

SBI Research

WHITE NOISE: A J-SHAPED voting on the anvil

A clear & better measure of voting pattern is absolute number of voters...In absolute terms, 8.7 lakh more voters / 60% of parliamentary constituencies show either an increase or status quo in terms of vote cast in first two phases of general elections 2024....This is a clear improvement of 0.4% above high levels in 2019...women voters continue to outstrip men.... The numbers can swell in remaining 5 phases with earnest efforts from the Election Commission of India and based on voter turnout probabilities.....Parliament Efficiency at its best in the past 68 years...

06-May-2024

- ❑ The unending debates propagated around supposedly low voter turnout in the first two phases of the General Elections'2024 is a myth
- ❑ **A better measure of votes cast is the absolute number of voters.... In first 2 phases, 8.7 lakh additional voters have voted...This is actually an increase of 0.4% over the first 2 phases of 2019 with women voters outstripping men in incremental numbers.... Further a welcome and encouraging trend visible through our analysis pertains to the increase in absolute votes in the reserved constituencies vis-à-vis the open constituencies. Of the total 8.7 lakh increase in voters, ~70% happened in 42 reserved (SC+ST) constituencies only**
- ❑ During 2019, the voting pattern showed a declining trend over the 7 phases, starting at 69.4% and finishing at 61.7% (reaching a cumulative average of 67.7%)....In GE'2024, we believe a reverse phenomenon could be underway, with voting percentage poised for a marked improvement going by the absolute numbers of voting exercised in the first two phases (66.1% & 66.7%)
- ❑ With the completion of the 3rd phase on 7th May, more than half of the PCs and registered electorates therein would be covered enabling a better analysis...The first two phases were spread across 191 PCs, covering ~35% of the registered voters across the country
- ❑ **Analysing state-wise trends, Karnataka accounts for highest number of increase in voters in 2024, followed by Assam and Maharashtra. A granular analysis of PCs shows absolute voters casting their votes increasing by more than 1 lakh in 85 constituencies whereas in 25 constituencies, there has been status quo...Hence ~60% constituencies exhibited either increase or no marked difference**
- ❑ **Our model estimates show the turnout within PCs destined to poll in upcoming phases should be on the higher side (For the remaining phases the average male voter per PC is 9.61 lakh and average female voter is 8.98 lakh per PC...Using the count data for pooled sample for first two phases, probabilities for male and female turnout ratio have been estimated...We also believe the scorching summer and sweeping heat waves might have played a spoilsport for a certain percentage of voters willing yet unable to exercise the franchise**
- ❑ To estimate the efficiency of Parliament, through **two I-O models using DEA techniques for I-O two data set that utilizes** Slack based model (SBM) to measure the efficiency of parliament, under Variable returns to scale (inference being as the maximum number of Bills passed by both houses with minimum number of Lok Sabha and Rajya Sabha Sittings), **we understand 2023 was the most efficient year for the Parliament in terms of bills passed, at par with 1955.** The years of 1976 (the emergency year with major opposition political leadership in abeyance) and 2020 (the disruptions brought in by the pandemic) have been excluded for the rankings purpose. **Under SBM super-efficiency DEA model, we find the 17th Lok Sabha (2019-2024) to be the most efficient one based on the relative efficiency scores**

- The two phases of 2024 general elections has happened so far with total voter turnout at 66.1% in phase 1 and 66.7% in phase 2; this is almost 3.1% less than the last year

Phase/Voter Turnout Ratio (%)	2019	2024
1	69.4	66.1
2	69.3	66.7
3	68.4	-
4	65.5	-
5	64.2	-
6	64.4	-
7	61.7	-
Total	67.7	-

.....Phase-wise Constituencies Polling.....

