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Internship Report

on

Fiscal Effects of Public-Private Partnership in Karnataka

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Certificate

This internship report titled *"Fiscal Effects of Public-Private Partnership in Karnataka"* is a report on the study taken up at the Fiscal Policy Institute (FPI) in 2022-23.

The internship report is prepared by Sharadhi K M studying at Dr. B R Ambedkar School of Economics (BASE), Bengaluru under the mentorship of Prof. M R Narayana, Consultant (A&R), Fiscal Policy Institute.

All opinion and conclusions expressed in the internship report are of the Intern and usual disclaimer applies.

Sujit Kumar Chowdhury

Director, FPI

Institute's Seal

Acknowledgment

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During the two-month internship period between 30th June and 30th August, 2022, I was given the following opportunities to learn from the distinguished lectures related to my internship study. First, training session on Financial Management of PPP Projects in Government of Karnataka: Case Studies of Select Projects, conducted by Shri D.P. Prakash, Executive Director, Karnataka State Industrial and Infrastructure Development Corporation, Government of Karnataka, Bengaluru. Second, inaugural address on Challenges of Financial Management of PSUs in Karnataka, delivered by Shri Ajay Seth, IAS, Secretary, Department of Economic Affairs, Ministry of Finance, Government of India, New Delhi. I am grateful to FPI for providing me with these learning opportunities.

I declare that the research contents in this report are the outcomes of my original work and have not been published before. All citations and references are duly acknowledged within this report.

Sharadhi K. M.

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Abstract

The Public-Private Partnership is an emerging area for the efficient management of resources for both government and private entities. It helps governments to fill in funding gaps and at the same time take up infrastructure development projects. In this background, the main objective of the present study is to identify and calculate the fiscal effects of PPP projects in the state of Karnataka. The fiscal effects of PPP projects are calculated through revenue, expenditure, and debt effect. In the absence of required data, approximations are used to arrive at indicative results. The final results show that the PPP projects have a positive effect on reduction in the fiscal burden by reducing the cost of public financing infrastructure projects, which requires huge investments. Of the fiscal effects, debt effects are found to be stronger. Further, the results imply that resources thus saved are allocable to welfare sectors.

1. Introduction

Public Private Partnership (PPP), as per the definition given by the Asian Development Bank, is the coalescence between public (national, state, provincial, or local) and private sector entities through which the skills, assets, and/ or financial resources of each of the public and private sectors are allocated in the projects in a complementary manner. PPP projects aim at sharing the business and investment risks and rewards, to seek to provide optimal service delivery and a good value to citizens. The basic motto of the PPP is the successful cooperation between the private sector ethos and the public sector mission.

Governments across the world, particularly developing nations, face budgetary constraints to meet the demands of infrastructure for consumption and production purposes. Therefore, PPP has become a plausible option to finance the infrastructure requirements because the huge amount of funds required cannot be met either by the public sector or the private sector alone.

The PPP mode has been employed in India since the 19^{th} century. However, efforts by the national and sub-national governments to attract private participation to meet infrastructure needs were initiated through the National Economic Reforms started in July 1991. It started with infrastructure sectors such as telecommunications, ports, and, roads.

As per the constitution of India, the Parliament of India can frame laws on subjects related to the Union List and the state legislatures can frame laws related to the State List. Some states which have an explicit legal framework for infrastructure financing including private investments for public infrastructure are - Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Karnataka, Kerala, Odisha, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttarakhand, West Bengal, and Madhya Pradesh.

The benefits of PPP can be divided into parts like financial and budgetary benefits and economic benefits:

1. Financial and budgetary benefits:
    - Easing budgetary constraints - Government may not finance the entire PPP projects or it might provide partial financing if required. This enables the governments to provide capital-intensive infrastructure projects without increasing the government's debt

burden or raising money from the general public by increasing its taxes, especially when the governments already have budget deficits.

- Improved value for money - Better coordination in all phases leads to innovative designs, applications of reengineering principles, and quality services because of constant supervising by the regulatory authority or due to contractual obligations of the private operator and risk sharing.
- Cost effectiveness - Since the selection of private operators is through a competitive process, PPP ensures the minimum cost of the project. In addition, the governments are not liable for the huge investments and manpower required for the project. Thus, governments gain in terms of both capital and revenue costs.
- Generation of additional revenue through revenue sharing arrangement and user charges.
- Optimal allocation of risks.

