
Rajasthan	3.99	4.06	4.32	4.06	4.03	5484	6459	7909	8823	10135
Sikkim	0.77	0.71	0.52	0.61	0.60	1057	1135	962	1317	1504
Tamil Nadu	8.71	8.38	7.33	7.13	6.96	11972	13340	13426	15516	17529
Tripura	0.82	0.82	0.82	0.83	0.81	1130	1302	1511	1801	2043
Uttarakhand	2.02	2.05	2.01	2.39	2.49	2771	3268	3687	5197	6280
Uttar Pr	7.96	8.36	9.24	8.19	8.36	10937	13306	16930	17807	21052
West Bengal	7.39	7.39	7.35	7.43	7.22	10161	11751	13467	16149	18184

Source: Author's own calculation

The resulting fiscal deficit using these shares is given by

$$FD_{s\,(i,t)} = IFD_{i,t} + S_{FD\,(i,t)} * (Total\ allowed\ FD\ of all\ states\ or\ 3\ per\ cent\ of\ GDP_t - Total\ estimated\ fiscal\ deficit)$$

Or

$$FD_{s\,(i,t)} = S_{FD\,(i,t)} * Total\ allowed\ FD\ of all\ states\ or\ 3\ per\ cent\ of\ GDP_t$$

Where, $FD_{s\ (i,t)}$ is fiscal deficit of ith state in tth year using shares mentioned in equation (7.8)

Panel two of Table 7.8 shows fiscal deficit each state that can be allowed in order to exhaust maximum allowable fiscal deficit of all state i.e. 3 per cent of GDP. The sum of fiscal deficit of all states in each year is equal to the amount of 3 per cent of GDP of that year.

Table 7:9 Fiscal deficit using shares and estimated fiscal deficit as per cent of GSDP (in per cent)

	Fiscal Deficit (Share)					Estimated Fiscal Deficit				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Andhra Pr	3.69	3.35	3.31	3.02	2.93	2.97	2.73	2.97	1.99	1.90
Arunachal Pr	22.03	23.04	21.13	24.00	25.17	17.71	18.79	18.95	15.85	16.29
Assam	3.41	3.70	3.96	3.79	4.05	2.74	3.02	3.55	2.50	2.62
Bihar	3.07	3.16	4.03	2.84	2.79	2.47	2.58	3.61	1.87	1.80
Chhattisgarh	2.22	2.17	3.19	3.27	3.81	1.78	1.77	2.86	2.16	2.46
Goa	5.73	3.58	2.94	3.03	3.41	4.61	2.92	2.64	2.00	2.21
Gujarat	2.53	2.81	2.66	2.89	3.10	2.04	2.29	2.39	1.91	2.01
Haryana	3.38	3.18	2.71	3.47	3.72	2.72	2.59	2.43	2.29	2.41
Himachal Pr	10.08	9.12	8.53	9.48	9.60	8.10	7.44	7.66	6.26	6.21
J&K	9.60	10.51	11.61	12.09	13.06	7.72	8.58	10.41	7.98	8.45
Jharkhand	2.93	3.66	4.07	3.54	3.79	2.35	2.98	3.65	2.34	2.45
Karnataka	3.04	2.98	3.28	3.14	3.32	2.44	2.43	2.94	2.07	2.15
Kerala	3.18	3.22	3.26	4.10	4.15	2.56	2.63	2.92	2.70	2.68
Madhya Pr	3.15	2.92	3.11	2.97	2.83	2.53	2.38	2.79	1.96	1.83
Maharashtra	2.36	2.53	2.38	2.32	2.13	1.90	2.07	2.14	1.53	1.38
Manipur	12.50	13.74	15.22	15.43	15.54	10.05	11.21	13.65	10.19	10.06
Meghalaya	6.62	7.20	8.64	10.15	11.50	5.33	5.87	7.75	6.70	7.45
Mizoram	20.30	20.67	21.88	23.77	25.68	16.32	16.86	19.63	15.69	16.62
Nagaland	20.27	17.47	15.62	15.51	13.87	16.30	14.25	14.02	10.24	8.97
Orissa	3.03	2.99	3.25	2.94	3.17	2.43	2.44	2.92	1.94	2.05
Punjab	3.17	3.05	2.89	3.29	3.27	2.55	2.49	2.60	2.18	2.12
Rajasthan	2.81	2.80	2.98	2.61	2.51	2.26	2.28	2.67	1.72	1.63
Sikkim	42.18	35.16	15.69	17.76	17.46	33.92	28.68	14.07	11.73	11.30
Tamil Nadu	3.41	3.32	2.80	2.65	2.63	2.74	2.71	2.51	1.75	1.71
Tripura	9.58	9.59	9.81	10.08	9.74	7.70	7.83	8.80	6.66	6.30
Uttarakhand	6.04	5.83	5.21	6.19	6.43	4.86	4.76	4.68	4.09	4.16
Uttar Pr	2.86	2.99	3.23	2.97	3.10	2.30	2.44	2.90	1.96	2.01
West Bengal	3.39	3.44	3.38	3.50	3.38	2.73	2.80	3.03	2.31	2.19

Source: Author's own calculation

Panel one of Table 7.9 show the fiscal deficit of each state as per cent of GSDP using shares in the equation (7.8). Table also shows the previously estimated fiscal deficit as per cent of GSDP for comparison. As it can be noted for the table that the fiscal deficit of each state has

increased and the increase is relatively higher in case of those states that have relatively higher estimated fiscal deficit.

7.8 Projection of revenue deficit, fiscal deficit, and debt to GSDP ratio of states:

The present study has also projected revenue deficit, fiscal deficit, and debt to GSPD ratio of each state for the period 2012-13 to 2016-17. The projections of major budgetary aggregates will give us likely scenario of the fiscal positions of the states in the future. Based on these projections, the targets for these budgetary aggregates can be determined for the future and states can be asked to achieve these projected targets.

Expenditure need and fiscal capacity of each state will change in the future due to changes in their respective inherent factors. Borrowing need will also change since it depends on the changes in fiscal gap and changes in the federal fiscal transfers. As a result, the debt level that will be stabilised in the future will also change. Therefore, the present study is forecasting likely levels of the fiscal and revenue deficits in the future and corresponding stabilised level of debt of each state. Since fiscal and revenue deficit depend on their respective inherent factors, the study will first project the likely level of these determinants for the period 2012-13 to 2016-17. Using these projected inherent factors and using estimated panel data econometric models in the chapter 5 (equation 5.1, 5.2, 5.2', 5.3, 5.4, 5.4'), the study will project the fiscal deficit and the revenue deficit for the years 2012-13 to 2016-17.

7.8.1 Projection of variables for the years 2012-13 to 2016-17:

State-wise GSDP has been projected for the period 2012-13 to 2016-17 using a semi-log model given by

$LnGSDP_{i,t} = \ln GSDP_0 + t \ln(1 + r)$ or $LnGSDP_{i,t} = \beta_1 + \beta_2 t + \mu_t$

Where i = states, and t = time period.

The semi-log model has been estimated for the period 2007-08 to 2011-12. This model gives compound annual growth rate of GSDP of each state for the period 2007-08 to 2011-12 and the same state-wise growth rate has been assumed for the period 2012-13 to 2016-17.

Population and urbanisation is projected for the period 2012-13 to 2016-17, using compound annual growth rate formula given by

$$Y_t = Y_0 (1 + r)^t$$

Census 2001 and 2011 has been taken as base period and current period for the calculation of growth rate of population and urbanisation respectively. The same growth rate is assumed for the period 2012-13 to 2016-17 and year-wise population and urbanisation has been calculated for each state.

7.8.2 Projected level of revenue gap and fiscal gap of the states:

Using the projected values of these variables and their respective coefficients obtained from the estimated panel data model, own revenue, revenue expenditure, capital expenditure, and total receipts of the states has been projected for the years 2012-13 to 2016-17. Accordingly, fiscal gap and revenue gap of each state has been projected for the years 2012-13 to 2016-17 (Table 7.10).

7.8.3 Projected Federal fiscal transfers:

As discussed in the chapter 6, the federal fiscal transfer proposed by the present study is based on the estimated fiscal gap of the states. Shares of each state in the total federal fiscal transfers for the period 2012-13 to 2016-17 has been determined on the basis of same formula used in the chapter 6.

State-wise and year-wise share in the total federal fiscal transfers based on the above formula is depicted in Table 7.11. The table also contains the state-wise and year-wise total transfers that each state will get for the years 2012-13 to 2016-17. For that total transfers from the central government is projected using compound annual growth rate estimated using semi-log model for the years 2007-08 to 2011-12.

$$LnTransfers_t = \beta_1 + \beta_2 t + \mu_t$$

It has been assumed that the total transfers will grow at the compound annual rate for the period 2012-13 to 2016-17 measured using the above formula.

The projected shares in the total transfers and total amount of the federal fiscal transfers that each state will receive for the period 2012-13 to 2016-17 are shown in Table 7.13.

Table 7:10 State-wise projected revenue gap and fiscal gap (in Crores)

	Projected Revenue Gap					Projected Fiscal Gap				
States	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
Andhra Pr	25100	25895	26387	26468	26007	41073	42761	44230	45389	46126
Arunachal Pr	5093	6351	7905	9821	12184	6932	8418	10226	12429	15114
Assam	19092	22555	26583	31262	36694	21953	25644	29918	34863	40582
Bihar	41409	49871	60054	72309	87053	53317	63310	75242	89498	106541
Chhattisgarh	12871	16639	21339	27186	34442	17137	21381	26614	33056	40976
Goa	1174	1245	1315	1385	1452	2326	2456	2592	2732	2876
Gujarat	22367	27067	32723	39523	47697	35358	41453	48680	57254	67432
Haryana	12069	14777	18081	22109	27016	18465	21890	26009	30968	36944
Himachal Pr	9240	10424	11753	13247	14923	11417	12728	14192	15827	17652
J&K	21576	26676	32875	40403	49537	29519	35512	42704	51338	61701
Jharkhand	16536	19995	24161	29178	35216	22439	26572	31496	37362	44354
Karnataka	18013	20799	24015	27727	32013	33839	37987	42708	48084	54215
Kerala	21907	26615	32286	39110	47316	25594	30519	36445	43572	52135
Madhya Pr	20364	23059	26077	29450	33209	34594	38686	43254	48348	54026
Maharashtra	17883	17570	16770	15344	13123	39873	41664	43229	44473	45276
Manipur	4552	5342	6263	7336	8587	6521	7488	8601	9884	11364
Meghalaya	5364	6810	8615	10867	13674	6192	7748	9678	12072	15040
Mizoram	4422	5358	6488	7851	9494	5146	6164	7385	8849	10605
Nagaland	2970	2924	2875	2825	2772	3956	3906	3854	3800	3743
Orissa	15734	17481	19409	21534	23875	20518	22640	24982	27565	30414
Punjab	13392	14825	16400	18130	20030	15311	16896	18643	20568	22690
Rajasthan	25691	29296	33350	37896	42974	33476	37968	43038	48750	55175
Sikkim	1538	1585	1616	1625	1606	2179	2259	2324	2367	2381
Tamil Nadu	20180	20643	20753	20386	19389	34233	35815	37167	38187	38746
Tripura	4626	5264	5988	6809	7740	6108	6852	7690	8633	9694
Uttarakhand	9633	11552	13821	16501	19663	12336	14490	17013	19969	23430
Uttar Pr	77297	91472	108218	127998	151355	106069	123231	143300	166778	194258
West Bengal	50213	56185	62828	70210	78404	52647	58728	65490	73004	81348

Source: Author's own calculation

Table 7:11 State-wise yearly shares in total fiscal transfers and yearly transfers from the centre

	Shares Yearly (in per cent)					Projected Yearly Transfers (in Crores)				
States	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
Andhra Pr	5.62	5.13	4.64	4.16	3.69	28367	29598	30632	31401	31823
Arunachal Pr	0.94	1.00	1.07	1.13	1.20	4759	5791	7039	8546	10364
Assam	3.38	3.46	3.53	3.60	3.65	17060	19973	23314	27138	31503
Bihar	8.43	8.78	9.13	9.50	9.86	42595	50691	60279	71622	85027
Chhattisgarh	2.56	2.81	3.06	3.32	3.59	12955	16199	20175	25030	30943
Goa	0.20	0.18	0.17	0.16	0.14	1001	1059	1118	1177	1236
Gujarat	4.59	4.72	4.85	4.98	5.12	23176	27232	31997	37592	44154
Haryana	2.19	2.28	2.37	2.47	2.57	11067	13149	15632	18592	22119
Himachal Pr	1.48	1.45	1.41	1.38	1.34	7471	8348	9313	10375	11539
J&K	4.39	4.63	4.88	5.12	5.37	22182	26745	32179	38642	46316
Jharkhand	3.42	3.55	3.68	3.82	3.96	17266	20492	24302	28797	34092
Karnataka	4.72	4.65	4.57	4.50	4.43	23845	26828	30178	33940	38162
Kerala	3.35	3.50	3.66	3.82	3.99	16911	20211	24149	28839	34413
Madhya Pr	5.22	5.12	5.01	4.90	4.78	26387	29574	33084	36940	41165
Maharashtra	5.00	4.58	4.16	3.74	3.33	25268	26462	27471	28231	28662
Manipur	1.01	1.01	1.02	1.02	1.03	5088	5855	6729	7725	8856
Meghalaya	0.93	1.02	1.11	1.21	1.32	4685	5876	7344	9150	11369
Mizoram	0.74	0.78	0.81	0.85	0.89	3734	4483	5374	6433	7689
Nagaland	0.56	0.49	0.42	0.36	0.31	2849	2819	2783	2741	2693
Orissa	3.04	2.94	2.84	2.74	2.64	15370	16998	18767	20685	22760
Punjab	2.04	1.98	1.91	1.84	1.77	10324	11417	12605	13892	15283
Rajasthan	4.83	4.80	4.77	4.72	4.66	24401	27738	31459	35595	40176
Sikkim	0.19	0.17	0.15	0.14	0.12	937	974	1002	1020	1023
Tamil Nadu	4.50	4.12	3.75	3.36	2.98	22709	23811	24724	25374	25675
Tripura	0.89	0.88	0.86	0.85	0.83	4520	5082	5706	6399	7166
Uttarakhand	1.55	1.59	1.64	1.68	1.72	7821	9206	10816	12681	14838
Uttar Pr	16.60	16.91	17.22	17.51	17.80	83868	97655	113622	132092	153436
West Bengal	7.63	7.47	7.29	7.10	6.91	38565	43115	48106	53567	59526

Source: Author's own calculation

Using projected revenue, fiscal gap, and the projected total federal fiscal transfers that each state will receive, the fiscal deficit and revenue deficit for each state is calculated. It is shown in Table 7.12.