- ❑ So far, two phase polling has done with 191 constituencies covered so far (35% of total strength)
- ❑ By the end of third phase (on 7th May), half of the India cast their votes

Phase	Constituencies 2024	Share Cumulative)
1	102	19%
2	89	35%
3	94	52%
4	96	70%
5	49	79%
6	57	90%
7	57	100%
Total	543	

Data Source

1. We have collected State wise electoral roll (E-Roll data 2024 data, which is available in Election Commission of India website(<https://www.eci.gov.in/data-archive>))
2. State wise electoral roll 2024 (Parliamentary Constituencies-PC wise) is available for the states Arunachal Pradesh, Assam, Jammu & Kashmir, MP, Uttarakhand and West Bengal in respective state election commission web sites
3. State wise electoral roll 2024 (Assembly Constituencies-AC wise) is available for the states Bihar and Rajasthan in respective state election commission web sites. For the states Andaman & Nicobar Islands, Lakshadweep, Mizoram, Nagaland, Puducherry and Sikkim with single PC, we have used data mentioned in point no.1
4. For the states Karnataka and Tamil Nadu, PC wise voters data is available in Open city data portal (<https://data.opencity.in/dataset/parliamentary-elections-2024-voter-rolls>)
5. For all other states like Chhattisgarh, Kerala, Maharashtra, Manipur, and Uttar Pradesh, we have taken latest available AC wise data from ECI website

Methodology

- ❑ For the states listed in point no 2 and 4, we used the electoral data in the list
- ❑ For the states listed in point no 3 , we combined PC wise data using PC and AC wise list available in ECI web site
- ❑ For the states listed in point no 5, we used % share of PC wise electors in the latest available AC wise list and distributed electoral roll data mentioned in point no.1

- ❑ While voter turnout ratio is widely accepted measure of participation of people in election, this is not the most accurate method
- ❑ While comparing voter turnout ratio across phases or elections, this measure might paint a misleading picture
- ❑ Hence, we endeavored to find out that how much more people have cast their votes in the just concluded 2 phases in 2024 vis-à-vis the same constituency in 2019
- ❑ Using electoral data provided on states election commission websites and the voter turnout ratio we calculated the absolute number of voters cast their votes in each constituency during 2019 and 2024
- ❑ **We calculate total voters (per constituency) = voter turnout ratio x total electors**
- ❑ **We believe this provides a truer picture of democracy through free exercise of franchise**

- While the voter turnout ratio is showing declining trend in 2024 as compared to 2019 in percentage terms, in terms of absolute voters there is a significant increase over already the high base in 2019
- Provisionally, a total of 20.7 crore voters cast their votes in 2024 as compared to 20.6 crore casted their votes in 2019, **an increase of 8.7 lakh voters**
- The female voters increased by 5.7 lakh while male voters increased by 3.0 lakh...thus female voters outstrip men decisively...Excluding Nagaland where there were calls of vote boycott, the increase in voters were 11 lakh...women voters were 6.8 lakh...**

Absolute Voters cast their votes (in lakh)			
	2019	2024	Change
Male	1051.8	1054.8	3.0
Female	1009.5	1015.2	5.7
Total	2061.4	2070.1	8.7

Source: ECI & State ECIs; SBI Research; Our analysis consists 184 constituencies not 191 polled so far

2024 Election: State-wise Absolute Number Voter Turnout reveal increase or status quo in 60% of constituencies relative to 2019

State-wise trends indicates:

- Karnataka accounted for highest number of increase in voters in 2024, followed by Assam and Maharashtra
- Kerala accounted for largest decline in number of voters in 2024, followed by UP and Rajasthan

Constituencies-wise trend indicate:

- In 85 constituencies, absolute voters casted their votes have increased by more than 1 lakh
- In 25 constituencies, there is *status quo*
- In 74 constituencies, absolute voters declined by more than 1 lakh votes
- **Hence ~60% constituencies exhibited either increase or status quo**

Absolute Increase/Decrease in Number of Voters in 2024 vis-à-vis 2019				
States	PC voted	Increase/Decrease in Absolute Voters (in lakh)		
		Male	Female	Total
Karnataka	14	5.0	7.9	12.9
Assam	5	2.6	4.2	6.8
Maharashtra	13	3.1	1.9	5.0
Chhattisgarh	4	1.9	2.5	4.4
West Bengal	6	1.6	2.4	4.1
Meghalaya	2	1.7	1.7	3.5
Tamil Nadu	39	0.0	2.7	2.7
Tripura	2	0.9	0.9	1.8
Arunachal Pradesh	2	0.3	0.4	0.7
Bihar	9	0.3	0.3	0.6
Jammu & Kashmir	2	0.2	0.3	0.5
Uttarakhand	5	0.8	-0.3	0.4
Sikkim	1	0.1	0.2	0.3
Manipur	2	0.2	0.0	0.2
Puducherry	1	0.1	0.1	0.2
Lakshadweep	1	0.0	0.0	0.0
A&N Islands	1	0.0	0.0	-0.1
Mizoram	1	0.0	-0.1	-0.1
Nagaland	1	-1.2	-1.1	-2.4
Madhya Pradesh	12	-3.6	-2.9	-6.5
Rajasthan	25	-2.9	-4.8	-7.7
Uttar Pradesh	16	-3.8	-5.2	-8.9
Kerala	20	-4.1	-5.6	-9.7
Total	184	3.0	5.7	8.7
Total (ex Nagaland)	183	4.2	6.8	11.0