2. Economic benefits:
    - Project stability - PPP contracts are for longer durations. The private operator performs the functions as per the contract.
    - Modernization of the economy - Private sector brings in and adopts state-of-the art technology to improve project quality to reduce project costs and provide access to markets with an edge over their competitors.
    - Development of social sector infrastructure - Investment by private sector entities in capital-intensive projects helps the government save its funds for allocation to other needy sectors including social welfare.

2. Objectives of the study

The main objectives of the study are as follows:

(a) Describe the existing policy frameworks for the promotion of PPP in Karnataka.
(b) Analyse the database on PPP projects in Karnataka.
(c) Identify and calculate the fiscal effects of PPP projects in Karnataka.

3. Methodology

The fiscal effects can be observed through the budget. The budget has three components - revenue, expenditure, and debt. If the government employs PPP for infrastructure projects, then investments are shared by the private entity. Using the budget and project cost, the magnitude of reduction in the fiscal burden due to PPP-financed infrastructure projects is estimated. Throughout, the methodology is descriptive and positive.

As a policy background for this study, a brief review of the policy frameworks for the promotion of PPP is given below.

4. Policy framework for the promotion of private investment in infrastructure in Karnataka.

4.1. Policy on PPP for Infrastructure Projects in Karnataka, 2018

The main objective of the PPP policy as stated by the government is to provide a fair and transparent policy framework to facilitate the process of economic growth and encourage PPPs in upgrading, expanding, and developing infrastructure in the state. The government of Karnataka envisions building strong PPP in infrastructure to achieve the twin objectives of high growth and equity.

The PPP Policy focuses on recognizing and embracing the key role of PPP in enhancing infrastructure development. There is a need for infrastructure development; therefore, all efforts need to be made to maximize the limited public sector resources through PPPs in the development and functionality of the infrastructure.

The PPP policy seeks to derive the following benefits to deliver better value for money to the user from the infrastructures:

1) Reducing costs through innovative designs, timely implementation of projects, and operational efficiency.
2) Enhanced quality of services from better efficiency practices.
3) Reduction in, and gradual elimination of, pricing constraints.
4) Enabling the public funds to be used for non-commercial and socially justifiable projects.
5) Financial innovation and development of cost-effective solutions.
6) Greater employment opportunities in the infrastructure sector.

Infrastructure policy is developed around the following main principles:

a. Efficient use of existing assets and optimal allocation of additional resources - This can be achieved by prioritization of projects in an objective and unbiased manner. Priority is accorded to those projects which provide critical linkages. The government develops projects based on social need and economic viability, and develops objective criteria for rationalization of investments for expanding, upgrading, and developing infrastructure.

   Project identification and prioritization are governed by the following considerations:

   i. Magnitude of the gap between demand and supply for the infrastructure.
   ii. Focus on balanced regional development, especially about the provision of basic infrastructure.
   iii. Development of physical/ inter-sectoral linkages where significant economic gains can be realized.

b. Payment for services - In a system where prices of services are not economically sustainable, users would have no incentive to economize on their use of resources, and service providers would have no incentive to become more efficient.

   Levy of user charges would be based on one or more of the following criteria:

   i. Savings to users.
   ii. Willingness to pay.
   iii. Need for explicit subsidies.
   iv. Uniformity between various projects.
   v. Cost recovery.
   vi. Debt service and equity returns.

c. Equitable contractual structures - The government's objective would be to develop a contractual framework that allows for equitable allocation of risks between the contracting parties. The government could promote PPPs in new infrastructure projects or already existing projects.

d. Transparent process of procurement - All contracts would be awarded based on a transparent process, under the ambit of Karnataka Transparency in Public Procurement Act, 2000, or under the Swiss Challenge format. Stages in the procurement process include -

   i. Expressions of interest
   ii. Request for qualifications
   iii. Request for proposals
   iv. Technical and financial evaluation
   v. Signing of agreements

e. Fair regulatory framework – the government intends to set up independent regulatory authorities whose role includes setting norms for entry and exit, tariff fixation, and establishing standards for construction, operations, and maintenance of the facilities/ services.
f. Enabling institutional frameworks -
    i. The Infrastructure Development Department through the PPP cell manages all the activities related to policies, technical, and legal aspects of the PPP projects.
    ii. Services of empanelled consultants and advisors can be employed by the government.
    iii. The government will set up a district PPP committee.
    iv. Karnataka State Industrial and Infrastructure Development Corporation (KSIIDC) will act as a nodal agency to assist the government in the development of PPP policies and programmes, review and monitor PPP projects during implementation, execution and management.
    v. A State Level Single Window Agency (SLSWA) under the chairmanship of the Chief Secretary will be set up to approve PPP projects up to Rs 500 crore, and to recommend the projects above Rs 500 crore to the State High-Level Clearance Committee (SHLCC) under the chairmanship of the Chief Minister.
g. Sustainable incentives and concessions.

