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Political Diversity and Competition in India

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Political Diversity and Competition in India

Abstract

Utilising data on election results from 1952 to 2017, covering all 16 Lok Sabha or Parliamentary Constituency (PC elections) elections and last 3 elections for each state/UT assemblies (AC elections), this paper offers a comprehensive and up-to-date evaluation of fragmentation and consolidation of political power in India. We quantify the changes in political diversity and competition in India based on estimates of Effective Number of Parties (ENP).

India's political diversity has increased over time, with a considerable jump in the 1990s. Even though the 2014 Lok Sabha polls saw a decline in political diversity, we argue that there is little evidence from the subsequent assembly elections to suggest any major reversal from the post-1990 levels.

As is to be expected, political diversity varies considerably across states. We present an ENP-based framework to measure the impact of pre-poll alliances and assess the nature of competition in each state. It clearly shows that even as there is space for five to six parties at the state level, an electoral contest after considering alliances is usually restricted to two or three parties. Extending this analysis to the booth level, we find that the contest rarely goes beyond two candidates and at times is dominated by just one candidate.

We also find that assembly elections tend to be more competitive than parliamentary elections. Given that the level of competition varies across states, we argue that the difference between the effective parties contesting in an election and the Duvergerian equilibrium — an ENP of two — is an indicator of the likelihood of future political realignment in terms of shifting pre-poll alliances, mergers and acquisitions of political factions. The research suggests that analysis of recent local-body elections using this framework can provide further insights into changes in political diversity, nature of competition and predicting political churn.

1. Introduction

The Indian National Congress, more popularly known as the Congress Party, dominated India's political space for most of the period after independence. However, the 1990s saw the emergence of regional and caste-based parties. Successive coalition governments have seen greater fragmentation at the top, with the leading party in the ruling coalition securing much fewer seats than the required majority[1].

In 2014, the Bhartiya Janata Party (BJP) came to power with a full majority on its own. Several parties, including the Congress, saw their vote shares eroded and core voter base threatened. More significantly, it seemed to set in motion a move towards realignment of vote-banks, ideologies and alliances, party-hopping, merger of smaller parties and an aggressive expansion of BJP in states where they earlier had a limited presence.

In this context, the key objective of this study is to provide a descriptive account of political diversity and the party system in India. In doing so, we provide a longer-term perspective of how this has changed over time and what it means for competition in India's electoral marketplace. We also look at how this varies across states and whether there is a difference between Lok Sabha and state assembly elections in terms of diversity and competition. Finally, we attempt to quantify the incentive or opportunity available to parties for political realignment, which is a precursor to political churn.

To achieve this, we build a framework based on "Effective" Number of Parties (ENP), which simply put, is a summary measure of the number of parties that matter in an election — allowing credible comparisons across space and time. We consider six measures of ENP suitable in the Indian context, for Lok Sabha elections since 1952 and last 3 assembly elections. Details of these measures are provided in **Appendix A**.

[1] Seats required for parliamentary majority are 272. Congress won around 140 seats in 1996, 1998 & 2004; 206 in 2009. BJP won 161 in 1996, around 180 in 1998 & 1999

Following Laakso-Taagepera (1979), the primary measure for Effective Number of Parties (ENP[2]) used in the study is calculated as:

$$ENP_{LT} = \frac{1}{\sum_{i=1}^{n} v_i^2}$$

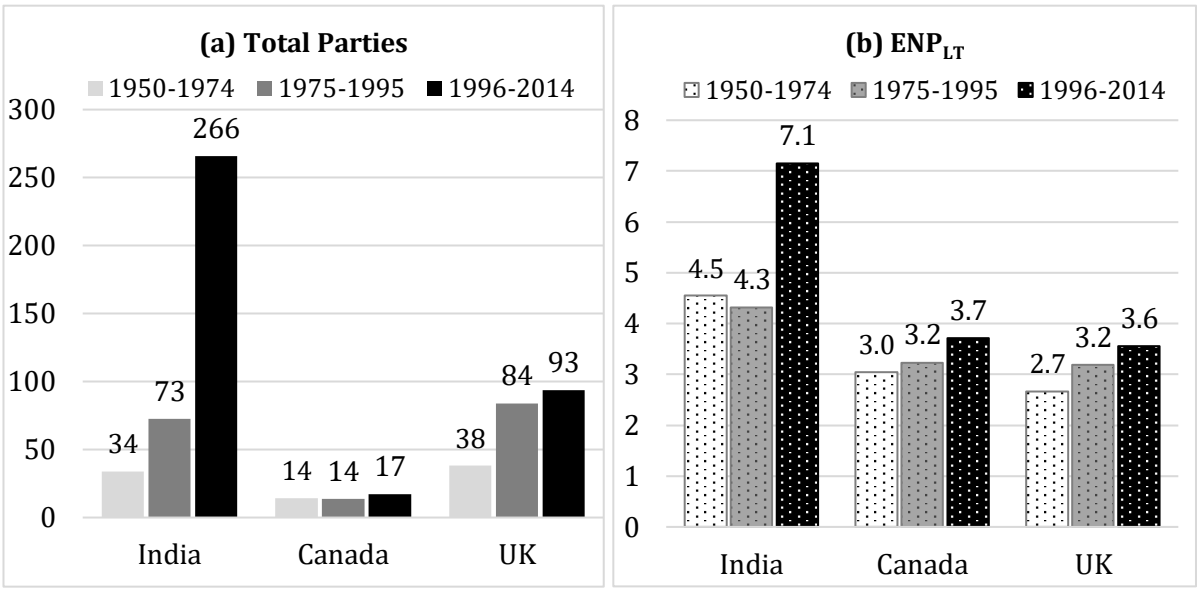
Where v_i is the vote share of the i^{th} party and total parties[3] is N {1, 2, … … n}. In addition, ENP_{LT} using seat share, parties with 1/6th of total votes (ENP_{Maj}) and parties with over 5% vote share (ENP_{Per5}) are other three supplementary measures that have been presented[4], where necessary.

2. Political Diversity in India: Some Perspectives

India is a federal democracy that follows the Westminster model. Both national and state legislatures elect representatives in single-member constituencies[5] through the first-past-the-post (FPTP) system[6] — where the contestant with maximum votes wins the election. However, no other country following a similar plurality-based system comes close to India in terms of electoral diversity.

[2] Unless specified or is otherwise apparent, ENP in this report refers to the estimate with Laakso-Taagepera (1979) formula, using vote share.
[3] For calculating ENP_{LT}, each independent candidate is considered as a different party rather than lumping them together as one party or ignoring them in calculating the ENP. Appendix A provides further details.
[4] The remaining measures are discussed in Appendix A. While it is beyond the scope of this paper to go into the pros and cons of the different measures of ENP [See Molinar (1991) and Golosov (2010)], it suffices to say that these were of limited significance given the descriptive nature of this study. We believe that the other primary measures would have worked just as well, and to that extent, the use of Laakso-Taagepera (1979) as our choice of ENP was more due to its wider acceptance and popularity.
[5] There used to be constituencies that elected more than one member before 1962. However, since 1962, all constituencies in Lok Sabha as well as state legislative assemblies have been single-member constituencies.
[6] What this also means is that in any electoral contest with more than two candidates, one could win with votes fewer than a simple majority i.e. 50%. For instance, little over one-third or one-fourth of the total votes would suffice if there are 3 or 4 candidates respectively. In this situation, it also follows that while one can win with 35% of the votes, someone else may lose another seat with even 45% of the votes. In effect, there is no direct relationship between vote share and seats. In fact, when it comes to the aggregate electoral outcome, it is possible that the party with the highest vote share does not win the maximum number of seats.

Figure 1: Total Parties and ENP — India, Canada and UK



Note: For each period, estimates for total parties and ENP_{LT} (vote share based) are simple averages of all parliamentary elections held during that period. Source: Authors' calculations based on official election results of respective countries.

For instance, India has a significantly higher number of parties as compared to Canada and UK. Over 450 political parties contested the 2014 Lok Sabha elections in India as compared to around 130 in UK and 20 in Canada in their recent parliamentary elections[7]. More importantly, as shown in Figure 1, there has been a significant increase in effective number of political parties in India since 1990s in contrast to the relative stability of Canada and UK.

