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# **Incumbents, Challengers and Electoral Risk**

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## **Chapter 4**

### **Incumbents, Challengers and Electoral Risk**

#### **4.1. Introduction**

A major issue in the study of elections is whether, and to what extent, the chances of a candidate or a party being elected from a constituency are improved or damaged by virtue of the fact that he/she/it is the incumbent in that constituency (that is, had won the previous election from that constituency). The literature on US elections suggests that incumbents enjoy considerable advantage over their challenger rivals: they are not only much more likely to be re-elected but their margin of victory has increased significantly over time (Alford and Hibbing, 1981; Collie, 1981; Garland and Gross, 1984). By contrast, a recurring theme in the literature on *Lok Sabha* elections in India since the 1990s is that of “anti-incumbency”: it is alleged that at every election since 1991, voters have cut a swathe through incumbent members of parliament and chosen to replace many of them with a fresh set of faces.

The “anti-incumbency” sentiment of Indian voters in a particular constituency may be underpinned by any one of four “grievances”. At its broadest, it may represent a vote against the ruling party at the centre (“national government incumbency”). More narrowly, but still within the purview of a ruling party, it may represent a vote against the party of government in the state in which the constituency is based (“state government incumbency”). Alternatively, it may represent a vote against the party which won the constituency in the previous election, regardless of whether that party is part of the government at the centre or in the state (“party incumbency”). Finally, anti-incumbency might focus on the candidate rather than the party and represent a vote against the sitting member of parliament (“candidate incumbency”).

In this chapter – and, indeed, in this book - incumbency is defined in terms of the party which won the constituency in the previous election (“party incumbency”) and an anti-incumbent vote is, therefore, a vote against the incumbent party. Consequently, issues relating to “government incumbency” (Yadav, 2004) or “candidate incumbency” (see Linden, 2003) are not addressed. Within the context of party incumbency, this chapter draws on Bayes’ Theorem to make more precise the

concept of “anti-incumbency” and then, based on this concept, measures the extent of anti-incumbency towards the Indian National Congress (INC) and the Bharatiya Janata Party (BJP).

### 3.2. Bayes’ Theorem and the "Incumbency Effect"

The Reverend Thomas Bayes, an 18<sup>th</sup> century Presbyterian minister, proved what, arguably, is the most important theorem in statistics.<sup>1</sup> Bayes’ Theorem states that the probability of a hypothesis being true (event T), *given that the data has been observed* (event A), is the probability of the hypothesis being true, *before any data has been observed*, times an ‘updating factor’. The theorem is encapsulated by the well-known equation:

$$P(T | A) = \frac{P(A|T)}{P(A)} \times P(T) \quad (4.1)$$

where:  $P(T)$  represents the *prior* belief that the hypothesis is true *before the data has been observed*;  $P(A)$  is the probability of observing the data, *regardless of whether the hypothesis is true or not*;  $P(A|T)$  is the probability of observing the data, given that the hypothesis is true, and  $P(A|T) / P(A)$  is the Bayesian “updating factor” which translates one’s *prior* (that is, *before* observing the data) belief about the hypothesis’s validity into a *posterior* (that is, *after* observing the data) belief.<sup>2</sup>

In this chapter we use Bayes’ ideas to analyse the question of whether incumbents are more or less likely to win elections than challengers. As in the preceding paragraph, let  $A$  and  $\bar{A}$  denote the “data” which, in this case, is: (i) the party is the incumbent in that constituency, event  $A$ ; (ii) the party is a challenger (that is, *not* the incumbent) in that constituency, event  $\bar{A}$ . Similarly, let  $T$  and  $\bar{T}$  denote the “hypothesis” which, in this case, is: (i) the party wins the election to that constituency, event  $T$ ; (ii) the party loses the election to that constituency, event  $\bar{T}$ . Then  $P(T)$  is the probability of the party winning the election for that constituency *in the absence of any information about whether it is the incumbent or challenger party there*. The probability that the party wins the election for the constituency, *given that it is the incumbent party in that constituency* is  $P(T | A)$  and this can be

<sup>1</sup> See “In Praise of Bayes”, *The Economist*, 28 September 2000.

<sup>2</sup> The updating factor is the ratio of the probability of observing the data when the theory is true, to that of observing the data regardless of whether the theory is true or false:  $P(A) = P(A|T)P(T) + P(A|\bar{T})P(\bar{T})$ ,  $\bar{T}$  being the event that the theory is false.

obtained by applying Bayes' theorem as in equation (4.1). Similarly, the probability that the party wins the election in the constituency, *given that it is a challenger party in that constituency* is  $P(T | \bar{A})$  and this can also be obtained from Bayes' theorem by replacing  $A$  with  $\bar{A}$  in equation (4.1).