The framework provided by the government in its infrastructure policy lists four key stages in post-contract management:

i) Development stage - It includes all pre-construction activities like land acquisition and meeting financial closure.
ii) Construction stage - It involves the period from the start of construction till the completion of construction as specified in the terms and conditions of the concession agreement.
iii) Operations and management stage.
iv) Handover stage.

The above policy provides a comprehensive framework for PPP projects in Karnataka.

5. Database on PPP projects

5.1. All India Database

The database provided by the Government of India is a collection of information on all the infrastructure projects implemented in India by the public and/ or the private sectors. The database is developed and managed by the Department of Economic Affairs, Ministry of Finance, Government of

India (www.infrastructureindia.gov.in). The website distinguishes between infrastructure projects as government sector infrastructure projects, private sector infrastructure projects, and public-private partnership (PPP) projects and provides a separate report. Further, these projects are divided based on state, sector-wise, authority, and status of implementation.

Table 1 gives the number of PPP projects employed across different states and Union Territories in India, either under 'Pre-construction Stage', 'Under Construction' or 'Operation and Maintenance Stage' as on April 1, 2011, or 'Awarded' thereafter and with a project cost of higher than Rs 5 crore. In addition, **Figure 1** shows the regional concentration of PPP projects in India. For this study, PPP projects in Karnataka are focused.

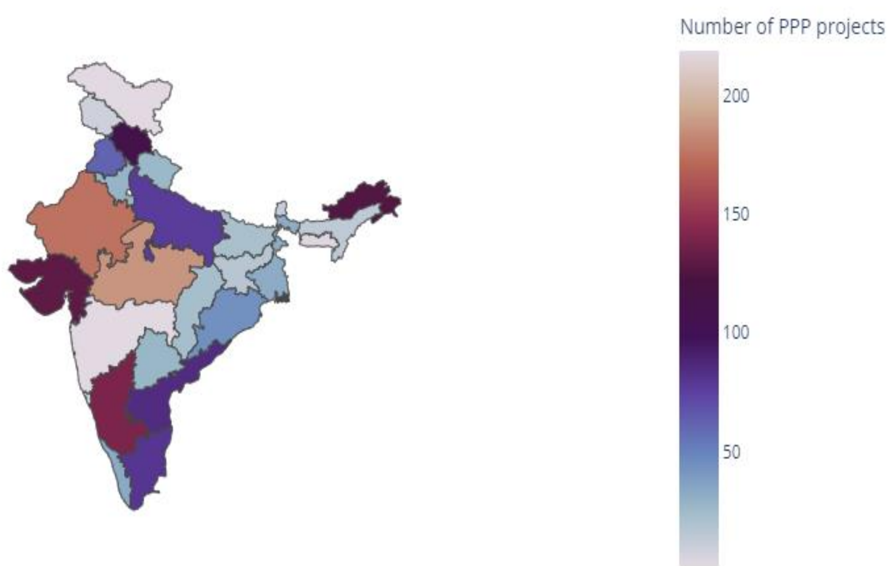
Table 1: State-wise distribution of PPP projects in India as of 1st April 2011 or awarded thereafter

State/ UT	Number of PPP projects	Share (%)
Andaman & Nicobar Islands (UT)	4	0.22
Andhra Pradesh	85	4.66
Arunachal Pradesh	126	6.9
Assam	13	0.71
Bihar	21	1.15
Chandigarh (UT)	1	0.05
Chhattisgarh	22	1.2
Delhi (UT)	21	1.15
Goa	11	0.6
Gujarat	130	7.12
Haryana	28	1.53
Himachal Pradesh	110	6.02
Jammu & Kashmir	8	0.44
Jharkhand	16	0.88
Karnataka	140	7.67
Kerala	33	1.8
Ladakh	1	0.05
Madhya Pradesh	187	10.25
Maharashtra	219	12
Meghalaya	2	0.1
Odisha	44	2.43

Puducherry (UT)	3	0.16
Punjab	62	3.4
Rajasthan	175	9.6
Sikkim	11	0.6
Tamil Nadu	80	4.38
Telangana	27	1.5
Uttar Pradesh	77	4.2
Uttarakhand	26	1.48
West Bengal	32	1.75
Multi-state projects	110	6
Total	**1825**	100.00

Source: Compiled by the author from "PPP India" website by Department of Economic Affairs, Ministry of Finance. www.pppindia.gov.in

Figure 1: State-wise distribution of PPP projects



Source: Author's drawings from data in "PPP India" website, www.pppindia.gov.in

5.1.1. PPP Projects in Karnataka

There are 140 PPP projects in Karnataka at different stages. The database for the individual project contains details such as the sector and sub-sector of the PPP projects, project objectives, cost of the project, and timelines. **Table 2** shows the key sectors and sub-sectors where PPP projects are used in Karnataka.