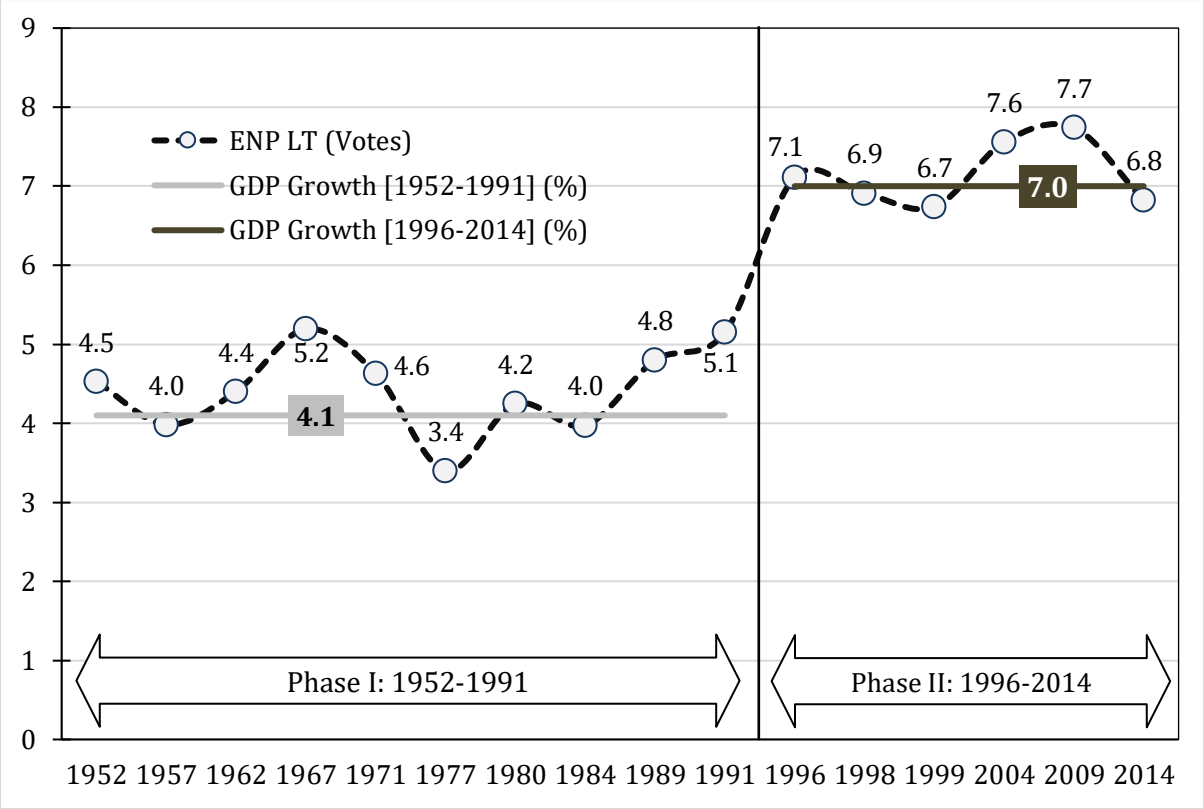
Diversity in India's electoral participation can be looked at in terms of two distinct phases, with a significant increase[8] in ENP post 1991. Interestingly, this is very closely associated with increase in India's GDP. As shown in Figure 2, the first phase [1952 – 1991] — which covers the first Lok Sabha election after independence in 1952 upto the liberalisation of the economy in 1991 — had an average ENP of 4.4 and GDP growth rate (CAGR) of 4.1% per annum. The second

[7] UK General Election in May 2015 and Canada Federal Election in October 2015.

[8] Multiparty system and increase in number of parties in India after 1991 has been ascribed to various factors. Cox (1997) notes the importance of social cleavages and political institutions, Chibber and Kollman (1998) note the role of political and economic centralisation and Yadav (1999) provides a comprehensive account of the transformation of India's politics in the 1990s, in which he posits largely on social change. Yadav and Palshikar (2002) provide an account of emergence of party systems in different states in terms of competition and social groups. In contrast, Chibber, Jensenius and Suryanarayan (2014) highlight that considerable changes in party fragmentation have taken place despite the same political institutions and relatively stable social cleavages and go on to assess the impact of level or maturity of party organisation for 15 states (1967-2004).

phase [1996 – 2014] — the post liberalisation period — saw a significant jump not just in the GDP growth, but also in political diversity. ENP during Phase II averaged 7.1 and the GDP Growth was 7% per annum.

Figure 2: ENP_{LT} (Lok Sabha) and GDP Growth Since Independence



Source: Official election results from Election Commission of India and GDP data from CSO. Authors' calculations.

As mentioned earlier, the second phase saw increasingly greater fragmentation at the top, with the leading party in the ruling coalition securing much fewer seats than the required majority. This increased the incentive to form alliances manifold[9], despite inherent contradictions in terms of core voter base and ideology of political parties. In so far as analysis of electoral performance of political parties is concerned, pre-poll alliances present a rather unique challenge as these result in transfer of votes among the constituent parties. So, the vote share secured by a party is no longer an unbiased measure of its own support base. Contested vote

[9] Ziegfeld (2012) discusses how coalition governments shifted the incentives in favour of formation and success of regional parties in India in the 1990s

share[10], which is often used as an alternative, has its own drawbacks and is certainly not fit for estimating ENP.

Besides, the Indian electoral system is peculiar in many ways. First, there are many more parties as compared to other countries following the Westminster model. Second, there are pre-poll alliances with characteristics that are perhaps unique to India. For instance, territory specific alliances — where parties ally in one state but not in another, and election specific alliances — where parties ally for Lok Sabha polls, but not for assembly or local elections. Then, there are instances of inter-temporal understanding across elections where a party contests a higher proportion of seats in Lok Sabha polls but much lower proportion of seats in next assembly polls or *vice versa*. Third, there is significant churn in alliances over time which is further complicated by mid-term break-ups. Moreover, alliances affect voter behaviour itself by changing the likelihood of winning.

We recognise that these factors can have implications on the use of vote share as a party's support base and subsequently on estimates of ENP, more so in the case of India. However, we believe that the outcome of seat sharing negotiations for pre-poll alliances reflect the ground realities quite accurately and therefore result in a minimisation of this bias.

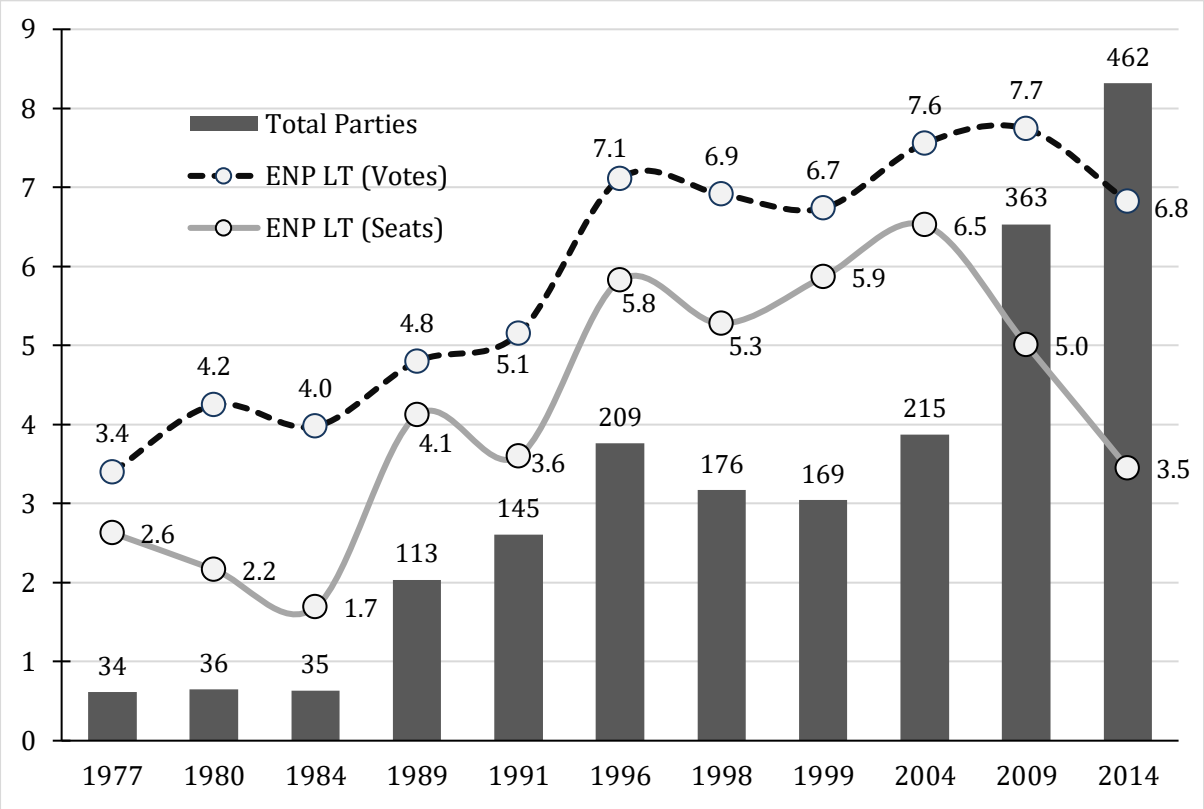
3. Decline in Political Diversity in 2014

The 2014 Lok Sabha election was the first since 1977, and the second ever in independent India, when only two parties secured a vote share of over 5%. This is in part a story of the decline of the two major Left parties. Communist Party of India (Marxist), which consistently secured over 5% votes[11], was reduced to a vote share of 3.3% in 2014 — making it the first Lok Sabha election when CPI (M) or CPI did not feature among the top-5 parties. Bahujan Samaj Party (BSP), which had a very successful run — from close to nothing in early 1990s to securing 5.3% votes in

[10] Contested vote share is defined as votes secured by a party as a proportion of total votes polled in the seats that the party contests as a part of an alliance (as distinct from total votes polled in all seats).
[11] Since its Lok Sabha debut (1971), there has been only one previous instance in 1977 of CPI (M) receiving less than 5% votes. However, here too, their combined vote share was 7.1%, with CPI (M) and CPI receiving 4.3% and 2.8% of the votes respectively. In 2014, the combined vote share was 4.1%.

