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FISCAL FEDERALISM: TRANSFER DEPENDENCY AND ITS DETERMINANTS AMONG SELECT INDIAN STATES

J S Darshini* **and K Gayithri****

Abstract

India is a federal country with asymmetric levels of development: Asymmetries that are both vertical and horizontal. This paper proceeds in two steps. First, it decomposes the level and pattern of fiscal dependency on the different components of total transfers. Second, it examines the factors that influence the allocation of conditional/discretionary central transfers to the states. The study finds that successive finance commissions have gradually enhanced the share of states in the centralised divisible pool over a period of time. It is evident from the overall empirical outcomes that states with a larger fiscal space and GSDP growth were able to get more funds relative to the political factors during the first and third sub-period. In all the three sub-periods, interactive dummies have remained significant in determining the allocation of federal funds to the states.

Keywords: Fiscal federalism, fiscal dependency, federal transfers and expenditure.

Introduction

Fiscal asymmetry in powers of taxation and expenditure responsibilities are vested with any federal structure. The allocation of expenditure and revenue responsibilities to different levels of government is the most fundamental issue in fiscal federalism. Under afederal system like India, the fiscal performance and the path of fiscal adjustment are closely linked. Fiscal performance is reflected in the existing resource gap, which is the volume of expenditure financed from alternative sources of revenue. Proper fiscal management involves both revenue and expenditure adjustment. In any fiscal system, the fiscal management at the subnational level is closely linked with the level of financial dependency on the higher level of government.Larger the extent of asymmetry between the centre and sub-national governments, and even across the subnational governments both in the capacity to collect revenue and cost of providing public services (even with comparatively larger assigned expenditure responsibilities), are the sources of horizontal and vertical externalities. These externalities are the limits to decentralisation, which also necessitate greater dependency on central transfers in the path of fiscal adjustment.

Federal transfers address the inefficiency and inequality that would result from inequalities in the process of decentralisation of spending and revenue-sharing responsibilities.

Indian fiscal federalism can be viewed in the constitutional and political context (Rajaraman Indira, 2007). Given the nature and design ofa federal system like India and the larger responsibilities at the subnational level, intergovernmental transfers play an instrumental role in shaping the fiscal performance and way of fiscal adjustment at the subnational level.In bridging the existing resource gap, finance commissions determine a significant part of formula-based devolution. Besides the finance

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commissions, two other channels –the Planning Commission (now Niti Aayog with changed framework) and central ministries provide plan-purpose and specific purpose transfers. Specific purpose grants such as centrallysponsored programmes and additional central assistance for state plan schemes play an important role in influencing the level and quality of public service delivery. While general-purpose transfers are given to enable the states to provide comparable levels of public services at a comparable tax effort, specific purpose transfers are given to ensure a minimum standard of public services (Rao Govinda, 2019) Substantial resources flow to the subnational level in the form of generalpurpose transfers. Specific purpose transfers have important fiscal and economic advantages in terms of allocative efficiency.

Apart from fiscal intervention through these transfers, in recent decades, the central government had undertaken several policy initiatives by way of intervention, concerning the economic activities of respective states. Further, based on the second generation fiscal federalism theories and with the Eleventh Finance Commission being constituted, emphasis came to be placed on incentivising states for undertaking some fiscal and institutional reforms at the subnational level[1]. Given these fiscal correction measures undertaken at the state level and the changing pattern of fund sharing from the central pool between the Union and states, it is essential to understand the changing fiscal position and the pattern and extent of dependency on the central government funds. It is necessary to examine how the states' reliance on different components of transfers has changed over time. This paper assesses the pattern of dependency of states on the different components of the total central transfers, as also the extent of dependency on the different types of central transfers and the factors that determine the flow of transfers to the states.

The entire period of the study has been analysed taking into account the institutional and policy changes initiated over the years. Based on an inter-temporal analysis of devolution of transfers, implementation of new economic policies and fiscal adjustment measures, the period of the study from 1981-82 to 2014–2015 has been sub-divided into three phases: 1981-82 to 1991-92 (Period I); 1992-93 to 2002-03 (Period II); and 2003-04 to 2014-15 (Period III). Fourteen major states have been considered for the present analysis. They are Andhra Pradesh, Bihar, Gujarat, Haryana, Kerala, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. The data required for the study were compiled from the Reserve Bank of India Bulletin (various issues). The present study is restricted till the period of the Thirteenth Finance Commission due to data constraints (non-availability of data on state GDSP due to change in the estimation method). The required data has been obtained from RBI Bulletins, Reserve Bank of India (RBI) State Finance: A study of State Budget documents and individual State Budget documents.

The structure of the paper consists of two parts. The first part of the paper focuses on the theoretical background, assesses the pattern of dependency of states on the different components of the total central transfers, as also the extent of dependency (following the methodology developed by Srivastava and Rao, 2014) on the different types of central transfers. The second part of the paper examines the determinants of transfers, besides presenting a summary of the findings.