### ***The 'Bayes Factor' and the 'Inverse Bayes Factor'***

One definition of the risk, associated with being the incumbent, is the ratio of the likelihood that the incumbent party wins an election to the likelihood that it loses it. This ratio is, hereafter, referred to as the *risk ratio (RR)* and is denoted by  $\rho$ , where:

$$\rho = \frac{P(T|A)}{P(\bar{T}|A)} = \frac{P(A|T)}{P(A|\bar{T})} \times \frac{P(T)}{P(\bar{T})} = \frac{P(A|T)}{P(A|\bar{T})} \times \frac{P(T)}{1-P(T)} = \Phi \frac{P(T)}{1-P(T)} \quad (4.2)$$

where:  $\Phi = \frac{P(A|T)}{P(A|\bar{T})} = \frac{\rho}{\lambda}$ , where  $\lambda = \frac{P(T)}{1-P(T)}$  is *odds ratio (OR)* that, the ratio of the likelihood of winning, to the likelihood of losing, the election.

The term  $\Phi$  in equation (4.2) is the so-called *Bayes Factor (BF)* applied to incumbent parties. The Bayes Factor is a measure of whether the data ( $A$ : the party is the incumbent) is more likely to be observed under one outcome ( $T$ : the party wins) than under the alternative outcome ( $\bar{T}$ : the party loses):  $\Phi > 1 (< 1)$  signifies that the likelihood of being an incumbent is higher (lower) when the party *wins* compared to when the party *loses*. It tells us by how much we should alter our prior belief that the party will win with probability,  $P(T)$  and lose with probability,  $P(\bar{T}) = 1 - P(T)$  in the light of the data that the party is an incumbent.<sup>3</sup>

### ***The Inverse Bayes' Factor***

The risk ratio,  $\rho$  in equation (4.1), measures the odds of the null hypothesis being "true" (the party *wins* the election from a constituency) to it being "false" (the party *loses* the election from that constituency) *under a particular set of data* which, in this case, is that the party is the incumbent party in the constituency. In this formulation of risk, the data applicable to the different outcomes (winning or losing the election) was the same (the party was the incumbent). An alternative view of risk is obtained by posing the following question: given two rival scenarios – in the first, a party is the

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<sup>3</sup> See Matthews (2000).

incumbent in an election to a constituency while, in the second, it is a challenger - what is the ratio of its probabilities of winning in these different situations?

In this case, the risk ratio of being the incumbent party is the ratio of the likelihood that the party wins the election *if it was the incumbent* to the likelihood that the party wins the election *if it was a challenger*. Here the outcome is the same (the party wins the election) but the data that is input is different (incumbent or challenger). In order to answer this question, the relevant risk ratio

(represented by  $\sigma$ ) is  $\sigma = \frac{P(T|A)}{P(T|\bar{A})}$ . Hereafter,  $\sigma$  is referred to as the *inverse risk ratio* (IRR): given

two different “pieces” of information – a party is the incumbent or a challenger – what is the ratio of the party’s probabilities of winning the election?

In turn, one can expand  $\sigma$  so that:

$$\sigma = \frac{P(T|A)}{P(T|\bar{A})} = \frac{P(A|T)P(T)}{P(A)} \times \frac{P(\bar{A})}{P(\bar{A}|T)P(T)} = \frac{P(A|T)}{P(\bar{A}|T)} \times \frac{P(\bar{A})}{P(A)} = \Psi \frac{P(\bar{A})}{P(A)} \quad (4.3)$$

where:  $\Psi = \frac{P(A|T)}{P(\bar{A}|T)} = \frac{\sigma}{\mu}$  where  $\mu = \frac{P(\bar{A})}{P(A)}$  is the *inverse odds ratio* (IOR): the ratio of the likelihood

of contesting a seat as a challenger party to that of contesting it as the incumbent party. The term  $\Psi$  in equation (4.3) is the *inverse Bayes Factor* (IBF) applied to the party that won that constituency. The inverse Bayes Factor is the odds of the null hypothesis being true (the party wins) under one set of data (the party was the incumbent), against it being true (the party wins) under the obverse set of data (the party was a challenger). If  $\Psi > 1 (< 1)$  then, given that the hypothesis is true (the party wins), we are more (less) likely to observe one set data (A: the party is the incumbent party) than the complementary set of data ( $\bar{A}$ : the party is a challenger).