2004 and 6.2% in 2009 — also fell below the 5% mark in 2014 with a vote share of 4.2%. Although BSP retained its position as the third largest party in terms of vote share, its large spread meant that it performed extremely poorly — not managing to win even a single constituency in 2014[12].

Figure 3: Political Diversity — Total Parties and ENP



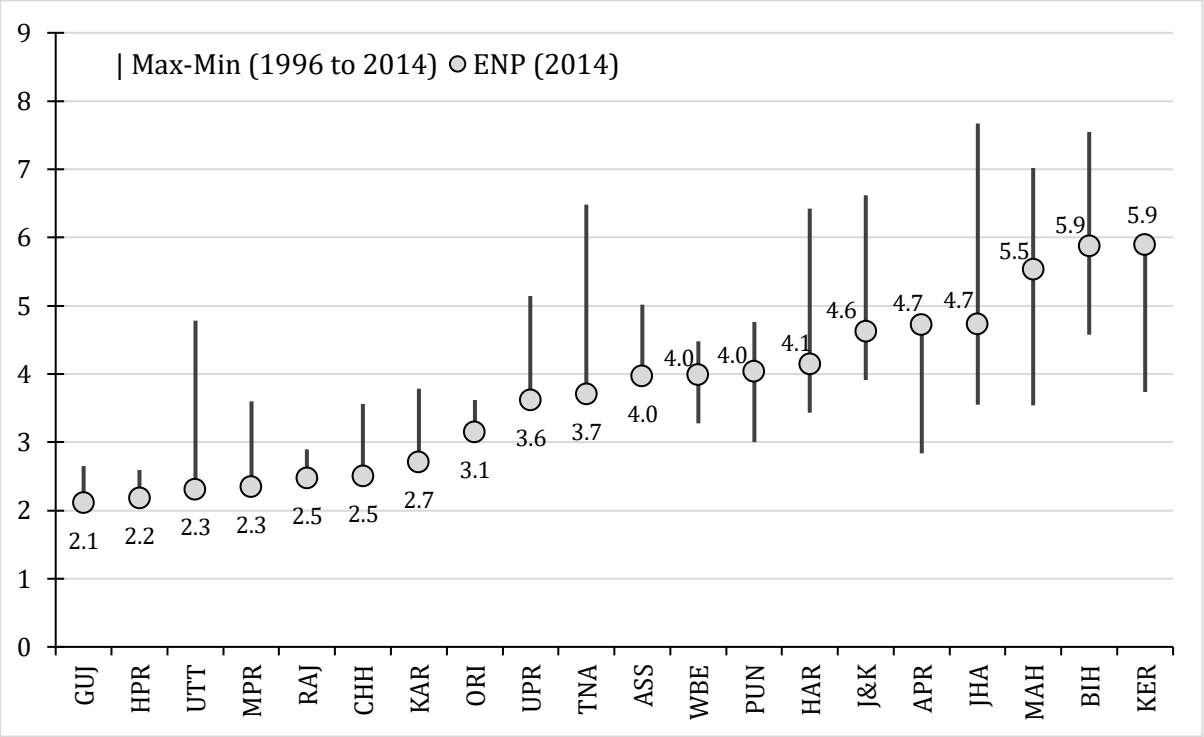
Source: Official election results from Election Commission of India. Authors' calculations.

These changes in political diversity are captured in Figure 3. It shows a decline in effective parties at the all-India level in 2014. ENP calculated using vote share came down from a high of 7.7 in 2009 to 6.8 in 2014, even as total parties contesting elections was at an all-time high. Interestingly, 2014 was a rare instance when the direction of change in total parties and ENP was not the same. The decline was much steeper in case of ENP estimated using seat share[13], taking it to its lowest level since 1984 — the last instance a single party received a parliamentary majority.

[12] In contrast, All India Trinamool Congress won 34 seats in 2014 with a 3.9% vote share that was largely concentrated in West Bengal. This also highlights a key characteristic of the FPTP system.
[13] For the remainder of the paper, we restrict ourselves to estimating ENP using vote share and using data for post-1977 elections.

Even as this is a useful summary, diversity varies considerably across states given the emergence of strong regional parties. Therefore, state-level ENP is a more intuitive indicator of diversity and their analysis is crucial to understand the change in diversity in 2014. ENP came down in most states between 2009 and 2014[14]. Among the major states, the only exceptions were Kerala, Punjab, Andhra Pradesh[15] (undivided) and Haryana. In fact, 11 of the 20 major states recorded ENP level around their lowest since 1996 — the beginning of Phase II. Figure 4 provides the data.

Figure 4: State-wise ENP Since 1996 — A Summary



Note: State-wise ENP estimates for 2014 Lok Sabha elections along with the range of values for each of the 20 major states since 1996; Source: Official election results from Election Commission of India. Authors' calculations.

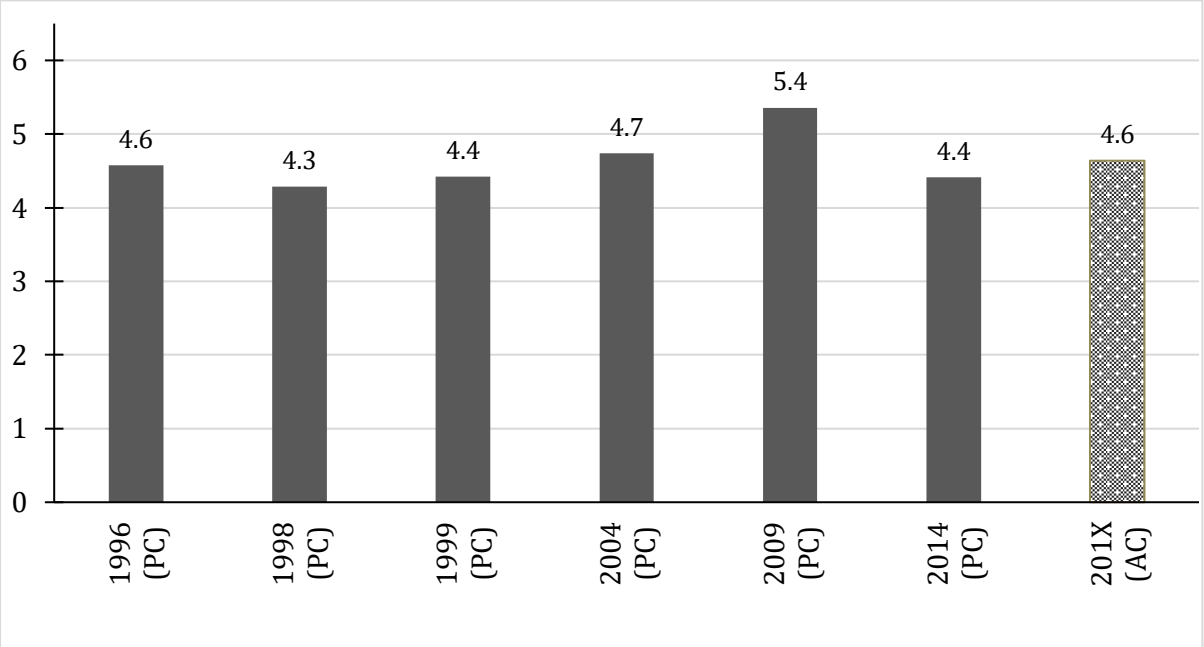
Does this mean that India is headed towards a less diverse polity? This does not appear to be the case. To begin with, the decline in the all-India ENP in 2014 to 6.8 is significant but not game-changing. In fact, ENP was marginally lower at 6.7 in 1999 — the previous occasion when BJP-led NDA came to power, that too with a

[14] See Table B1 in Appendix B for detailed data, list of major states and expansion of state abbreviations.
[15] Other than 2014, data pertains to undivided Andhra Pradesh. So, the study does not compute separate estimates for Telangana and the current Andhra Pradesh.

more fractured mandate. Second, in most states with an ENP of 4 or above (See Figure 4) — even in cases where ENPs came down in 2014 — the 2014 level is higher than the minimum observed since 1996.