[1] Debt Consolidation And Relief Facility(DCRF) by the FC-XII , Debt Swap Scheme(2002-03 to 2004-05), Tax reform measures(VAT)-2005,FRBM Act(2002-03), New Pension Scheme (NPC), Guarantee RedemptionFund, Consolidated Sinking Fund.

Theoretical Background

Fiscal federalism has a rich theoretical background with first and secondgeneration theories. Fiscal federalism has various instruments such as taxes, loans and grants which are used to correct the inherent fiscal imbalances. The intergovernmental transfer has two dimensions: one is the vertical sharing and another is the horizontal sharing of revenue between the national and subnational governments and also between the subnational governments. The economic rationale for designing an equalisation transfer system is to reduce fiscal inequality. The allocation of expenditure and revenue responsibilities to different levels of governments is the most fundamental issue in federalism. According to traditional fiscal federalism theories, intergovernmental transfers can be used to reduce problems associated with decentralisation like inequality, externalities and poor quality in the delivery of local public goods (Oates, 1972). Intergovernmental transfers play a substantial role in reducing inequality, assuring a certain minimum level of local public goods and incentivising efficient allocation of resources in a decentralised environment (ibid). The theory says the federal government should hold the responsibility of macroeconomic stabilisation and income redistribution. For that, the federal government has to possess a larger share of the total revenue. Thus, the federal government has more taxing powers but comparatively fewer expenditure responsibilities; and, on the other hand, sub-national governments generally have less taxing powers but more expenditure functions to perform.

The first generation theory (FGT) of fiscal federalism emphasised the role of intergovernmental transfers in solving the problems of vertical as well as horizontal fiscal imbalances. Fiscal decentralisation is associated with expenditure decentralisation and revenue centralisation (no decentralisation of taxing power) to achieve equity and efficiency in the federation. This result in most of the countries is the inability of the subnational governments to finance their public services from their resources. As a step towards effective decentralisation, the second generation theory (SGT) emphasises the decentralisation of revenue responsibilities of the subnational governments. The FGT envisaged a major role for the central government in establishing macroeconomic stability and income distribution. It emphasised the role of subsidies/matching grants in the welfare maximisation of subnational governments to establish efficiency and equity. In fiscal federalism literature, the role of the central government is emphasised compared to that of subnational governments. But the second generation theory emphasised market-preserving federalism and for the design of transfers, tax collection, the political economy of the different levels of governments and hard-budget constraints. It is against discretionary transfers and bailing out fiscally irresponsible subnational governments.

Decomposition and Pattern of Dependence: Different Categories of States

In the previous literature, some studies have examined the extent of fiscal dependency of the states on federal transfers. Regarding the level of fiscal dependency, Srivastava and Rao (2014) have analysed the pattern of dependence of different categories of states by using an index of the dependence of states on the different components of central government transfers. The study revealed based on a state-wise decomposition, that the reliance of high-income states on transfers was between 6-18 per cent, middle-income states between 15-23 per cent, and low-income states between 21-58 per cent. Following this, the present study tries to decompose the pattern of dependency on different components of transfers.

To measure the degree of fiscal dependence on the central government, several methods have been suggested in previous literature. Transfers as a share of subnational revenue (Rodden, 2002; Serhan Cevik, 2017); transfers as a share of subnational expenditure (Serhan Cevik, 2017; Hunter, 1974); and even transfers as a share of central government revenue (Bahl & Wallace,2007) as a measure of the level of dependency on central transfers. Transfers as a share of subnational revenue expenditure have been employed in the present study to find out the relative role of sub-components of transfers in bridging the fiscal gap.

In the decomposition process, the share of central taxes (D1) is treated as the first component and the total grants (D2) as the second component. The second component includes the state plan grants (D2.1), conditional grants (D2.2) and non-plan grants (D2.3) as subcomponents. A conditional grant is a combination of central plan grants and centrally sponsored schemes[2]. Each type of transfer is characterised by a specific objective.

Table 1: Decomposition of Dependence: States with a Relatively Larger Level of Dependence on Transfers

Period	States	Total Transfers	Share in Central Taxes	Total Grants	Total Grants			
					State Plan Grants	CSS	CPG	Non Plan Grants
1981-91	**Uttar Pradesh**	50.06	30.37	19.68	8.20	5.88	2.83	2.77
1992-02		41.55	28.13	13.42	7.98	3.31	0.56	1.57
2003-14		55.16	38.71	16.45	6.69	4.54	0.57	4.65
1981-91	**MP**	41.42	26.00	15.42	6.73	4.89	2.17	1.64
1992-02		37.42	24.41	13.01	4.69	5.31	1.34	1.67
2003-14		49.08	31.18	17.90	8.79	4.68	0.81	3.62
1981-91	**Bihar**	56.32	38.63	17.69	6.95	5.42	2.44	2.88
1992-02		54.67	40.63	14.04	4.79	5.10	0.43	3.71
2003-14		72.04	50.49	21.55	10.47	3.92	1.70	5.47
1981-91	**Odisha**	57.15	29.54	27.61	8.26	6.61	3.37	9.37
1992-02		46.72	28.08	18.64	7.72	4.71	1.13	5.08
2003-14		56.49	35.44	21.25	10.90	4.15	0.45	5.55
1981-91	**Rajasthan**	42.31	21.05	21.26	8.66	8.19	1.26	3.14
1992-02		35.03	18.84	16.19	4.85	5.52	1.13	4.68
2003-14		39.92	25.45	14.47	5.68	4.21	0.25	4.33

