

The ‘Other Indias’: Two Analytical Narratives (Redistributive and Natural Resources) on States’ Development

13 CHAPTER

“Please understand, Your Excellency that India is two countries: an India of Light, and an India of Darkness. The ocean brings light to my country. Every place on the map of India near the ocean is well-off. But the river brings darkness to India.”

– *“The White Tiger” by Aravind Adiga*

This chapter examines whether the pathologies associated with foreign aid and natural resources internationally also afflict the Indian states. It calculates redistributive resource transfers (RRT) from the Centre and revenue from natural resources for Indian states. There is no evidence of a positive relationship between these transfers and various state outcomes, including per capita consumption, GDP growth, development of manufacturing, own tax revenue effort, and institutional quality. In the case of RRT, there is even suggestive evidence of a negative relationship. The question is whether RRT can be tied more strictly to fiscal and governance efforts on the part of the states as provided for by the Thirteenth Finance Commission. Another idea that merits discussion is providing a universal basic income (UBI) directly to households in states receiving large RRT and reliant on natural resource revenues.

I. INTRODUCTION

13.1 The Indian growth take-off since 1980 is associated with Peninsular India, the states that the narrator in "The White Tiger" astutely associates with better geography--being close to the ocean--which development experience has long confirmed as conferring special advantages (Sachs and Warner [1997]). These states—Gujarat, Maharashtra, Tamil Nadu, Karnataka, Kerala, and Andhra

Pradesh—have indeed grown faster and advanced more rapidly economically.

13.2 As a result, they have also been a greater focus of policy and research attention in comparison to other states- the so called ‘Other Indias’. These states include not just hinterland India (the India of rivers) but also the India of forests, of natural resources, and of ‘Special Category’ status¹. This chapter is devoted to those states that have not been

¹ The concept of a 'Special Category' state, first introduced in 1969, sought to provide disadvantaged states (those, due to several factors, were unable to generate enough resources for development) with preferential treatment in the form of central assistance and tax breaks. The states of Assam, Nagaland, Arunachal Pradesh, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim, Tripura, Uttarakhand and Jammu & Kashmir were given special status. Major factors that determined the grant for special status have been: (i) hilly and difficult terrain; (ii) low population density/sizeable share of tribal population; (iii) strategic location along international borders; (iv) economic and infrastructural backwardness; and (v) non-viable state finances.

at the mainstream of India's development narrative. But the analysis is conducted through the lens of broader development experience.

13.3 Successful Peninsular India has offered three interesting and different models of development: the traditional East Asian mode of escape from development based on manufacturing (Gujarat and Tamil Nadu); the remittance-reliant mode of development exemplified by Kerala; and the distinctive, "Precocious India" model based on specializing in skilled services (Karnataka, Andhra Pradesh and Tamil Nadu studied by Kochhar et. al. [2006]).

13.4 Other states have been relatively less successful, and perhaps because of that have received less attention. But they are interesting in their own right because they have conformed to other models of development. This chapter studies two such models of development: those based on "aid" or special status, and those based on natural resources. The definition of natural resources includes coal, onshore oil and natural gas, major and minor minerals but excludes forest cover. Large forest covers can also lead to a "forest curse" but is not analysed in this chapter.

13.5 The "aid" model is most applicable to the erstwhile 'Special Category' states that includes North-eastern states and Jammu and Kashmir; the natural resources model to Jharkhand, Chhattisgarh, Odisha, Gujarat and Rajasthan. This chapter examines in an analytical manner the experience of these states.

II. IMPACT OF REDISTRIBUTIVE RESOURCES

13.6 At the time of India's independence, most economists held a straightforward view of development. According to this view,

developing countries were poor because they lacked capital. And they were unable to overcome this problem themselves, because their people were too poor to save. So the key to development, the only way to solve the conundrum, was foreign aid. There was only one possible exception to this rule. Countries with vast amounts of mineral resources mine and sell them, allowing the proceeds to be invested in physical or human capital. But all others were doomed to rely on aid.

13.7 India was never completely convinced of this paradigm. For many years, it accepted aid, but tried to rely on its resources as much as possible, with the aim of winding down its aid dependence as quickly as possible. This strategy has proved successful, and over time many international economists, starting with Easterly (2003) and Rajan and Subramanian (2007) have begun to realise the virtues of this approach. One reason for the change of heart is that research has found it difficult to identify a robust positive relationship between aid and growth.

13.8 Why so? Several theories have been advanced. One hypothesis is that aid perpetuates resource dependency, in the sense that since revenues flow in from outside, recipient countries may fail to develop their own tax bases or their institutions more generally. And it is institutions, tax revenues, and incentives that have been found to be critical for growth, much more than overall resource availability. Many economists, including Brautigam and Knack (2004), Azam, Devarajan, and O'Connell (1997), and Adam and O'Connell (1999) document such effects.

13.9 Another potential downside of aid is that it could trigger "Dutch disease", named after the impact that discovery of natural gas in the North Sea had on the domestic

economy in the Netherlands. This windfall caused the real exchange rate to appreciate as the extra income was spent domestically, pushing up the price of nontradeables, such as services geared to the local economy. The higher prices for services then eroded profitability in export and import-competing industries, de-industrialising the economy, with the share of manufacturing in the economy falling (Corden and Neary [1982]). Similar effects have occurred in Canada, Australia, Russia, and Africa.

13.10 Despite these international examples and the lessons of India's own experience with foreign aid, when it comes to development within India, the country has followed the path prescribed by the first development economists. It has provided extensive transfers to certain poorer states in an attempt to spur their development. Has this strategy succeeded where others have failed? Could it be that the original development consensus was actually correct? If not, what are the alternatives?

13.11 This section examines the record of Indian states, to try to find an answer – in part so that it can inform the process of reforming the architecture of fund disbursement by the Centre.