Further, if we look at major 14 states that have gone to polls either simultaneously or after the Lok Sabha elections upto March 2017, there is a marginal reversal with the ENP[16] increasing from 4.4 in 2014 to 4.6 in the subsequent assembly elections. This latest estimate is also greater than the Lok Sabha average for most years during the period. Figure 5 provides the data.

Figure 5: Average of State-wise ENP Estimates



Note: PC and AC refer to parliamentary (Lok Sabha) and assembly elections respectively. AC Data for 14 states that polled between 2014 and March 2017.
Source: Official election results from Election Commission of India. Authors' calculations.

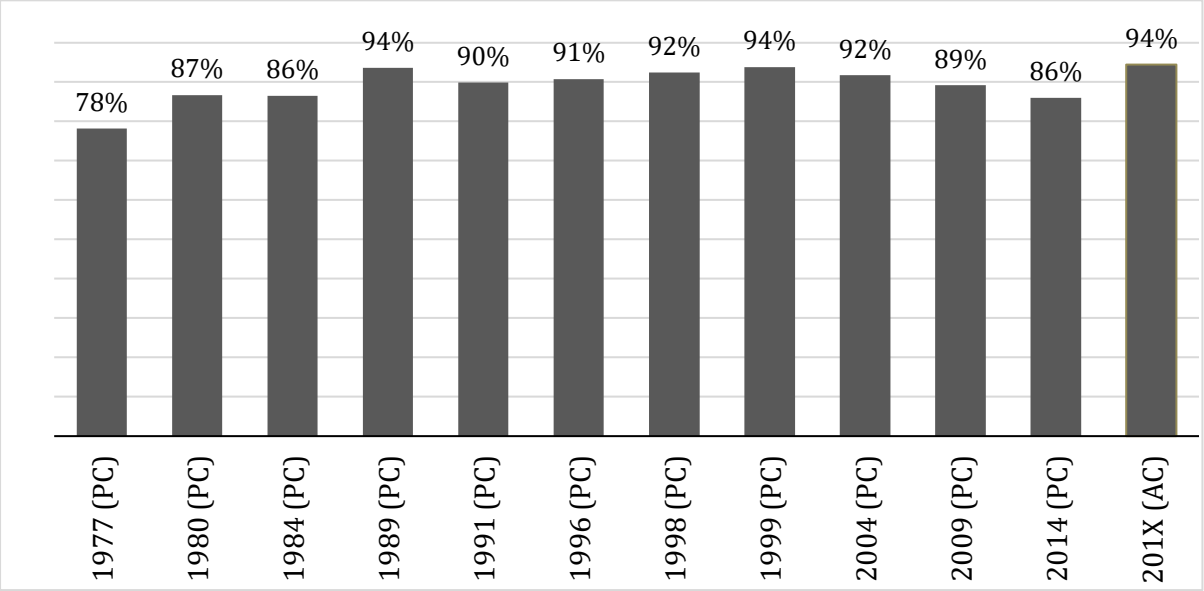
4. Characterisation of Nature of Electoral Contest

Performance of parties in elections at the aggregate, either at the state or all-India level, indicate the relevance of political parties and is a valid measure of political diversity. However, this is not a very good indicator of the nature of contest or

[16] For each of the elections, only 14 (out of 20 major) states that have gone to polls since 2014 have been considered. Average ENP is weighted by number of parliamentary constituencies (PCs) in the respective state.

competition that takes place at the constituency-level. The effective number of parties or contestants at the constituency level can be quite different. As shown in Figure 6, in an overwhelming majority — well over 90% — of the cases, the ENP at the constituency-level is less than ENP at the state-level.

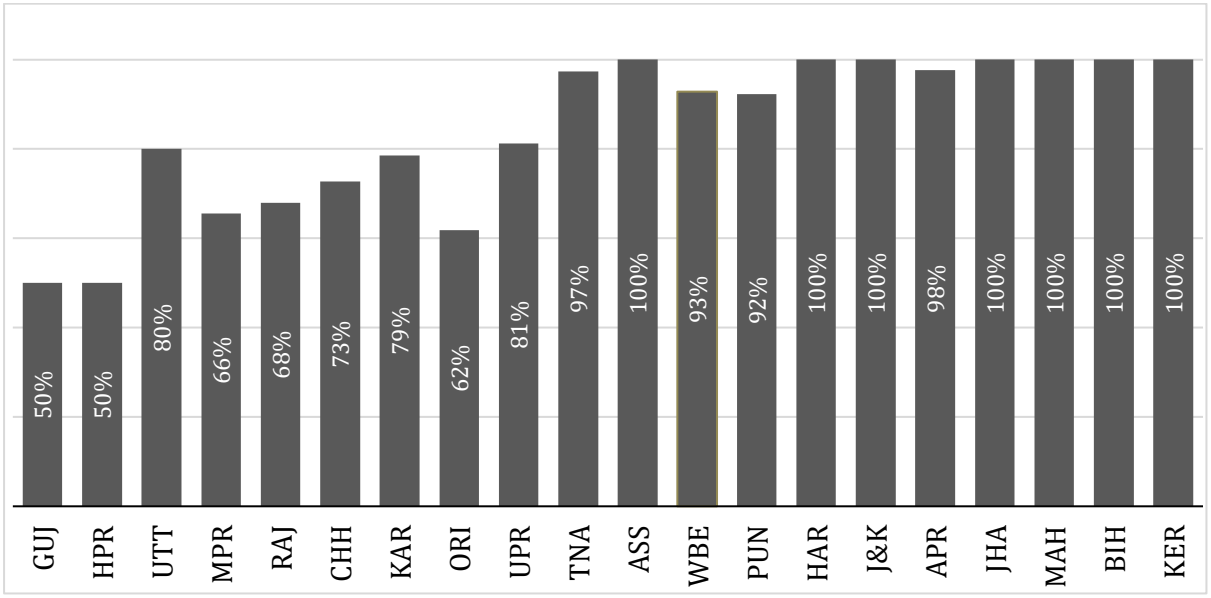
Figure 6: Constituencies with ENP less than state-level ENP (%)



Note: 20 major states for Lok Sabha (PC) elections; 14 states for latest assembly (AC) elections.
Source: Official election results from Election Commission of India. Authors' calculations.

The most important reason for this is the pre-poll alliances formed by political parties that reduce the contest to fewer "effective" candidates. Understandably, this is less of a factor in states where the politics is dominated by two parties. In such two-party states, it is possible that there are independent candidates and marginal local parties that are significant at the constituency-level, resulting in a higher constituency-ENP as compared to state-ENP.

Figure 7: Constituencies with ENP less than State-level ENP in PC 2014, State-wise (%)



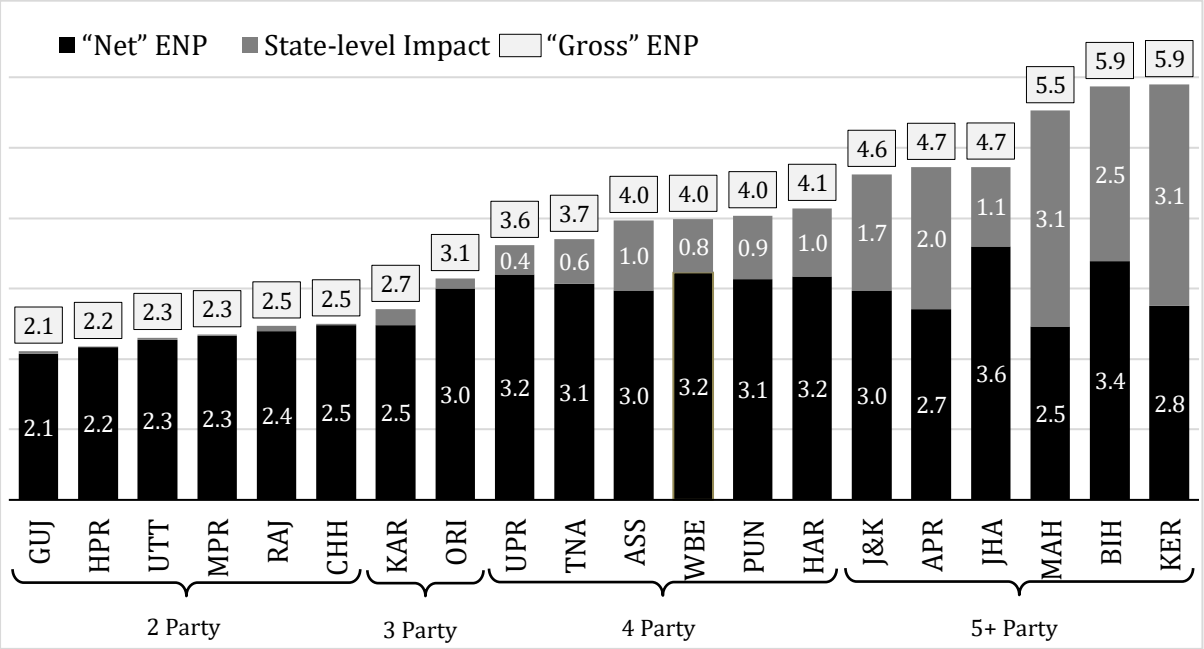
Source: Official election results from Election Commission of India. Authors' calculations.