Source: Computed by the authors

[2] An index of dependence (D) is defined as D=TR/RE. where TR=Transfers Received by a state on Revenue Account (TR is a sum of SCTR+SPG+CT (CSS+CPG) +NPG) and RE=state's Total Revenue Expenditure. Where, SCTR= Share in central taxes, TG=Total of plan and Non-Plan Grants, STG=State plan Grants, NPT =Non-Plan Grants and CT CT = conditional transfers. D is the sum of four components: D=D1+D2, Where D1=D*SCTR/TR; D2=D*TG/TR; D2.1=D2*SPG/TR and D2.2=D2*CT/TR D2.3=D2* NPG /TR. BIMARU states- Bihar,MP, Rajasthan, UP.

Conditional transfers need to achieve a minimum level of standard in providing public goods, whereas equalisation transfers deal with regional equity. This research has found that of the 14 states, Punjab, Haryana, Maharashtra and Gujarat were the least dependent on transfers to finance their expenditure in the 1980s and the 1990s. In the last decade, Gujarat came to be replaced by Kerala. The existing gap in the devolution of shared taxes predominates as compared to the devolution of grants in the last two decades concerning BIMARU states (Table 1). On the other hand, the existing gap in the devolution of grants cannot be noticed in the devolution of shared taxes over the last two decades in respect of non-BIMARU states except in Kerala in respect of which both the shared taxes and grants show a decreasing trend over the last decade (Table 2). Despite this difference, the share of grants shows a relatively progressive trend over the period involving the last two commissions with respect to all the states.

Table 2: Decomposition of Dependence: States with a relatively Lower Level of dependency on Transfers

Period	States	Total Transfers	Share in Central Taxes	Total Grants	Total Grants			
					State Plan Grants	CSS	CPG	Non-Plan Grants
1981-91	Haryana	20.95	10.65	10.30	3.62	4.18	0.98	1.52
1992-02		13.12	7.10	6.02	2.15	2.91	0.02	0.95
2003-14		16.32	7.77	8.55	3.19	2.15	0.17	3.04
1981-91	Punjab	19.91	11.25	8.67	3.10	2.30	1.18	2.08
1992-02		12.94	7.18	5.75	1.75	1.88	0.35	1.78
2003-14		16.63	8.43	8.20	2.66	1.60	0.09	3.85
1981-91	Maharashtra	21.07	12.93	8.14	2.43	3.10	1.26	1.35
1992-02		15.38	9.40	5.98	2.17	2.28	0.44	1.08
2003-14		19.98	9.87	10.10	4.15	2.49	0.32	3.14
1981-91	Gujarat	22.81	13.16	9.65	3.93	3.76	0.77	1.18
1992-02		18.48	10.70	7.78	2.77	2.27	0.26	2.48
2003-14		22.27	12.64	9.63	4.84	2.05	0.14	2.60
1981-91	Kerala	31.12	19.57	11.55	4.39	3.76	1.24	2.15
1992-02		23.81	15.59	8.22	3.23	3.06	0.47	1.47
2003-14		21.93	13.81	8.13	3.06	2.28	0.13	2.66
1981-91	Tamil Nadu	30.61	20.02	10.59	3.56	3.56	1.84	1.64
1992-02		22.92	15.29	7.63	3.20	2.78	0.44	1.20
2003-14		25.32	15.24	10.08	4.24	1.99	0.22	3.62
1981-91	Karnataka	27.53	17.82	9.72	2.94	4.11	1.90	0.77
1992-02		24.95	16.04	8.91	3.09	3.85	0.88	1.09
2003-14		28.45	16.12	12.33	4.88	3.15	0.18	4.12
1981-91	Andhra Pradesh (undivided)	33.53	20.69	12.84	3.89	4.35	2.36	2.24
1992-02		31.51	19.34	12.17	4.56	4.12	0.70	2.79
2003-14		31.26	19.13	12.13	5.80	2.83	0.23	3.27
1981-91	West Bengal	37.54	23.92	13.62	5.02	2.86	1.01	4.74
1992-02		33.48	21.65	11.83	5.99	2.36	0.38	3.10
2003-14		37.06	23.71	13.36	6.27	3.05	0.21	3.83

Source: Computed by the authors

As regards the non-BIMARU states, the share of state non-plan grants and plan grants are found relatively higher for the last decade with a fall in the conditional transfers, whereas in the BIMARU states, conditional transfers are relatively high compared to non-plan grants (except Odisha). Bihar happens to be the major beneficiary as far as the allocation of total grants is concerned, which accounts for more than 20 per cent, as against less than 10 per cent in respect of Punjab, Haryana, Maharashtra, Kerala and Gujarat over the entire period. Comparison across the states shows that conditional transfers are relatively high for Bihar, MP, UP, Odisha, and Rajasthan (Tables 1 & 2).

