6. On the Merits of Bicameral Legislatures: Intragovernmental Bargaining and Policy Stability

Roger D. Congleton

Center for Study of Public Choice

Fairfax, VA 22030

Congleto@gmu.edu

I. Contemporary Rational Choice Research on Bicameralism

Bicameral legislatures are characterized by two independently selected chambers, each with some authority over new legislation. Many bicameral systems are symmetric in the sense that the two chambers have essentially equal power to originate and veto legislative proposals, as in the United States and Belgium. Others are asymmetric with one chamber having far less control over legislation than the other, as in Canada, the Netherlands, and France. Moreover, the balance of power between the chambers may be constitutionally adjusted through time. The House of Lords was the dominant chamber of the British Parliament for most of the period prior to 1700, a more or less equal partner in legislation during the eighteenth and early nineteenth century, and is presently by far the lesser of the two chambers with neither veto power nor authority to originate legislation. Approximately 180 contemporary national governments have a legislature or parliament. About a third of those governments, 61 countries, have legislatures that are bicameral (Patterson and Mughan 1999).

Historical Background

The practice of dividing the authority to create new laws and regulation among two or more legislative chambers is an ancient one. For example, political power in Athens was divided between its assembly (an open town meeting) and its council (staffed by members of the ten tribes of Athens). The Roman Republic divided authority between its Senate and several Assemblies. Venice had its Great Council and Senate (Gordon, 1999). Multicameralism in modern Europe is nearly as old as parliamentary governance. Parliaments emerged throughout Europe in the thirteenth century. These new assemblies were called *cortes* in Spain, *diets* in Germany, *tings* in Scandanavia, *estates general* in France, and parliaments in the British Isles (Palmer and Coulter 1950). Many of these

assemblies were multicameral, as the term "estates" implies, with particular interests (church, town, rural, and noble) represented by separate chambers of the parliament.

Multicameralism remained commonplace within Europe until approximately 1800, after which most European governments gradually became bicameral, partly as a consequence of reforms associated with the French revolution, but also as a consequence of new constitutional theories and subsequent pressures for constitutional reform. For example, Sweden shifted from an unelected four chamber parliament to an elected two chamber parliament in 1866. The British Parliament was an exception to this rule. It has been bicameral since early in the fourteenth century, with its upper chamber representing the nobility and clergy (the Lords temporal and spiritual) and its lower chamber representing what might be called federal (town and county) interests during most of its history (Field 2002: ch.2).

These early parliaments, although representative, were not democratic in the modern sense. Their members were not elected to office by a broad electorate. Rather, their membership was often explicitly or implicitly reserved for members of elite families, and in those cases in which elections were held to select members, the right to vote for representatives was generally reserved for the wealthiest 5 or 10% of the population. Nonetheless, membership in these multicameral assemblies was widely dispersed throughout the territitory ruled, which allowed a variety of regional and economic interests to be represented at court.

Because of this history, it not surprising that analysis of the effects of divided government is an ancient field of research, as is evident in Aristotle's 330 B.C. empirically based argument in favor of divided government. The analysis and arguments of Montesquieu (1748) clearly influenced the constitutional designers of the eighteenth and nineteenth centuries. Such work continues within political science and law, because any effort to improve governance must evaluate the relative merits of alternative forms of political architecture, and multicameralism is one of several methods for representing a broad cross section of national interests.

As national governance came to be increasingly grounded in theories of popular sovereignty in the nineteenth century, however, intellectual and political support for the old multicameral and bicameral systems tended to decline. The old ideas of represented interests gave way to contemporary notions of elected representation. Clearly granting special powers to a particular class, economic interest group, or to local governments conflicts with the democratic principle of "one man, one vote." Indeed, bicamerals systems are widely regarded to be undemocratic if different interests are represented in legislative chambers, and unnecessarily redundant if not.

Contemporary rational choice based–research, however, suggests that bicameral government can advance broad citizen interests in either case. For example, as developed below, "unbiased" bicameral systems can produce public policies that are both more faithful to the interests of the electorate, better informed, and more predictable.

Rational Choice Accounts of Bargaining within Bicameral Legislatures

The modern rational choice literature on constitutional design analyzes the bargaining that takes place within and between the chambers of bicameral legislatures. For the most part, it analyzes the effects of the formal procedures of interchamber bargaining on both the bargains reached and the policies that emerge from the legislature. A smaller strand of empirical literature attempts to determine which, if any, of the various implications of these bargaining theories are present in real bicameral systems. The analytical literature on bicameralism begins with Tullock (1959) and with Buchanan and Tullock (1962: ch. 16) and continues to the present day, with a substantial increase in the flow of analytical research in the 1990s. Empirical work did not begin in earnest until the 1990s.