III. REDISTRIBUTIVE RESOURCE TRANSFERS: EVIDENCE FROM INDIAN STATES

13.12 The first task is to define a concept akin to “aid” in the Indian internal context. State governments up to now have received funds from the Centre via different channels: (i) a share of central taxes, as stipulated by Finance Commissions; (ii) plan and non-

plan grants; and (iii) plan and non-plan loans and advances. These funds constitute “gross devolution to states” and the entire amount is not “aid”.²

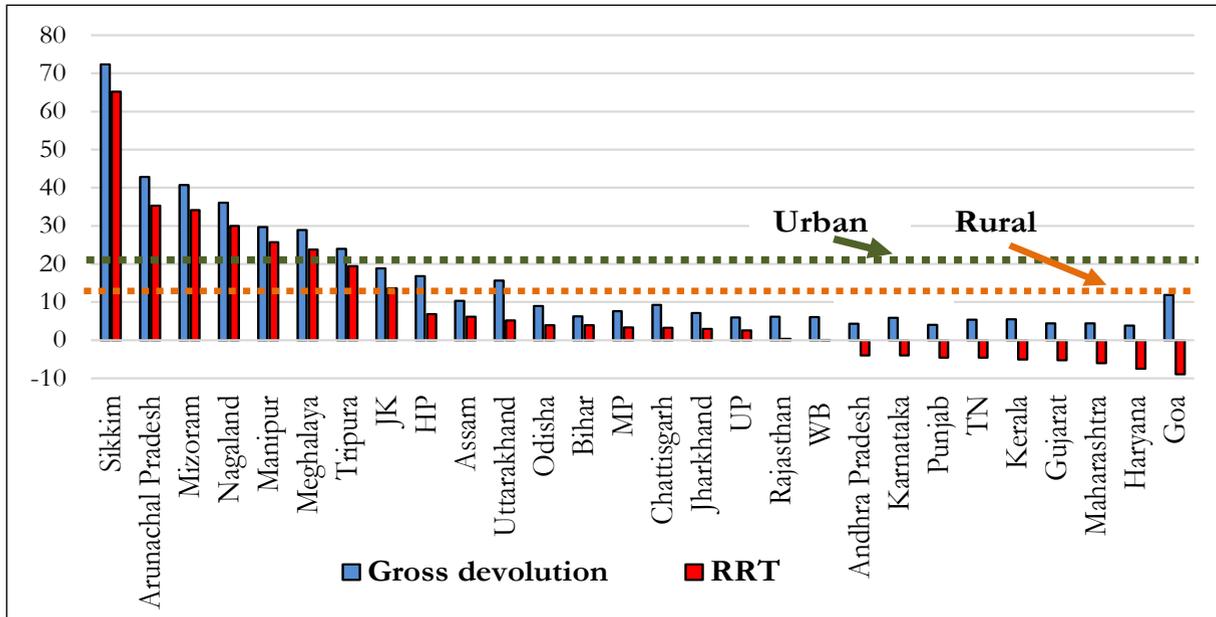
13.13 Gross devolution entails a strong redistributive element. Certain state-specific characteristics (captured in the ‘Special Category’ status) have determined whether some states are more dependent on such transfers, and particularly concessional assistance (grants). The ‘Special Category’ states have been heavily dependent on such flows for their developmental needs vis-à-vis other states. However, redistributed resources from the Centre differ from traditional “aid” in two important aspects. First, these are intra-country transfers and do not augment overall national disposable income like foreign aid does; second, the donor-recipient relationship is also very different because states benefiting from transfers are part of national governance structures that determine them. The objective of the chapter is not to argue for the replacement of such transfers, but to examine their effects. The perspective utilized in this chapter does recognize that transfer of resources to states are done to avert regional inequalities and correct fiscal imbalances and are therefore extremely crucial.

13.14 In this light, this chapter utilizes the concept of ‘Redistributive Resource Transfers’ (RRT). RRT to a state is defined as gross devolution³ to the state adjusted for the respective state's share in aggregate gross domestic product (definition D1). Thus RRT is not identical to gross devolution. This adjustment is made to ensure that only the portion of resources devolved to the states

² Some transfers are for schemes devised by the Centre; some are for those designed and implemented by the states themselves; while others are aimed to address specific issues viz. regional backwardness or reconstruction following a natural calamity.

³ Fiscal data on states is from the Reserve Bank of India's “State Finances: A Study of Budgets”, 2016.

Figure 1. Gross Devolution & RRT per capita (Rs. thousand, annual 2015)



over and above their contribution to Gross Domestic Product is included as RRT. An alternative definition (gross devolution net of the amount the state would have received as per its contribution in the country-wide fiscal effort measured by the state’s share in aggregate own tax revenue) is also considered to check whether results obtained using the first definition are robust or not.

13.15 The definition of RRT excludes the impact such transfers have on expenditures undertaken by state governments. It is also essential to note that any redistribution that might occur directly by the Centre’s spending is also excluded⁴. Thus, RRT is *one specific* measure of transfers, and is not a definitive metric of redistribution. Gross devolution and RRT as share of GSDP for various states is plotted in the Appendix.

Figure 3a. Per-capita GSDP and per-capita RRT*

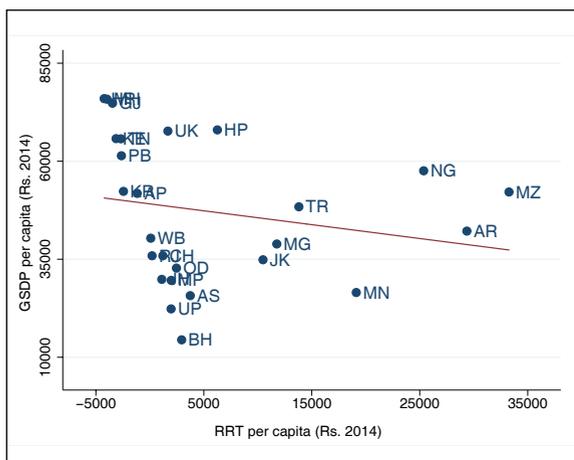
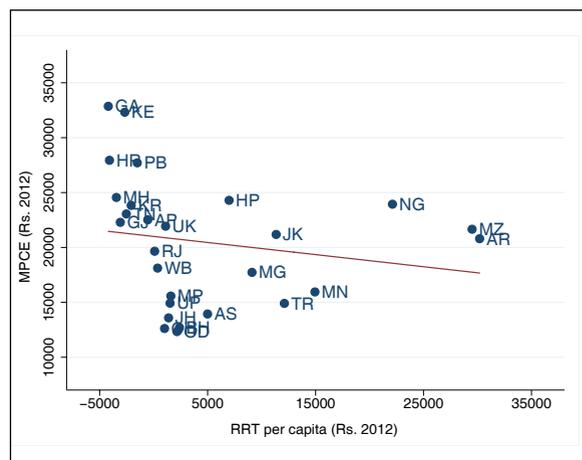


Figure 3b. Per-capita Consumption (MPCE) and per-capita RRT



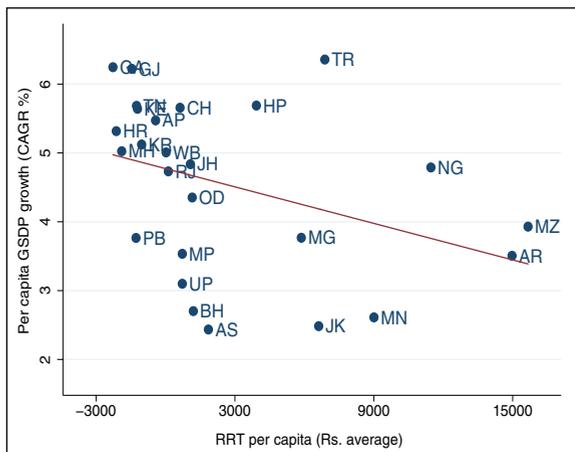
*: Robust to outliers. Chart 2a excludes Goa and Sikkim. Downward slope in chart 3b is preserved if Goa is excluded.