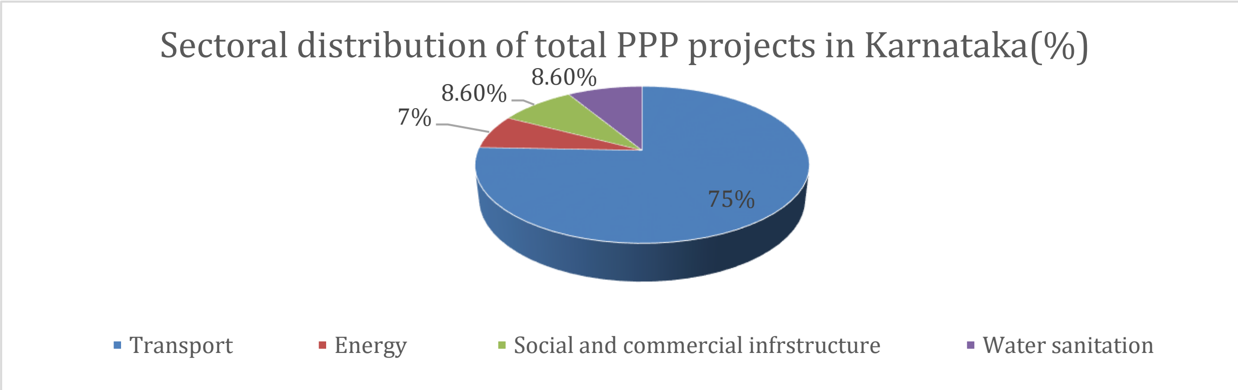
Table 2: List of key sectors and sub-sectors of PPP projects in Karnataka.

Sl. No	Sector	Sub-sector
1.	Transport	Airports
		Ports
		Railway tracks, tunnels, viaducts, bridges
		Roads and bridges
		Urban public transport
2.	Energy	Electricity Distribution
		Electricity Generation (grid)
		Electricity transmission
		Renewable energy (grid)
3.	Social and commercial infrastructure	Common infrastructure for industrial parks, and SEZ
		The post-harvest storage infrastructure for agriculture and horticulture produces including cold storage
		Tourism
4.	Water sanitation	Sewage collection, treatment, and disposal system
		Solid waste management
		Water supply pipeline
		Water treatment plants

Source: Compiled by the author from the "PPP India" website. www.pppindia.gov.in

Figure 2 shows the total number of PPP projects (in terms of percentage) across sectors. In Karnataka, the transport sector has the highest number of PPP projects, that is, 75% of the total PPP projects in Karnataka are from the transport sector.

Figure 2: Sectoral distribution of total PPP projects in Karnataka (%)