Table 7:12 State-wise projected revenue deficit and fiscal deficit (in Crores)

	Projected Revenue Deficit					Projected Fiscal Deficit				
States	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
Andhra Pr	-3267	-3703	-4246	-4933	-5815	12706	13163	13598	13989	14303
Arunachal Pr	334	560	865	1275	1820	2174	2626	3187	3883	4750
Assam	2032	2582	3268	4124	5191	4893	5671	6604	7725	9079
Bihar	-1186	-821	-225	687	2027	10721	12618	14963	17877	21514
Chhattisgarh	-84	439	1164	2156	3499	4182	5182	6439	8025	10033
Goa	173	186	198	208	217	1326	1398	1474	1555	1640
Gujarat	-809	-165	725	1932	3543	12181	14221	16682	19662	23279
Haryana	1002	1629	2450	3517	4897	7398	8741	10377	12376	14825
Himachal Pr	1769	2076	2440	2872	3383	3946	4380	4879	5452	6113
J&K	-606	-69	696	1761	3221	7337	8767	10525	12695	15385
Jharkhand	-730	-497	-141	382	1124	5173	6081	7194	8565	10262
Karnataka	-5831	-6029	-6163	-6213	-6149	9994	11160	12530	14145	16053
Kerala	4996	6404	8137	10271	12903	8682	10308	12296	14732	17722
Madhya Pr	-6023	-6515	-7007	-7490	-7956	8207	9112	10169	11408	12861
Maharashtra	-7385	-8891	-10701	-12887	-15539	14605	15202	15758	16243	16614
Manipur	-535	-513	-466	-388	-270	1434	1633	1872	2160	2507
Meghalaya	679	934	1271	1716	2305	1506	1872	2334	2922	3671
Mizoram	687	875	1113	1418	1806	1411	1681	2010	2416	2917
Nagaland	122	105	92	84	79	1107	1087	1071	1059	1050
Orissa	364	483	642	849	1115	5147	5642	6215	6881	7654
Punjab	3069	3407	3795	4239	4747	4988	5478	6038	6677	7408
Rajasthan	1289	1558	1891	2301	2799	9074	10231	11579	13155	14999
Sikkim	601	611	614	605	583	1242	1285	1321	1347	1358
Tamil Nadu	-2528	-3168	-3971	-4988	-6286	11524	12004	12443	12813	13071
Tripura	107	183	282	411	574	1588	1771	1984	2234	2529
Uttarakhand	1813	2346	3006	3820	4825	4515	5283	6197	7288	8592
Uttar Pr	-6571	-6183	-5404	-4094	-2081	22201	25576	29678	34686	40822
West Bengal	11649	13070	14722	16643	18878	14082	15613	17384	19437	21822

Source: Author's own calculation

The projected revenue deficit and fiscal deficit as per cent of projected GSDP is shown in Table 7.13.

Table 7:13 State-wise projected revenue deficit and fiscal deficit as per cent of projected GSDP (in per cent)

	Projected Revenue Deficit					Projected Fiscal Deficit				
States	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
Andhra Pr	-0.43	-0.42	-0.42	-0.42	-0.43	1.68	1.51	1.34	1.19	1.05
Arunachal Pr	2.76	3.83	4.89	5.95	7.03	17.98	17.95	18.00	18.13	18.33
Assam	1.43	1.58	1.74	1.91	2.09	3.46	3.48	3.52	3.58	3.65
Bihar	-0.38	-0.21	-0.05	0.12	0.29	3.41	3.29	3.20	3.13	3.09
Chhattisgarh	-0.05	0.25	0.59	0.96	1.38	2.72	2.98	3.26	3.59	3.96
Goa	0.50	0.47	0.45	0.42	0.39	3.79	3.56	3.34	3.13	2.94
Gujarat	-0.12	-0.02	0.08	0.18	0.29	1.82	1.83	1.85	1.88	1.92
Haryana	0.29	0.40	0.51	0.62	0.73	2.14	2.15	2.16	2.18	2.22
Himachal Pr	2.40	2.41	2.43	2.45	2.48	5.35	5.09	4.86	4.66	4.48
J&K	-0.80	-0.08	0.69	1.51	2.39	9.71	10.04	10.43	10.88	11.41
Jharkhand	-0.44	-0.26	-0.06	0.15	0.38	3.14	3.19	3.26	3.36	3.48
Karnataka	-1.11	-1.01	-0.90	-0.79	-0.69	1.91	1.86	1.83	1.81	1.79
Kerala	1.43	1.60	1.77	1.94	2.13	2.49	2.57	2.67	2.79	2.92
Madhya Pr	-1.62	-1.49	-1.36	-1.24	-1.12	2.21	2.08	1.97	1.88	1.80
Maharashtra	-0.54	-0.56	-0.58	-0.61	-0.63	1.06	0.96	0.86	0.77	0.68
Manipur	-4.47	-3.82	-3.10	-2.30	-1.43	11.96	12.16	12.43	12.79	13.25
Meghalaya	3.74	4.56	5.49	6.56	7.79	8.31	9.13	10.08	11.16	12.41
Mizoram	8.53	9.34	10.22	11.19	12.25	17.52	17.94	18.46	19.07	19.79
Nagaland	0.82	0.63	0.49	0.40	0.33	7.46	6.51	5.69	5.00	4.40
Orissa	0.14	0.17	0.19	0.22	0.25	2.01	1.93	1.86	1.80	1.75
Punjab	1.07	1.05	1.03	1.01	0.99	1.74	1.68	1.63	1.59	1.55
Rajasthan	0.28	0.28	0.29	0.29	0.30	1.98	1.87	1.77	1.68	1.61
Sikkim	6.03	4.61	3.47	2.57	1.86	12.47	9.69	7.48	5.73	4.33
Tamil Nadu	-0.34	-0.36	-0.39	-0.42	-0.45	1.55	1.38	1.22	1.08	0.94
Tripura	0.45	0.66	0.89	1.12	1.36	6.66	6.44	6.26	6.11	6.00
Uttarakhand	1.59	1.72	1.83	1.94	2.04	3.96	3.86	3.77	3.70	3.63
Uttar Pr	-0.85	-0.70	-0.53	-0.35	-0.15	2.89	2.89	2.92	2.97	3.04
West Bengal	1.88	1.82	1.77	1.73	1.69	2.27	2.17	2.09	2.02	1.95

Source: Author's own calculation

The level of fiscal deficit as per cent of GSDP shown in Table 7.13 is possible since the total fiscal deficit of all states taken together is less than 3 per cent of projected GDP (Table 7.14). Therefore, there is still scope for allowing the states to borrow further up to the level of 3 per cent of projected GDP. As pointed out earlier, the reaming fiscal deficit can be distributed among the states based on their relative shares in the total projected fiscal deficit. The resulting shared fiscal deficit is shown in Table 7.15.

Table 7:14 Total fiscal deficit of all states as per cent of projected GDP

Year	2013	2014	2015	2016	2017
Total FD	1.98	1.91	1.86	1.82	1.80

Source: Author's own calculation

Table 7:15 State-wise share of states in total fiscal deficit and fiscal deficit based on these shares as per cent of projected GSDP (in per cent)

	Share in Total Projected Fiscal Deficit					Shared Projected Fiscal Deficit				
States	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
Andhra Pr	6.57	6.04	5.51	4.97	4.43	2.55	2.36	2.16	1.96	1.76
Arunachal Pr	1.12	1.21	1.29	1.38	1.47	27.26	28.14	29.00	29.82	30.61
Assam	2.53	2.60	2.68	2.75	2.81	5.24	5.45	5.67	5.88	6.10
Bihar	5.55	5.79	6.06	6.35	6.66	5.18	5.16	5.16	5.16	5.16
Chhattisgarh	2.16	2.38	2.61	2.85	3.11	4.13	4.67	5.26	5.91	6.61
Goa	0.69	0.64	0.60	0.55	0.51	5.75	5.57	5.37	5.15	4.91
Gujarat	6.30	6.53	6.76	6.99	7.21	2.76	2.87	2.98	3.10	3.21
Haryana	3.83	4.01	4.20	4.40	4.59	3.25	3.36	3.48	3.59	3.70
Himachal Pr	2.04	2.01	1.98	1.94	1.89	8.12	7.98	7.83	7.66	7.47
J&K	3.79	4.03	4.26	4.51	4.77	14.72	15.73	16.80	17.90	19.06
Jharkhand	2.68	2.79	2.91	3.04	3.18	4.76	5.00	5.25	5.52	5.81
Karnataka	5.17	5.12	5.08	5.03	4.97	2.89	2.92	2.95	2.97	2.99
Kerala	4.49	4.73	4.98	5.24	5.49	3.77	4.03	4.30	4.58	4.88
Madhya Pr	4.24	4.18	4.12	4.05	3.98	3.34	3.26	3.18	3.10	3.01
Maharashtra	7.55	6.98	6.38	5.77	5.15	1.61	1.50	1.38	1.26	1.13
Manipur	0.74	0.75	0.76	0.77	0.78	18.14	19.05	20.02	21.05	22.12
Meghalaya	0.78	0.86	0.95	1.04	1.14	12.59	14.32	16.23	18.36	20.71
Mizoram	0.73	0.77	0.81	0.86	0.90	26.57	28.12	29.73	31.37	33.05
Nagaland	0.57	0.50	0.43	0.38	0.33	11.32	10.20	9.17	8.22	7.35
Orissa	2.66	2.59	2.52	2.45	2.37	3.06	3.03	3.00	2.96	2.92
Punjab	2.58	2.52	2.45	2.37	2.29	2.64	2.64	2.63	2.61	2.59
Rajasthan	4.69	4.70	4.69	4.67	4.65	3.00	2.93	2.85	2.77	2.68
Sikkim	0.64	0.59	0.54	0.48	0.42	18.91	15.19	12.05	9.42	7.24
Tamil Nadu	5.96	5.51	5.04	4.55	4.05	2.35	2.16	1.97	1.77	1.57
Tripura	0.82	0.81	0.80	0.79	0.78	10.10	10.09	10.08	10.06	10.02
Uttarakhand	2.34	2.43	2.51	2.59	2.66	6.01	6.05	6.08	6.08	6.06
Uttar Pr	11.48	11.74	12.03	12.33	12.64	4.38	4.53	4.70	4.88	5.07
West Bengal	7.28	7.17	7.04	6.91	6.76	3.44	3.41	3.36	3.32	3.26

Source: Author's own calculation

7.9 State-wise fiscal deficit and debt path proposed in the study:

The present study has proposed the justifiable level of fiscal deficit for each state for the years 2007-08 to 2016-17. If the state governments are asked to follow the proposed fiscal deficit path for the same years then the required IP-RR ratios and corresponding stabilised level of debt to GSDP ratio of each state for each year are presented in this section.

The stabilised debt level for given or desirable level of fiscal deficit can be measured using the debt sustainability equations. Certain assumptions have been made for the calculations and they are as follows. First, it is assumed that the growth rate of GSDP (g) for individual state is the actual growth rate for the period 2007-08 to 2011-12. For the period 2012-13 to 2016-17, the compound annual growth rate has been assumed. Revenue receipt to GSDP ratio (r) has been measured by adding the benchmarked own total revenue receipts of individual state and total transfers proposed by the study for the period 2007-08 to 2016-17. Next, an average interest cost of individual state has been considered as the nominal interest rate (i). It is measured as the interest payment during a year divided by outstanding liabilities of state in the previous year[38]. The average interest cost for the period 2007-08 to 2011-12 is considered as the rate of interest for individual state. On the other hand, the nominal interest rate for the period 2012-13 to 2016-17 is assumed to be same as the average of average nominal interest rate for the period 2007-08 to 2011-12. Based on these assumptions, the IP-RR ratio of individual state that will stabilised the fiscal deficit at proposed level and debt-to-GSDP ratio for each state has been measured.