As shown in Figure 7, this is indeed the case. Two-party states such as Gujarat, Himachal Pradesh, Uttarakhand, Madhya Pradesh, Rajasthan and Chhattisgarh account for almost all instances where constituency-ENP is higher than state-level ENP. Such cases are negligible in states with a history of pre-poll alliances.

Going forward, we refer to the ENP calculated using aggregate state-level vote share, which represents the political diversity of the state, as "Gross" ENP of a state. In contrast, the average of constituency-level ENPs for a state discounts the impact of alliances[17] and is a much better indicator of nature of contest or competition in the state. We call this measure the "Net" ENP for a state.

[17] Another related reason can be parties that have a dominant presence in largely mutually exclusive regions within a state. This manifests as a natural alliance bringing down the seat-level ENP, something similar to a lower average of state ENPs as compared to all-India ENP.

Figure 8: State-wise ENP (Gross and Net) and Impact of alliances, strongholds etc., PC 2014



Note: State classification is based on "Gross" ENP for PC 2014
Source: Official election results from Election Commission of India. Authors' calculations.

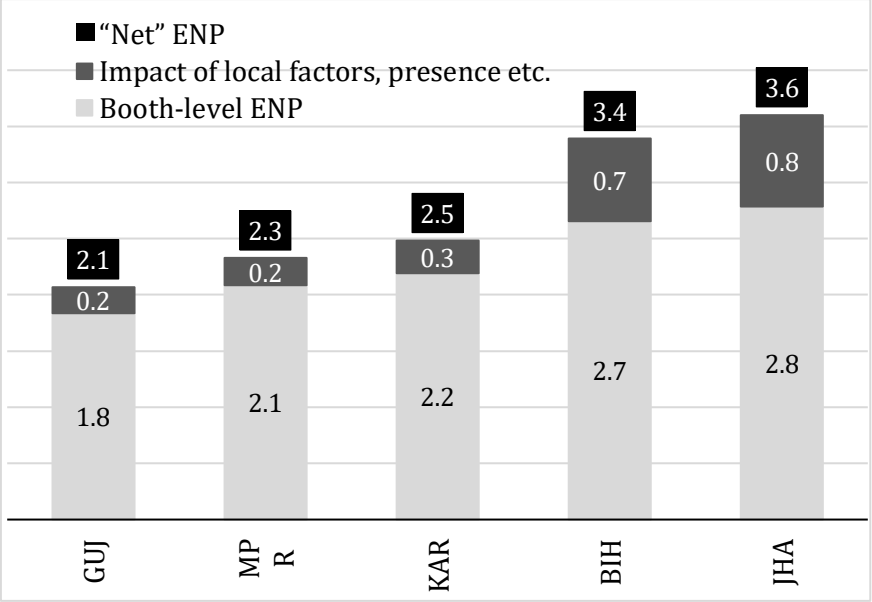
Figure 8 presents the data for 2014 Lok Sabha elections. Here are some key observations. First, Gross ENP objectively identifies the number of dominant parties in each state. Second, data clearly shows that while there was space for two to six competing parties (Gross ENP) across different states in India, the electoral contest (Net ENP), after taking into account alliances and other state-specific factors, was restricted to two to three parties. Third, and as one would expect, alliances are not a factor in states with just two dominant parties. But, at the same time, this framework does an excellent job of quantifying the impact of alliances and reflecting the ground reality as the effective number of parties increases — whether it is single relevant alliance in Assam, Bengal and Punjab or multi-party formations in Maharashtra, Bihar and Kerala.

Next, we extend the "Net" ENP methodology from the constituency-level to the booth-level[18] using data for five states for PC 2014. Although availability of polling booth-level results was also a factor, the state selection was done to cover a wide

[18] Polling booth is the finest level at which election results data are available. Each polling booth typically covers around 1,000 electors, but this may vary significantly depending on population density and terrain.

range of Net ENPs — from Gujarat which had the lowest Net ENP of 2.1 to Jharkhand which had the highest Net ENP of 3.6. Other states included were MP, Karnataka and Bihar.

Figure 9: Booth-level ENP and Impact of local strength, PC 2014



Source: Data from respective State CEO websites. Authors' calculations.

ENP was computed for each booth and a simple average was taken for each state. The results, as shown in Figure 9, reveal the same pattern. Electoral contest is limited to even fewer contestants as one moves from the constituency level to the booth level. The difference can be attributed to local factors such as uneven presence and pockets of strength. While this is to be expected, we also find that booth-level contests rarely go beyond two candidates[19]. In states with lower Net ENP such as Gujarat and Madhya Pradesh, it is often dominated by one candidate.

5. Diversity in Assembly Elections *versus* Parliamentary Elections

Assembly elections tend to be more keenly contested as compared to Lok Sabha elections. This hypothesis is borne out by comparing Gross ENP of the assembly and Lok Sabha elections. Table 1 provides two sets of comparisons: (a) average of

[19] There are a few booths in high-ENP states where booth-level ENP is very high. This skewness results in a somewhat higher mean as compared to the median.

last three assembly and last three Lok Sabha polls and (b) last assembly election and Lok Sabha election (2014).

Table 1: ENP in Assembly and Lok Sabha Polls—A Comparison

State	(a) Gross ENP: Last 3 Elections			(b) Gross ENP: Last Election		
	AC Avg	PC Avg	Diff (AC-PC)	Last AC	PC 2014	Diff (AC-PC)
PUN	3.4	3.7	**-0.2**	3.6	4.0	**-0.4**
WBE	3.9	4.2	**-0.3**	3.6	4.0	**-0.4**
APR	4.0	4.1	**-0.1**	4.5	4.7	**-0.2**
TNA	4.4	5.2	**-0.8**	3.5	3.7	**-0.2**
MAH	6.9	6.0	**0.9**	5.5	5.5	**0.0**
UPR	4.7	4.6	**0.1**	3.8	3.6	**0.2**
ODI	3.9	3.4	**0.5**	3.4	3.1	**0.3**
CHH	3.1	2.6	**0.5**	2.8	2.5	**0.3**
HAR	4.4	4.0	**0.4**	4.6	4.1	**0.5**
MPR	3.4	2.7	**0.7**	2.8	2.3	**0.5**
GUJ	2.6	2.3	**0.2**	2.6	2.1	**0.5**
KER	6.1	4.7	**1.4**	6.4	5.9	**0.5**
RAJ	3.5	2.6	**0.9**	3.0	2.5	**0.6**
UTT	4.0	2.8	**1.1**	2.9	2.3	**0.6**
ASS	5.2	4.5	**0.7**	4.7	4.0	**0.7**
J&K	6.5	5.1	**1.4**	5.4	4.6	**0.8**
HPR	3.1	2.2	**0.9**	3.0	2.2	**0.8**
JHA	8.3	5.9	**2.4**	5.9	4.7	**1.2**
BIH	7.4	6.4	**1.0**	7.3	5.9	**1.4**
KAR	4.0	3.0	**1.0**	4.4	2.7	**1.7**
DEL	3.1	2.4	**0.7**	2.4	2.9	**-0.4**
MAN	4.8	4.9	**-0.1**	3.7	3.9	**-0.2**
SIK	1.9	2.0	**-0.1**	2.1	2.2	**-0.2**
ARP	3.4	2.6	**0.7**	2.8	2.5	**0.3**
PON	5.4	3.1	**2.3**	4.6	4.1	**0.5**
TRI	2.8	2.1	**0.7**	2.7	2.2	**0.5**
MIZ	3.7	2.0	**1.7**	3.1	2.1	**1.0**
NAG	3.8	1.7	**2.1**	3.5	1.8	**1.7**
MEG	5.9	3.6	**2.3**	6.2	4.0	**2.2**
GOA	4.6	2.9	**1.8**	4.8	2.3	**2.4**