⁴ This chapter excludes those transfers between 2005-06 to 2013-14, that went from the Centre directly to implementing agencies (district) for schemes like MGNREGA, SSA, etc.

13.16 Figure 1 shows the ranking of states, in 2015, in the descending order of RRT received in *per capita terms* and also per-capita gross devolution. The top 10 recipients are: Sikkim, Arunachal Pradesh, Mizoram, Nagaland, Manipur, Meghalaya, Tripura, Jammu and Kashmir, Himachal Pradesh and Assam (all 'Special Category' states). Gross devolution per-capita per annum is at Rs. 32000 on average for the top 10 recipients of which Rs. 26000 (81 per cent) is estimated as RRT in 2015.

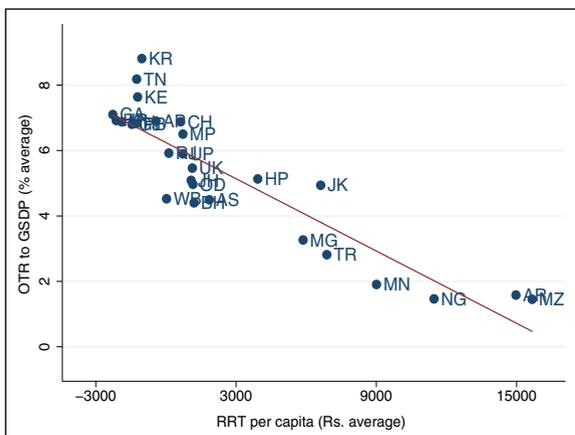
13.17 The yellow and green dotted lines in figure 1 show the all-India rural and urban annualised per-capita poverty lines for 2015

Figure 4a. Per-capita Growth & RRT*



*: Robust to outliers. Excludes Uttarakhand and Sikkim.

Figure 4c. Fiscal Effort and RRT



respectively⁵. Annual per capita RRT flows for all the north-eastern states (except Assam) and Jammu and Kashmir have exceeded the annual per-capita consumption expenditure that defines the all-India poverty lines, especially the rural.

13.18 Figures 3a and 3b plot the levels of per capita GSDP (for 2013-14) and monthly per capita expenditure (as reported in the 68th round of the National Sample Survey Office [NSSO],2011-12) against RRT per capita (for 2013-14 and 2011-12 respectively). A negative relationship is obtained, slightly stronger in case of the level of per capita GSDP. In other words, poorer states receive

Figure 4b. Manufacturing Share & RRT

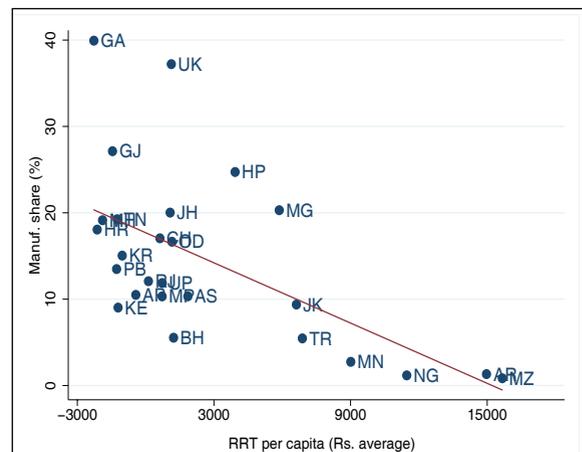
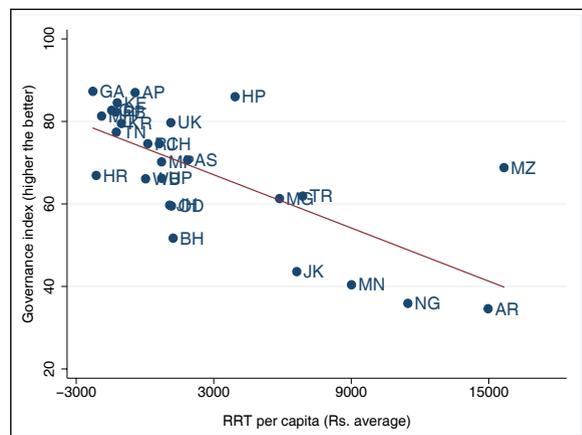


Figure 4d. Governance and RRT



⁵ The erstwhile Planning Commission calculated these poverty lines for 2011-12. The poverty line for 2011-12 is adjusted by the change in CPI (IW) and CPI (RL) for urban and rural respectively to bring them to 2015 prices.

the highest transfers, exactly as one would expect. However, despite such flows over the past few decades most of the high RRT recipient states (excluding Himachal Pradesh and Uttarakhand) are at lower levels of per-capita GSDP. Some of these states have significant catch-up to do vis-à-vis the average (denoted by the red line). These states also spend less on average on consumption. There are some notable exceptions. Nagaland and Mizoram, in particular, have significantly larger-than-average per-capita GSDP and consumption. Also, Jammu and Kashmir has relatively high consumption for a state receiving significant RRT.

13.19 Has RRT helped states perform better? Figures 4a-4c plots RRT against per capita GSDP growth, share of manufacturing in GSDP, and fiscal effort (defined as a share of own tax revenue [OTR] in GSDP). All of this data are shown as averages over 1993-94 to 2014-15 for states in existence prior to 2000-01, and 2000-01 to 2014-15 for the states created in 2000-01.⁶

13.20 The results are striking. The higher the RRT:

- The slower is growth.
- The smaller is the share of manufacturing in GSDP.⁷
- The lower is own tax revenues.

13.21 What about the quality of overall governance? This can be seen by relating RRT flows to a suitable indicator of the quality of governance. As Kochhar *et. al.* (2006) argue, transmission and distribution (T&D) losses in the distribution of power can be taken as a reasonably robust indicator

of governance. Such losses reflect the quality of both infrastructure and institutions in a given state. In this section, a slightly broader concept - the aggregate technical and commercial (ATC) losses (capturing commercial losses over and above technical losses and power theft that get captured in T&D losses as per cent of net power input energy) - is taken to define the index⁸. Figure 4d plots this index against RRT. Again it emerges that the highest RRT recipient states have lagged behind on overall governance. In the northeast Mizoram stands out as a significantly better performer.