### 3.3 Risk Ratio and Bayes Factor Calculations for Lok Sabha Elections

Table 4.1 shows the winning and incumbency outcomes for seats contested by the INC and the BJP in Lok Sabha Elections. The INC results pertain to the 14 successive Lok Sabha Elections in India from 1962 [3<sup>rd</sup> Lok Sabha] to 2014 [16<sup>th</sup> Lok Sabha]; since the BJP only made its electoral debut

in the 1984 *Lok Sabha* Election, its results pertain to the nine *Lok Sabha* Elections between 1984 and 2014.

<Table 4.1>

If there were no constituency changes between elections, then the number of seats won by a party (say, the INC) in one election should be the number of seats in which it was the incumbent in the subsequent election. However, boundary changes mean that constituencies disappear between elections and, sometimes, even reappear. A case in point is the number of changes that occurred between the 2004 and 2009 *Lok Sabha* elections. The INC won 145 *Lok Sabha* seats in the General Election of 2004 but, in the 2009 election, it was the incumbent in only 119 constituencies. Similarly, the BJP won 138 *Lok Sabha* seats in the General Election of 2004 but, in the 2009 election, it was the incumbent in only 103 constituencies.<sup>4</sup>

Tables 4.2 and 4.3 show, respectively, the losses and gains by the INC and the BJP depending upon whether they were the incumbent or a challenger party. So, when the 2009 elections were announced, the INC, as Table 4.2 shows, was the incumbent in 120 constituencies. However, in the 2009 elections, it decided to contest only 116 of its ‘incumbent’ constituencies and, of these, it won 70 and lost 45.<sup>5</sup> In the constituencies where it was not the incumbent party, it won 136 and lost 189. Consequently, a total of 181 seats changed hands between the INC and the other parties (45 INC incumbents lost and 136 INC challengers won)<sup>6</sup> which represented an “electoral turnover” for the INC of 41 percent of the 440 seats it contested in 2009.

Similarly, as Table 4.3 shows, in 2009 the BJP, as the incumbent party, won and lost, respectively, 52 and 50 seats while, as a challenger party, it won and lost, respectively, 64 and 267 seats. As a consequence of this, a total of 114 seats changed hands in 2009 between the BJP and the other parties<sup>7</sup> (50 BJP incumbents lost and 64 BJP challengers won) which was an “electoral turnover” for the BJP of 26 percent of the 433 seats it contested in 2009.

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<sup>4</sup> For example, in Delhi: Sadar, Outer Delhi, and Karol Bagh which were 2004 *Lok Sabha* constituencies disappeared in 2009.

<sup>5</sup> The four constituencies in 2009 which the INC did not contest, even though it was the incumbent party in these, were: Bombay North East; Hatkanangale; Namakkal; and Nilgiris.

<sup>6</sup> ‘Parties’ include independent candidates.

<sup>7</sup> ‘Parties’ include independent candidates.

A high volume of trade between a party and other parties suggests either, or both, of two things: (i) a soft “centre”, so that core voters exit easily; (ii) a strong “periphery”, so that non-traditional voters enter easily. In “trading” between itself and other parties, a party can either have an ‘electoral deficit’: out-migration exceeds in-migration (the number of losing incumbents exceeds the number of winning challengers); or it can have an ‘electoral surplus’: in-migration exceeds out-migration (the number of winning challengers exceeds the number of losing incumbents).

<Figure 4.1>

Figure 4.1 shows the *net* migration of seats (that is, exits less entries) for the two parties for parliamentary elections between 1989 and 2014. This shows that it was only in the 2004 and 2009 elections that there was a net inflow of seats into the INC. On the other hand, except for the 2004 election - when there was a small net outflow from the BJP – the BJP has always been able to attract a net inflow of seats. This is evidence to suggest that, since 1989, INC fortunes have on a downward trend and this has been mirrored in an upward trend in the fortunes of the BJP.