As mentioned earlier, the study has derived two set of fiscal deficits, first set that does not exhaust available savings in the country and second, that exhaust available savings (shared fiscal deficit). The study has derived debt-to-GSDP ratios for these two set of fiscal deficit.

7.9.1 Case-1: Fiscal deficit of the states without exhausting available savings:

The fiscal deficit of the states without exhausting the limit of available savings i.e. 3 per cent of GDP for the period 2007-08 to 2016-17 is shown in Table 7.16. This is the same fiscal deficit that was shown in the Tables 7.5 and Table 7.13.

If states are allowed to borrow up to the level of fiscal deficit depicted in Table 7.16 then standard level of public services associated with the benchmark is likely to be achieved. The

[38] See Ministry of Finance (2013)

states should be allowed to borrow up to their inherent fiscal deficit unless certain standard of public services or outcome will be achieved.

Table 7:16 State-wise fiscal deficit path proposed by the present study (in per cent)

	Proposed Estimated Fiscal Deficit as per cent of GSDP									
State	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Andhra Pr	2.97	2.73	2.97	1.99	1.90	1.68	1.51	1.34	1.19	1.05
Arunachal Pr	17.71	18.79	18.95	15.85	16.29	17.98	17.95	18.00	18.13	18.33
Assam	2.74	3.02	3.55	2.50	2.62	3.46	3.48	3.52	3.58	3.65
Bihar	2.47	2.58	3.61	1.87	1.80	3.41	3.29	3.20	3.13	3.09
Chhattisgarh	1.78	1.77	2.86	2.16	2.46	2.72	2.98	3.26	3.59	3.96
Goa	4.61	2.92	2.64	2.00	2.21	3.79	3.56	3.34	3.13	2.94
Gujarat	2.04	2.29	2.39	1.91	2.01	1.82	1.83	1.85	1.88	1.92
Haryana	2.72	2.59	2.43	2.29	2.41	2.14	2.15	2.16	2.18	2.22
Himachal Pr	8.10	7.44	7.66	6.26	6.21	5.35	5.09	4.86	4.66	4.48
J&K	7.72	8.58	10.41	7.98	8.45	9.71	10.04	10.43	10.88	11.41
Jharkhand	2.35	2.98	3.65	2.34	2.45	3.14	3.19	3.26	3.36	3.48
Karnataka	2.44	2.43	2.94	2.07	2.15	1.91	1.86	1.83	1.81	1.79
Kerala	2.56	2.63	2.92	2.70	2.68	2.49	2.57	2.67	2.79	2.92
Madhya Pr	2.53	2.38	2.79	1.96	1.83	2.21	2.08	1.97	1.88	1.80
Maharashtra	1.90	2.07	2.14	1.53	1.38	1.06	0.96	0.86	0.77	0.68
Manipur	10.05	11.21	13.65	10.19	10.06	11.96	12.16	12.43	12.79	13.25
Meghalaya	5.33	5.87	7.75	6.70	7.45	8.31	9.13	10.08	11.16	12.41
Mizoram	16.32	16.86	19.63	15.69	16.62	17.52	17.94	18.46	19.07	19.79
Nagaland	16.30	14.25	14.02	10.24	8.97	7.46	6.51	5.69	5.00	4.40
Orissa	2.43	2.44	2.92	1.94	2.05	2.01	1.93	1.86	1.80	1.75
Punjab	2.55	2.49	2.60	2.18	2.12	1.74	1.68	1.63	1.59	1.55
Rajasthan	2.26	2.28	2.67	1.72	1.63	1.98	1.87	1.77	1.68	1.61
Sikkim	33.92	28.68	14.07	11.73	11.30	12.47	9.69	7.48	5.73	4.33
Tamil Nadu	2.74	2.71	2.51	1.75	1.71	1.55	1.38	1.22	1.08	0.94
Tripura	7.70	7.83	8.80	6.66	6.30	6.66	6.44	6.26	6.11	6.00
Uttarakhand	4.86	4.76	4.68	4.09	4.16	3.96	3.86	3.77	3.70	3.63
Uttar Pr	2.30	2.44	2.90	1.96	2.01	2.89	2.89	2.92	2.97	3.04
West Bengal	2.73	2.80	3.03	2.31	2.19	2.27	2.17	2.09	2.02	1.95

Source: Author's own calculation

The required Interest Payment to Revenue Receipt ratio (IP-RR ratio) to stabilise above mentioned fiscal deficit of each state with assumptions mentioned above is given in Table 7.17.

Table 7:17 State-wise required IP-RR ratio

	Required IP-RR ratio									
States	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Andhra Pr	6.84	7.90	12.47	4.38	7.09	5.54	5.08	4.65	4.24	3.83
Arunachal Pr	11.30	7.57	10.18	19.18	13.99	12.45	12.56	12.72	12.93	13.20
Assam	10.35	7.57	7.49	5.50	8.68	8.86	9.02	9.23	9.49	9.81
Bihar	5.83	3.16	7.10	2.25	2.46	5.41	5.31	5.25	5.23	5.26
Chhattisgarh	4.33	3.88	44.78	4.22	7.67	7.49	7.83	8.20	8.62	9.09
Goa	10.05	4.60	8.46	6.10	14.85	13.77	13.05	12.36	11.71	11.10
Gujarat	8.88	12.88	9.03	5.74	9.54	7.07	7.08	7.13	7.21	7.32
Haryana	10.76	8.08	6.80	9.11	9.69	7.26	7.24	7.27	7.32	7.41
Himachal Pr	25.13	13.97	20.33	12.89	19.79	14.18	14.25	14.38	14.56	14.81
J&K	18.00	11.34	14.42	7.97	11.23	12.12	12.27	12.47	12.74	13.08
Jharkhand	5.28	32.43	11.74	3.86	7.54	9.27	9.27	9.34	9.47	9.67
Karnataka	6.30	7.73	13.65	3.91	6.99	5.71	5.59	5.52	5.47	5.45
Kerala	10.93	9.30	11.47	10.31	8.20	8.56	8.71	8.91	9.16	9.44
Madhya Pr	8.16	3.92	6.36	4.41	3.50	4.90	4.71	4.55	4.42	4.31
Maharashtra	7.90	12.62	10.43	4.82	6.11	4.67	4.27	3.89	3.53	3.17
Manipur	14.16	17.39	15.28	11.14	8.43	12.87	12.84	12.89	13.04	13.28
Meghalaya	11.46	8.18	21.31	10.59	11.52	11.91	12.09	12.32	12.60	12.93
Mizoram	12.01	10.58	20.37	8.67	15.07	11.90	11.91	11.97	12.10	12.30
Nagaland	27.69	19.15	28.04	21.06	18.59	18.38	18.05	17.80	17.64	17.57
Orissa	4.33	7.21	13.38	4.08	8.54	6.45	6.27	6.12	6.01	5.93
Punjab	7.99	10.72	11.22	8.62	9.41	7.42	7.22	7.05	6.91	6.79
Rajasthan	8.30	6.14	8.92	3.31	4.51	5.46	5.25	5.06	4.90	4.77
Sikkim	20.34	11.33	2.45	11.97	13.75	8.32	7.60	6.90	6.20	5.51
Tamil Nadu	12.61	9.57	6.53	4.42	6.74	5.06	4.62	4.19	3.78	3.37
Tripura	31.20	17.11	20.60	12.42	11.48	15.20	15.16	15.21	15.36	15.60
Uttarakhand	9.64	10.42	9.65	12.02	14.65	11.30	11.53	11.81	12.13	12.49
Uttar Pr	5.07	4.62	5.15	4.21	4.83	5.93	5.90	5.91	5.96	6.06
West Bengal	12.35	12.63	11.62	8.67	8.11	9.49	9.25	9.06	8.91	8.81

Source: Author's own calculation

For example, if it is assumed that all states are required to stabilise fiscal deficit corresponding to the year 2017 in the Table 7.16, then each state has to achieve and stabilise IP-RR ratio correspond to the year 2017 as shown in the Table 7.17.

Corresponding stabilised level of debt to GSDP ratio of each state is depicted in Table 7.18.

Table 7:18 State-wise stabilised level of debt to GSDP ratio (in per cent)

	Proposed Debt-to-GSDP ratio									
States	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Andhra Pr	17.0	18.8	28.3	10.9	16.0	12.3	11.0	9.8	8.7	7.7
Arunachal Pr	121.4	121.9	79.3	92.8	107.7	103.6	103.5	103.8	104.5	105.7
Assam	30.5	24.5	22.9	16.9	25.1	26.3	26.5	26.8	27.2	27.8
Bihar	21.7	12.8	28.5	9.2	10.4	18.9	18.3	17.7	17.4	17.1
Chhattisgarh	10.7	10.3	118.8	12.8	24.3	23.2	25.3	27.8	30.6	33.7
Goa	29.7	12.7	20.7	15.0	32.8	34.4	32.2	30.2	28.4	26.6
Gujarat	14.7	21.9	16.3	11.0	16.3	13.2	13.3	13.5	13.7	14.0
Haryana	18.0	15.3	13.2	16.1	17.6	14.1	14.1	14.2	14.4	14.6
Himachal Pr	74.6	41.0	55.0	38.8	53.8	37.5	35.7	34.0	32.6	31.3
J&K	74.0	69.6	83.0	47.8	72.3	72.1	74.5	77.4	80.8	84.8
Jharkhand	11.6	68.1	28.6	11.2	21.3	23.2	23.6	24.1	24.8	25.7
Karnataka	15.2	19.0	36.4	11.6	20.4	15.2	14.9	14.6	14.4	14.3
Kerala	21.0	19.3	23.2	22.4	18.7	19.3	19.9	20.7	21.6	22.6
Madhya Pr	24.2	13.1	20.7	14.6	11.8	14.7	13.9	13.2	12.5	12.0
Maharashtra	13.0	22.5	18.0	8.8	10.0	7.9	7.1	6.4	5.7	5.0
Manipur	105.5	134.6	131.8	105.4	77.3	110.8	112.6	115.2	118.5	122.7
Meghalaya	46.7	36.2	90.2	52.1	66.8	72.1	79.3	87.4	96.8	107.7
Mizoram	118.4	101.4	151.2	88.9	147.7	125.0	128.0	131.6	136.0	141.2
Nagaland	160.9	98.8	135.3	97.8	82.1	66.6	58.1	50.8	44.6	39.3
Orissa	11.5	18.8	32.9	11.1	25.9	16.0	15.4	14.8	14.3	13.9
Punjab	15.5	19.9	21.9	17.1	18.0	14.5	14.0	13.6	13.3	12.9
Rajasthan	18.5	14.6	20.3	8.0	10.1	12.2	11.5	10.9	10.4	9.9
Sikkim	246.5	128.1	29.7	68.0	80.9	50.0	38.9	30.0	23.0	17.4
Tamil Nadu	23.9	21.5	15.4	9.7	14.1	10.7	9.5	8.4	7.4	6.5
Tripura	102.9	59.8	74.1	48.3	42.5	50.2	48.6	47.2	46.1	45.3
Uttarakhand	24.6	26.2	22.5	25.9	29.6	23.7	23.1	22.6	22.2	21.8
Uttar Pr	18.8	17.6	19.3	15.3	17.3	22.1	22.2	22.4	22.7	23.3
West Bengal	21.6	22.6	21.2	17.2	15.2	16.6	15.9	15.3	14.8	14.3

Source: Author's own calculation

If each state achieves the required IP-RR ratio (Table 7.17) then their corresponding debt to GSDP ratio will be stabilised at a certain level. The stabilised level of debt to GSDP ratio of

each state for the period 2007-08 to 2016-17 proposed by the present study is depicted in Table 7.18. The actual debt to GSDP ratio of each state is shown in the Table 7.19. The second panel of the Table 7.19 also shows the targets adopted by the states after amendment of their respective FRBM Act.