As compared to the 1990s, in recent decades, the state plan grants show a more progressive trend, while conditional transfers show a relatively higher trend in respect of several states. The state plan grants are found relatively higher in Odisha, Bihar, MP, UP and West Bengal. And non-plan grants are relatively higher in respect of Odisha, Bihar, UP, Rajasthan and Karnataka. However, the level of dependency on federal transfers differs significantly across BIMARU and non-BIMARU states (as per Finance Commission classification) rather than within BIMARU and non-BIMARU states. The steadily evolving structure of intergovernmental transfers reveals that the successive finance commissions have gradually enhanced the share of states in the centralised divisible pool over time. At the same time, the discontinuation of central plan loans linked to the plan grants has helped reduce the repayment obligation on the part of states, besides facilitating them in terms of getting a substantial proportion of earmarked grants. Following this, emphasis was given to several state-specific grants during the Thirteenth Finance Commission period. But this trend has been reversed with a substantial rise in the share of central taxes during the period of the Fourteenth Finance Commission.

Since the first part of this paper examines the level of central dependency of the 14 major states, it is also necessary to examine the determinants of the flow of discretionary transfers. This empirical analysis focuses on only discretionary transfers, excluding which are general and formula-based.

Factors Determining Conditional/ Discretionary Transfers

Federalism in India is evolving through institutional and political challenges of the day. In recent years, the political economy of transfers gained the attention of researchers (Singh & Vasishtha, 2004; Biswas & Sugata, 2010; Sethia, 2017). In the Indian federalism, compared to the 1980s, in recent years, mainly in the 1990s and 2000s, the central-states relations in the federal political economy haswitnessed drastic changes. The political scenario has changed from single-party dominance to multi-party minority coalition both at the centre and the states. Larger the dominance of the regional parties at the subnational level, greater the power or voice to the states, both in regional and central politics. This power or political imbalance along with fiscal imbalance with institutional changes seems to be an interesting area for further research. As the central transfers are major sources in the federal system with vertical and horizontal imbalances, the fundamental challenge in the pattern of sharing discretionary transfers arises with the prominence of political imbalance in the vertical and horizontal power structure.

Literature Review

In the existing literature, several earlier studies have attempted to examine the combined role of economic and political variables on the central fiscal transfers. For instance, Biswas Rongili and Sugata Marjit (2010), using a panel set of 14 major states over the period 1974-2002, found lobbying power a significant factor in influencing the central funds, while political lobbying was a less significant factor for the post-economic reforms period; economic variable income and political alignment dummy had a positive and significant impact on the allocation of central funds; coalition and economic reform dummies had a negative influence on central transfers. The study also found interaction terms like lobbying power* political alignment positively significant and lobbying power* coalition and lobbying power*economic reform negatively significant. Similarly, Deepak Sethia (2017) while examining the influencing factors behind the interstate distribution of discretionary central transfers for the period 2005 to 2009, found along with state GSDP and poverty ratio, some political variables such as voter share and political affiliation/ alignment between the centre and states positive and significant, while MPs and cabinet ministers index (state representatives being part of the ruling government or coalition partner and central cabinet) was insignificant. Singh and Vasishtha (2004) also concluded that GSDP per capita and political variables such as political alignment and MPs had no impact (insignificant) on both CSSs and central plan grants, based on their analysis, for the period 1983 to 1992. The studies reviewed here have tried to explore the political economy of Indian fiscal federalism. Following these studies, the questions one can pose are: Are the central transfers, which are discretionary, politically motivated? Do these transfers influence immediate election outcomes? Does the ruling party at the centre transfer discretionary funds as part of its own political agenda? Are the flow of transfers and being incumbent closely linked? Are the combined effect of the state of the economy at the subnational level and political factors more influential than mere political factors? Since there is scope for improvement by adding some more political variables and interactive terms (a combined mix of economic and political variables), the present analysis attempted in that direction, while considering all these factors. This study tries to address the gap by including additional independent variables along with a large number of variables that are political and also bifurcating the entire period into 3 phases based on the changed fiscal and political scenario.