13.22 All of this suggests there might be an “RRT curse”. But suggestion is far from proof. To go from one to the other, there is a need to examine whether the trends are robust to alternative definitions of RRT. Indeed, they are. They hold even if RRT is defined as the gross devolution to the state net of the amount it would have received if the state was given its share in aggregated states’ own tax revenue. Interestingly, these trends are preserved even if gross devolution of the centre to states is considered without any adjustments.

13.23 The next issue that needs to be addressed is causality. After all, poor performance is not necessarily the consequence of RRT. The causation could go the other way round, with greater transfers given in response to the observation that performance has been lagging. This issue needs to be addressed before formal statistical tests (regressions) are performed, since otherwise the estimated impact of RRT will be biased.

⁶ These states are Jharkhand, Chhattisgarh and Uttarakhand.

⁷ The share of manufacturing to GSDP is the average over the years 2011-12 to 2014-15 as per the 2011-12 series of the CSO. The negative relationship is robust to the average RRT to GSDP ratio taken excluding the last ten years (2005 to 2015).

⁸ The index is defined as $i = 100 - [\text{ATC loss}]$ to ensure that a higher value of the index indicates better governance.

Figure 5a. Per-capita GSDP growth and per-capita RRT controlling for landlocked nature

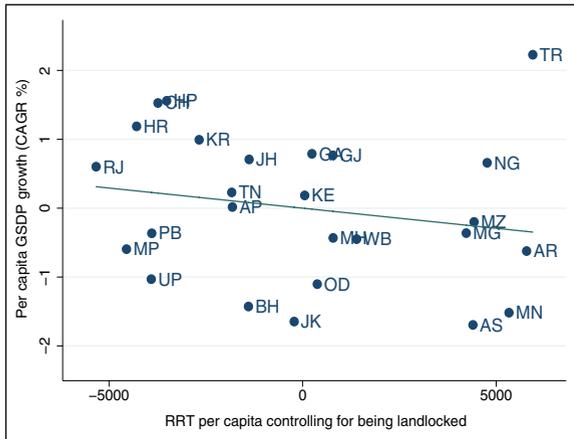


Figure 5b. Manufacturing share and per-capita RRT controlling for landlocked nature

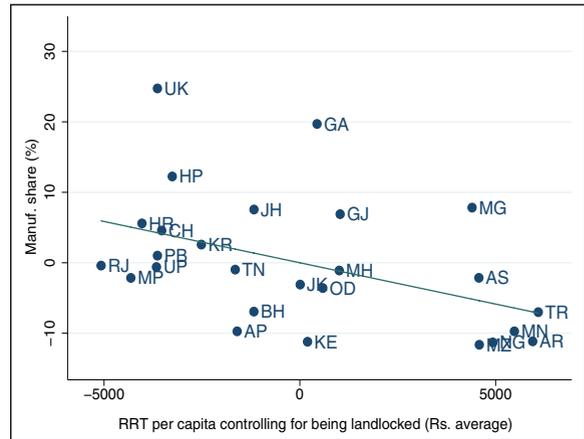


Figure 5c. Fiscal effort and per-capita RRT controlling for landlocked nature

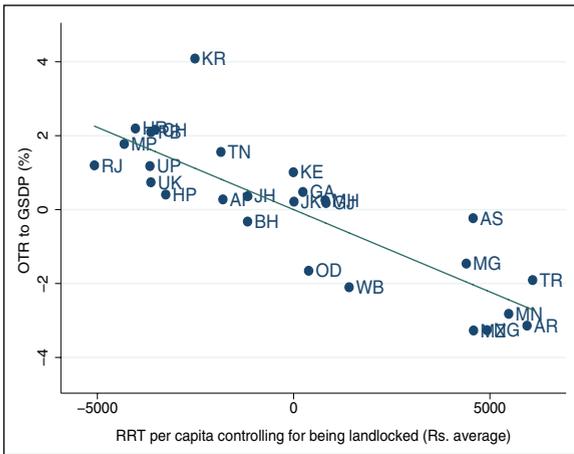
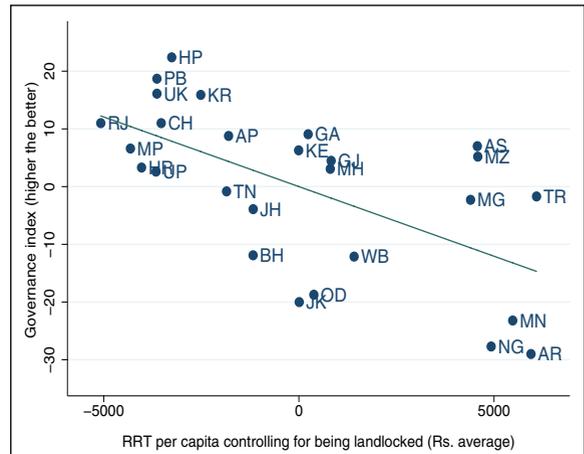


Figure 5d. Governance index and per-capita RRT controlling for landlocked nature



13.24 To get a reliable estimate of the effect of RRT, one needs to separate out that part of these transfers that is unrelated to economic outcomes considered in this chapter (growth, manufacturing share, fiscal effort) and governance. One way address this issue is to identify an instrumental variable (IV) for the explanatory variable (i.e. RRT) which is strongly correlated with RRT but not with economic outcomes or governance. The impact of RRT on each of the variables

of interest can then be estimated using the IV regression. The IV methodology is outlined in the Appendix.

13.25 The trends emerging from the new regressions seem to reinforce the relationships reported earlier. Figures 5a-5d plot the findings. Controlling for whether a state is landlocked or not⁹, larger RRT inflows seem to have no positive impact on per capita GSDP growth, and may negatively impact manufacturing share, fiscal effort and governance.

⁹ This is important as being landlocked implies that additional transaction costs will be incurred for conducting international trade, which will damage the prospects for developing manufacturing and generating growth. As Sachs and Warner (1997) estimated- a landlocked country's growth is likely to be lower by 0.58 percentage points vis-à-vis one with access to the sea.

IV. IMPACT OF NATURAL RESOURCES

13.26 There is another way that the original development view has been overturned. Initially, economists saw natural resources as a way out of the low saving-low capital development trap. But with the benefit of hindsight it has become clear that economies with abundant natural resources have actually tended to grow less rapidly than resource-scarce economies. Economic geographer Richard Auty coined the phrase “resource curse” in 1993 to describe this phenomenon; since then, it has been analysed in a number of studies such as Sachs and Warner (1995,1999), Sala-i-Martin and Subramanian (2003) and Ross (2014).