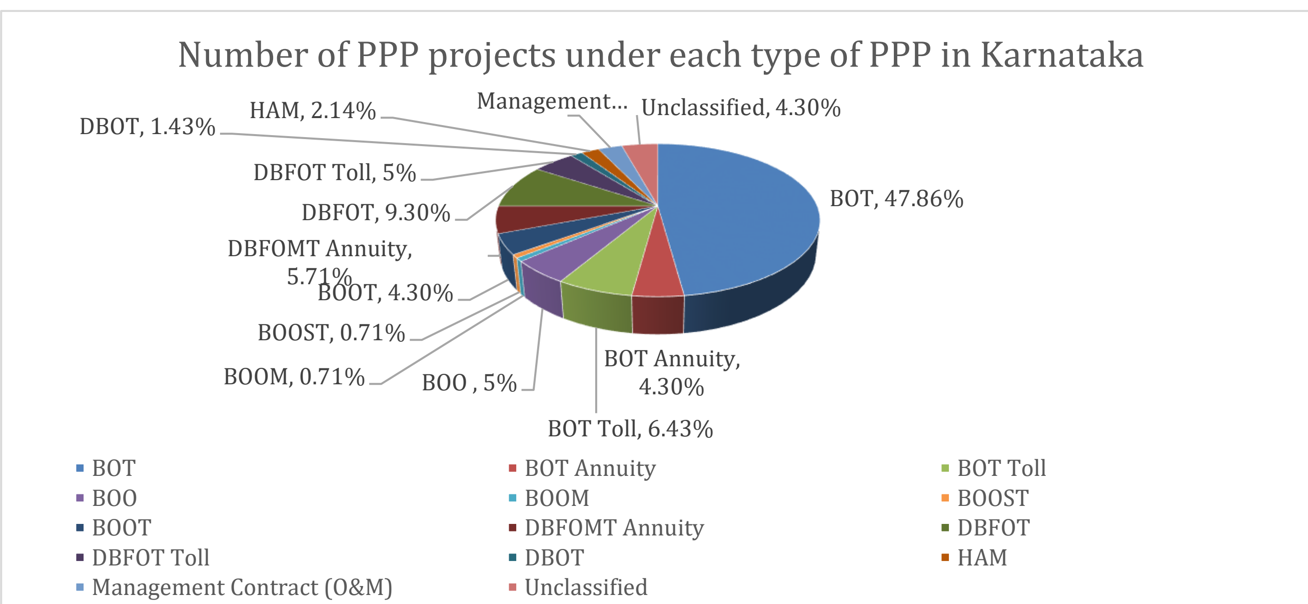


Source: Author's calculation based on data from "PPP India" website. www.pppindia.gov.in

The types of PPP models in these projects include Build-Operate-Transfer (BOT), Build-Operate-Transfer (BOT) Annuity, Build-Operate-Transfer (BOT) Toll, Design-Build-Operate-Transfer (DBOT), Design-Build-Finance-Operate-Transfer (DBFOT), Design-Build-Finance-Operate-Transfer (DBFOT) Toll, Design-Build-Finance-Operate-Maintain-Transfer (DBFOMT) Annuity, Hybrid Annuity Mode (HAM), Build-Own-Operate-Transfer (BOOT), Management Contract (O&M), Build-Own-Operate-Share-Transfer (BOOST), Build-Own-Operate-Manage (BOOM), Build-Own-Operate (BOO).

Figure 3 shows the percentage of each model of PPP across projects in Karnataka. The BOT model is used the highest number of times, that is, 48% of the total PPP projects in Karnataka have employed the BOT model.

Figure 3: Distribution of the projects based on the PPP model used in Karnataka.



Source: Author's calculations using data in "PPP India" website. www.pppindia.gov.in

Table 3 gives the total project costs or investments in each of the sectors where PPP projects are employed.

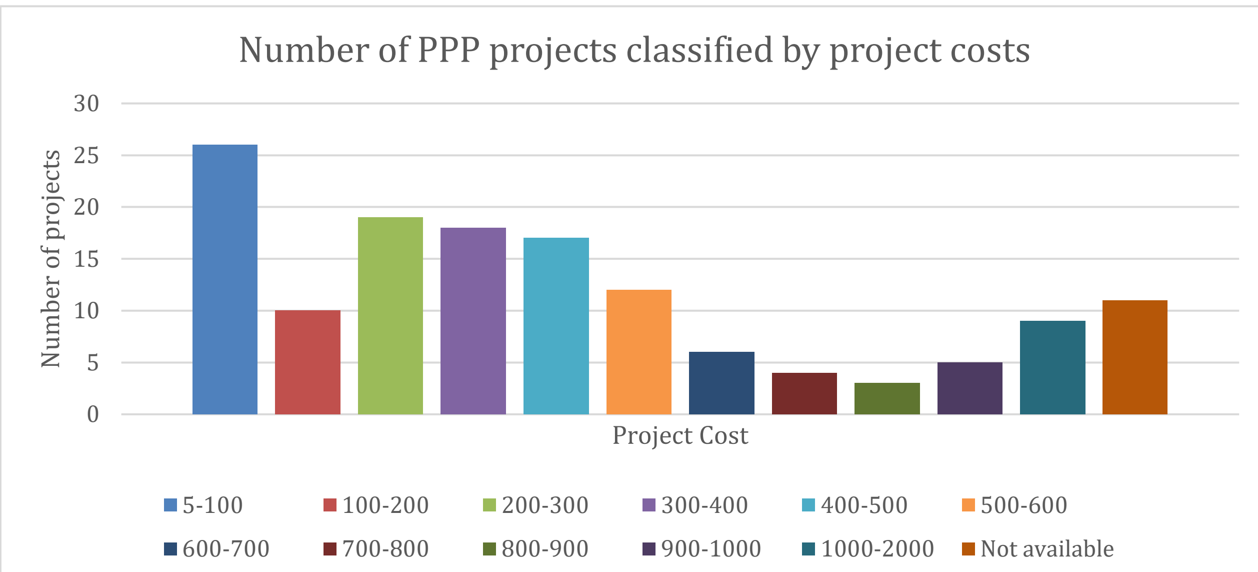
Table 3: Sectoral distribution of project costs of PPP projects in Karnataka (in Rs crore)

Sectors	Project cost (Rs crores)
Energy	233.06
Social & commercial infrastructure	2518.72
Transport	50652.48
Water Sanitation	511.05

(Source: Author's calculations using data in "PPP India" website. www.pppindia.gov.in)

The classification of PPP projects by different sizes of project costs is summarized in **Figure 4**.