Table 7:19 State-wise actual debt to GSDP ratio (in per cent)

	Actual Debt to GSDP ratio					Amendment[39]	
State	2008	2009	2010	2011	2012	2010-11	2014-15
Andhra Pr	27.4	25.8	25.9	23.9	22.7	30.3	27.6
Arunachal Pr	59.0	104.3	42.3	38.9	37.2	61.3	50.1
Assam	28.4	28.1	26.7	23.5	22.2	28.2	28.5
Bihar	46.5	39.2	36.5	31.1	27.5	48.2	41.6
Chhattisgarh	18.3	15.5	16.4	14.3	13.5	22.0	23.9
Goa	33.9	28.1	28.9	28.4	27.6	-	-
Gujarat	30.5	29.9	28.6	27.4	25.4	27.1	27.1
Haryana	19.7	18.4	18.3	17.8	18.8	22.4	22.9
Himachal Pr	57.4	52.8	49.3	46.0	43.5	49.7	40.1
Jammu Kashmir	59.6	59.3	62.3	55.4	55.8	56.1	49.3
Jharkhand	25.4	27.4	26.8	22.2	21.8	29.0	26.9
Karnataka	22.4	21.0	25.0	22.8	23.1	26.2	25.2
Kerala	33.4	33.0	32.5	31.8	30.8	32.3	29.8
Madhya Pr	34.0	30.6	29.8	28.7	26.0	37.6	35.3
Maharashtra	23.7	24.8	23.8	22.3	20.5	26.3	25.3
Manipur	66.8	66.0	67.6	68.1	61.9	65.8	54.3
Meghalaya	33.1	31.8	31.0	29.8	32.7	32.7	31.7
Mizoram	103.5	90.7	71.9	72.9	68.4	87.3	74.8
Nagaland	44.3	44.3	52.2	50.2	51.1	56.8	52.3
Orissa	33.2	29.6	28.1	23.8	22.3	31.0	29.5
Punjab	36.6	35.4	34.3	33.1	32.3	42.5	38.7
Rajasthan	39.6	36.5	34.5	29.4	26.4	39.3	36.5
Sikkim	68.2	62.6	40.4	33.1	32.4	68.4	55.9
Tamil Nadu	21.1	21.5	21.2	19.6	19.6	24.5	25.2
Tripura	38.5	34.7	35.4	34.1	31.3	45.2	43.8
Uttarakhand	31.9	30.7	27.8	25.4	25.4	41.0	37.2
Uttar Pr	46.9	43.3	39.4	38.3	36.0	46.9	41.9
West Bengal	45.6	44.0	44.0	41.9	39.7	39.1	34.3

Source: State Finances: A Study of Budgets, RBI, India.

As it can be seen form both of these tables, debt to GSDP ratio of most of the special category states will stabilised at higher level than their actual level. On the contrary, almost

[39] Keeping in view disturbances in fiscal consolidation effort by the states due to financial crisis, the Thirteenth Finance Commission had recommended a different set of fiscal accountability targets that need to be achieved. Accordingly the state governments have amended their FRBM Acts and new targets have been set.

all of the general category states will witness the reduction in the debt to GSDP ratio from their current level. Similar aspect can be observed if we consider targets of states after amendment that to be achieved by the year 2014-15.

Among the general category states, Andhra Pradesh, Maharashtra, Punjab, Rajasthan, and West Bengal will have very low level of debt to GSDP ratio proposed by the model as compared to both their level in 2011-12 and amended targets of 2014-15.

According the proposed model, states like Andhra Pradesh, Goa, Himachal Pradesh, Maharashtra, Nagaland, Punjab, Sikkim, Tamil Nadu, Tripura, and Uttarakhand will witness reduction in their debt level due to decrease in their inherent fiscal deficit for the period 2007-08 to 2016-17. On the other hand, states like, Chhattisgarh, Jammu and Kashmir, Manipur, Meghalaya, and Mizoram will witness considerable increase in debt level due to increase in inherent fiscal deficit during the same period.

In case of Arunachal Pradesh, Assam, and Bihar, although the estimated fiscal deficit will increase marginally, their debt level will come down over the period. The reason for this phenomenon lies in the relationship between fiscal deficit and debt to GSDP ratio. According to debt sustainability equation, $f^*=b^*.g/(1+g)$ or $b^*=f^*.(1+g)/g$, debt to GSDP ratio is directly proportional to the level of fiscal deficit and inversely proportional to the growth in GSDP. Although, these states have higher fiscal deficit, they have also reported the higher growth[40]. As a result these states will have lower stabilised debt to GSDP ratio as growth in GSDP outweighs increase in the fiscal deficit.

Some of the states in special category will have a very high level of debt to GSDP ratio, (in some cases more than 100 per cent of GSDP). However, if these states are asked to reduce the debt to GSDP ratio lower than the proposed level then they have to reduce fiscal deficit lower than the inherent level. Such reduction may affect the standard level of public services in these states considering their revenue capacity. Therefore, in order to ensure the standard level of public services in these states, the proposed debt to GSDP ratio should be allowed. If the borrowing is used efficiently and productively then it results in higher growth and thereby likely to reduce debt to GSDP ratio in the future.

[40] compound annual growth rate of GSDP for the period 2007-08 to 2011-12

Moreover, it is interesting to know whether or not states can achieve and stabilise fiscal deficit path (shown in table 7.16) and debt level (shown in table 7.18). For example, whether or not fiscal deficit in the year 2017 and associated debt level can be achieved and stabilised by the states. An ability of states to achieve and stabilise debt level depends on the whether or not they can achieve the required IP-RR ratio (shown in table 7.17). To see whether states can achieve the required IP-RR ratio, following exercise has been done.

First, the study has calculated amount of interest payment for the years 2007-08 to 2016-17 based on the estimated debt to GSDP ratios of the states. In order to do this, the study has calculated debt of states at level by using debt GSDP ratio and GSDP of states for the period under consideration. Then, by applying average of average interest cost for the years 2007-08 to 2011-12, amount of interest payments for each state for the period under consideration has been calculated.

In order to calculated IP-RR ratio for the period 2007-08 to 2016-17, the estimated total receipt of the states (including transfers) proposed by the present study has been considered. The resulting likely IP-RR ratio of each state for the period 2007-08 to 2016-17 has been depicted in the Table 7.20.

Comparing Table 7.17 and Table 7.20, it can be noted that most of the states can achieve required IP-RR ratio in order to stabilise debt level at the level shown in the Table 7.18. However, in order to achieve the required IP-RR ratio states need to collect more revenue than the estimated in the present study. Since, for most of the states the requirement of increase in revenue above estimated level is smaller, it is possible form these states to reduce debt level at very comfortable level.

7.9.2 Case-2: Fiscal deficit of the states using all available savings in the country:

In this case, total fiscal deficit of all states taken together is kept equal to 3 per cent of GDP in order to exhaust available savings for the states. Resulting fiscal deficit path is shown in the Table 7.21.

Table 7:20 State-wise Interest Payment to Estimated revenue Ratio

	Interest Payment to Estimated revenue Ratio									
States	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Andhra Pr	7.9	9.1	14.0	5.6	8.3	6.4	5.9	5.4	4.9	4.4
Arunachal Pr	16.9	17.1	12.8	14.2	16.2	15.1	15.2	15.4	15.6	16.0
Assam	11.0	9.0	9.0	6.5	9.5	10.2	10.4	10.6	10.9	11.3
Bihar	6.2	3.9	8.7	2.7	3.1	6.6	6.5	6.4	6.4	6.4
Chhattisgarh	4.7	4.6	48.3	5.1	9.1	8.5	8.9	9.3	9.8	10.3
Goa	12.3	5.8	9.8	7.2	15.5	15.5	14.7	13.9	13.2	12.5
Gujarat	9.8	14.3	10.8	7.3	10.7	8.2	8.2	8.3	8.4	8.5
Haryana	11.5	10.0	8.9	10.6	11.4	8.6	8.5	8.6	8.6	8.7
Himachal Pr	26.2	16.0	23.2	16.9	24.1	16.5	16.6	16.8	17.0	17.3
J&Kashmir	15.7	14.5	17.6	9.7	14.1	14.0	14.2	14.4	14.7	15.1
Jharkhand	5.9	31.5	13.4	5.3	9.7	10.7	10.7	10.8	11.0	11.2
Karnataka	6.5	8.2	15.6	5.1	8.8	6.5	6.4	6.3	6.3	6.2
Kerala	11.7	10.8	13.0	12.0	10.0	9.8	10.0	10.2	10.5	10.8
Madhya Pr	8.2	4.7	7.7	5.2	4.3	5.8	5.5	5.3	5.2	5.1
Maharashtra	8.6	14.7	11.9	6.0	7.0	5.4	4.9	4.5	4.1	3.7
Manipur	14.6	18.1	18.3	13.1	9.7	14.4	14.4	14.5	14.6	14.9
Meghalaya	12.7	9.8	23.0	11.7	13.8	13.5	13.7	13.9	14.2	14.6
Mizoram	14.9	13.1	19.9	11.1	17.4	13.8	13.8	13.9	14.1	14.3
Nagaland	28.1	20.5	32.9	24.5	23.1	20.7	20.3	20.0	19.9	19.8
Orissa	4.8	8.2	14.4	4.9	11.2	7.4	7.2	7.0	6.9	6.8
Punjab	9.1	11.8	13.2	10.3	10.8	8.4	8.2	8.0	7.8	7.7
Rajasthan	9.1	7.4	10.4	4.2	5.4	6.5	6.3	6.0	5.9	5.7
Sikkim	23.6	14.3	5.3	12.9	16.2	11.1	10.1	9.2	8.3	7.3
Tamil Nadu	12.3	11.2	8.4	5.5	8.0	5.9	5.4	4.9	4.4	3.9
Tripura	30.5	18.6	24.5	15.4	14.2	17.5	17.5	17.5	17.7	18.0
Uttarakhand	11.3	13.0	12.6	14.5	16.9	13.6	13.8	14.2	14.6	15.0
Uttar Pr	5.8	5.5	6.3	4.7	5.2	6.8	6.8	6.8	6.9	7.0
West Bengal	13.1	13.9	13.8	10.8	9.8	11.0	10.7	10.5	10.3	10.2

Source: Author's own calculation

Table 7:21 State-wise fiscal deficit path proposed by the present study (in per cent)

	Proposed Fiscal Deficit as per cent of GSDP (shared)									
State	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Andhra Pr	3.7	3.4	3.3	3.0	2.9	2.6	2.4	2.2	2.0	1.8
Arunachal Pr	22.0	23.0	21.1	24.0	25.2	27.3	28.1	29.0	29.8	30.6
Assam	3.4	3.7	4.0	3.8	4.1	5.2	5.5	5.7	5.9	6.1
Bihar	3.1	3.2	4.0	2.8	2.8	5.2	5.2	5.2	5.2	5.2
Chhattisgarh	2.2	2.2	3.2	3.3	3.8	4.1	4.7	5.3	5.9	6.6
Goa	5.7	3.6	2.9	3.0	3.4	5.7	5.6	5.4	5.2	4.9
Gujarat	2.5	2.8	2.7	2.9	3.1	2.8	2.9	3.0	3.1	3.2
Haryana	3.4	3.2	2.7	3.5	3.7	3.2	3.4	3.5	3.6	3.7
Himachal Pr	10.1	9.1	8.5	9.5	9.6	8.1	8.0	7.8	7.7	7.5
J&Kashmir	9.6	10.5	11.6	12.1	13.1	14.7	15.7	16.8	17.9	19.1
Jharkhand	2.9	3.7	4.1	3.5	3.8	4.8	5.0	5.3	5.5	5.8
Karnataka	3.0	3.0	3.3	3.1	3.3	2.9	2.9	2.9	3.0	3.0
Kerala	3.2	3.2	3.3	4.1	4.1	3.8	4.0	4.3	4.6	4.9
Madhya Pr	3.2	2.9	3.1	3.0	2.8	3.3	3.3	3.2	3.1	3.0
Maharashtra	2.4	2.5	2.4	2.3	2.1	1.6	1.5	1.4	1.3	1.1
Manipur	12.5	13.7	15.2	15.4	15.5	18.1	19.1	20.0	21.0	22.1
Meghalaya	6.6	7.2	8.6	10.1	11.5	12.6	14.3	16.2	18.4	20.7
Mizoram	20.3	20.7	21.9	23.8	25.7	26.6	28.1	29.7	31.4	33.0
Nagaland	20.3	17.5	15.6	15.5	13.9	11.3	10.2	9.2	8.2	7.4
Orissa	3.0	3.0	3.3	2.9	3.2	3.1	3.0	3.0	3.0	2.9
Punjab	3.2	3.1	2.9	3.3	3.3	2.6	2.6	2.6	2.6	2.6
Rajasthan	2.8	2.8	3.0	2.6	2.5	3.0	2.9	2.8	2.8	2.7
Sikkim	42.2	35.2	15.7	17.8	17.5	18.9	15.2	12.0	9.4	7.2
Tamil Nadu	3.4	3.3	2.8	2.7	2.6	2.3	2.2	2.0	1.8	1.6
Tripura	9.6	9.6	9.8	10.1	9.7	10.1	10.1	10.1	10.1	10.0
Uttarakhand	6.0	5.8	5.2	6.2	6.4	6.0	6.1	6.1	6.1	6.1
Uttar Pr	2.9	3.0	3.2	3.0	3.1	4.4	4.5	4.7	4.9	5.1
West Bengal	3.4	3.4	3.4	3.5	3.4	3.4	3.4	3.4	3.3	3.3

Source: Author's own calculation

Note: the fiscal deficit in the above table the same fiscal deficit reported in the tables 7.11 and 7.17.

The required Interest Payment to Revenue Receipt ratio (IP-RR ratio) to achieve above mentioned fiscal deficit of each state with assumptions mentioned above is given in Table 7.22.