13.27 As with foreign aid, the negative association between resource abundance and growth poses a conceptual puzzle. In the literature, three possible channels of causation have been identified. First, the exploitation of natural resources generates rents, which lead to rapacious rent-seeking (the voracity effect) and increased corruption. Second, natural resource ownership exposes countries to commodity price volatility, which can destabilise GDP growth. Finally, natural resource ownership – like foreign aid -- makes countries susceptible to “Dutch

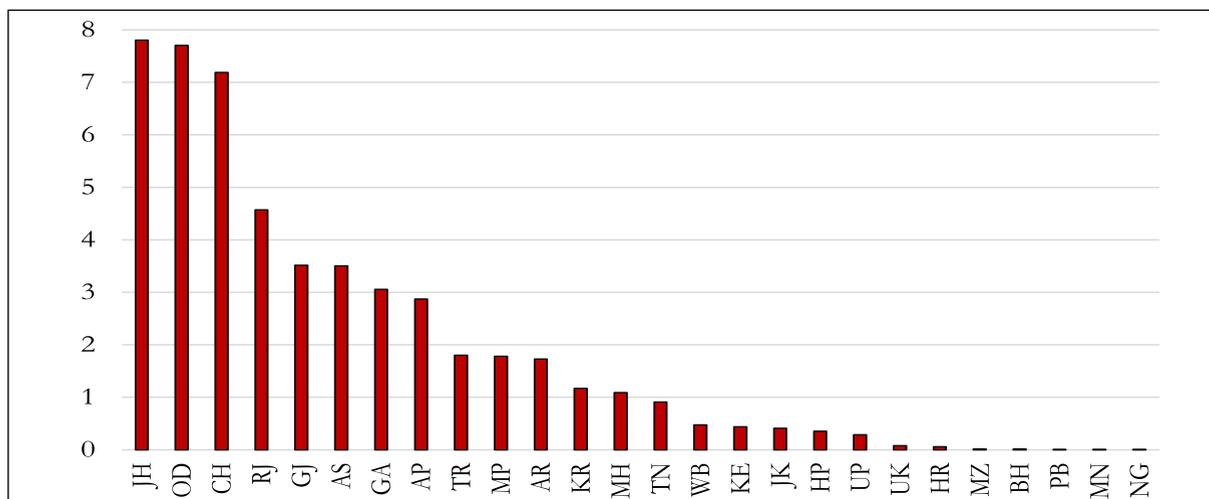
Disease”.

13.28 While most of the research concerning resource curse effects is pursued in a cross-country set up, it is intriguing to employ the framework for the states of India, which are heterogeneous in terms of their natural resource endowments, especially mineral wealth. This approach seems particularly fruitful, since some Indian states were bifurcated in 2000 – Chhattisgarh was split off from Madhya Pradesh, Uttarakhand from Uttar Pradesh, and Jharkhand from Bihar. In this process, mineral wealth was reallocated in favour of the newly created states (nearly all of Bihar’s mineral wealth going to Jharkhand, for example), creating a natural experiment that can be studied profitably.

V. NATURAL RESOURCES AND EVIDENCE FROM INDIAN STATES

13.29 Mindful of this bifurcation, the analysis utilizes two time periods (1981-2000 and 2001-2014), to discern the impact, if any, of the “resource curse” on the new states (Jharkhand, Chhattisgarh and Uttarakhand). For this analysis the key variables are the same as identified in the earlier section on RRT. Figure 6 shows the share of minerals (in value terms) *per capita* in 2014. The value of

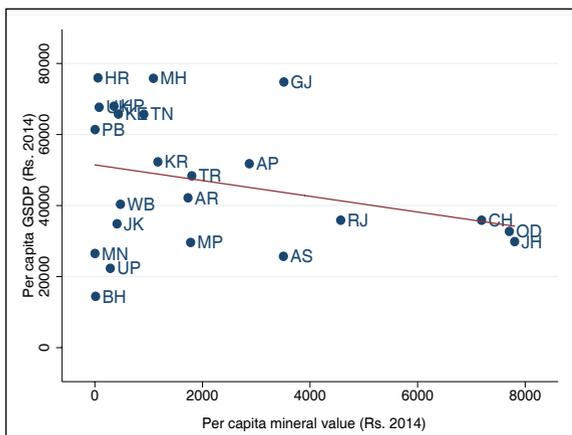
Figure 6. Per-capita value of minerals (Rs. Thousand, 2014)



minerals is the sum total of fuels (coal, lignite, crude petroleum [onshore only] and natural gas)¹⁰, all metallic minerals, non-metallic minerals as well as other minor minerals. As per this definition the mineral resource rich states are: Jharkhand, Chhattisgarh, Odisha, Rajasthan and surprisingly Gujarat¹¹.

13.30 One way to motivate the impact of natural resource availability is to estimate whether populations in mineral rich areas have emerged out of poverty better than other areas. To this end, poverty trends¹² for the mineral-rich states with other states is contrasted between 1993-94 and 2011-12, the latest year for which NSSO data is available (Table 1). At first blush, the mineral-rich states seem relatively successful. Their poverty ratio fell by around 31 percentage points over nearly two decades, compared with 28.5 percentage points in the other states.

Figure 7a. Per capita GSDP and per capita mineral value (2014)*



*Robust to outliers. Charts without Goa and Meghalaya.

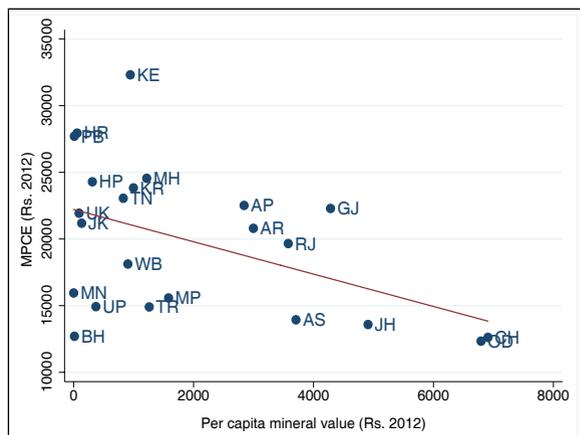
Table 1. Comparison of poverty decline

	1993-94		2011-12	
	ST	All	ST	All
Mineral Rich states	70.5	48.0	53.7	17.1
Other states	57.6	39.5	35.1	11.0

Source: Calculated from NSSO unit level data. Poverty line from erstwhile Planning Commission and Tendulkar Committee Report.