Figure 4: Classification of projects based on project costs in Karnataka



(Source: Author's calculations using data in "PPP India" website. www.pppindia.gov.in)

5.2.Government of Karnataka database on PPP projects

The database provided by the GoK gives the list of PPP projects identified by the various departments which would be implementing them. The Infrastructure Development, Ports and Inland Water Transport Department lists 52 PPP projects under various departments. There are 92 PPP projects approved and listed by the State Level Single Window Agency (SLSWA) and State High-Level Clearance Committee (SHLCC) in the Infrastructure Development, Ports and Inland Water Transport Department.

The limitation of the above databases is that all the timelines of the project are not available, and project costs do not show the share of the cost borne by the government and private entities, making it difficult to study the fiscal effects of the projects without approximations. Thus, in what follows, the fiscal effects of PPP projects are indirectly calculated under specified assumptions on project costs.

6. Fiscal effects of PPP projects in Karnataka

The year-wise distribution of PPP projects was available for 73 projects out of 140 projects in Karnataka. The other 67 projects do not have the year-wise distribution, that is, in terms of the year of the signing of the concession agreement. Based on the available data for 73 projects, the total project cost for 67 projects, year-wise distribution of PPP projects, and Projects' costs were obtained by the following approximation. First, 67 projects for which the year of the signing of the concession agreement was not available were allocated year-wise in proportion of the year-wise distribution of 73 projects. Second, the average cost of 67 projects was multiplied by the year-wise allocated number of projects to obtain the total project cost for 67 projects in each year. Third, year-wise project costs of 73 projects (actual) and 67 projects (approximated) were added to obtain the total PPP projects' costs for each year. These total PPP projects' costs are the basis for the calculation of the fiscal effects of PPP projects below.

Fiscal effects are captured by revenue effects, expenditure effects, and debt effects. The analysis is presented by considering three policy scenarios:

Scenario 1: The entire financing of the project is done by the private entity or the government bears no share in the financing.

Scenario 2: The government takes up a certain share of the financing of the project. This share is assumed to be 25% of total project costs.

Scenario 3: The government does not opt for PPP mode. It takes up the entire responsibility of financing the projects.

The results of the fiscal effects scenarios are analyzed below.

6.1. Revenue effect

The government using PPP projects for its infrastructure development leads to a decrease in its tax efforts or mobilization of tax and non-tax revenues. The revenue effect is calculated using the three scenarios.

Table 4: Fiscal effects of PPP projects in Karnataka: Revenue effect

Year	Number of projects (Actual)	Number of projects (Approximated)	Project cost (Actual) Rs crore	Project cost (Approximated) Rs crore	State's Own Revenue (in Rs crore)	Scenario 1 (% reduction in the revenue)	Scenario 2 (% reduction in the revenue)	Scenario 3 (% reduction in the revenue)
1997-98	1	2	68	516.2	10613.39	0	1.22	4.86
2001-02	2	4	417.94	1314.34	11327.76	0	2.9	11.6
2003-04	2	4	213	1109.4	16389.35	0	1.69	6.77
2004-05	6	11	4347.86	6588.86	19516.17	0	8.44	33.76
2005-06	3	5	271	1167.4	23141.99	0	1.26	5.04
2006-07	4	8	9656	11448.8	28184.7	0	10.15	40.62
2007-08	4	8	2030.78	3823.58	29020.42	0	3.29	13.17
2008-09	5	10	2476.52	4717.52	30670.48	0	3.84	15.38
2009-10	5	10	2300.77	4541.77	31833.53	0	3.57	14.27
2010-11	10	19	4318.17	8351.97	41568.15	0	5.02	20.09
2011-12	3	5	1280.07	2176.47	48963.67	0	1.11	4.44
2012-13	5	10	1364.14	3605.14	57288.83	0	1.57	6.29
2013-14	4	8	2255.9	4048.7	65389.44	0	1.55	6.19

2014-15	1	2	523.49	971.7	73019.42	0	0.33	1.33
2015-16	12	23	3728.16	8658.36	80979.64	0	2.67	10.69
2016-17	6	11	5999.68	8240.68	89309.63	0	2.3	9.23
Total/ Average	**73**	**140**	**41251.48**	**71280.9**		**0**	**3.18**	**12.73**

Notes: Scenario 1 (No contribution from the government): Scenario 2 (25% contribution from the government): and Scenario 3 (100% financing done by the government)

Source: Author's calculations

6.2. Expenditure effect

The government using PPP projects for its infrastructure development leads to a decrease in its expenditure. The effect on expenditure can be studied using the three scenarios.