Source: ECI; SBI Research

2024 Election: 0.4% increase in Absolute Number Voter Turnout So Far in first 2 phases...

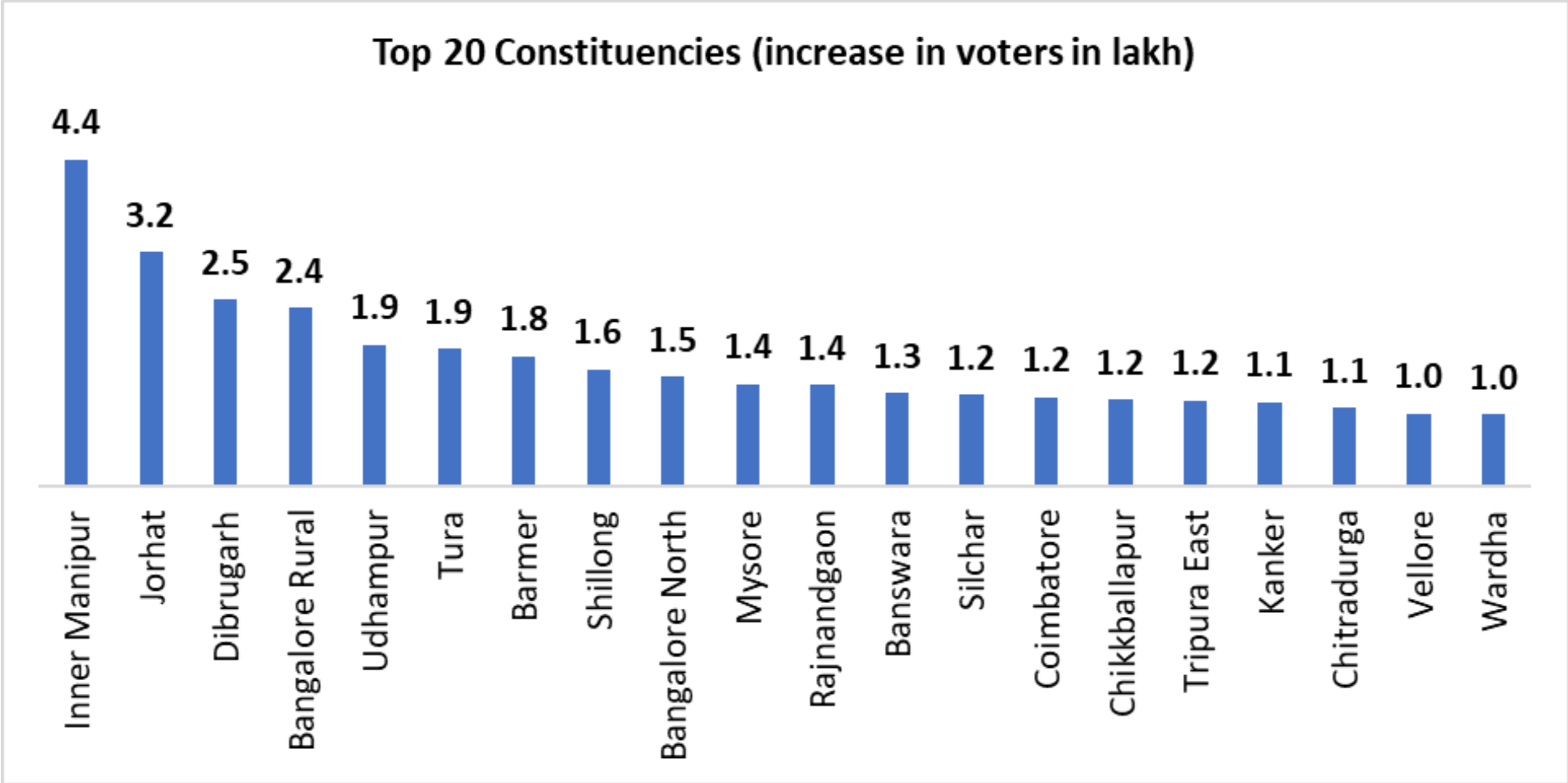


% Change in Absolute Voters in 2024 as compared to 2019				
State	Voters (in lakh)		Change	
	2019	2024	lakh	%
Karnataka	184.1	196.9	12.9	7.0%
Assam	53.5	60.3	6.8	12.6%
Maharashtra	150.8	155.8	5.0	3.3%
Chhattisgarh	45.9	50.3	4.4	9.6%
West Bengal	81.2	85.3	4.1	5.0%
Meghalaya	13.7	17.1	3.5	25.3%
Tamil Nadu	431.9	434.6	2.7	0.6%
Tripura	21.4	23.2	1.8	8.3%
Arunachal Pradesh	6.3	6.9	0.7	10.6%
Bihar	91.8	92.4	0.6	0.7%
Jammu & Kashmir	26.2	26.8	0.5	1.9%
Uttarakhand	47.8	48.2	0.4	0.9%
Sikkim	3.4	3.7	0.3	9.2%
Manipur	16.1	16.3	0.2	1.5%
Puducherry	7.9	8.1	0.2	2.0%
Lakshadweep	0.5	0.5	0.0	3.7%
A&N Islands	2.1	2.0	-0.1	-3.3%
Mizoram	5.0	4.9	-0.1	-1.4%
Nagaland	10.0	7.6	-2.4	-23.7%
Madhya Pradesh	148.1	141.6	-6.5	-4.4%
Rajasthan	322.6	314.8	-7.7	-2.4%
Uttar Pradesh	188.3	179.4	-8.9	-4.7%
Kerala	203.1	193.4	-9.7	-4.8%
Total	2061.4	2070.1	8.7	0.4%
Total (ex Nagaland)	2051.4	2062.4	11.0	0.5%

Source: ECI; SBI Research

Almost zero voting was recorded across six districts in Nagaland after the Eastern Nagaland People's Organisation declared a 'public emergency' and called on locals to boycott the election