Empirical Methodology and Variables Used

This analysis considers central funds which are not determined by the formula. The methodology used in the analysis of factors that determine Conditional Transfers is the static panel model**.** In the present model, most of the determinants are time-varying dummy variables, while some are time-varying but are individual-specific dummies. Fixed Effect (FE) controls common unobserved factors which capture time-constant individual heterogeneity across units, which are often related to the covariates.In the fixedeffect model, one way the fixed effect is not employed is due to the existence of some explanatory variables with individual heterogeneity (Individual invariant regressors). When time dummies are used as a proxy for unobserved common shocks, they consider or assume that the impact of those common factors is the same across units (factor loadings are homogeneous). To avoid the problem of multicollinearity, year dummies are not employed in the fixed-effect model. This model is also preferable over the random effect model after employing the Hausman test (considering main economic and a few political variables). To get rid of unit-wise heteroskedasticity, robust standard errors are used in the fixed-effect model. Along with this, the Driscoll and Kraal (1998) model with fixed effect is also employed (it uses the Newey-West type correction method).

The following empirical model is used: $Y_{it} = \alpha_i + \lambda_t + \beta_1 X_{1it} + u_{it}$. The error term is decomposed as $u_{it} = \alpha_i + \lambda_t + \varepsilon_{it}$. Y_{it} -continuous dependent variable, $\beta_1 X_{1it}$ -vector of all explanatory variables or covariates, α_i-individual heterogeneity, which is often unobservable, varies across individuals but fixed across time. α_i- represents state-specific factors as major sources of cross-sectional correlation. λ_t -Time or year dummy controls time-specific fixed effects (economic shocks) which are not captured by the included explanatory variables. It captures the influence of aggregate trends.

The variables and their data sources considered in the model are as follows.

Table 3: Description of data and sources

Dependent and Independent Variables	**Definition and data source**
CT- Conditional Transfers	State finance documents
Log of Per capita GSDP	CSO, New Delhi
Rural Population- Population is expected to have a positive effect on the flow of transfers.	Census of India
Electoral cycle dummies - (ELA- election year of state legislative assembly, BELA-one year before election and AELA- one-year post-election.	http://eci.gov.in of Election Commission of India.
Centre-statepolitical affiliation variable – when the same political parties rule both at the centre and in the state. Value takes 1 if the same party holds power both at the centre and the state and0 otherwise.	http://eci.gov.in of Election Commission of India.
Fiscal space = [Total Revenue receipts – (Revenue expenditure on Interest Payments and Servicing of Debt + Revenue expenditure on Administrative Services) + Loans from the centre] / Total Revenue receipts.	Nooruddin and Chhibber(2008)
Political incumbency- takes value 1, if there is no change in the ruling party in the next state legislative assembly, 0 otherwise.	http://eci.gov.in of Election Commission of India.
Form of government -Single party Minority Government and Minority Coalition-takes value 1 if the Single party Minority Government and Minority Coalition form government, 0 otherwise.	http://eci.gov.in of Election Commission of India.
MP_{it} = Proportion of MPs from each state in the ruling coalition. Per capita MPs in ruling coalition $_{it}$ \(Total MPsin ruling coalition)/Σ population $_{it.}$ (Captures lobbying power of the states).	Sharma and Deepak Sethia, 2017
Lok Sabha Election Dummies – (ELA- Parliamentary election year, BELA-one year before election and AELA- one-year post-election).	http://eci.gov.in of Election Commission of India.
Economic Slowdown-(year and year after the recession) - during economic ups and downs, grants are positively related due to fluctuations in central shared taxes.	http://eci.gov.in of Election Commission of India.

Based on an inter-temporal analysis of the changing fiscal scenario as mentioned above,the period of the study from 1981-1982 to 2014-2015 has been sub-divided into 3 phases: Sub-Period I - 1981 to 1991 is the period of single-party dominance (1981-1982 to 1986-1987, a period with fiscally fewer ups and downs in the economy; 1987-1988 to 1990-1991, a period with a fiscally slight negative variability and fewer ups and downs in the economy); Period II- 1991 to 2002 is the period of multiparty minority coalition with frequent changes in the formation of government (1991-1992 to 1996-

1997—a period of fiscal contraction and 1997-1998 to 2002-2003 -- a period of fiscal imbalance, fiscal deterioration) and Period III- 2003-2014 is the period of multiparty minority coalition with a stable government (2003-2004 to 2007-2008 --- a period of fiscal improvement, fiscal soundness and 2008-2009 to 2013-2014 -- a period of fiscal expansion). It is evident from the electoral statistics that since the 1990s, the representation of regional political parties in the central coalition government has increased in the context of thechanging political scenario of the country, mainly to receive higher transfers.