Table 7:22 State-wise required IP-RR ratio

	Required IP RR ratio									
States	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Andhra Pr	8.5	9.7	13.9	6.6	11.0	7.8	7.4	6.9	6.4	5.9
Arunachal Pr	14.0	9.3	11.3	29.0	21.6	18.8	19.6	20.4	21.2	22.0
Assam	12.9	9.3	8.4	8.3	13.4	14.2	15.0	15.7	16.5	17.3
Bihar	7.3	3.9	7.9	3.4	3.8	9.1	9.3	9.4	9.6	9.8
Chhattisgarh	5.4	4.8	49.9	6.4	11.9	10.1	10.9	11.8	12.6	13.5
Goa	12.5	5.6	9.4	9.2	22.9	15.1	14.8	14.4	14.0	13.4
Gujarat	11.0	15.8	10.1	8.7	14.7	10.7	11.1	11.5	11.8	12.2
Haryana	13.4	9.9	7.6	13.8	15.0	10.6	10.9	11.3	11.6	11.9
Himachal Pr	31.2	17.1	22.7	19.5	30.6	21.6	22.5	23.3	24.1	24.9
J& Kashmir	22.4	13.9	16.1	12.1	17.4	19.5	20.4	21.3	22.3	23.2
Jharkhand	6.6	39.8	13.1	5.9	11.7	13.1	13.5	14.0	14.5	15.0
Karnataka	7.8	9.5	15.2	5.9	10.8	8.1	8.3	8.4	8.5	8.6
Kerala	13.6	11.4	12.8	15.6	12.7	12.9	13.6	14.3	15.0	15.7
Madhya Pr	10.1	4.8	7.1	6.7	5.4	7.9	7.8	7.8	7.7	7.6
Maharashtra	9.8	15.5	11.6	7.3	9.4	7.1	6.7	6.3	5.8	5.3
Manipur	17.6	21.3	17.0	16.9	13.0	20.8	21.4	22.1	22.8	23.6
Meghalaya	14.3	10.0	23.7	16.0	17.8	17.1	17.9	18.8	19.6	20.4
Mizoram	14.9	13.0	22.7	13.1	23.3	17.3	17.9	18.5	19.1	19.7
Nagaland	34.4	23.5	31.3	31.9	28.7	27.6	28.0	28.4	28.8	29.1
Orissa	5.4	8.8	14.9	6.2	13.2	8.6	8.7	8.7	8.7	8.7
Punjab	9.9	13.1	12.5	13.0	14.5	10.1	10.2	10.2	10.2	10.2
Rajasthan	10.3	7.5	9.9	5.0	7.0	8.5	8.5	8.4	8.3	8.2
Sikkim	25.3	13.9	2.7	18.1	21.3	12.2	11.5	10.7	9.9	8.9
Tamil Nadu	15.7	11.7	7.3	6.7	10.4	7.9	7.4	6.9	6.4	5.8
Tripura	38.8	21.0	23.0	18.8	17.7	25.1	25.9	26.7	27.6	28.4
Uttarakhand	12.0	12.8	10.8	18.2	22.6	15.9	16.8	17.6	18.5	19.3
Uttar Pr	6.3	5.7	5.7	6.4	7.5	8.9	9.2	9.5	9.7	10.1
West Bengal	15.3	15.5	13.0	13.1	12.5	14.7	14.8	14.9	15.0	15.0

Source: Author's own calculation

Corresponding stabilised level of debt to GSDP ratio of each state is depicted in Table 7.23.

Table 7:23 State-wise stabilised level of debt to GSDP ratio (in per cent)

	Stabilised level of Debt-to-GSDP ratio									
States	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Andhra Pr	21.1	23.1	31.6	16.5	24.7	17.4	16.1	14.8	13.4	12.0
Arunachal Pr	150.9	149.4	88.4	140.6	166.4	156.9	162.0	166.9	171.6	176.1
Assam	37.9	30.0	25.5	25.5	38.8	41.9	43.7	45.4	47.1	48.8
Bihar	27.0	15.7	31.8	14.0	16.0	31.3	31.2	31.2	31.2	31.2
Chhattisgarh	13.3	12.6	132.4	19.5	37.6	31.7	35.9	40.4	45.4	50.9
Goa	36.9	15.6	23.0	22.7	50.7	39.4	38.2	36.8	35.3	33.6
Gujarat	18.3	26.8	18.1	16.7	25.2	20.0	20.8	21.6	22.5	23.3
Haryana	22.4	18.7	14.7	24.4	27.2	20.7	21.4	22.2	22.9	23.6
Himachal Pr	92.7	50.3	61.3	58.8	83.1	57.1	56.2	55.1	53.9	52.6
J& Kashmir	92.0	85.3	92.6	72.5	111.7	115.1	123.1	131.4	140.0	149.1
Jharkhand	14.4	83.5	31.9	16.9	32.8	33.0	34.7	36.5	38.3	40.3
Karnataka	19.0	23.3	40.6	17.6	31.6	21.9	22.1	22.3	22.5	22.7
Kerala	26.1	23.6	25.9	34.0	28.9	29.1	31.1	33.2	35.3	37.6
Madhya Pr	30.1	16.1	23.1	22.1	18.3	23.4	22.8	22.3	21.7	21.1
Maharashtra	16.1	27.6	20.0	13.4	15.5	12.0	11.2	10.3	9.4	8.4
Manipur	131.2	165.1	146.9	159.6	119.4	177.7	186.7	196.2	206.2	216.8
Meghalaya	58.1	44.4	100.6	79.0	103.2	104.0	118.2	134.0	151.6	171.0
Mizoram	147.2	124.3	168.5	134.6	228.2	182.9	193.6	204.6	216.0	227.5
Nagaland	200.1	121.2	150.8	148.1	126.8	100.2	90.3	81.2	72.8	65.1
Orissa	14.3	23.1	36.7	16.8	40.0	21.8	21.6	21.4	21.1	20.9
Punjab	19.2	24.4	24.4	26.0	27.8	20.1	20.1	20.0	19.9	19.7
Rajasthan	23.1	17.9	22.7	12.2	15.6	18.9	18.5	18.0	17.5	17.0
Sikkim	306.5	157.0	33.1	103.0	125.0	73.9	59.4	47.1	36.8	28.3
Tamil Nadu	29.7	26.4	17.1	14.8	21.8	16.6	15.2	13.9	12.5	11.1
Tripura	128.0	73.3	82.6	73.1	65.6	82.2	82.1	82.0	81.8	81.6
Uttarakhand	30.6	32.1	25.1	39.3	45.7	33.8	34.0	34.2	34.2	34.1
Uttar Pr	23.4	21.6	21.5	23.2	26.7	33.4	34.6	35.8	37.2	38.6
West Bengal	26.9	27.7	23.7	26.0	23.5	25.6	25.4	25.0	24.7	24.3

Source: Author's own calculation

As it can be seen from the Table 7.23 that when states are allowed to borrow up to the level of 3 per cent of GDP then the resulting debt-to-GSDP ratio turns out to be very high, especially in case of special category states. This high level of debt may not be sustainable in log run considering its burden on interest payments. Therefore, the present study proposes that the states should follow the fiscal deficit and debt path suggested in case one (Tables 7.16 and 7.18). Further, state-wise revenue deficit path as per cent of GSDP proposed by the present study is shown in Table 7.24.

Table 7:24 State-wise proposed revenue deficit path as per cent of GSDP (in per cent)

	Revenue Deficit as per cent of GSDP									
States	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Andhra Pr	-0.43	-0.32	0.10	-0.47	-0.39	-0.43	-0.42	-0.42	-0.42	-0.43
Arunachal Pr	-3.66	-1.52	1.62	-0.30	0.89	2.76	3.83	4.89	5.95	7.03
Assam	0.00	0.42	1.19	0.33	0.52	1.43	1.58	1.74	1.91	2.09
Bihar	-3.34	-2.64	-1.50	-2.72	-2.46	-0.38	-0.21	-0.05	0.12	0.29
Chhattisgarh	-1.38	-1.10	-0.30	-0.74	-0.43	-0.05	0.25	0.59	0.96	1.38
Goa	-0.06	-0.86	-0.83	-1.16	-0.88	0.50	0.47	0.45	0.42	0.39
Gujarat	-0.38	-0.09	0.15	-0.14	0.02	-0.12	-0.02	0.08	0.18	0.29
Haryana	0.16	0.25	0.32	0.29	0.49	0.29	0.40	0.51	0.62	0.73
Himachal Pr	3.29	3.27	3.86	2.89	3.05	2.40	2.41	2.43	2.45	2.48
J& Kashmir	-4.86	-3.69	-1.52	-3.07	-2.41	-0.80	-0.08	0.69	1.51	2.39
Jharkhand	-1.78	-1.40	-0.60	-1.41	-1.23	-0.44	-0.26	-0.06	0.15	0.38
Karnataka	-1.49	-1.27	-0.74	-1.21	-1.03	-1.11	-1.01	-0.90	-0.79	-0.69
Kerala	0.86	1.10	1.54	1.44	1.55	1.43	1.60	1.77	1.94	2.13
Madhya Pr	-3.05	-2.61	-1.94	-2.53	-2.33	-1.62	-1.49	-1.36	-1.24	-1.12
Maharashtra	-0.19	0.00	0.16	-0.25	-0.30	-0.54	-0.56	-0.58	-0.61	-0.63
Manipur	-8.83	-7.66	-4.78	-7.96	-7.14	-4.47	-3.82	-3.10	-2.30	-1.43
Meghalaya	0.78	1.56	3.28	2.28	3.00	3.74	4.56	5.49	6.56	7.79
Mizoram	5.21	6.55	9.65	6.56	7.59	8.53	9.34	10.22	11.19	12.25
Nagaland	3.88	3.66	4.56	1.80	1.48	0.82	0.63	0.49	0.40	0.33
Orissa	-0.15	0.03	0.56	-0.15	-0.01	0.14	0.17	0.19	0.22	0.25
Punjab	1.66	1.66	1.81	1.44	1.42	1.07	1.05	1.03	1.01	0.99
Rajasthan	-0.13	0.05	0.52	-0.14	-0.11	0.28	0.28	0.29	0.29	0.30
Sikkim	14.48	12.70	5.27	4.02	4.28	6.03	4.61	3.47	2.57	1.86
Tamil Nadu	-0.04	0.10	0.17	-0.31	-0.25	-0.34	-0.36	-0.39	-0.42	-0.45
Tripura	-1.18	-0.45	0.99	-0.57	-0.29	0.45	0.66	0.89	1.12	1.36
Uttarakhand	0.98	1.31	1.71	1.37	1.62	1.59	1.72	1.83	1.94	2.04
Uttar Pr	-2.33	-1.95	-1.20	-1.99	-1.84	-0.85	-0.70	-0.53	-0.35	-0.15
West Bengal	2.07	2.20	2.49	1.83	1.75	1.88	1.82	1.77	1.73	1.69

Source: Author's own calculation

To sum up, the analysis in this chapter shows that if states are required to follow a certain benchmark or norm in collection of revenues and expenditures then the resulting deficit indicators like revenue deficit and fiscal deficit would be different from the actual. The actual revenue deficit and fiscal deficit may not give appropriate picture of true fiscal balance of the states. The present study has measured the potential revenue and expenditure of the states against benchmark or norm. Considering these normative levels of revenue and expenditure, the study has proposed targets of revenue deficit and fiscal deficit for each state. The present study argues that the states should be allowed to borrow up to the level of inherent fiscal deficit derived by the study. While allowing all states to borrow up to their respective level of inherent fiscal deficit, the study has make sure that the overall fiscal deficit of all states should not cross the 3 per cent of GDP that is associated with availability of savings to all states taken together. In this manner, study has proposed a design of deriving state-specific numerical fiscal accountability targets. Considering the proposed state-wise fiscal and revenue deficits, it can be seen that the present design of uniform fiscal rule may undermine state governments' provision of public services at standard level. Therefore, the study asserts that the targets on major budgetary aggregates should be state-specific.

Moreover, apart from proposing fiscal and revenue deficit path for the states, the study has further derived state-specific debt-GSDP ratios using the debt sustainability equation. This analysis also shows that the debt level should be state-specific. The analysis of debt dynamics shows that debt levels of most of the general category states will be reduced to a comfortable level as compared to their current high level. On the other hand, debt level of special category states will be very high as compared to the current level. However, in order to ensure the standard level of public services in special category states, these states should be allow to incur the proposed level of debt. If the borrowing will be used for the productive activities then it will result in higher growth which in turn will reduce debt level in the future. Considering the resource constraints of these states, borrowing for productive use should be allowed up to the inherent level so that higher growth can be achieved.

Thus, the analysis in this chapter shows that the ceilings on major budgetary aggregates under the numerical fiscal rule should be state-specific.