13.31 Viewed from a different perspective, however, the mineral states seem less successful. Table 1 shows the gains were not passed on equally to all sections of the population. In particular, the Scheduled Tribes (ST) population of the mineral-rich states, which actually forms the predominant population in these areas, saw only a 17 percentage point decline in poverty, smaller than the 22 percentage points fall in the other states.

Figure 7b. MPCE and per capita mineral value (2012)*



¹⁰ The data have been collated from "Statistical Abstract India" published by the CSO for various years. Data in figure 6 excludes Meghalaya.

¹¹ It may seem surprising that Rajasthan and Gujarat have a higher per capita mineral value as compared to a mineral rich state like Madhya Pradesh. However, this result is because Gujarat has a very high value of on-shore petroleum (crude), natural gas and lignite. Rajasthan, on the other hand, has very high value for natural gas and metallic minerals like copper ore, lead and zinc.

¹² Defined as proportion of people below poverty line to total population; for poverty analysis the mineral rich states include Madhya Pradesh, Chhattisgarh, Jharkhand, Odisha and West Bengal.

13.32 The same “two-handed” assessment is evident when resource values are correlated with economic outcomes. On the one hand, Figures 7a and 7b suggest a negative correlation. They plot per capita mineral value against the levels of monthly per capita expenditure (for 2012) and per capita GSDP (2014). It is clear that resource-rich states, especially Jharkhand, Chhattisgarh and Odisha (with the exception of Gujarat) are at low levels of per-capita GSDP, with low levels of monthly per-capita expenditure. As figure 7a shows, the negative relationship is being driven by the top four mineral rich

states Jharkhand, Odisha, Chhattisgarh and Rajasthan.

13.33 On the other hand, figures 8a and 8b show this relationship has not held more recently. In these figures, the time period is divided in two, in order to capture the bifurcation of Madhya Pradesh, Bihar and Uttar Pradesh in 2000. Figure 8a shows that the relationship between per capita mineral production and average per capita GSDP growth (CAGR)¹³ was negative during 1981-2000. But the relationship for the period 2001-2014 (Figure 8b) is inconclusive.

Figure 8a. Per-capita GSDP growth and per-capita mineral value(1981-2000)*

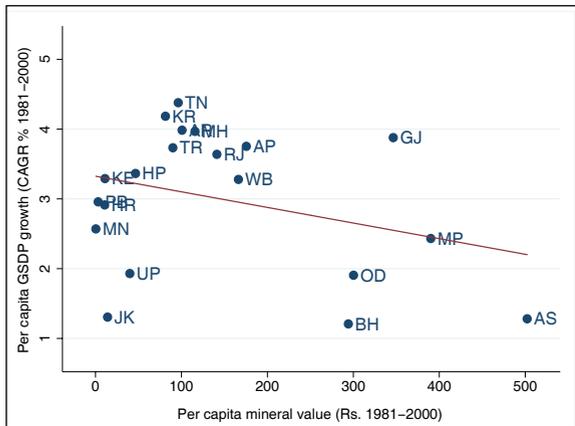
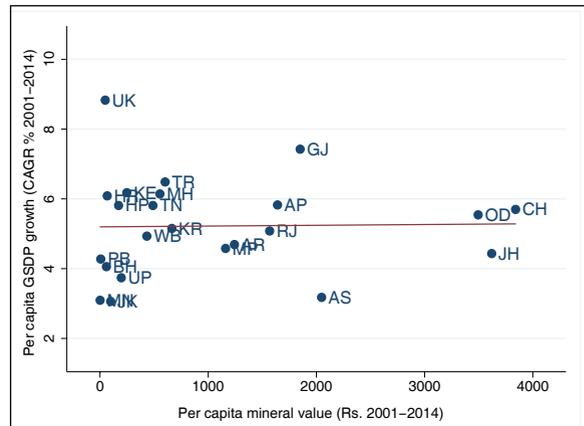
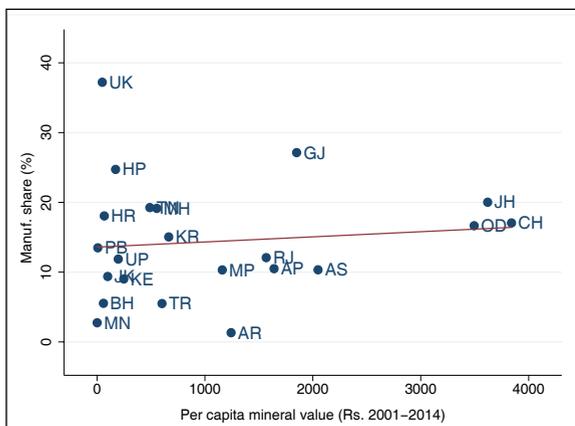


Figure 8b. Per-capita GSDP growth and per-capita mineral value(2001-2014)



*Robust to outliers; excludes Goa and Meghalaya.

Figure 9. Share of Manufacturing and per-capita mineral value (2001-14)



13.34 If the development experience of the resource-rich Indian states is really characterised by a "resource curse", an important indicator of the same will be a decline in the share of manufacturing in GSDP (the “Dutch disease”). Figure 9 shows the relationship between the value of resources and the average share of manufacturing to GSDP.¹⁴ It is observed that the relationship is, once again, rather weak.

13.35 Another indicator that can identify resource curse is the extent of fiscal effort made by respective states (captured by the

¹³ Goa and Meghalaya which turn out to be an outlier in this regression, have been dropped.

¹⁴ The share of manufacturing to GSDP is the average for 2011-12 to 2013-14 as per the 2011-12 series of CSO.

share of OTR in GSDP as in the earlier section), which is expected to decline over time in the wake of excess reliance on non-tax revenue from natural resources. As expected, figure 10a shows that for the period 1981-2000, the relationship is mildly negative. Once again, the result breaks down in the more recent period (2001-14).

13.36 Finally, figure 11 plots the index of governance defined in the earlier section, showing no evidence that resource value has a negative impact. Interestingly, a resource-rich state, viz. Chhattisgarh (apart from

Gujarat), seems to be doing above average on governance.