Model Specification

Equation 1 = Discretionary Transfers$_{it}$ **=** $\boldsymbol{\beta_1}$ Ln per capita GSDP$_{it}$ **+** $\boldsymbol{\beta_2}$A year after Lok Sabha election$_{it}$**+** $\boldsymbol{\beta_3}$A year before Lok Sabha election$_{it}$ **+** $\boldsymbol{\beta_4}$Economic slowdown$_{it}$ **+** $\boldsymbol{\beta_5}$A year after economic slowdown$_{it}$ **+** $\boldsymbol{\beta_6}$ Incumbent Government**+** $\boldsymbol{\beta_7}$ Single party Minority Government*MPs + $\boldsymbol{\beta_8}$ Single party Minority Government* Fiscal Space$_{it}$ **+ u**$_{it}$**......(1).**

Equation 2 = Discretionary Transfers$_{it}$ **=** $\boldsymbol{\beta_1}$Ln per capita GSDP$_{it}$ **+** $\boldsymbol{\beta_2}$Fiscal space$_{it}$ **+** $\boldsymbol{\beta_3}$ A year after Lok Sabha election$_{it}$**+** $\boldsymbol{\beta_4}$A year before Lok Sabha election$_{it}$ **+** $\boldsymbol{\beta_5}$Economic slowdown$_{it}$ **+** $\boldsymbol{\beta_6}$A year after economic slowdown$_{it}$ **+** $\boldsymbol{\beta_7}$ Single party Minority Government* Fiscal Space$_{it}$ **+ u**$_{it}$**......(2).**

Equation 3 = Discretionary Transfers$_{it}$ **=** $\boldsymbol{\beta_1}$Ln per capita GSDP$_{it}$ **+** $\boldsymbol{\beta_2}$Fiscal space$_{it}$ **+** $\boldsymbol{\beta_3}$ Fiscal space*Minority coalition $_{it}$**+** $\boldsymbol{\beta_4}$A year after Lok Sabha election$_{it}$ **+** $\boldsymbol{\beta_5}$A year before Lok Sabha election$_{it}$ **+** $\boldsymbol{\beta_6}$A year after economic slowdown$_{it}$ **+** $\boldsymbol{\beta_7}$Second year after economic slowdown$_{it}$ **+** $\boldsymbol{\beta_8}$ Mps + $\boldsymbol{\beta_9}$political affiliation *Fiscal space **+ u**$_{it}$**......(3).**

Equation 4 = Discretionary Transfers$_{it}$ **=** $\boldsymbol{\beta_1}$Ln per capita GSDP$_{it}$ **+**$\boldsymbol{\beta_2}$ Fiscal space*Minority coalition $_{it}$**+** $\boldsymbol{\beta_3}$A year after Lok Sabha election$_{it}$ **+** $\boldsymbol{\beta_4}$A year before Lok Sabha election$_{it}$ **+** $\boldsymbol{\beta_5}$A year after economic slowdown$_{it}$ **+** $\boldsymbol{\beta_6}$Mps$_{it}$ **+** $\boldsymbol{\beta_7}$ + $\boldsymbol{\beta_9}$political affiliation *Fiscal space$_{it}$**+** $\boldsymbol{\beta_{10}}$ political affiliation *MPs$_{it}$ **+ u**$_{it}$**......(4).**

Equation 5 = Discretionary Transfers$_{it}$ **=** $\boldsymbol{\beta_1}$ Ln per capita GSDP* Rural population$_{it}$ **+** $\boldsymbol{\beta_2}$Fiscal space*Minority coalition $_{it}$ **+** $\boldsymbol{\beta_3}$Political affiliation $_{it}$ **+** $\boldsymbol{\beta_4}$ A year after Lok Sabha election$_{it}$**+** $\boldsymbol{\beta_5}$A year before Lok Sabha election$_{it}$ **+** $\boldsymbol{\beta_6}$Economic slowdown$_{it}$ **+** $\boldsymbol{\beta_7}$ A year after economic slowdown$_{it}$ **+** $\boldsymbol{\beta_8}$Fiscal space*MPs $_{it}$ **+** $\boldsymbol{\beta_9}$ Incumbent Government$_{it}$ **+ u**$_{it}$**......(5).**

Equation 6 = Discretionary Transfers$_{it}$ **=** $\boldsymbol{\beta_1}$ Ln per capita GSDP$_{it}$ **+** $\boldsymbol{\beta_2}$Ln per capita GSDP* Rural population$_{it}$ **+** $\boldsymbol{\beta_3}$Fiscal space$_{it}$ **+** $\boldsymbol{\beta_4}$ A year after Lok Sabha election$_{it}$**+** $\boldsymbol{\beta_5}$A year before Lok Sabha election$_{it}$ **+** $\boldsymbol{\beta_6}$Economic slowdown$_{it}$ **+** $\boldsymbol{\beta_7}$Minority coalition$_{it}$ **+** $\boldsymbol{\beta_8}$ Mps$_{it}$ **+** $\boldsymbol{\beta_9}$Political affiliation *Fiscal space$_{it}$ **+** $\boldsymbol{\beta_{10}}$political affiliation *MPs$_{it}$ **+ u**$_{it}$**......(6).**

Where i = state , t = year

Results and Interpretation

The test results related to all the three periods are presented in Table 4 with the second and third columns displaying the results for the period 1981 to 1991 (period I); third and fourth columns the results for the period 1992 to 2002 (period II), and the last two columns the results for the period 2003 to 2014 (period III). Variables are taken in per capita terms to take into account size differences among states and to control the heteroskedasticity problem.