Table 5: Fiscal effects of PPP projects in Karnataka: Expenditure effect

Year	Number of projects (Actual)	Number of projects (Approximated)	Project cost (Actual) Rs crore	Project cost (Approximated) Rs crore	Capital Expenditure (in Rs crore)	Scenario 1 (% increase in the capital expenditure)	Scenario 2 (% increase in the capital expenditure)	Scenario 3 (% increase in the capital expenditure)
1997-98	1	2	68	516.2	1209.95	0	10.66	42.66
2001-02	2	4	417.94	1314.34	1776.2	0	18.49	74
2003-04	2	4	213	1109.4	3825.29	0	7.25	29
2004-05	6	11	4347.86	6588.86	4117.7	0	40	160.01
2005-06	3	5	271	1167.4	5647.05	0	5.17	20.67
2006-07	4	8	9656	11448.8	8019.44	0	35.69	142.76

2007-08	4	8	2030.78	3823.58	8886.14	0	10.76	43.03
2008-09	5	10	2476.52	4717.52	9435.05	0	12.5	50
2009-10	5	10	2300.77	4541.77	10920.82	0	10.4	41.59
2010-11	10	19	4318.17	8351.97	11987.42	0	17.42	69.67
2011-12	3	5	1280.07	2176.47	14015.14	0	3.88	15.53
2012-13	5	10	1364.14	3605.14	14877.13	0	6.06	24.23
2013-14	4	8	2255.9	4048.7	17781.62	0	5.69	22.77
2014-15	1	2	523.49	971.7	18880.06	0	1.29	5.15
2015-16	12	23	3728.16	8658.36	21133.91	0	10.24	40.97
2016-17	6	11	5999.68	8240.68	24773.54	0	8.32	33.26
Total/ Average	**73**	**140**	**41251.48**	**71280.9**		**0**	**12.74**	**50.96**

Notes and Source: Same as in Table 4.

6.3. Public Debt Effect

The public debt effect due to the PPP projects can be observed from the deficit on the capital account side through the Revenue and the Fiscal deficits.

Fiscal Deficit (FD) = (Revenue Expenditure (RE) + Capital Expenditure (CE)) – (Revenue Receipts (RR) – Non debt capital receipts (NDCR)

Revenue Deficit (RD) = Revenue Expenditure (RE) – Revenue Receipts (RR)

The deficit on the capital account side:

FD – RD = CE – NDCR= Fiscal Deficit on Capital Account (FDCA)

Thus, the public debt effect is calculated in terms of the deficit on the capital account side as presented in Table 6.

Table 6: Fiscal effects of PPP projects in Karnataka: Debt effect

Year	Number of projects (Actual)	Number of projects (Approximated)	Project cost (Actual) Rs crore	Project cost (Approximated) Rs crore	Fiscal deficit (in Rs crore)	Revenue deficit (in Rs crore)	FD – RD (in Rs crore)	Scenario 1 (% increase in Fiscal Deficit on Capital Account (FDCA)	Scenario 2 (% increase in FDCA)	Scenario 3 (% increase in FDCA)
1997-98	1	2	68	516.2	1467.74	276.82	1190.92	0	10.84	43.34
2001-02	2	4	417.94	1314.34	5150.81	3006.17	2144.64	0	15.32	61.28
2003-04	2	4	213	1109.4	5564.1	1318.44	4245.66	0	6.53	26.13
2004-05	6	11	4347.86	6588.86	4191.61	-507.67	3683.94	0	44.71	178.85
2005-06	3	5	271	1167.4	4764.1	-1186.78	3577.32	0	8.16	32.63
2006-07	4	8	9656	11448.8	5371.85	-2831.54	2540.31	0	112.67	450.68
2007-08	4	8	2030.78	3823.58	6085.48	-2981.49	3103.99	0	30.8	123.18
2008-09	5	10	2476.52	4717.52	9356.89	-767.47	8589.42	0	13.73	54.92
2009-10	5	10	2300.77	4541.77	11265.66	-538.19	10727.47	0	10.58	42.34
2010-11	10	19	4318.17	8351.97	11699.93	-1595.35	10104.58	0	20.66	82.65
2011-12	3	5	1280.07	2176.47	12672.92	-3143.78	9529.14	0	5.71	22.84
2012-13	5	10	1364.14	3605.14	15239.31	-942.86	14296.45	0	6.3	25.22
2013-14	4	8	2255.9	4048.7	17958.05	-64.55	17893.5	0	5.66	22.63
2014-15	1	2	523.49	971.7	19034.68	-160.11	18874.57	0	1.29	5.15