Chapter 8 CONCLUSION

8.1 Introduction:

The present study was set out to analyse the design of numerical fiscal rule, particularly in case of provincial governments in a federation. During last couple of decades, some federal countries have adopted provincial numerical fiscal rules to reduce debt and deficit at a comfortable level, e.g. India, Canada, Italy, and Belgium etc. The European Union also ask its member countries to reduce debt and deficit at comfortable level. However, ceiling on major budgetary aggregates under this numerical fiscal rule is arbitrarily set. It has been argued in the literature on this issue that such arbitrary restriction on borrowing of provincial government may undermine their development perspective.

Therefore, the present study was set to analyse present design of numerical fiscal rule and propose a new design that is based on a sound economic rationale. In order to illustrate the proposed design, case of Indian states has been considered. During last decade, almost all states have adopted numerical fiscal rule in India. The numerical fiscal rules adopted by the states are uniform across all states i.e. ceiling on major budgetary aggregates are uniform across the states. Therefore, the present study has analysed design of present numerical fiscal rule and its appropriateness from the point of view of regional balanced growth.

The study has further sought to analyse an importance of design of federal fiscal transfers in determining ceilings on major budgetary aggregates under the numerical fiscal rule. In this manner, the study has attempted to integrate the design of federal fiscal transfers with the design of numerical fiscal rule and thereby attempted to take a holistic view of integrating four main aspects of intergovernmental fiscal relations namely, revenue raising capacity, expenditure need, federal fiscal transfers, and borrowing need of the provinces. The analysis of these four aspects has shown that borrowing need is dependent on them and therefore, determination of ceiling on borrowing should consider them.

Public finance literature has paid little attention on above mentioned aspects of numerical fiscal rule, particularly in case of provincial government where the federal fiscal transfers exists. Therefore, the present study was set out first; to design the federal fiscal transfer that is more appropriate from the point of view of design of numerical fiscal rule and second, to determine ceilings on the major budgetary aggregates of Indian states.

8.2 Empirical and theoretical findings:

The major theoretical and empirical findings of the study are as follows.

The analysis of interrelationship between the four pillars of intergovernmental fiscal relation presented in the first chapter shows that borrowing need of provinces is not unrelated to revenue capacity, expenditure need, and fiscal transfers. The study had provided theoretical justification of how these three components together determine borrowing need of the provinces and why these components should be taken into account while determining borrowing ceilings of the provinces.

The study further showed that the present design of ceiling on budgetary aggregates does not take into account the above mentioned aspects of borrowing and the current ceiling have been determined on an arbitrary basis. Taking case of Indian states, the study showed that such arbitrary ceiling may hamper states' provision of standard level of public services by cutting down public expenditures. Analysis of the actual public expenditure and revenue collection of Indian states reveal wide differences among the states. Under these circumstances, such arbitrary ceilings on borrowing may force states to cut down their already low level of public expenditure further. The actual fiscal balances of the states may not give true picture of the fiscal positions of the states and their borrowing need. The benchmarking or norms set in the present study further gave evidence that the actual fiscal balances of states are not justifiable. The benchmarked or norms used in the present study tells us how much of expenditure and revenue of states can be considered to be justifiable. This exercise enabled us to identify the inherent fiscal deficit from the actual fiscal deficit and the difference can be considered as the fiscal management induced fiscal deficit.

With regard to federal fiscal transfer system, the study proposed a new design. The proposed design of federal fiscal transfer took into consideration both fiscal balance and equity aspects. The study used benchmarked or normative revenue and expenditure of the states in order to determine the justifiable fiscal balance of the states. The proposed shares of states in total fiscal transfer will ensure justifiable transfer to each state. This total transfer can be given to the states either in the form of unconditional transfers or conditional transfers to take care of spill-over effects. Such design of fiscal transfer ensured that every state gets it justifiable share and will not be subject to the centre’s discretion. Moreover, the proposed design had also proved to be more appropriate for the determination of ceilings on borrowing.

The federal fiscal transfer proposed by the present study reveals that the actual fiscal transfers by the central government are not justifiable and not conducive to the design of numerical fiscal rule. Since the fiscal transfers are one of the main variant of the fiscal deficit and due to such unjustifiable actual transfers, some states ended up with higher or lower fiscal deficit than justifiable. The difference between the fiscal transfers proposed by the present study and the actual transfers can be attributed to the ill-designed fiscal transfers. This exercise supports an argument of present study that the federal fiscal transfer is an important variant of borrowing need of states and therefore it should be properly designed in order to determine justifiable levels of borrowings of the states.

The inherent fiscal deficit estimated by the present study showed that under certain norm the borrowing need differs across the states. Under this circumstance, imposition of uniform borrowing ceiling across the states may not be appropriate. Moreover, the current ceiling on borrowing is stand alone; means does not specify level of expenditure and revenue associated with deficit. In this matter, the benchmarked or normative revenue and expenditure of the present study gives direction to the states about a path of correction both at sides of account.

Further, consideration of normative revenue and expenditure for the determination of shares in total fiscal transfers as well as borrowing ceiling ensured that no state will claim higher shares in on these resources at the cost of others.

The empirical findings regarding determination of justifiable revenue and expenditure, justifiable federal fiscal transfers, and justifiable fiscal deficit of the states reveals that three components of fiscal deficit can be identified. The identification of these components helped in determination of justifiable borrowing need of each state.

Moreover, the proposed debt level of the states showed that debt levels of most of the general category states can be reduced at comfortable level than the existing high level. On the other hand, the debt levels of special category states would be higher if they are asked to borrow up to the level of inherent fiscal deficit. This analysis reveals that the actual debt levels of Indian states are not justifiable and need to be corrected. The study showed that for some states, debt level should be allowed to increase while for others it should be reduced in phase manner as proposed by the study.

8.3 Theoretical implications:

The proposed design of numerical fiscal rule is based on the four pillars of intergovernmental fiscal relation. The study has measured justifiable level of fiscal deficit, revenue deficit, and debt to GSDP ratios for each state in India based on the relationship between these four pillars. The existing design of numerical fiscal rule arbitrarily imposes ceilings on major budgetary aggregates.

The justifiable level of these budgetary aggregates proposed by the present study indicates that these ceiling can be determined on a more rational and theoretical basis. Moreover, the proposed design also may avoid reasons for over borrowing by the states discussed in the literature.

First, it avoids a common pool problem since budgetary positions of states are assessed ex ante. The benchmarked fiscal position measured in the study will avoid the possibility of states running higher deficit in order to claim higher share in transfer as well as in borrowing. Therefore, there will not be any possibility of states to pass on fiscal burden to other states and creating the common pool problem.

Second, the justifiable borrowing ceiling and debt ceiling proposed in the model will not allow states to pass on higher interest cost on other jurisdictions by running higher deficit and higher debt. The study has also restricted overall fiscal deficit of all states at 3 per cent, i.e. available savings, and therefore, it will not put upward pressure on interest rate and thereby crowding out of private investment. Moreover, the study has used benchmarked level of revenue of states; therefore, the justifiable debt level has come down for those states that have reported lower than benchmarked revenue collection. The major reason of higher debt in some states is their lower revenue effort and reliance on borrowing. Therefore, the proposed method will avoid excessive debt accumulation by these states and thereby putting upward pressure on interest rate.

Third, the benchmarking of expenditure of states will avoid the deficit bias emanating from the political process of budgeting. Since expenditure is considered only up to the benchmark level, an excessive expenditure has to be finance through own resources. In other words, such excessive expenditure will not find place in determination of transfers as well as borrowing limit. Therefore, government will probably face voters' scrutiny for excessive spending if such spending is not socially desirable.

Fourth, the proposed design also avoids the implicit bail out by the centre in the form of ex ante transfers to fiscally imprudent states. The proposed design takes into account certain normative level of revenue and expenditure of the states for determination of fiscal transfers and borrowing ceiling. Therefore, it will not be possible for states to indulge in higher spending or lower revenue collection in order to attract higher transfers.

8.4 Policy implications:

Analysis and evidences reported in the present study showed that there is a need to revise the current design of numerical fiscal accountability target of Indian states. The present study is one of these kinds of studies and provides one such basis for the design of numerical fiscal rule based on the intergovernmental fiscal relations.

The empirical resulted presented in the study shows that, against certain norm, revenue and expenditure of states differ from the actual. The normative revenue and expenditure also differ across the states in India and also their justifiable transfers. Therefore, it will be only proper that the ceiling on the fiscal accountability indicators should be state-specific. Considering wide differences in provision of public services that is reflected in a large variation in public expenditure, the design of both federal fiscal transfers and numerical fiscal rule should sufficiently incorporate these differences. This will allow a sufficient room for lower public expenditure states to undertake development activity. The analysis presented in the present study suggests the same and therefore, the study recommends revising the present design of state-level numerical fiscal rule in India.

8.5 Drawback and future research:

Literature on design of numerical fiscal rule for provincial government that ensures province-specific targets is very thin. The present study is one among them adding to the debate on uniformity and rigidness of the present design of numerical fiscal rule. However, the proposed design by the study heavily relies on the normative assessment of revenue and expenditure of state governments. The normative assessment is very crucial in determination of fiscal transfers as well as ceiling on budgetary aggregates under numerical fiscal rule. Considering data limitation, the present study has employed Regression Based Representative Revenue/Expenditure System. This method is a close approximation of the actual revenue capacity and expenditure need of states by setting a norm. If accurate data on tax bases, cost

of provision of each public services, population covered under each item of public services etc will be made available then estimation of the revenue capacity and expenditure need of the states can be done more accurately.

Moreover, the functional form used for econometric analysis is exponential function. The study has also tried translog functional form. However, due to insignificance of some variables and opposite signs than expected of some variables the study has not used this functional form for the stated purpose. The changes in functional form make differences in revenue and expenditure of states. Therefore, finding an accurate and acceptable functional form is crucial for the analysis. Apart from this, if some other more sophisticated technique for estimation or measurement of revenue capacity and expenditure need of states is developed that would be more appropriate for this king of analysis.

Further, efficiency of public expenditure is another issue that can serve as a complimentary to this kind of study. If the proposed borrowing ceiling together with efficiency is consider then such borrowing would be more justifiable. Reducing unproductive expenditure and using the resources efficiently will justify proposed borrowing ceiling and result in moving towards regional balanced development. Therefore, future research can be directed to incorporate efficiency of public expenditure in the design of fiscal rule to ensure best use of scare resources.

To sum up, the present study has offered a more appropriate design of numerical fiscal rule than the current design, given the data constraint in estimating revenue and expenditure of states. It has contributed to the discussion on the design of numerical fiscal rule and proposed one such method that is based on economic rationale. The study also alarms the adverse implications of uniform numerical rule on low income states and recommends design of state-specific numerical targets.

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APPENDIX

Appendix .A Sustainability conditions of fiscal deficit and debt

Let D is outstanding debt, Y=GDP at market prices, g=nominal growth rate, i=effective rate of interest, P=primary deficit, I=interest payment, F=fiscal deficit, and I=interest payment.

$b_t = D_t/Y_t$ and $p_t = P_t/Y_t$ are debt-GDP ratio and Primary deficit to GDP ratio.

Fiscal deficit is defined as

$D_t - D_{t-1} = F_t$

Fiscal deficit can be defined as sum of primary deficit and interest payments

$$D_t - D_{t-1} = P_t + I_t \quad \text{...(1)}$$

The interest payment can be written as

$I_t = i\, D_{t-1}$

GDP at time t can be written as

$Y_t = Y_{t-1}(1 + g_t)$

Dividing (1) by Y_t we get

$$b_t - b_{t-1}\left[\frac{1}{1+g_t}\right] = p_t + i_t b_{t-1}\left[\frac{1}{1+g_t}\right] \text{ or } b_t = p_t + b_{t-1}\left[\frac{1+i_t}{1+g_t}\right] \quad \text{...(2)}$$

Subtracting b_{t-1} from both side we get

$$b_t - b_{t-1} = p_t - b_{t-1}\left[1 - \frac{1+i_t}{1+g_t}\right] \text{ or } b_t - b_{t-1} = p_t - b_{t-1}[(g_t - i_t)/(1 + g_t)] \quad \text{...(3)}$$

In the long run b_t and b_{t-1} becomes equal their long run equilibrium values are given by

$$b_t = b_{t-1} = b^* = p\,(1 + g)/(g - i) \quad \text{...(4)}$$

Similarly, long run value of fiscal deficit can be derived

The stabilisation condition requires that $b_t = b_{t-1}$

This implies that $D_t = D_{t-1}\,(1 + g)$

Since, $D_t - D_{t-1} = F$

$D_{t-1}(1+g) - D_{t-1} = F$ or $D_{t-1}.g = F$

Diving both side by Y_t , we get

$f_t = b_{t-1}.g/(1+g)$ or $f^* = b_t.g/(1+g)$

At stabilisation $b_t = b_{t-1} = b^* = p\,(1+g)/(g-i)$

$$f^* = p\frac{1+g}{g-i}.\frac{g}{(1+g)} \text{ or } f^* = p.g/(g-i) \quad ...(5)$$

Equation (4) and (5) implies that for given values of g and i and targeted level of p i.e. primary deficit to GDP ratio, long run sustainable values of debt to GDP ratio(b^*) and fiscal deficit to GDP ratio (f^*)are given by these two equation. The relationship between f^* and b^* is given by

$$f^* = b^*\,g/(1+g) \quad ...(6)$$

Equation (6) implies that given g and with long run stabilised value of b^*, the long run stabilised value of f^* is given by (6). Thus, once the long run target for primary deficit to GDP ratio is set then given values of g and i, the corresponding values of b^* and f^* can be derived by equations (4) and (5). The relationship between them is given in equation (6).