Per capita, GSDP and fiscal space are the main economic variables, while several other variables are political. To examine the simultaneous impact of economic and political variables, and more than one political variable, interaction variables are also used in the present analysis. In general, political lobbying seems to have been less explicitly proven in the Indian context due to substantial statutory and formula-based transfers and also because political lobbying has not been institutionalised or legitimised (Biswas and Marjit, 2010). However, to some extent, there are chances of the elected members being pressurised by the people of their respective constituencies. Accordingly, this paper has attempted to examine the impact of some political variables along with economic variables.

For the sub-period 1981-91, the per capita GSDP is found significant and positively related to discretionary transfers. Perhaps mainly because the 1980s witnessed fewer ups and downs in the economy both at the central and sub-national levels and larger devolutions of central transfers. The central government is expected to transfer a larger amount of funds which are at the central discretion in legislative election years to increase their popularity. In the meantime, to emphasise more on vote-enhancing expenditure, MPs are also involved in lobbying with the central government to receive more funds during election years. The Lok Sabha elections (the year before and the year after elections) are found positively significant, indicating political factors or decisions were closely linked to the transfer of central funds in the 1980s.Some political variables such as incumbency andsingle party minority government*MPs (state representatives being part of ruling government or coalition partner) are found statistically significant and negatively associated with the dependent variable. This implies that even after the formation of successive governments (single party minority government -Congress I), the National Front-led minority government had no influence, whereas, a single party minority government* fiscal space is found positive and significant indicating that states with a larger fiscal space were able to get more discretionary funds during the single party minority government/ coalition government at the centre (more than one party form a government).

Overall, the results suggest that states with a larger fiscal space and GSDP growth were able to get more funds relative to the political factors during the 1980s. Even positively significant electoral cycles also reveal a similar picture. The central government continued to transfer more funds during the economic slowdown and even a year after the economic slowdown, a situation in which there were chances of reducing the devolution of central shared taxes. The per capita GSDP is found insignificant (but positively significant in FE Driscoll and Kraay model)for the period 1992-2003. Even the fiscal space is insignificant.The economic slowdown combined with political ambiguity in the era of multiparty minority government failed to influence the discretionary transfers.

Table 4: Dependent variable (log conditional/Discretionary Transfers)

Sub-Periods	Period I Model-1	Period I	Period II Model-II	Period II	Period III Model-III	Period III
Variables	**One Way Fixed Effect**	**One Way Fixed Effect Driscoll and Kraay**	**One Way Fixed Effect**	**One Way Fixed Effect Driscoll & Kraay**	**One Way Fixed Effect**	**One Way Fixed Effect Driscoll & Kraay**
Log. per capita GSDP	0.475* (1.94)	0.0941** (2.85)	0.430 (0.71)	0.163*** (3.46)		3.20* (2.1)
Log. per capita GSDP* Rural population					0.044* (1.95)	-0.084 (-1.26)
Fiscal space		0.588 (1.43)	0.262 (0.75)			-0.044 (-0.04)
Fiscal space*minority coalition			- 0.0847*** (-3.15)	-0.068*** (-5.18)	0.277** (2.59)	
Political Affiliation					-0259 (-1.69)	
A year after Lok Sabha election	0.126** (2.54)	0.200*** (5.40)	0.119** (3.24)	0.125*** (3.12)	-0.117* (-2.03)	0.006 (0.10)
A year before Lok Sabha election	0.249*** (5.54)	0.309*** (7.38)	-0.126* (-1.92)	-0.116*** (-3.28)	-0.456 (-1.43)	-0.47*** (-9.81)
Economic slowdown	0.258*** (3.96)	0.298*** (4.31)			0.561 (1.66)	0.600*** (6.04)
A year after economic slowdown	0.128* (1.96)	0.202*** (3.79)	0.11** (2.57)	0.087** (2.68)	-0.401* (-1.80)	
Second-year after the economic slowdown			0.094 (1.28)			
Fiscal space*MPs					0.67 (1.42)	
Minority coalition						1.08*** (10.04)
MPs			-0.481 (-0.46)	-3.268*** (-3.34)		1.365 (0.78)
Incumbent government	-0.276*** (-5.11)				0.151 (1.11)	
Political affiliation *Fiscal space			-0.0178 (-1.06)	-0.032** (-2.68)		-0.065* (-1.84)
Political affiliation *MPs				3.656*** (4.10)		
Single party minority government*MPs	-0.893** (-2.41)					
Single party minority government* Fiscal Space	0.0638*** (8.86)	0.0521*** (8.06)				
Constant	-0.272 (-0.12)	0.823 (-0.46)	-0.586 (-0.09)	3.691*** (9.97)	-4.06 (-0.95)	- 13.7*** (-7.33)
Number of Observations (No. Groups)	154 (14)	154 (14)	154 (14)	154 (14)	168 (14)	168 (14)
F Test (R Square)	36 (0.26)	100 (0.57)	9 (0.194)	55 (0.365)	38 (0.168)	89 (0.274)