<Tables 4.4 and 4.5>

Table 4.4 shows that the INC’s risk ratio ( $\rho_{INC}$ ) – defined, as  $\rho = P(T | A) / P(\bar{T} | A)$  in equation (4.2) - as the ratio of the number of seats contested by the INC incumbents that were won and lost - for all the *Lok Sabha* Elections from 1967 to 2014; Table 4.5 does the same for the BJP’s risk ratio ( $\rho_{BJP}$ ) for all the *Lok Sabha* Elections from 1989 to 2014.<sup>8</sup> For four of the five elections between 1967 and 1984, the risk ratio for the INC was greater than unity (meaning that the chance of the INC winning a seat in which it was an incumbent was greater than that of losing it) but in the four of the five elections held after 1996 the risk ratio for the INC was less than unity (meaning that the chance of the INC winning a seat in which it was an incumbent was less than that of losing it): in the INC massacre of 2014, the chances of incumbents winning their seats was just 20 percent of their chances of losing them.

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<sup>8</sup> Equation (4.2) is defined in terms of the *proportion* of contested incumbent seats won to the *proportion* of contested incumbent seats lost but since the denominators are equal,  $\rho = \frac{N_W^{incum} / N_W^{incum} + N_L^{incum}}{N_L^{incum} / N_W^{incum} + N_L^{incum}} = \frac{N_W^{incum}}{N_L^{incum}}$  where  $N_W^{incum}$  and  $N_L^{incum}$  are the number of seats won and lost by a party as an incumbent.

For the BJP, on the other hand, the risk ratio was always positive. Even in the difficult elections of 2004 and 2009, both of which led to INC-led coalition governments, the risk ratio for the BJP was slightly over unity meaning that the chance of the BJP winning a seat in which it was an incumbent was just greater than that of losing it. In other elections, the risk ratio for the BJP was comfortably over unity and, most spectacularly, the BJP's risk ratio in the 2014 election was 7.92: the chances of the BJP winning an incumbent seat was eight times that of losing it.<sup>9</sup> Figure 4.2 compares the risk ratios for the INC and the BJP from the 1991 election onwards.

<Figure 4.2>

The *odds ratio*,  $\lambda$ , is the ratio of the *total* number of seats won, to the *total* number of seats lost, by the INC and is the empirical equivalent of the term  $P(T)/P(\bar{T})$  in equation (4.2). Figure 4.3 compares the odds ratios for the INC and the BJP from the 1991 election onwards with the lowest and highest odds ratios being recorded for the 2014 elections: in this election the INC and the BJP won 0.1 and 1.9 seats, respectively, for every seat that they lost.

<Figure 4.3>

The risk ratio ( $\rho$ ) when compared to the odds ratio ( $\lambda$ ) yields the *Bayes Factor (BF)* defined as the term  $\Phi = P(A|T)/P(A|\bar{T})$  in equation (4.2).<sup>10</sup> If the risk ratio is greater than the odds ratio ( $BF = \frac{\rho}{\lambda} > 1$ ), it means that, in the light of the information that the party is an incumbent, we should *revise upwards* – by the amount suggested by the *BF* – our prior belief that the party will win with probability,  $P(T)$  and lose with probability,  $P(\bar{T}) = 1 - P(T)$ . Conversely, if the risk ratio is less than the odds ratio ( $BF = \frac{\rho}{\lambda} < 1$ ), it means that, in the light of the information that the party is an incumbent we should *revise downwards* – by the amount suggested by the *BF* – our prior belief that the party will win with probability,  $P(T)$  and lose with probability,  $P(\bar{T}) = 1 - P(T)$ .<sup>11</sup>

Table 4.4 shows that, except for 1977 and 1989, the risk ratio was always greater than the odds ratio for the INC (meaning that the *BF* value, entered in the last column of Table 4.4, was greater

<sup>9</sup> In the 2014 election, the BJP contested 116 seats in which it was the incumbent party and won 103 of them.

<sup>10</sup> Proof:  $\rho = \frac{P(T|A)}{P(\bar{T}|A)} = \frac{P(A|T)P(T)}{P(A|\bar{T})P(\bar{T})} \Rightarrow \frac{P(A|T)}{P(A|\bar{T})} = \frac{\rho}{\lambda} = \Phi$

<sup>11</sup> In other words, if  $BF > 1$ , it means that a party is more likely to have been the incumbent in a constituency if it won, than if it lost, from there:  $P(A|T) > P(A|\bar{T})$ . Conversely, if  $BF < 1$ , it means that a party is more likely to have been the incumbent in a constituency if it lost, than if it won, from there:  $P(A|T) < P(A|\bar{T})$ .



than one): even in the 1996, 1999, and 2014 elections, when it was very “risky” standing as an INC incumbent<sup>12</sup>, *it was not as risky as standing as an INC challenger*. Consequently, in 1999, the likelihood of an INC win being an incumbent victory was almost twice as likely (risk ratio/odds ratio=1.91) as an INC loss being an incumbent defeat. Only in the 1977 and 1989 elections, both of which were characterised by a strong anti-INC sentiment, was it more risky being an INC incumbent compared to being an INC challenger:  $BF=[risk/odds\ ratio]<1$  implied that the likelihood of an INC loss being an incumbent defeat was greater (by 2 percent in 1977 and 10 percent in 1989) than the likelihood of an INC win being an incumbent victory.