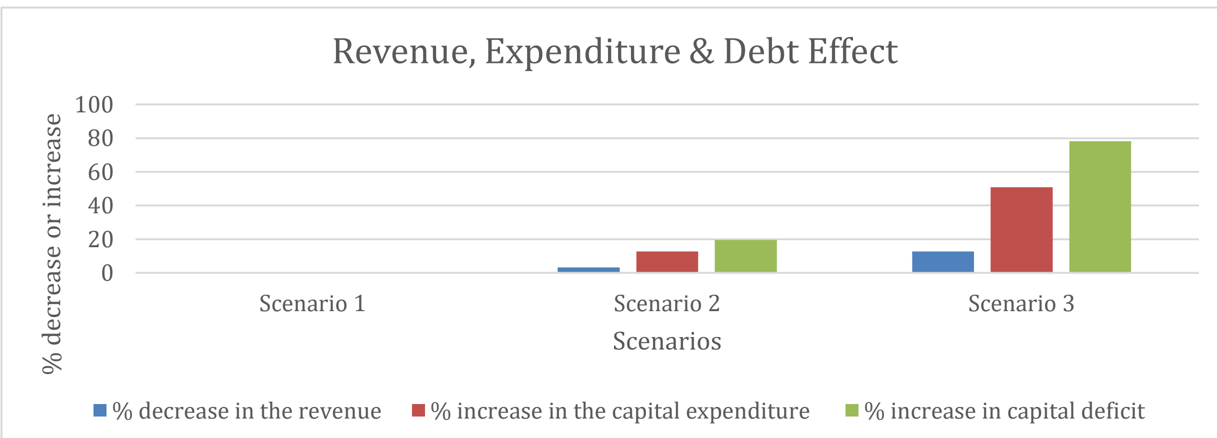
2015-16	12	23	3728.16	8658.36	20560.52	-998.69	19561.83	0	11.06	44.26
2016-17	6	11	5999.68	8240.68	24153.86	-1062.51	23091.35	0	8.92	35.69
Total/ Average	**73**	**140**	**41251.48**	**71280.9**					**19.56**	**78.24**

Notes and Source: Same as in Table 4.

All these calculated results indicate the magnitude of approximate changes in the size of the fiscal burden to the government caused by the PPP projects' investments in the infrastructure sectors. The positive effects are helpful to the government to reduce its debt and use the funds in other welfare sectors.

Figure 5 summarizes the aggregate fiscal effects of PPP projects by revenue, expenditure, and debt effects over the period 1997-98 to 2016-17.

Figure 5: Aggregate Revenue, Expenditure, and Debt effect of PPP projects in Karnataka



Source: Author's calculations using results in Table 4 through Table 6

7. Conclusion

The objective of the study was to find the fiscal effects of PPP projects in the state of Karnataka. There were limitations posed to the study by the non-availability of required data. The limitation was the non-availability of timelines of all the projects and the ratio of the project costs that are shared by the government and private entities, making it difficult to study the fiscal effects of the projects without approximations.

The main results show a reduction in the cost of public financing of infrastructure projects by GoK due to PPP. This is evident in the calculated results of the impact of PPP projects' investments on the state's own revenue, total expenditure, and public debt. A few of the projects are financed entirely by private entities. In such cases, the entire revenues in that particular fiscal year can be used for other welfare activities, hence leading to overall economic development. In a few other projects, the government bears a certain percentage of the funding. This causes a reduction in the total revenues by a small amount. The paper clearly brings out that if the projects which are now being taken up by the private entities were to be taken up by the government on its own, there would be a huge deficit in the revenue available at the disposal of the government for other welfare programmes. Through PPP mode, the government can take up infrastructure projects, increase revenue availability, reduce expenditure, reduce debt, and provides ample scope for the government to take up other welfare projects.

The results of this study are indicative due to data limitations. However, subject to the availability of more recent and refined data, the results of this study may be revised in the future to obtain conclusive and generalized evidence for the fiscal effects of PPP projects in Karnataka.

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