Several political variables such as MPs and interaction variables such as political affiliation*MPs, fiscal space*minority coalition and political affiliation* fiscal space all are negatively correlated with the dependent variable. This means due to little fiscal space after meeting the committed expenditure, and also due to fiscal contraction measures both at the central and subnational levels, the flow of central funds decreased in the 1990s. However, political affiliation *MPs variable is found positive and significant, implying that states with a larger share of MPs in the coalition government in the Lok Sabha and the emergence of alliance or political affiliation between the central and state governments helped those states to get relatively larger central discretionary funds using lobbying power.

A positive sign of the variable political affiliation *MPs reveals that political affiliation played an important role in the transfer of central funds as compared to other political factors. Exclusion of the combined impact of political affiliation *MPs, fall in the central transfers combined with a lesser fiscal space (larger share of the interest payment with a high-cost borrowing) among the states might be the reason behind the negative correlation between several independent variables and the dependent variable.

And finally, during the period 2003-2014, the per capita GSDP and interaction term log per capita GSDP* rural population are found significant and positively related to discretionary transfers.During this period, political affiliation seems to have been less influential compared to the proportion of MPs in the minority coalition government in terms of getting a larger share of central funds. The negatively significant correlation of political affiliation* fiscal space justifies the same. But a notable factor is that fiscal space*minority coalition is positively significant, meaning states with a larger fiscal space were able to get more funds during the minority coalition government. The MPs factor is also positive, but insignificant. Electoralcycles are also found negatively correlated, whereas economic slowdown is positively correlated with central funds. It is evident from the overall results that states with a larger fiscal space and GSDP growth were able to get more funds relative to the political factors during this period, as it happened in the 1980s. For the three sub-periods, interactive dummies have remained as core independent variables with more significant variables in determining the flow of federal funds to the states.

The analysis was even carried out using the lags of continuous core economic independent variables to clarify the doubt regarding endogeneity. CSSs, which are also part of discretionary transfers, are matching grants in nature. So to utilise such matching grants, states need to match their own revenues and there are even chances of getting more such grants by rich states as compared to poor states with a larger fiscal space and GSDP. In this respect, previous year's GSDP and fiscal space also matter in getting more matching funds (Biswas and Marjit, 2010). To avoid such a problem of endogeneity, the above equation was run, including one year lag of GSDP and fiscal space, with the outcomes being the same as the models with no lagged variables. Lag of GSDP and fiscal space are found positive and significant for the first and third sub-periods, and insignificant for the second sub-period. However, it does not consider the lag of dependent variables since there are more chances of the dominance of lagged dependent variable and even suppresses other explanatory variables[3] in the model, and also due to the methodological point of view and nature of the analysis, it has not been considered in the present analysis. And also the present analysis was carried out, using both the robust fixed effect (to control heteroskedasticity) and FE Driscoll and Kraay models. In both the models, the sign and the level of significance of several variables are more or less the same with very few exceptions. All the models are free of autocorrelation and cross-sectional correlation due to the shorter time period involved.

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3 Refer Christopher Achen (2001).Why lagged dependent variables can suppress the explanatory power of the dependent variables.Paper presented at the American Political Science Association meeting, UCLA.

Conclusion

This study decomposed the level and pattern of fiscal dependency on the different components of total transfers with respect to 14 major Indian states for the period 1981-82 to 2014-15. The key objective of this analysis was to explore the level and changing trends in the process of states' dependency on central transfers and also the economic and political factors influencing the flow of conditional or discretionary transfers to the states. The extent of dependency on various revenue sources, the strategies that are adopted to mobilise more revenue, the extent of borrowing, the share of federal transfers and the pattern of spending are linked to economic growth. Considering the above factors, this paper decomposed the level and pattern of fiscal dependency on the different components of total transfers with respect to 14 major Indian states for the period 1981-82 to 2014-15.Overall, as compared to previous decades, states' dependency on central transfers had increased over the years, mainly because of the recommendations of the last two successive finance commissions. It is evident from the above analysis that heterogeneity existed across the 14 major states. Of the 14, BIMARU states were the major beneficiaries when it came to the sharing of federal transfers. On the other hand, states such as Punjab, Haryana, Kerala and Gujarat, excepting Maharashtra, were the least dependent on federal transfers. In the meantime, at the subnational level, states' own tax spending was improved with fiscal improvement during the post-reforms period. On the other hand, starting from 2000 to 2014, with relatively larger funds under CSSs, CPS has been transferred directly to the state line agencies bypassing the state budgets. This could also be the cause behind the lesser influence of the determinants of the dependent variable. All these complexities make it difficult to arrive at a proper conclusion, even though it is evident from the estimated results that both the economical and political factors together influence the flow of discretionary/conditional transfers among states in India.

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