<Figure 4.4>

For the BJP, too, the risk ratio was always greater than the odds ratio (meaning that the *BF* value entered in the last column of Table 4.5 was greater than one). In the 2014 election, the likelihood of a BJP win being an incumbent victory was more than four as likely (risk ratio/odds ratio=4.1) as of a BJP loss being an incumbent defeat. However, as Figure 4.4 shows, the Bayes Factor was generally higher for the BJP than for the INC. For both parties, a win was more likely to signal an incumbent victory than a defeat was to signal an incumbent loss but this gap was larger for the BJP than the INC.

#### **4.4 The Inverse Risk Ratio and the Inverse Bayes Factor Calculations for *Lok Sabha* Elections**

Tables 4.4 and 4.5, compared the proportion of incumbent seat wins to the proportion of incumbent seat losses (from the seats contested by, respectively, the INC and BJP as incumbent parties) to yield the *risk ratio*. This then led, through a comparison of the risk ratio with the odds ratio, to the *Bayes Factor*.

Tables 4.6 and 4.7 compare, for respectively, the INC and the BJP, the ratio of the proportion of *incumbent* wins (from the seats contested by, respectively, the INC and BJP as incumbent parties) to the proportion of *challenger* wins (from the seats contested by, respectively, the INC and BJP as challenger parties). This ratio is the *inverse risk ratio (IRR)* defined by the term  $\sigma = P(T | A)/P(T | \bar{A})$  in equation (4.3). The *inverse odds ratio (IOR)* - the term  $\mu = P(\bar{A})/P(A)$  in equation (4.3) – represents

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<sup>12</sup> In 1999, for example, INC incumbents lost 88 of the 140 seats they contested.

the ratio of the likelihood of contesting as a challenger to the likelihood of contesting as an incumbent. A comparison of the IRR with the IOR then results in the *inverse Bayes Factor (IBF)*. This is the term  $\Psi = P(A|T)/P(\bar{A}|T)$  in equation (4.3). If  $\Psi > 1 (< 1)$ , the probability of winning as an incumbent is greater (less) than the probability of winning as a challenger.

<Tables 4.6 and 4.7>

Table 4.6 shows that, except for the elections of 1977 and 1989, the *inverse risk ratio* was always greater than 1 meaning that the INC had a greater chance of winning from where it was the incumbent than from where it was the challenger: indeed, since 1991, the chances of winning as an incumbent has been more than twice that of winning as a challenger. Table 4.7 tells a similar story with respect to the BJP's the inverse risk ratio: the likelihood of an incumbency win was always greater than that of a non-incumbency win. Figure 4.5 brings together the values of the Inverse Risk Ratios for the INC and BJP from the 1991 election onwards.

<Figure 4.5>

The values of the *inverse odds ratio*,  $\mu$ , shown in Tables 4.6 and 4.7 are the ratios of the total number of seats which the parties – respectively, INC and BJP - contested as challengers to the total number of seats they contested as incumbents. Since 1991 there has been a sharp reduction in the number of seats won by the INC in *Lok Sabha* elections notwithstanding the fact that the number of constituencies contested by the INC has not fallen commensurately.

Consequently, post-1991, the INC emerges as a challenger party in the majority of the seats contested by it and in 2004 it contested three times as many constituencies where it was a challenger compared to where it was the incumbent. For the BJP, the three elections of 1996, 1998, and 1999 were “good” elections when it won, respectively, 161, 182, and 182 seats and, consequently, it built up a stock of seats in which it was the incumbent party. This stock, combined with the fact that it contested far fewer seats than the INC (in 1999 the BJP contested only 339 constituencies compared to the INC's 453) meant that it had a smaller ratio of challenger to incumbent seats. Figure 4.6 brings together the values of the Inverse Bayes Factor for the INC and BJP from the 1991 election onwards.