13.37 Based on the above, there seems to be no concrete evidence either in favour or against a "resource curse" in the context of Indian states. The results are, however, relatively strong for levels of per capita GSDP and consumption. With regards to manufacturing share and governance, even though there is no negative correlation, it must be emphasized that there is *no strong positive relation* either. This implies that the resource rich states need to bolster efforts to

Figure 10a. Fiscal effort and per-capita mineral value (1981-2000)

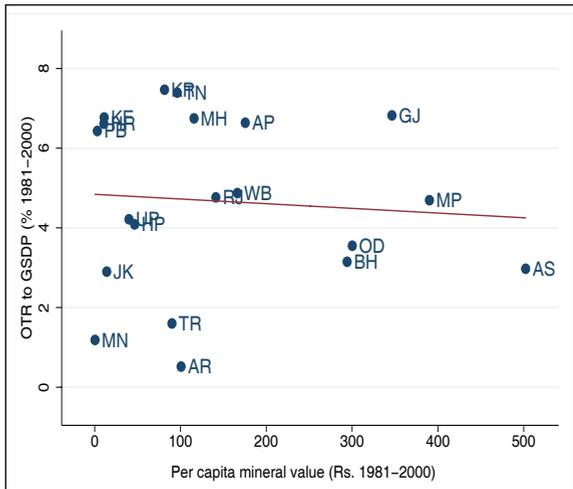


Figure 10b. Fiscal effort and per-capita mineral value (2001-2014)

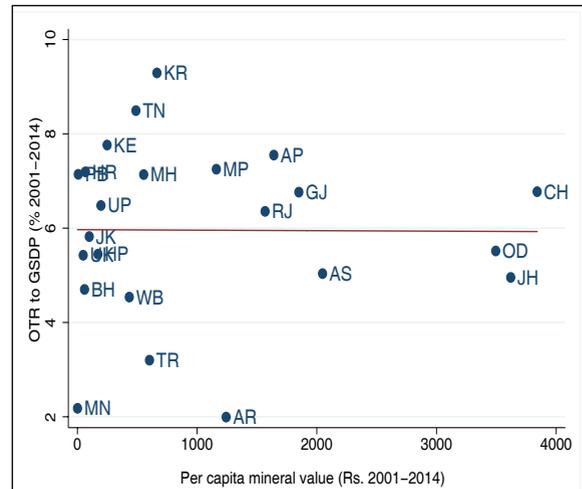
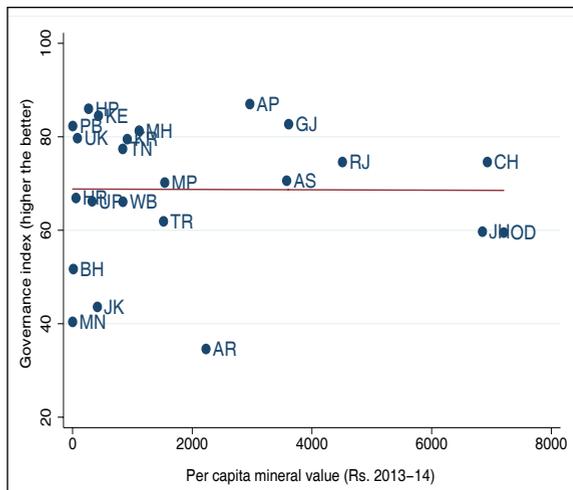


Figure 11. Governance index and per-capita mineral value (2013-14)



counter any possible downsides of a "resource curse" that may emerge in the future. As is clear from the diagrams above, despite significant resource endowments, some states, most prominently Gujarat, has performed better than average on many indicators.

VI. CONCLUSION

13.38 **Infrastructure and Connectivity:** It is, of course, possible, that the "RRT curse" and "natural resource curse", to the extent they are valid, could be a result of poor connectivity in particular and poor infrastructure - physical, financial, and digital - in general that most of these states suffer

from. This is clearly true of the north-east but also true of many parts of resource-rich India. Enhancing connectivity - financial and physical - on a war footing (as the government has attempted for financial inclusion with the Pradhan Mantri Jan Dhan Yojana (PMJDY), expediting the optical fibre network, etc.) will have a moderating effect. However, despite the above observations some simple but important policy recommendations can be considered.

A. Redistributive Resource Transfers

13.39 In sum, it seems as if the new view of development economics may be right. There may well be some version of the phenomenon referred to internationally as the “aid curse”.

13.40 If so, how should this view inform policy? Clearly, the answer cannot be to dispense with RRT altogether, since in a federal system the Centre must play a redistributive role: it will always have to redirect resources to under-developed states. Rather, the Centre will need to find ways of ensuring that the resources it redistributes are used more productively.

13.41 There are, in fact, a number of factors that can be taken in the account while determining the quantum and architecture of redistributive resource flows to the states. In the spirit of cooperative federalism these proposals can be suitably modified to address the priorities and concerns of various states. For example:

Redirecting flows to households: One possibility would be to redirect a certain portion of RRT and channel the resources directly to households as part of a Universal Basic Income (UBI) scheme. As chapter 9 shows, targeting issues plague existing development interventions and transfers directly to households could eliminate some of these problems.

Conditioning transfers on fiscal performance: Another possibility would be to find ways to offset the fiscal bias uncovered by the above analysis, in which higher resource flow leads states to relax their own tax effort. Perhaps future Finance Commissions could revert to the practice of the 13th FC of conditioning transfers on the tax effort of states; in fact the weightage could be even greater than suggested by the 13th FC.

Making governance-contingent transfers: Given that some high RRT recipient states have performed better than others, it is possible that the capacity of states to utilize funds optimally plays an important role. To encourage better governance and sound institutional practices, the fund transfer mechanism could explicitly include a few monitorable institutional indicators as criteria for receiving transfers.

B. Natural Resource Revenues

13.42 Based on the assessment in this chapter, there is little evidence to suggest that a “resource curse” exists in India, of the kind that economists have found in other countries. Indeed, the fact that negative correlations tend to break down after 2000 implies that the new mineral-dependent states created post bifurcation have managed natural resources less inefficiently than their forbears.

13.43 But equally there is no evidence to suggest that mineral wealth has been a boon, as the earliest development economists had hoped. This suggests that there is a need to improve governance, to ensure a more productive use of the resources, especially in the states that are relying so heavily on them.

13.44 The structure of revenue administration as it stands today is such that the government receives royalty from the mining of mineral resources. However, in the present system there is further scope

to bolster citizen engagement in sharing the fruits of resource extraction. Robust mechanisms of citizen engagement will act as a constraint on large scale corruption and over-exploitation of resources.

13.45 With the intention of ensuring that the revenue from minerals are utilized for the development and welfare of the citizens of the concerned states, the Mines and Minerals (Development and Regulation) Amendment Act, 2015 included the following in the Act:

- Establishment of a trust, to be called the District Mineral Foundation (DMF) for districts affected by mining related operations.
- The composition and functions of DMF are to be prescribed by the respective State governments. The foundation shall work for the benefit and interest of persons affected by mining related operations.