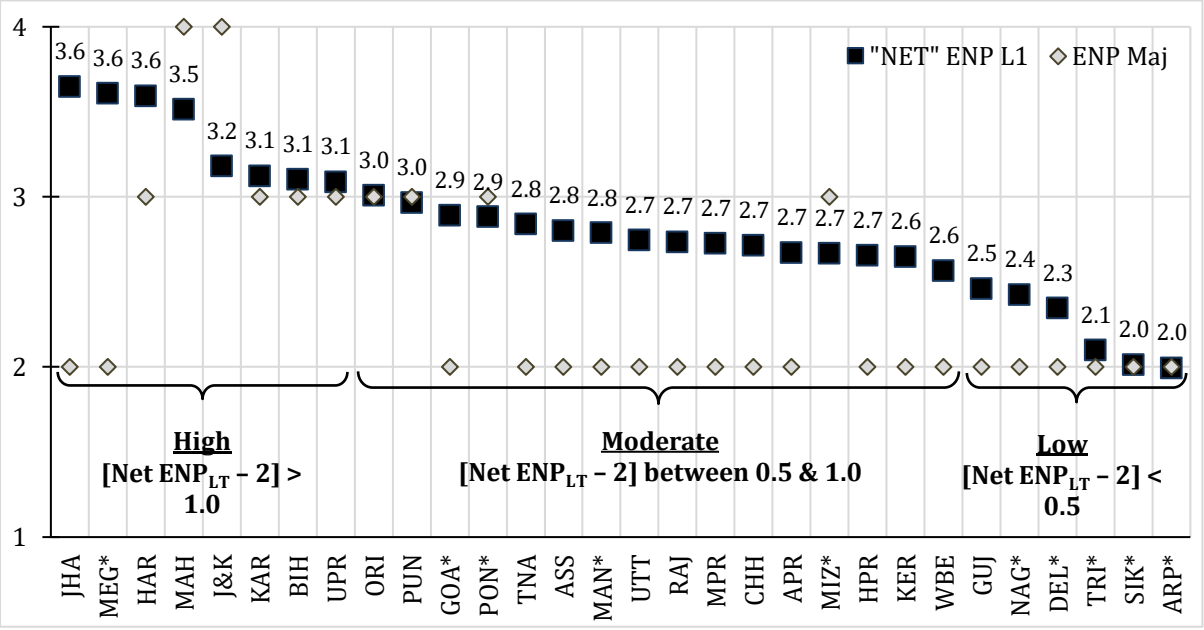
Note: Top panel has 20 large states and bottom panel has 10 smaller states/UTs with Assembly
Source: Official election results from Election Commission of India. Authors' calculations.

As shown in Table 1, assembly elections have more diverse participation, and therefore tend to be more competitive, as compared to parliamentary elections. If one considers the last elections alone, 15 out of the 20 large states have a higher

ENP in the respective assembly elections. Of these, 12 states had a significantly higher Gross ENP in their last AC election compared to PC 2014, considering a cut-off of 0.5. The situation is not too different for smaller states, although it must be noted that a separate set of dynamics may be at play for most of these when it comes to estimating ENP for 2014 elections as, other than Delhi, they have just 1 or 2 parliamentary constituencies.

But, as discussed earlier, a more precise measure of competition is Net ENP, which accounts for the impact of alliances. Net ENP varies within a much smaller band across states *vis-à-vis* Gross ENP or total parties contesting a seat. As shown in Figure 10, Net ENP for all 30 assemblies was in the 2 to 4 parties band in their last assembly elections. In fact, barring a few cases, Net ENP has remained in the 2 to 4 parties band in previous three assembly polls which took place in the last 10-15 years[20].

Figure 10: Net ENP_{LT} and ENP_{Maj} in the Last Assembly Election



Note: * = Smaller States/UTs with Assembly
Source: Official election results from Election Commission of India. Authors' calculations.

[20] See Table B3a and B3b in Appendix B for detailed estimates of ENP in the last three assembly elections for major and small states respectively.

Duverger's law holds that plurality-rule elections such as the Indian first-past-the-post system for single-member seats tend to favour a two-party system. And, one expects a convergence to the Duvergerian equilibrium[21] of two (2) over time. Taking a cue from this, we define the deviation of Net ENP from 2 to be the slack in the system. This can be interpreted as an indicator of 'opening' or 'opportunity' — existence of players beyond 'Top 2' — for electoral negotiations and political realignment. This represents greater risk for the dominant parties in their quest for a favourable outcome and results in attempts at pre-poll alliances to cut risks and make the party system or the electoral marketplace more stable. Based on results of the last assembly election, the 'opening' or 'opportunity' can accordingly be classified as: Low, Moderate and High[22]. Table 2 presents the details for 11 large states where this opportunity is over 0.75 — where political realignment is likely — based on the political formations during the last assembly elections in these states.

Table 2: Large States where Political Realignment is Likely

State		Last Assembly Poll (L1)			Duverger Based	
		Year	ENP_{LT}	ENP_{Maj}	Opportunity	Category
Jharkhand	JHA	2014	3.6	2	1.6	High
Haryana	HAR	2014	3.6	3	1.6	High
Maharashtra	MAH	2014	3.5	4	1.5	High
Jammu & Kashmir	J&K	2014	3.2	4	1.2	High
Karnataka	KAR	2013	3.1	3	1.1	High
Bihar	BIH	2015	3.1	3	1.1	High
Uttar Pradesh	UPR	2017	3.1	3	1.1	High
Odisha	ODI	2014	3.0	3	1.0	Moderate
Punjab	PUN	2017	3.0	3	1.0	Moderate
Tamil Nadu	TNA	2016	2.8	2	0.8	Moderate
Assam	ASS	2016	2.8	2	0.8	Moderate

Source: Official election results from Election Commission of India. Authors' calculations.

[21] The foregoing analysis and characterisation of Gross and Net ENP clearly brings out that Duvergerian equilibrium is relevant at the seat or constituency level, not at the aggregate level for a federal polity such as India. This is also borne out by other empirical research that also go on to identify the reason behind the exceptions. Chibber and Murali (2006) attribute exceptions in the case of Indian states to the federal nature of Indian politics, whereas Ziegfeld (2014) considers collusion among parties to reduce the number of viable candidates as the underlying reason. In contrast, Diwakar (2007) notes that there are several instances where there is no systematic movement towards the Duvergerian equilibrium at the constituency level in India, concluding that there are factors other than electoral rules that are at play.

[22] The Duverger equilibrium-based 'opportunity' or 'opening' has been classified as Low if [ENPLT–2] <= 0.5; Moderate if 1 <= [ENPLT–2] < 0.5; and High if [ENPLT–2] > 1.0. See Figure 10.

Of course, this interpretation of the Duvergerian equilibrium requires some context and a better understanding of the current ground realities. In some states, there may be over two major parties with an entrenched voter base and stated positions that preclude a pre-poll alliance. While we believe that such positions are always open, this can certainly be the case in the short term. In such cases, one possible refinement is to consider the number of such parties as the equilibrium. Another way to objectively quantify this phenomenon is to use ENP_{Maj} as the indicator of equilibrium in the short term and use [Net ENP_{LT} - ENP_{Maj}] rather than [Net ENP_{LT} – 2] as the measure of the opening for political churn. This explains the large deviation from the Duvergerian equilibrium in states such as Haryana, Maharashtra, J&K, Karnataka, Bihar, UP and Odisha.

6. Conclusion

India is among the most politically diverse democracies in the world. Its inherent cultural diversity combined with a first-past-the-post electoral system are plausible explanations for this. This diversity has increased over time. The jump in diversity since the liberalisation of the economy in the early 1990s makes it tempting to argue that economic opportunities provided the much-needed ammunition for successful mobilisation around social and regional identities, resulting in success of many of these political parties.

To be sure, there has been a decline in diversity in the 2014 Lok Sabha elections with the rise of BJP. But, we argue that there is little evidence that India is moving towards becoming a less diverse polity. Interestingly, the rise of BJP in states where it otherwise had very limited presence has raised the political diversity and competition in these states.

Political competition varies across states. Even as some states are extremely competitive, others are duopolies. Based on this and the Duvergerian equilibrium, we quantify the opening for political realignment or churn in each state. Not only does this opening vary across states, it is likely to have significant implications on the governance and policy paradigm followed by the respective governments. It is possible that a less stable party system restricts the room for manoeuvre required for

sound policy making, resulting in a more populist model of governance. This is something that should be investigated further.

We also find that assembly elections tend to be more competitive than parliamentary elections. It is quite possible that local elections are even more competitive. So, another interesting area for future research would be using the ENP framework to analyse local elections. These can provide useful insights into the changes in ground realities since the previous assembly or PC elections and help predict the political realignments in the state.

Given the close association of ENP with macroeconomic growth in India, a similar analysis for key states can provide further understanding of the linkage and whether there is any causality. Similarly, there is a case for a cross-country study to see if the association holds for other electorally comparable countries in their development journey.

Appendix A: Methodology, Data and Processes

The following six measures of Effective Number of Parties (ENP) have been estimated.