<Figure 4.6>

When the inverse risk ratio was greater than the inverse odds ratio ( $\sigma/\mu > 1$ ), the chance of a party win being an incumbent victory was greater than the chance of it being a challenger victory and this this reflected in the fact that the inverse Bayes factor (IBF),  $\Psi > 1$ , implying  $P(A|T) > P(\bar{A}|T)$ . When the inverse risk ratio was less than the inverse odds ratio ( $\sigma/\mu < 1$ ), the chance of a party win being a challenger victory was greater than the chance of it being an incumbent victory and this this reflected in the fact that the Inverse Bayes Factor (IBF),  $\Psi < 1$ , implying  $P(A|T) < P(\bar{A}|T)$ .<sup>13</sup> Figure 4.7 brings together the values of the Inverse Bayes Factor for the INC and BJP from the 1991 election onwards.

<Figure 4.7>

Figure 4.7 shows that the INC's IBF value was 3.4 for the *Lok Sabha* election of 2014. Even though the INC only won 44 seats in this election, its constituency victories, as and when they did occur, were 3.4 times more likely to have been as the incumbent, than as a challenger, party. On the other hand, the BJP which went into the 2014 election with only 116 incumbent constituencies but ended up winning 282 seats. In the event of a of BJP victory in this election, the likelihood that the party was the incumbent in a constituency was only 60 percent of the likelihood that it was a challenger.

#### 4.5 Concluding Remarks

This chapter's contribution lay in developing a methodology, based on Bayes' theorem, for evaluating the electoral risk associated with being the incumbent party, as opposed to being a challenger party, in a constituency. The first concept was that of 'the risk ratio' – the likelihood of a party *winning*, compared to the likelihood of a party *losing*, a constituency as its incumbent party. On this measure, for the five *Lok Sabha* elections after 1996 of 1998, 1999, 2004, 2009, and 2014, the likelihood of the INC *losing* an incumbent seat was *larger* than its likelihood of *winning* it; on the other hand, for the same elections, the likelihood of the BJP *losing* an incumbent seat was *smaller* than its likelihood of *winning* it. So, on this measure - for the five *Lok Sabha* elections of 1998, 1999,

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<sup>13</sup> Proof:  $\sigma = \frac{P(T|A)}{P(T|\bar{A})} = \frac{P(A|T) P(\bar{A})}{P(\bar{A}|T) P(A)} \Rightarrow \frac{P(A|T)}{P(\bar{A}|T)} = \frac{\sigma}{\mu} = \Psi$

2004, 2009, and 2014 - there was an anti-incumbency effect for the INC but a pro-incumbency effect for the BJP.

The second concept was that of the Bayes' Factor (BF). If  $BF > 1$ , the party was more likely to have been the incumbent in a constituency if it won from that constituency compared to losing from it. The fact that  $BF > 1$  for the INC tells us that while it was "risky" for the INC to contest an election as the incumbent – in the sense that that the probability of winning was greater than that of losing - it was not as "risky" as the INC contesting the election as the challenger. So, on this interpretation there was a pro-incumbency effect for the INC. For the BJP, too,  $BF > 1$  and its value was larger for the INC. For both parties, a win was more likely to signal an incumbent victory than a defeat was to signal an incumbent loss but this gap was larger for the BJP than the INC.

The third concept was that of the inverse risk ratio: the likelihood of a party winning a constituency as the incumbent compared to the likelihood of a party winning a constituency as the challenger. Both INC and the BJP had a greater chance of winning as the incumbent party compared to winning as the challenger party (the inverse risk ratio was greater than 1) so that, on this interpretation, there was a pro-incumbency effect towards both parties.

The fourth concept was that of the inverse Bayes' Factor (IBF): when  $IBF > 1$ , a party win was more likely to be as the incumbent than as a challenger; conversely, when  $IBF < 1$ , a party win was more likely to be as a challenger than as the incumbent. On this interpretation, there was a pro-incumbent effect for the INC in the *Lok Sabha* election of 2014 (in the event of a of INC victory in this election, the likelihood that the party was the incumbent in a constituency was 3.4 times the likelihood that it was a challenger) but an anti-incumbency effect for the BJP (in the event of a of BJP victory in this election, the likelihood that the party was the incumbent in a constituency was only 60 percent of the likelihood that it was a challenger).

The overall conclusion of this chapter is that there is no obvious way of measuring the degree of anti-incumbency, or its obverse, pro-incumbency. There are at least four measures based on the likelihood of winning. Which measure is appropriate depends on what one is trying to establish. As Huckleberry Finn advised (in chapter 28 of Mark Twain's eponymous novel): "you pays your money and you takes your choice".