13.46 One way to increase citizens' participation is via creation of a dedicated Fund to which all mining revenue must accrue. The assumption here is that minerals are part of the commons, owned by the state as trustee for the people – including

future generations. Therefore, the revenue from the natural resources should be saved in a non-wasting asset- in a Permanent Fund. The real income accrued by the Fund can be redistributed to citizens affected by and having a stake in the extraction of the resource. **(Box 1)**

13.47 The proposal to create a Fund at the district level is laudable and is a recognition of the state being cognizant of the possible ill-effects of a "resource curse" at some point in future. There are however other approaches that may be considered to ensure more integrated and active participation of the citizens who are directly affected by mining operations.

13.48 An alternative structure would be to redistribute the gains from resource use directly into the accounts of the concerned citizens as part of a UBI. However, to make this income transfer effective and to make the citizens feel invested in the management of the resources, the state could impose a nominal tax on the post - UBI disposable income of citizens and use this revenue for development purposes. Correspondingly, it is also likely that this arrangement (UBI

Box 1: Supreme Court of India Judgement on Goa Mining

The judgment of the Supreme Court of India in WP 435/2012 (*Goa Foundation vs UoI & Ors*, the Goa mining case), was the culmination of a series of landmark judgements on the subject of managing natural resources in public domain. In this case, the apex court ordered a cap on mining as well as the creation of a Goan Iron Ore Permanent Fund to meet the ends of inter-generational equity and sustainable development. When considered along with earlier SC judgments on the public trust doctrine, notably CA 4154/2000 (*Fomento Resorts & Anr vs Minguel Martins & Ors*), and on the disposal of natural resources, notably WP 423/2010 (*CPIL & Ors vs UoI & Ors, the 2G spectrum case*), a new picture emerges for minerals.

What implications does the SC judgment carry for natural resource management?

Natural resources, including minerals, are a shared inheritance that needs to be preserved for future generations. As sub-soil minerals are largely owned by the States, and offshore minerals by the Centre, the states are the trustees on behalf of the people. The cap on mining in Goa is to ensure the availability of minerals over several generations as well as to limit the environmental damage from permitted extraction.

The proposal for exploring the creation of a Goan Iron Ore Permanent Fund is notable for being the first that has potential to be established by judicial action. Norway and over 50 other countries / sub-nations have created Permanent Funds based on extracting economic rent from oil or other natural resources. The oldest of these funds, in Texas, dates back to 1876.

and tax) may lead to citizens having a more benign view of taxation, since they will see the social contract as tangibly affirming their wellbeing.

13.49 These measures have never been tried in India. But permanent funds have been utilised effectively in many other countries, while pilot projects for UBI are beginning. Introducing these mechanisms in India could be contemplated, if only because their risks seem small compared with the costs that would accrue if the "natural resource curse" materialised on Indian soil, as it has in so many other countries around the world.

13.50 In sum, large bounties-either in the form of redistributed resources or natural resources- can create surprising pathologies, even in democratic India. Recognizing and responding to them creatively will be important to avoid making the errors of history.

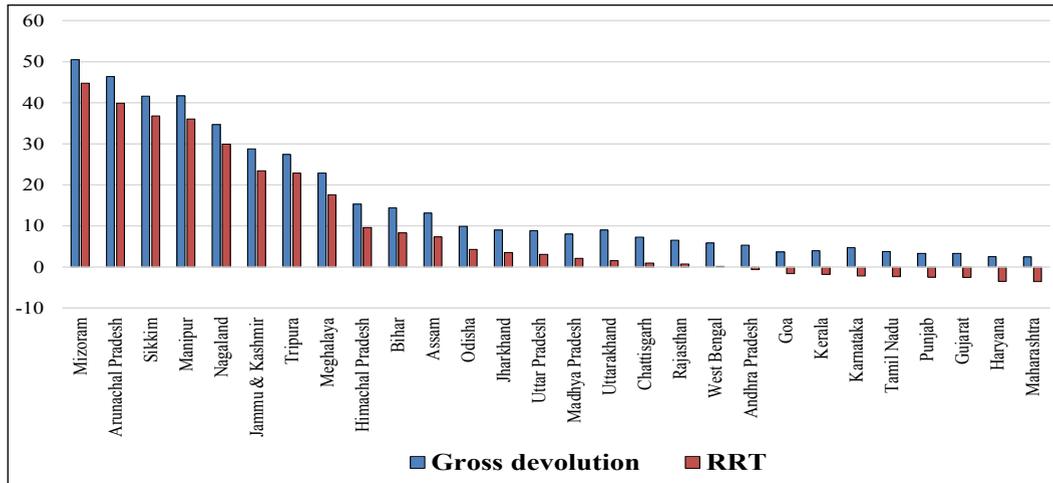
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APPENDIX

- The figure below shows gross devolution and RRT flows (as per the first definition), in each case as share of GSDP of the state concerned (averages over the period 1993-94 to 2014-15). Under the D1 definition 10 states have near zero or negative RRT (West Bengal, AP, Goa, Kerala, Karnataka, Tamil Nadu, Punjab, Gujarat, Haryana and Maharashtra).

Figure A1. Gross Devolution & RRT as percent of GSDP



- Instrumental Variable (IV) Regression:** For the regression two IVs are proposed:
 - the distance of the state capital from New Delhi, and
 - the distance of the state capital from the nearest international border.

These measures should not be interpreted literally. Rather, they proxy for non-economic factors that might influence resource transfers. For example, distance from international borders proxies for any strategic considerations underlying resource transfers. Are these good proxies? Figures A2 and A3 plot the RRT against these IVs (this is the so-called first stage of the IV regression). The figures show a very strong, statistically significant relationship and with the expected sign: the further away from the nearest international border the lower the RRT (Figure A2). All the regressions exclude Sikkim.

Figure A2. RRT and distance from international border

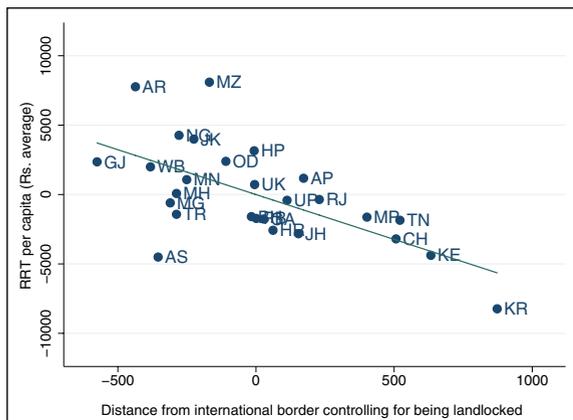


Figure A3. RRT and distance from New Delhi