1. Laakso-Taagepera (1979)

$$ENP_{LT} = \frac{1}{\sum_{i=1}^{n} v_i^2}$$

2. Taagepera (1999)

$$ENP_{Pos1} = \frac{1}{v_1}$$

3. Dunleavy-Boucek (2003)

$$ENP_{DB} = \frac{\left(\frac{1}{\sum_{i=1}^{n} v_i^2} + \frac{1}{v_1}\right)}{2}$$

4. Golosov (2010)

$$ENP_{GG} = \sum_{i=1}^{n} \frac{v_i}{v_i + v_1^2 - v_i^2}$$

5. Major Parties (ENP_{Maj}): Parties with vote share over 1/6th, who do not lose deposit

6. Imp Parties (ENP_{Per5}): Parties with vote share over 5%

Where v_i is the vote share (or seat share) of the i^{th} party and v_1 is the vote share (or seat share) of the party with the highest votes (or seats). Total parties is N {1, 2, … … n}. Note that ENP_{DB} is the simple average of ENP_{LT} and ENP_{Pos1}.

ENP_{LT}, ENP_{DB} and ENP_{GG} satisfy the three key properties (Golosov, 2010) that are necessary for any index that is intended to measure effective number of parties (ENP):

1. If all components in the given party constellation are equal, then the value of the index should equal the actual number of components. For instance, if there are 2 parties with 50% vote share or 3 parties with 33.33% vote share and so on, it should result in an ENP of 2, 3, … respectively
2. If the components are not equal, the value of ENP should be smaller than the actual number of components i.e. equal value constellation is the upper limit of the index.

For instance, any 2 party constellation other than (0.5, 0.5) will have an ENP < 2; any 3 party constellation other than (0.33, 0.33, 0.33) will have an ENP < 3 and so on

3. If any of the components in the given party constellation becomes smaller, so that the actual number of components goes up, the value of ENP should also go up. For instance, the value of ENP for a four-party constellation (0.52, 0.45, 0.02, 0.01), should be greater than for a three-party constellation (0.52, 0.46, 0.02). ENP_{LT} for these two constellations are 2.11 and 2.07 respectively.

Table A1 presents ENP estimates for each of the six measures assuming different vote share (seat share) constellations to provide an intuitive understanding of the ENP's generated. The last three constellations resemble Uttar Pradesh elections in 2012, 2014 (Lok Sabha) and 2016, respectively.

Table A1: ENP Simulation

Case	v1	v2	v3	v4	v5	v6	v7	LT	Pos1	DB	GG	Maj	5Per
A1	100%							**1.0**	1.0	1.0	1.0	1.0	1.0
A2	50%	50%						**2.0**	2.0	2.0	2.0	2.0	2.0
A3	33%	33%	33%					**3.0**	3.0	3.0	3.0	3.0	3.0
A4	25%	25%	25%	25%				**4.0**	4.0	4.0	4.0	4.0	4.0
A5	48%	45%	2%	1%	1%	1%	1%	**2.3**	2.1	2.2	2.2	2.0	2.0
A6	50%	40%	6%	1%	1%	1%	1%	**2.4**	2.0	2.2	2.2	2.0	3.0
A7	50%	30%	20%					**2.6**	2.0	2.3	2.1	3.0	3.0
A8	50%	30%	10%	6%	2%	1%	1%	**2.8**	2.0	2.4	2.3	2.0	4.0
A9	40%	30%	30%					**2.9**	2.5	2.7	2.6	3.0	3.0
A10	40%	30%	20%	6%	2%	1%	1%	**3.4**	2.5	2.9	2.9	3.0	4.0
A11	40%	35%	5%	5%	5%	5%	5%	**3.4**	2.5	2.9	3.1	2.0	7.0
A12	70%	5%	5%	5%	5%	5%	5%	**2.0**	1.4	1.7	1.6	1.0	7.0
A13	80%	5%	3%	3%	3%	3%	3%	**1.5**	1.3	1.4	1.3	1.0	2.0
UPR-AC12	29%	26%	15%	12%	6%	6%	6%	**5.0**	3.4	4.2	4.6	2.0	7.0
UPR-PC14	42%	22%	20%	8%	3%	3%	2%	**3.7**	2.4	3.0	2.9	3.0	4.0
UPR-AC17	40%	23%	22%	6%	3%	3%	3%	**3.7**	2.5	3.1	3.1	3.0	3.0

Based on a review of estimates generated using these methodologies, their suitability in the Indian context and the objectives of research, ENP_{LT} estimated using vote share is chosen as the primary measure for in-depth analysis. ENP_{LT} using seat share, ENP_{Maj} and ENP_{Per5} are presented as supplementary measures, where necessary.

Results for all contestants were considered for calculating ENP (other than for ENP_{Pos1}) i.e. no cut-offs in terms of vote shares were applied. For estimates at the aggregate-level (such

as states and all-India), each independent candidate is considered as a separate contestant/party for elections in 1977 and thereafter[23]. For instance, if an election had 25 parties and 200 independent candidates, the value of 'N' (total parties) for estimating ENP will be 225.

Data was collated for all 16 Lok Sabha (PC) elections (1952 to 2014) and the last 3 state assembly (AC) elections (these took place between 2002 and 2017). The last set of elections included in the study are assembly elections in Goa, Manipur, Punjab, Uttarakhand and Uttar Pradesh, which took place in March 2017. Booth-level results for Lok Sabha election in 2014 were processed for 5 selected states to extend the hypothesis on change in nature of contest.

Estimates of ENP generated at India, State and PC/AC levels

- India: PC 1952 to PC 1971 (Using party aggregates; ignores independent candidates)
- India: PC 1977 to PC 2014
- States: PC 1977 to PC 2014; last 3 AC-election
- PC/AC: for respective elections
- Booth: PC 2014 for selected states

[23] For previous elections (PC 1952 to PC 1971), ENP has been calculated only at the all-India level using party aggregates and ignoring votes/seats secured by independent candidates. In any case, comparable seat-level ENP could not be calculated for PC 1952 and PC 1957 due to existence of multi-member constituencies.

Appendix B: Tables

Table B1: ENP Estimates (Gross) – Based on Aggregate State/India-level Vote Share (1996-2014)

State		ENP_{LT} (Vote Share)						Change	Max (1996-2014)		Min (1996-2014)	
		1996	1998	1999	2004	2009	2014	(2014-2009)	ENP	Year	ENP	Year
Andhra Pradesh	APR	3.6	3.5	2.8	3.4	4.1	4.7	0.6	4.7	2014	2.8	1999
Assam	ASS	4.9	4.3	3.9	4.5	5.0	4.0	-1.1	5.0	2009	3.9	1999
Bihar	BIH	4.9	5.2	4.6	5.7	7.5	5.9	-1.7	7.5	2009	4.6	1999
Chhattisgarh	CHH	3.6	2.7	2.4	2.6	2.9	2.5	-0.4	3.6	1996	2.4	1999
Gujarat	GUJ	2.6	2.6	2.1	2.4	2.5	2.1	-0.4	2.6	1998	2.1	1999
Haryana	HAR	6.4	5.2	3.4	3.8	4.0	4.1	0.1	6.4	1996	3.4	1999
Himachal Pradesh	HPR	2.2	2.3	2.6	2.1	2.2	2.2	0.0	2.6	1999	2.1	2004
Jammu & Kashmir	J&K	6.6	3.9	4.6	5.1	5.7	4.6	-1.1	6.6	1996	3.9	1998
Jharkhand	JHA	4.9	3.9	3.5	5.3	7.7	4.7	-2.9	7.7	2009	3.5	1999
Karnataka	KAR	3.6	3.8	3.2	3.3	3.0	2.7	-0.3	3.8	1998	2.7	2014
Kerala	KER	4.8	4.7	4.0	4.5	3.7	5.9	2.2	5.9	2014	3.7	2009
Maharashtra	MAH	5.0	3.5	4.8	5.5	7.0	5.5	-1.5	7.0	2009	3.5	1998
Madhya Pradesh	MPR	3.6	2.7	2.4	2.8	2.8	2.3	-0.5	3.6	1996	2.3	2014
Odisha	ODI	3.2	3.4	3.3	3.4	3.6	3.1	-0.5	3.6	2009	3.1	2014
Punjab	PUN	4.5	4.8	4.1	3.9	3.0	4.0	1.0	4.8	1998	3.0	2009
Rajasthan	RAJ	2.9	2.7	2.3	2.4	2.8	2.5	-0.3	2.9	1996	2.3	1999
Tamil Nadu	TNA	5.5	6.1	6.5	5.5	6.4	3.7	-2.7	6.5	1999	3.7	2014
Uttar Pradesh	UPR	4.7	3.8	4.9	5.0	5.1	3.6	-1.5	5.1	2009	3.6	2014
Uttarakhand	UTT	4.8	3.4	3.1	3.1	3.1	2.3	-0.8	4.8	1996	2.3	2014
West Bengal	WBE	3.3	4.5	4.4	4.4	4.3	4.0	-0.3	4.5	1998	3.3	1996
India	**IND**	**7.1**	**6.9**	**6.7**	**7.6**	**7.7**	**6.8**	**-0.9**	**7.7**	**2009**	**6.7**	**1999**
India (Average[#])	**IND**	**4.2**	**3.9**	**3.9**	**4.2**	**4.6**	**3.9**	**-0.8**	**4.6**	**2009**	**3.9**	**2014**

