Chapter 5
Legislative Decision Making

5.1 Introduction

How many individuals must agree before a collective decision is imposed on a community? Buchanan and Tullock (1962) raised that question roughly fifty years ago and answered that it depends on how a community weighs decision costs and external costs. At the constitutional stage decision costs are less consequential. Hence, voting rules that produce Pareto superior and Pareto optimal outcomes (or just Pareto optimal outcomes) should be promoted. The only voting rule that could guarantee such results, and minimize external costs, is unanimity rule. At the legislative stage, the optimal \(k\)-majority rule may depend on both external costs and decision costs. With decision costs considered, the sum of decision costs and external costs might be minimized closer to majority rule.

This chapter analyzes the optimal \(k\)-majority rule in a context where both external costs and decision costs matter. Since decision costs are almost always important for judging voting procedures in legislatures, we title this chapter “Legislative Decision Making.” However, the results presented here should apply to constitutional decision making, or any type of decision making, where the optimal \(k\)-majority rule depends on both external costs and decision costs.

As mentioned in Chapter 2, other scholars have considered other types of costs that may be added to the external cost or decision cost functions (Mueller, 1996; Spindler, 1990; Brennan and Hamlin, 2000). These studies have not been fully formalized nor have they carefully examined the effects of functional form on their arguments. Dougherty and Edward (2004) have tried to formalize Buchanan and Tullock’s argument in the two-alternative case, but they could not adequately analyze decision costs because decision costs do not vary with \(k\) when only the status quo and a single proposal are feasible. Furthermore, the latter work does not extend its analysis to series of votes that are common in legislative settings.

Rather than trying to include new sources of external costs and decision costs, we attempt to assess the claims made by Buchanan and Tullock by creating a framework that can accommodate a series of votes. To conduct our analysis, we formulate a no-
tion of external costs that is analogous to the external costs described by Buchanan and Tullock and by Mueller (2003). We define a BT- loser as an individual who votes for a BT-preferred alternative when society chooses against him/her. We then formalize decision costs in a single round as a constant which makes decision costs in a series largely a function of the probability of passage. This produces several interesting results.

First, if a society values one cost more than the other, then the mere weight it puts on decision costs relative to external costs can make \( k = 1 \) or \( k = N \) optimal. However, even if a society puts no weight on decision costs, it is not always the case that \( k = N \) will be uniquely optimal. Because expected external costs largely depends on the probability of passing proposals and the probability of passing proposals is logistic-type function of \( k \), there is an almost certain probability of passage for \( k \) near 0 and an almost certain probability of failure for \( k \) near \( N \) (see Figure 5.1). As a result, expected external costs can take a logistic-type shape like this as well. Without decision costs, the flat spots on the right side of the external cost function can make the optimal \( k \)-majority rule a range of \( k \)-majority rules near \( k = N \) rather than a singleton.

Second, if external costs and decision costs are equally a concern, then the homogeneity of the society, as depicted by the preference probabilities introduced in chapter three, can affect the optima. Everything else equal, if a society is extremely homogenous with respect to the decisions it has to make, then more inclusive voting rules might be appropriate. If society is particularly heterogenous with respect to those decisions, then a less-inclusive voting rule may be appropriate.

Third, the ability to create increasingly desirable proposals between rounds can affect the optimal \( k \)-majority rule. If the political dynamics are such that the probability of passing a proposal quickly increases between rounds, then large \( k \)-majority rules may be preferred. If proposals are not increasingly likely to pass in subsequent rounds (or their chances improve only slowly), then moderately smaller \( k \)-majorities may be optimal.

Such an analysis can be compared to Mueller’s (2003, pp. 76–8) argument that total costs will be minimized at majority rule because of a “kink” in the decision cost function. The difference between our results and those claimed by Buchanan and Tullock, and Mueller, ultimately stems from the fact that for any fixed population, the probability of passage does not decline linearly as \( k \) increases. Instead, it decreases in a logistic-type manner, as shown in Figure 5.1. The difference in shape has important implications for the external cost function, the decision cost function, and many of the more intuitive arguments made by Buchanan and Tullock.

### 5.2 Related Literature

Several authors have tried to determine the optimal \( k \)-majority rule. At the legislative stage, Buchanan and Tullock argue that the optimal \( k \)-majority rule should minimize the sum of external costs and decision costs. Since external costs decrease mono-