The above mentioned equations can be written in the form of interest payment to revenue ratio (IP_t/RR_t).

Interest payment, $IP_t = i.D_{t-1} = i\,b_{t-1}\,Y_{t-1}$

At stabilised level of debt, i.e. $b_t = b_{t-1} = b^*$ and from equation (4)

$IP_t = i.[p\,(1+g)/(g-i)\,]Y_{t-1}$

Using $Y_{t-1} = Y_t/(1+g_t)$, we get,

$IP_t = i.[p\,/(g-i)\,]Y_t$

Revenue receipts can be written as a proportion of GDP

$RR_t = r.Y_t$, where r is ratio of revenue receipts to GDP ($RR_t/\,Y_t$)

$\frac{IP_t}{RR_t} = \frac{i.p}{r(g-i)} = (ip)^*$, (say)

$\frac{p}{(g-i)} = (ip)^* \, r/i$

From equation (5),

$$f^* = (ip)^* \, r.g/i \quad \text{...(7)}$$

From equation (4),

$$b^* = (ip)^* \, r.(1+g)/i \quad \text{...(8)}$$

First, the sum of all states' interest payment is

$IP_a = \sum IP_j$, where j=1,2,...,n

Similarly, sum of all states' revenue receipts is

$RR_a = \sum RR_j$, where j=1,2,...,n

The all state average interest payment to revenue receipts ratio will be

$\frac{IP_a}{RR_a} = \sum IP_j \, / \sum RR_j$

The commission has proposed the same average IP-RR ratio for all states.

From equation (8) we have,

$$\frac{b^*}{(1+g)} \frac{i}{r} = (ip)^* or \; IP/RR \quad \text{...(8)}$$

For an individual state j, the sustainable debt to GDP ratio is given by

$\frac{b^*_j}{(1+g_j)} \frac{i_j}{r_j} = \frac{b^*_a}{(1+g_a)} \frac{i_a}{r_a}$, in case where all states are assumed to attain average $IP - RR$ ratio.

The stabilised level of debt to GDP ratio is given by

$$b^*_j = \; b^*_a \left[\left(\frac{i_a}{i_j} \right) \left(\frac{r_j}{r_a} \right) \right] [(1+g_j)/\,(1+g_a)]$$

Similarly, stabilised level of fiscal deficit is given by

$$f^*_j = \; f^*_a \, [i_j r_a g_a / \, i_a r_j g_i]$$

Appendix .B State-wise Fiscal Responsibility Legislation (FRL)

States	Year of Enactment	Targets for Revenue Deficit	Targets for Gross Fiscal Deficit	Targets for Liabilities
Karnataka	Aug.02	Nil by March 2006	3% of GSDP by March 2006	25 % of GSDP by March 2015
Kerala	Sep.03	2 per cent of GSDP by 2005-06, Nil by 2006-07	3.5 % of GSDP by 2005-06 and 2 % of GSDP by 2006-07	-
Tamil Nadu	May.03	Eliminate RD by 2008-09	3% of GSDP by March 2008	
Punjab	May.03	Reduce RD/RR atleast 5% points from the previous year, until revenue balance is achieved.	Contain annual growth rate of GFD to 2 per cent in nominal terms till GFD is below 3% of GSDP	40 % of GSDP by 2006-07
Uttar Pradesh	Feb.04	Nil by March 2009	3% of GSDP by March 2009	25% of GSDP by March 2018
Gujarat	Mar.05	Nil by March 2008.	3 % of GSDP by March 2009.	30% of GSDP by March 2008
Himachal Pradesh	Apr.05	Reduce RD-RR ratio at least by 2% points each year until revenue surplus is achieved.	-	-
Maharashtra	Apr.05	Eliminate RD by 2009	Shall specify by rules, for reduction of GFD.	-
Orissa	May.05	Nil by 2008-09	3 % of GSDP by 2009; annual reduction of 1.5% of GSDP from 2004-05.	(i) Debt stock to be limited to 300 % of RR by 2007-08
				(ii) IP/RR ratio to be limited to 18-25 %.
Rajasthan	May.05	Nil by March 2009 with an average annual reduction of 3% in RD-RR ratio.	3 % of GSDP, annual reduction of 0.4 per cent of GSDP.	Outstanding Debt not to exceed twice the receipts in the Consolidated Fund of the State.
Assam	May, 2005	Nil by March 2010.	3 % of GSDP by March 2010.	45 % of GSDP by March 2010.
Tripura	June, 2005	Strive to have revenue balance and remain revenue surplus.	3% of GSDP by March 2010.	40 per cent of GSDP by 2010
Haryana	July, 2005	Nil by 2008-09 and generate revenue surplus thereafter.	3% of GSDP by March 2010.	28% of GSDP by March 2010.
Manipur	August, 2005	Strive to have revenue balance and remain revenue surplus	3% of GSDP.	-

Source: RBI staff studies, 2008.

States	Year of Enactment	Targets for Revenue Deficit	Targets for Gross Fiscal Deficit	Targets for Liabilities
Nagaland	August, 2005	Strive to have revenue balance and remain revenue surplus	3% of GSDP by March 2009.	40% of the GSDP by March 2010.
Madhya Pradesh	August, 2005	Nil by March 2009	3% of GSDP by March 2009.	40% of GSDP by 2015
Chhattisgarh	September, 2005	Nil by March 2009	3% of GSDP by March 2009	-
Andhra Pradesh	October, 2005	Nil by March 2009	3% of GSDP by March 2010.	35% of GSDP by March 2010
Uttaranchal	October, 2005	Nil by March 2009	3% of GSDP by March 2009.	25% of the GSDP by March 2015.
Arunachal Pradesh	March, 2006	Nil by March 2009.	3% of GSDP by March 2010.	-
Meghalaya	March, 2006	Nil by 2008-09.	3% of GSDP by 2008-09.	28% of the GSDP.
Bihar	April, 2006	Nil by 2008-09.	3 % of GSDP from 2008-09 onwards.	-
Goa	May, 2006	Nil by March 2009. annual reduction of 1.5 % of RD/RR from April 2006.	3 % of GSDP by March 2009 annual reduction of 0.5 % of GSDP from April 2006.	30 % of the GSDP by March 2009. Ratio of IP/RR not to exceed 20 % by March 2009.
Jammu and Kashmir	Aug.06	• Maintain revenue surplus. • Initiate steps to strengthen revenue surplus.	• 3 per cent of GSDP by March 2010. • Reduce GFD/GSDP by 0.5 per cent in each financial year beginning April 2006.	55 % GSDP in 2010.
Mizoram	Oct.06	• Nil by March 31, 2009.	• 3 per cent of GSDP by March 2009. • Reduce GFD/GSDP by such percentage points in each financial year so as to achieve 3 per cent of GSDP in March 2009.	• Total outstanding debt, excluding public account, in a year shall not exceed twice that of the estimated receipts in the consolidated fund of the State at the close of the financial year.
Jharkhand	May.07	• Nil by March 31, 2009.	• 3 per cent of GSDP by March 2009. • Reduce GFD/GSDP by such percentage points in each financial year so as to achieve 3 per cent of GSDP in March 2009.	• The total debt stock should be limited to 300 per cent of the TRR of the State by 2007-08. • In order to bring the debt stock to a sustainable level, interest payments (IP) to revenue receipts (RR) ratio is to be limited to 18 to 25 per cent.

Source: RBI staff studies, 2008.

Appendix .C Thirteenth Finance Commission's Recommendations and FRL Amendments

13FC Recommendations			
State	RD	FD	Debt-GSDP ratio 2014-15
Andhra Pradesh	Nil by 2011-12	3 % by 2011-12	27.6
Arunachal Pradesh	Nil by 2011-12	3 % by 2011-12	50.1
Assam	Nil by 2011-12	3 % by 2011-12	28.5
Bihar	Nil by 2011-12	3 % by 2011-12	41.6
Chhattisgarh	Nil by 2011-12	3 % by 2011-12	23.9
Goa	Nil by 2011-12	3 % by 2011-12	29.1
Gujarat	Nil by 2011-12	3 % by 2011-12	27.1
Haryana	Nil by 2011-12	3 % by 2011-12	22.9
Himachal Pradesh	Nil by 2011-12	3 % by 2011-12	40.1
Jammu and Kashmir	Nil by 2011-12	3 % by 2014-15	49.3
Jharkhand	Nil by 2011-12	3 % by 2011-12	26.9
Karnataka	Nil by 2011-12	3 % by 2011-12	25.2
Kerala	Nil by 2014-15	3 % by 2013-14	29.8
Madhya Pradesh	Nil by 2011-12	3 % by 2011-12	35.3
Maharashtra	Nil by 2011-12	3 % by 2011-12	25.3
Manipur	Nil by 2011-12	3 % by 2013-14	54.3
Meghalaya	Nil by 2011-12	3 % by 2011-12	31.7
Mizoram	Nil by 2011-12	3 % by 2014-15	74.8
Nagaland	Nil by 2011-12	3 % by 2013-14	52.3
Orissa	Nil by 2011-12	3 % by 2011-12	29.5
Punjab	Nil by 2014-15	3 % by 2013-14	38.7
Rajasthan	Nil by 2011-12	3 % by 2011-12	36.5
Sikkim	Nil by 2011-12	3 % by 2013-14	55.9
Tamil Nadu	Nil by 2011-12	3 % by 2011-12	25.2
Tripura	Nil by 2011-12	3 % by 2011-12	43.8
Uttarakhand	Nil by 2011-12	3 % by 2013-14	37.2
Uttar Pradesh	Nil by 2011-12	3 % by 2011-12	41.9
West Bengal	Nil by 2014-15	3 % by 2013-14	34.3

Source: RBI, PRS and Thirteenth Finance Commission.

Appendix .D Numerical Fiscal Rules: International Experience

Country	Numerical Fiscal Rules
Australia	The new Internal Stability Pact adopted in 2012 requires all levels of governments to achieve balance budget by 2016. All layers of government are required to reduce government debt by one-twentieth per year.
Belgium	Treaty on Stability, Coordination, and governance requires regional governments to achieve Nominal budget balance by 2015
Czech Republic	It is proposed that if total public debt exceeds 48 per cent of GDP then local and central governments are required to balance the budget.
Denmark	As per the Budget Law, structural deficit should be contained within 0.5 per cent of GDP
Germany	A 'debt break' introduced in the constitution in 2009 requires that sub-national governments should be financed without structural deficit from 2020 onwards.
Mexico	The Federal Budget Law introduces structural balance rule
Canada	Balanced budgets should be achieved by different sub-national governments by different time lines from 2010-11 to 2017-18.
Argentina	Under the New Fiscal Responsibility Law, provincial governments are required to ensure nominal current expenditure growth should not exceed nominal GDP growth rate; public debt service to current revenue should be within 15 per cent, and ensure balance of revenue and expenditure.
Brazil	Under the Fiscal Responsibility Law (2000) net public debt to net revenue ratio should be within 2 for states, personnel expenditure as proportion of net current revenue should be less than 60 percent, and credit operations cannot exceed capital expenses.