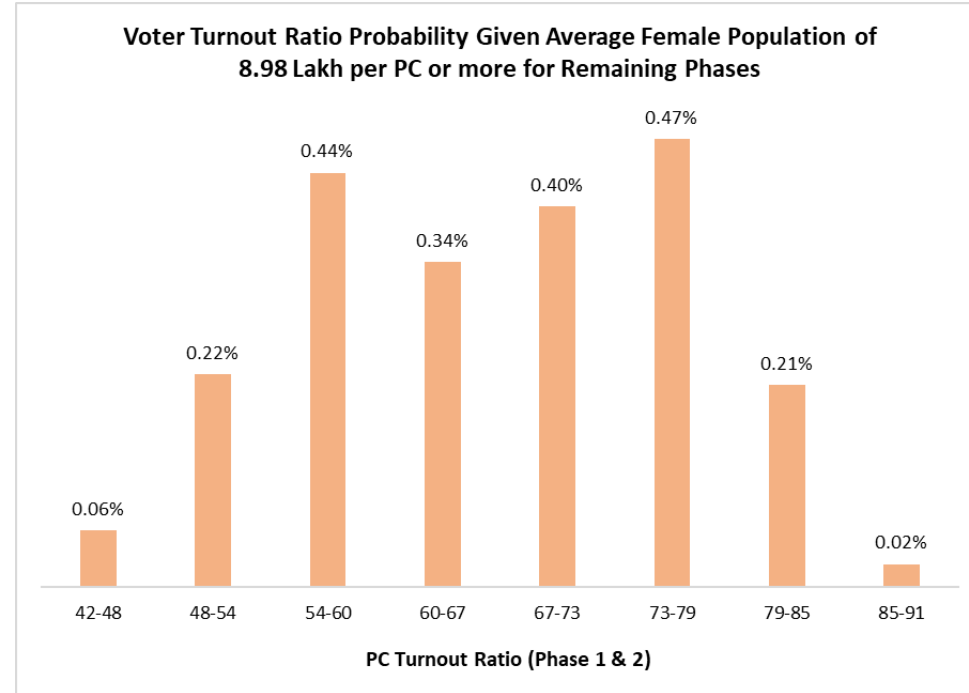
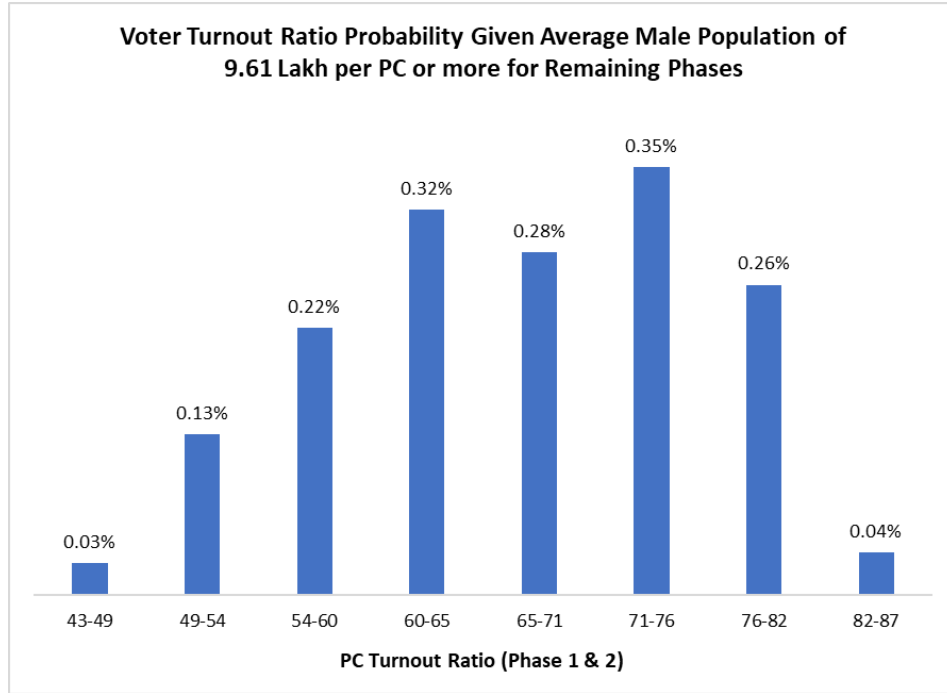
□ In Inner Manipur total voters increased by 4.4 lakh in 2024 as compared to 2019, followed by Jorhat and Dibrugarh



- ❑ A welcome and encouraging trend is visible in our analysis
- ❑ The increase in absolute votes in the reserved constituencies are more than the General category constituency
- ❑ Of the total 8.7 lakh increase in voters, ~70% happened in 42 reserved (SC+ST) constituencies only

Category-wise Change in Absolute Voters in 2024 (in lakh)				
Category	PC	Male	Female	Total
General	142	0.2	2.4	2.7
SC	27	1.4	1.5	2.9
ST	15	1.4	1.8	3.1
Total	184	3.0	5.7	8.7

Source: ECI; SBI Research; Our analysis consists 184 constituencies not 191 polled so far



- ❑ The overall voter turnout ratio for 2024 General Elections has been on the lower side compared to 2019 Elections....However, the turnout ratio within the PC is varying and different from pooled sample
- ❑ **For the remaining phases the average male voter per PC is 9.61 lakh and average female voter is 8.98 lakh per PC**
- ❑ Using the count data for pooled sample for first two phases, probabilities for male and female turnout ratio have been estimated using contingency table.
- ❑ The turnout within PC is expected to be on higher side in coming phases