Source: Authors' calculations; # Weighted Average of Gross ENP for all 35 States and UTs

Table B2: ENP Estimates (Net) – Average of PC-level Estimates (1996-2014)

State		ENP_{LT} (Vote Share)						Change	Max (1996-2014)		Min (1996-2014)	
		1996	1998	1999	2004	2009	2014	(2014-2009)	ENP	Year	ENP	Year
Andhra Pradesh	APR	3.0	2.7	2.3	2.3	3.3	2.7	-0.6	3.3	2009	2.3	2004
Assam	ASS	3.7	3.1	3.0	3.3	3.1	3.0	-0.1	3.7	1996	3.0	1999
Bihar	BIH	2.7	2.9	2.5	2.8	3.9	3.4	-0.5	3.9	2009	2.5	1999
Chhattisgarh	CHH	3.3	2.6	2.4	2.5	2.8	2.5	-0.3	3.3	1996	2.4	1999
Gujarat	GUJ	2.4	2.5	2.0	2.3	2.5	2.1	-0.4	2.5	1998	2.0	1999
Haryana	HAR	4.0	3.2	2.1	3.5	3.3	3.2	-0.1	4.0	1996	2.1	1999
Himachal Pradesh	HPR	2.2	2.2	2.0	2.1	2.2	2.2	0.0	2.2	1998	2.0	1999
Jammu & Kashmir	J&K	5.0	2.7	3.3	3.0	3.0	3.0	-0.1	5.0	1996	2.7	1998
Jharkhand	JHA	4.1	2.9	2.8	3.3	4.8	3.6	-1.2	4.8	2009	2.8	1999
Karnataka	KAR	3.2	2.8	2.5	2.9	2.7	2.5	-0.3	3.2	1996	2.5	2014
Kerala	KER	2.4	2.4	2.4	2.6	2.4	2.8	0.3	2.8	2014	2.4	1998
Maharashtra	MAH	3.1	2.2	2.8	2.5	3.0	2.5	-0.5	3.1	1996	2.2	1998
Madhya Pradesh	MPR	3.2	2.6	2.4	2.8	2.7	2.3	-0.4	3.2	1996	2.3	2014
Odisha	ODI	2.9	2.4	2.1	2.4	3.0	3.0	0.0	3.0	2009	2.1	1999
Punjab	PUN	3.2	2.2	2.6	2.7	2.5	3.1	0.6	3.2	1996	2.2	1998
Rajasthan	RAJ	2.7	2.5	2.2	2.4	2.6	2.4	-0.2	2.7	1996	2.2	1999
Tamil Nadu	TNA	2.6	2.4	2.4	2.2	2.9	3.1	0.1	3.1	2014	2.2	2004
Uttar Pradesh	UPR	3.7	3.3	3.7	3.7	3.9	3.2	-0.7	3.9	2009	3.2	2014
Uttarakhand	UTT	3.8	2.9	2.8	2.8	3.0	2.3	-0.7	3.8	1996	2.3	2014
West Bengal	WBE	2.4	2.6	2.5	2.5	2.4	3.2	0.8	3.2	2014	2.4	1996
India#	**IND**	**3.0**	**2.7**	**2.6**	**2.8**	**3.1**	**2.8**	**-0.2**	**3.1**	**2009**	**2.6**	**1999**

Source: Authors' calculations; # Average of Net ENP for all 543 PCs

Table B3a: ENP Estimates in Last 3 Assembly Elections (Major 20 States)

State		Year of Polling			Total Parties (Average#)			Gross ENP			Net ENP		
		L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Andhra Pradesh	APR	2014	2009	2004	8.2	7.6	3.5	4.5	4.1	3.4	2.7	3.2	2.3
Assam	ASS	2016	2011	2006	4.5	5.7	5.4	4.7	4.6	6.1	2.8	3.0	3.6
Bihar	BIH	2015	2010	2005	9.5	9.0	5.7	7.3	7.8	7.1	3.1	4.0	3.4
Chhattisgarh	CHH	2013	2008	2003	7.0	7.5	6.3	2.8	3.2	3.4	2.7	3.0	3.2
Gujarat	GUJ	2012	2007	2002	5.5	4.3	3.6	2.6	2.6	2.5	2.5	2.5	2.4
Haryana	HAR	2014	2009	2005	8.3	7.9	6.0	4.6	4.8	3.8	3.6	3.7	3.1
Himachal Pradesh	HPR	2012	2007	2003	5.2	4.1	4.4	3.0	2.9	3.4	2.7	2.5	2.8
Jammu & Kashmir	J&K	2014	2008	2002	6.4	9.7	5.3	5.4	7.9	6.3	3.2	4.4	3.2
Jharkhand	JHA	2014	2009	2005	9.5	10.4	9.0	5.9	9.4	9.7	3.6	4.7	4.6
Karnataka	KAR	2013	2008	2004	7.7	5.8	5.7	4.4	3.7	4.0	3.1	3.1	3.1
Kerala	KER	2016	2011	2006	5.5	4.7	4.0	6.4	5.9	5.9	2.6	2.3	2.3
Maharashtra	MAH	2014	2009	2004	8.4	6.0	5.5	5.5	8.2	7.1	3.5	3.1	2.9
Madhya Pradesh	MPR	2013	2008	2003	6.5	7.7	5.6	2.8	3.9	3.5	2.7	3.6	3.2
Odisha	ODI	2014	2009	2004	7.8	6.2	3.4	3.4	3.9	4.4	3.0	3.2	2.7
Punjab	PUN	2017	2012	2007	7.2	5.6	5.3	3.6	3.4	3.2	3.0	2.7	2.5
Rajasthan	RAJ	2013	2008	2003	6.7	5.9	4.9	3.0	3.9	3.5	2.7	3.3	3.0
Tamil Nadu	TNA	2016	2011	2006	9.4	5.3	5.8	3.5	4.6	5.0	2.8	2.3	2.7
Uttar Pradesh	UPR	2017	2012	2007	8.4	12.8	8.7	3.8	5.3	5.1	3.1	4.2	4.0
Uttarakhand	UTT	2017	2012	2007	5.4	7.5	7.9	2.9	4.2	4.8	2.7	3.5	3.7
West Bengal	WBE	2016	2011	2006	5.4	4.7	3.8	3.6	3.9	4.2	2.6	2.4	2.4

Source: Authors' calculations; # Average of parties contesting in each AC; L1=Last Election, L2=Second Previous and L3=Third Previous

Table B3b: ENP Estimates in Last 3 Assembly Elections (Smaller 10 States/UTs)

State		Year of Polling			Total Parties (Average)			Gross ENP			Net ENP		
		L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Arunachal Pradesh	ARP	2014	2009	2004	2.3	2.6	2.0	2.8	3.1	4.2	2.0	2.1	2.3
Delhi	DEL	2015	2013	2008	6.8	8.4	7.4	2.4	3.8	3.2	2.3	3.3	2.9
Goa	GOA	2017	2012	2007	4.8	3.6	3.8	4.8	4.5	4.6	2.9	2.4	2.6
Manipur	MAN	2017	2012	2007	4.1	4.3	4.2	3.7	4.3	6.2	2.8	2.9	3.1
Meghalaya	MEG	2013	2008	2003	3.7	4.4	4.6	6.2	5.3	6.1	3.6	3.4	3.5
Mizoram	MIZ	2013	2008	2003	3.5	4.3	4.5	3.1	3.7	4.2	2.7	3.1	3.3
Nagaland	NAG	2013	2008	2003	2.5	3.1	3.5	3.5	3.9	4.1	2.4	2.7	2.8
Pondicherry	PON	2016	2011	2006	8.3	3.6	4.7	4.6	4.9	6.8	2.9	2.2	2.4
Sikkim	SIK	2014	2009	2004	3.6	4.4	2.3	2.1	2.0	1.7	2.0	1.9	1.7
Tripura	TRI	2013	2008	2003	3.8	4.2	3.4	2.7	2.7	2.9	2.1	2.2	2.1

Source: Authors' calculations; # Average of parties contesting in each AC; L1=Last Election, L2=Second Previous and L3=Third Previous

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