Source: Canadian Experiences with Fiscal Consolidations and Fiscal Rules, Stephen Tapp 2010; and Fiscal Rules in Latin America: A Survey Juan Carlos Berganza, 2012

Appendix .E Estimation Results:

```
. xtpcse  lnonrev lngsdp i.state1, correlation(ar1)

Prais-Winsten regression, correlated panels corrected standard errors (PCSEs)

Group variable:    state1                          Number of obs      =        55
Time variable:     year                            Number of groups   =        11
Panels:            correlated (balanced)           Obs per group: min =         5
Autocorrelation:   common AR(1)                                   avg =         5
                                                                  max =         5
Estimated covariances      =        66            R-squared          =    0.9792
Estimated autocorrelations =         1            Wald chi2(5)       =    159.29
Estimated coefficients     =        12            Prob > chi2        =    0.0000

------------------------------------------------------------------------------
             |             Panel-corrected
     lnonrev |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      lngsdp |    .549202   .0921192     5.96   0.000     .3686516    .7297524
             |
      state1 |
          2  |   .8967885   .3065003     2.93   0.003     .2960589    1.497518
          3  |   .7944503   .2361939     3.36   0.001     .3315189    1.257382
          4  |   .7380953   .2731598     2.70   0.007     .2027119    1.273479
          5  |  -.5604735   .2121548    -2.64   0.008    -.9762893   -.1446577
          6  |   -.330964   .2229451    -1.48   0.138    -.7679284    .1060003
          7  |  -.8764727   .1489696    -5.88   0.000    -1.168448   -.5844977
          8  |    -.93512   .2059132    -4.54   0.000    -1.338703   -.5315375
          9  |   .8841663   .1102707     8.02   0.000     .6680397    1.100293
         10  |  -.4968905   .2232163    -2.23   0.026    -.9343865   -.0593945
         11  |   .5772794   .2763289     2.09   0.037     .0356847    1.118874
             |
       _cons |   1.733356   .8294114     2.09   0.037     .1077397    3.358973
-------------+----------------------------------------------------------------
         rho |   .3556149
------------------------------------------------------------------------------

. reg  lnrevexp lnppl i.state1, cluster(state)

Linear regression                               Number of obs =        55
                                                F(  0,    10) =         .
                                                Prob > F      =         .
                                                R-squared     =    0.9838
                                                Root MSE      =    .10792

                                   (Std. Err. adjusted for 11 clusters in state)
------------------------------------------------------------------------------
             |               Robust
    lnrevexp |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lnppl |   8.766847   .6347685    13.81   0.000     7.352495     10.1812
             |
      state1 |
          2  |  -25.64364   1.982501   -12.93   0.000    -30.06093   -21.22635
          3  |  -12.93647   1.023601   -12.64   0.000    -15.21719   -10.65574
          4  |  -17.79152   1.400402   -12.70   0.000    -20.91181   -14.67123
          5  |  -5.496301   .3969384   -13.85   0.000    -6.380735   -4.611868
          6  |  -6.685824   .4831983   -13.84   0.000    -7.762457   -5.609191
          7  |   1.822877   .1459791    12.49   0.000     1.497616    2.148139
          8  |  -3.299062   .2420198   -13.63   0.000    -3.838316   -2.759809
          9  |   6.865359   .5123378    13.40   0.000     5.723799    8.006919
         10  |  -8.498203   .6257383   -13.58   0.000    -9.892435   -7.103971
         11  |  -16.36465   1.264644   -12.94   0.000    -19.18245   -13.54684
             |
       _cons |   25.64649   1.270131    20.19   0.000     22.81646    28.47651
------------------------------------------------------------------------------

. xtpcse lntotrecrbi lngsdp i.state1, correlation(ar1)

Prais-Winsten regression, correlated panels corrected standard errors (PCSEs)

Group variable:    state1                          Number of obs      =        55
Time variable:     year                            Number of groups   =        11
Panels:            correlated (balanced)           Obs per group: min =         5
Autocorrelation:   common AR(1)                                   avg =         5
                                                                  max =         5
Estimated covariances      =        66            R-squared          =    0.9786
Estimated autocorrelations =         1            Wald chi2(5)       =    249.68
Estimated coefficients     =        12            Prob > chi2        =    0.0000

------------------------------------------------------------------------------
             |             Panel-corrected
 lntotrecrbi |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      lngsdp |    .555368   .0710849     7.81   0.000     .4160442    .6946918
             |
      state1 |
          2  |   .8379741   .2548051     3.29   0.001     .3385652    1.337383
          3  |   .7609433   .2146768     3.54   0.000     .3401845    1.181702
          4  |   .6843455   .2408977     2.84   0.004     .2121946    1.156496
          5  |  -.6038257   .2083586    -2.90   0.004    -1.012201   -.1954503
          6  |  -.3550339   .2088871    -1.70   0.089    -.7644452    .0543773
          7  |  -.8246053   .1458692    -5.65   0.000    -1.110504   -.5387069
          8  |  -.9766316   .2113809    -4.62   0.000     -1.39093   -.5623327
          9  |   .8462845   .0975205     8.68   0.000     .6551479    1.037421
         10  |  -.5420863   .2096928    -2.59   0.010    -.9530767   -.1310959
         11  |   .5489451   .2374202     2.31   0.021       .08361    1.01428
             |
       _cons |   1.725612    .643658     2.68   0.007     .4640653    2.987158
-------------+----------------------------------------------------------------
         rho |   .3178446
------------------------------------------------------------------------------
```

```
. xtregar  lncapexrbi lnppl i.state1

RE GLS regression with AR(1) disturbances       Number of obs      =        55
Group variable: state1                          Number of groups   =        11

R-sq:  within  = 0.3913                         Obs per group: min =         5
       between = 1.0000                                        avg =       5.0
       overall = 0.9558                                        max =         5

                                                Wald chi2(12)      =    686.92
corr(u_i, Xb)      = 0 (assumed)                Prob > chi2        =    0.0000
```

lncapexrbi	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lnppl	5.042002	1.009827	4.99	0.000	3.062777	7.021228
state1						
2	-15.19977	3.156375	-4.82	0.000	-21.38615	-9.013389
3	-7.749749	1.63323	-4.75	0.000	-10.95082	-4.548677
4	-9.653436	2.231371	-4.33	0.000	-14.02684	-5.280029
5	-3.018705	.6438141	-4.69	0.000	-4.280558	-1.756853
6	-4.655992	.7788703	-5.98	0.000	-6.182549	-3.129434
7	.2774456	.2639508	1.05	0.293	-.2398885	.7947798
8	-2.21065	.4049423	-5.46	0.000	-3.004322	-1.416977
9	3.191192	.8246557	3.87	0.000	1.574896	4.807487
10	-5.067748	1.003336	-5.05	0.000	-7.03425	-3.101246
11	-9.520427	2.015779	-4.72	0.000	-13.47128	-5.569573
_cons	17.28337	2.022547	8.55	0.000	13.31925	21.24749
rho_ar	.153695	(estimated autocorrelation coefficient)				
sigma_u	0					
sigma_e	.17187414					
rho_fov	0	(fraction of variance due to u_i)				
theta	0					

```
. reg  lnonrev lngsdp i.state1, cluster(state)

Linear regression                               Number of obs =        85
                                                F(  0,    16) =         .
                                                Prob > F      =         .
                                                R-squared     =    0.9911
                                                Root MSE      =    .08351

                                   (Std. Err. adjusted for 17 clusters in state)
```

lnonrev	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
lngsdp	1.03224	.0595638	17.33	0.000	.9059707	1.15851
state1						
2	-.5540297	.0640165	-8.65	0.000	-.6897387	-.4183208
3	.0961108	.0924191	1.04	0.314	-.0998089	.2920305
4	.3476503	.1704583	2.04	0.058	-.0137052	.7090057
5	-.1964286	.0068187	-28.81	0.000	-.2108836	-.1819736
6	-.1146876	.0485699	-2.36	0.031	-.2176513	-.0117239
7	-.2227296	.091209	-2.44	0.027	-.4160841	-.0293751
8	.0848068	.0200335	4.23	0.001	.0423377	.1272759
9	-.0756231	.0447812	-1.69	0.111	-.1705551	.0193088
10	.0453509	.046157	0.98	0.340	-.0524976	.1431993
11	-.1716949	.0351424	-4.89	0.000	-.2461935	-.0971963
12	-.164078	.0640666	-2.56	0.021	-.2998931	-.028263
13	-.0152858	.0541988	-0.28	0.782	-.1301821	.0996105
14	-.1336544	.034157	-3.91	0.001	-.206064	-.0612448
15	-.0351364	.0010537	-33.35	0.000	-.0373701	-.0329026
16	-.117391	.0028018	-41.90	0.000	-.1233307	-.1114514
17	-.638107	.0124075	-51.43	0.000	-.6644097	-.6118044
_cons	-2.760351	.7806102	-3.54	0.003	-4.41517	-1.105531

```
. reg  lnrevexp lnppl  lnurb i.state1, cluster(state)

Linear regression                               Number of obs =        85
                                                F(  1,    16) =         .
                                                Prob > F      =         .
                                                R-squared     =    0.9954
                                                Root MSE      =    .05899

                                   (Std. Err. adjusted for 17 clusters in state)
```

lnrevexp	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
lnppl	7.752312	.5950769	13.03	0.000	6.490805	9.013819
lnurb	2.09281	.4766245	4.39	0.000	1.082411	3.103209
state1						
2	-.0050213	.5833365	-0.01	0.993	-1.24164	1.231597
3	8.665207	.6392683	13.55	0.000	7.310019	10.0204
4	27.32489	2.591457	10.54	0.000	21.83125	32.81854
5	1.748003	.2887839	6.05	0.000	1.135808	2.360198
6	8.263303	.7339816	11.26	0.000	6.707331	9.819274
7	6.650598	.4980467	13.35	0.000	5.594787	7.70641
8	1.878583	.2449552	7.67	0.000	1.359301	2.397865
9	5.742608	.6460409	8.89	0.000	4.373062	7.112153
10	.9751144	.0843336	11.56	0.000	.7963352	1.153894
11	-2.552781	.1499195	-17.03	0.000	-2.870596	-2.234966
12	5.873931	.3591157	16.36	0.000	5.11264	6.635222
13	7.498958	.7003485	10.71	0.000	6.014286	8.983631
14	1.734766	.1239309	14.00	0.000	1.472045	1.997488
15	.3460663	.2498928	1.38	0.185	-.1836827	.8758153
16	-5.510255	.6302356	-8.74	0.000	-6.846295	-4.174215
17	-.6920389	.0562451	-12.30	0.000	-.8112733	-.5728046
_cons	-12.63577	1.41885	-8.91	0.000	-15.6436	-9.627942

```
. reg   lntotrecrbi lngsdp i.state1, cluster(state)

Linear regression                               Number of obs =        85
                                                F(  0,    16) =         .
                                                Prob > F      =         .
                                                R-squared     =    0.9863
                                                Root MSE      =    .10405

                                    (Std. Err. adjusted for 17 clusters in state)
------------------------------------------------------------------------------
             |               Robust
lntotrecrbi |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      lngsdp |   1.010594   .0770709    13.11   0.000     .8472113    1.173977
             |
      state1 |
          2  |  -.6132215   .0828324    -7.40   0.000    -.7888182   -.4376247
          3  |   .0921224   .1195831     0.77   0.452    -.1613823    .3456272
          4  |   .2508675   .2205597     1.14   0.272    -.2166982    .7184333
          5  |  -.2288882   .0088229   -25.94   0.000    -.2475918   -.2101846
          6  |  -.1553682   .0628457    -2.47   0.025    -.2885952   -.0221413
          7  |  -.2918426   .1180174    -2.47   0.025    -.5420282   -.0416569
          8  |   .0491609   .0259218     1.90   0.076    -.0057908    .1041127
          9  |  -.1266949   .0579434    -2.19   0.044    -.2495294   -.0038603
         10  |   .0434614   .0597236     0.73   0.477    -.0831469    .1700697
         11  |  -.1875152   .0454715    -4.12   0.001    -.2839105   -.0911198
         12  |  -.2063196   .0828971    -2.49   0.024    -.3820537   -.0305855
         13  |   -.033601    .070129    -0.48   0.638    -.1822678    .1150658
         14  |  -.1528211   .0441965    -3.46   0.003    -.2465134   -.0591287
         15  |  -.0333453   .0013634   -24.46   0.000    -.0362356    -.030455
         16  |  -.1436279   .0036254   -39.62   0.000    -.1513133   -.1359425
         17  |  -.6153295   .0160543   -38.33   0.000     -.649363   -.5812959
             |
       _cons |  -2.438683   1.010049    -2.41   0.028    -4.57989    -.2974752
------------------------------------------------------------------------------

. reg  lncapexrbi lnppl  i.state1, cluster(state)

Linear regression                               Number of obs =        85
                                                F(  0,    16) =         .
                                                Prob > F      =         .
                                                R-squared     =    0.9549
                                                Root MSE      =    .19805

                                    (Std. Err. adjusted for 17 clusters in state)
------------------------------------------------------------------------------
             |               Robust
lncapexrbi  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lnppl |   4.975631   1.615581     3.08   0.007     1.550751    8.400511
             |
      state1 |
          2  |  -1.591565   .3156986    -5.04   0.000    -2.260816   -.9223136
          3  |   4.614033   1.950368     2.37   0.031     .4794378    8.748628
          4  |   17.46608    6.55563     2.66   0.017     3.568767     31.3634
          5  |   1.262504   .5545786     2.28   0.037     .0868501    2.438158
          6  |   4.899199   1.959045     2.50   0.024     .7462083    9.052189
          7  |   3.449748   1.537015     2.24   0.039     .1914219    6.708075
          8  |    1.44552   .5320875     2.72   0.015     .3175446    2.573495
          9  |   3.036736    1.49174     2.04   0.059    -.1256104    6.199083
         10  |   .5424032   .2592558     2.09   0.053    -.0071945    1.092001
         11  |  -1.264666   .4518981    -2.80   0.013    -2.222647   -.3066849
         12  |   2.168753   1.136357     1.91   0.074    -.2402156    4.577721
         13  |   3.642907   1.805088     2.02   0.061    -.1837091    7.469522
         14  |   .2091878    .353913     0.59   0.563    -.5410742    .9594497
         15  |   .6414685   .2634762     2.43   0.027     .0829238    1.200013
         16  |   -3.89005   1.375947    -2.83   0.012    -6.806928   -.9731717
         17  |  -1.852394   .1189671   -15.57   0.000    -2.104593   -1.600195
             |
       _cons |  -.9222803   3.432627    -0.27   0.792    -8.199124    6.354563
------------------------------------------------------------------------------
```