Efficiency of Parliaments

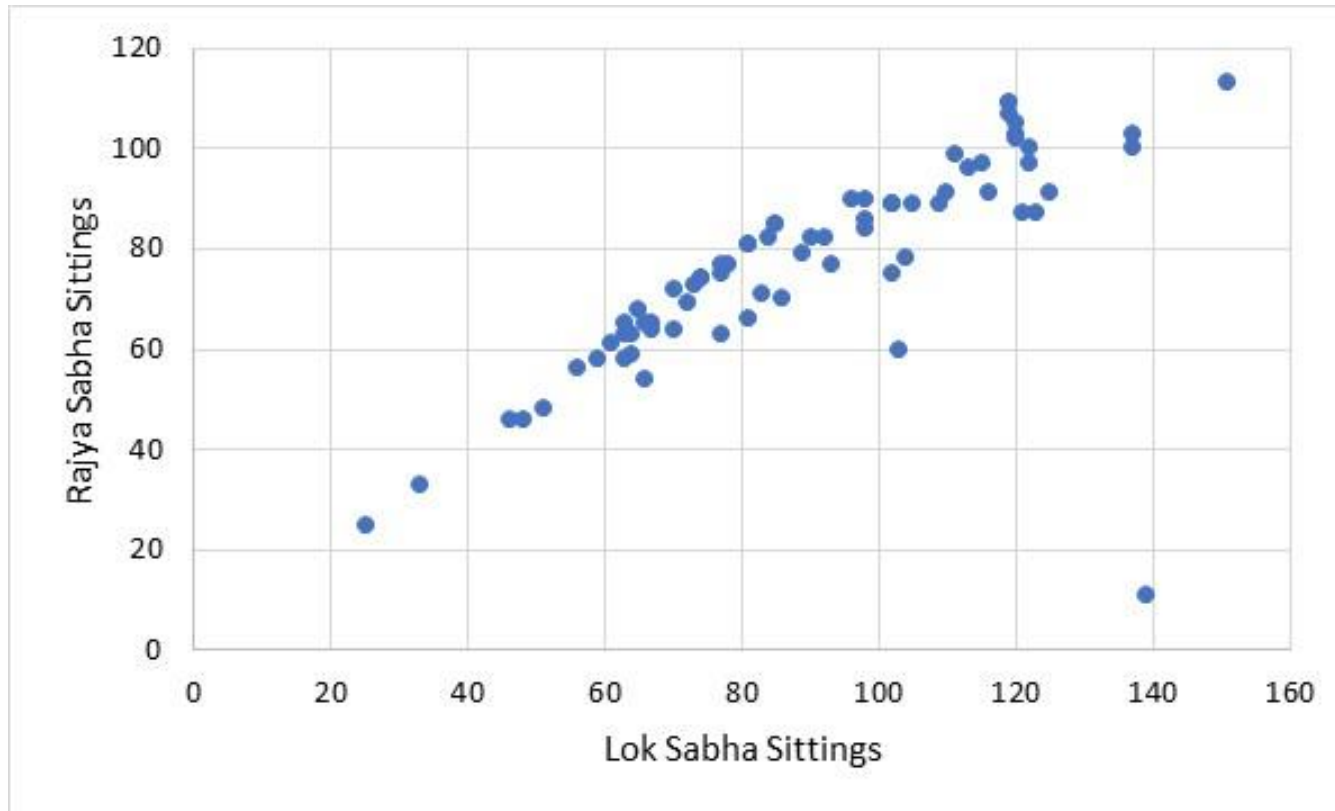
- ❑ To estimate the efficiency of Parliament, we have estimated **two I-O models using DEA techniques for I-O two data set** :
 - (i) yearly - 1952 to 2023 and (ii) LS/Gov. Tenure (1st LS to 17th LS) and two-different I-O
- ❑ The radial DEA model such as CCR or BCC model have some defects. In this study, we used slacks-based measurement (SBM) of super-efficiency model. In Model 2, the SBM super-efficiency DEA model, which will not only find-out the performance of efficient DMUs from inefficient ones but can distinguish between the efficient DMUs
- ❑ In Model 1, we have used Slack based model (SBM) to measure to efficiency of parliament, under Variable returns to scale. The same may be understood as the maximum number of Bills passed by both houses with minimum number of Lok Sabha and Rajya Sabha Sittings. SBM model finds out the years which have no possible increase in output with decrease in input, coming as fully efficient year with efficiency value of 1.
- ❑ Parliament Bill Passed/Bills introduced possibly set P is defined as
 $P = \{ (x_1, x_2, y) \mid x_1 \geq X\lambda, x_2 \geq X\lambda, y \leq Y\lambda, \lambda \geq 0 \}$ where x_1 , x_2 , and y are No. of Lok Sabha Sittings, No of Rajya Sabha Sittings, and No of Bills passed by both houses of parliament respectively.. X is input matrix x_{ij} , Y is output matrix $y_{ij} \dots x_{ij} = X\lambda + s^-$, and $y_{ij} = Y\lambda + s^+ \dots s^-$ is input surplus and s^+ is output shortfall and are called slack in SBM Model.
- ❑ **Based on the observations, an index ρ is first generated then it has been minimized subject to x_{ij} , y_{ij} , λ , s^- and s^+**

$$\rho = \frac{1 - \frac{1}{m} \sum_{i=1}^m \frac{s_i^-}{x_{i0}}}{1 + \frac{1}{s} \sum_{i=1}^s \frac{s_i^+}{y_{i0}}}$$

- The selection of input-output variables are as under

	Model - 1	Model - 2
Model	SBM Model (IO-V)	Super-SBM-O-V
Time Period	Yearly, 1952-2023	LS Tenure (1 st to 17 th)
Input 1	No of LS Sittings	No of LS sittings
Input 2	No of RS Sittings	Active Hours LS
Output	No of Bills Passed by both Houses (LS & RS)	No of Bills introduced

- ❑ Lok Sabha Sittings were maximum at 151 in 1956 and Minimum at 25 in 2023
- ❑ Rajya Sabha Sittings were maximum at 113 in 1956 and Minimum at 11 in 1955
- ❑ Bills passed by both houses of Parliament were maximum at 118 in 1976 most of which were constitutional amendments....However, we treat this year as an outlier given that parliament was non functioning...



- 1955, 1976, 2020, and 2023 are estimated to be most efficient years of Parliament in terms of maximum number of Bills passed with Minimum numbers of Lok Sabha and Rajya Sabha sittings under Variable Returns to Scale...
- **However, 1976 and 2020 are outliers based on political and health considerations...thus by that logic.... 2023 was the most efficient year of parliament after 1955.....**

Most Efficient Years of Parliament SBM Model (IO, VRS)		
Year	Parliamentary Efficiency Score	Rank
1955	1	1
1976	1	1
2020	1	1
2023	1	1
Source: SBI Research		

Model 2: SBM super-efficiency DEA model also indicate 17th Lok Sabha is the Most Efficient one....

- Initially, we used BCC model to measure the efficiency of LS, starting from first LS (1952-57) to 17th LS (2019-2024) using two inputs (number LS sittings & active hours of LS) and one output (Number of bills introduced)
- The BCC model found 5-LS (5th, 7th, 12th, 15th and 17th) are efficient and score 1.
- However, to know which is the best among the above-5 efficient units/LS, we used SBM super-efficiency DEA model and found that the 17th Lok Sabha (2019-2024) is the most efficient one and ranked at 1st place based on the relative efficiency scores

Measuring Efficiency of LS						
Sl. No	DMU	Party in Majority	BCC-O		Super-SBM-O-V	
			Score	Rank	Score	Rank
1	First (1952-57)	INC	0.8859	6	0.8859	6
2	Second (1957-62)		0.7981	10	0.7981	10
3	Third (1962-67)		0.7333	14	0.7333	14
4	Fourth (1967-70)		0.5631	17	0.5631	17
5	Fifth (1971-77)		1	1	1.0748	3
6	Sixth (1977-79)	Janata Party	0.6891	15	0.6891	15
7	Seventh (1980-84)	INC	1	1	1.1890	2
8	Eighth (1985-89)		0.7524	13	0.7524	13
9	Ninth (1989-91)	Janata Dal	0.7882	11	0.7882	11
10	Tenth (1991-96)	INC	0.7766	12	0.7766	12
11	Eleventh (1996-97)	BJP/NDA	0.6404	16	0.6404	16
12	Twelfth (1998-99)		1	1	1	4
13	Thirteenth (1999-04)		0.8769	7	0.8769	7
14	Fourteenth (2004-09)	INC/UPA	0.8055	9	0.8055	9
15	Fifteenth (2009-2014)		1	1	1	4
16	Sixteenth (2014-2019)	BJP/NDA	0.8711	8	0.8711	8
17	Seventeenth (2019-2024)		1	1	1.3576	1

Source: SBI Research

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