Buchanan and Tullock demonstrate that bicameralism indirectly tends to increase the size of the majority required to adopt new legislation. This is true when the chambers are designed to represent different interests, as they typically are. However, they point out that an implicit requirement for supermajorities may arise even in cases in which the chambers are not designed to represent different interests, because differences in the two chambers can arise as a consequence of chance events. For example, if some interests are spatially concentrated for whatever reason, those interests would tend to secure greater representation in the "lower" chamber elected from smaller districts than in an "upper" chamber elected from relatively larger districts. If both upper and lower chambers must agree for legislative proposals to become law, legislation will have to advance a broader cross-section of interests than would have been required in a unicameral legislature, because two somewhat different majorities would have to be assembled. Indeed, bicameralism can be defended as a method for identifying policies with supermajority support.

In a few cases, bicameral bargaining can also increase the stability of majoritarian decision making. It has been well known since Duncan Black's work (1948a, b) that majority rule is cycle prone and, thus, tends to be indecisive. If policy A secures majority support over policy B, in most cases, there exists a policy C that can secure policy support over policy A. The possibility of majoritarian indecisiveness has attracted a lot of attention in the academic literature since Black's rediscovery of Condorcet's paradox. As Arrow (1963) points out, indeterminacy—or intransitivity—is not simply a problem with majority rule, but with collective choice in general. Several authors have shown that, in some circumstances, bicameralism can eliminate majoritarian cycles. For

example, Hammond and Miller (1987), Brennan and Hamlin (1992), and Riker (1992) demonstrate that if the interests represented within the two chambers are more homogeneous than interests within the legislature as a whole, bicameralism can avoid some problems with democratic cycles.

These papers demonstrate there are circumstances in which a "median" or "pivotal" voter exists for each of the chambers of a bicameral legislature, but no median or pivotal voter exists for the combined legislature. In such cases, the pivotal voters of each chamber determine their chamber's policy and negotiation between the medians yields an agreement that lies between the two medians. Bicameralism increases stability insofar as it is generally easier to find Condorcet winners in two chambers than in an otherwise equivalent single chamber. (Political parties and stable coalitions may serve similar purposes.)

More recent work has focused attention on the institutions of interchamber bargaining. It is clear that if each chamber has veto power over new legislation, some form of interchamber negotiation and compromise will be necessary. Tsebelis and Money (1997) demonstrate that the distribution of bargaining power need not be symmetric to affect legislative outcomes. The power to delay implementation of a policy can be sufficient to affect legislation within bicameral systems. For example, in cases in which the weaker chamber can delay, but not veto a proposal, the more "patient" chamber tends to be decisive. The opportunity cost of negotiation might differ because election cycles differ in the two chambers, or because some issues are more pressing for one chamber's voters than the others. In such cases, the decisive voter of the chamber prepared to wait the longest for a relatively beneficial outcome can secure a legislative outcome that is relatively closer to his or her ideal point than that of his or her more impatient counterpart.

The distribution of agenda control and veto power clearly affects the bargaining power of the chambers of governance. For example, Steunenberg, Schmidtchen, and Kolboldt (1999) and Steunenberg (2001) demonstrate that the elaborate policy-making procedures of the present European Union (EU) determine the relative power of the Commission, Council, and European Parliament and indirectly the relative power of member states within the EU.

Bicameralism may also affect the internal organization of the legislature. Shepsle and Weingast (1987) demonstrate that intercameral conference committees within the United States (where compromises are worked out) tend to empower legislative committees in both chambers. Diermeier and Myerson (1999) suggest that bicameral systems tend to encourage the development of intracameral veto players insofar as lobbying costs are increased by bicameralism.

Rogers (1998) explores how the power to propose new legislation, a type of agenda control, may affect the course of legislation within bicameral

legislatures. He argues that bicameral systems can economize on information costs by allowing the more informed chamber to originate the legislation. He demonstrates that the latter is an equilibrium in the sequential proposal game when information is asymmetric. To the extent that the more informed chamber originates the legislative proposals, bicameral legislatures will tend to make more informed decisions than unicameral ones. His empirical results, based on U.S. state data, are consistent with the theoretical analysis, in that the larger (and he suggests more informed) chamber most often originates legislation. This form of specialization is more evident when a single party controls both chambers of the legislature, as implied by his theoretical analysis.

Persson, Roland, and Tabellini (1997) analyze bargains that might be struck between chambers of a divided government in a setting in which voters can replace incumbents for malfeasance or incompetence. Their analysis takes place in the context of a bipolar government with an independently elected executive and legislature, but their analysis also applies to bargaining between pivotal members of a bicameral legislature subject to reelection pressures. They demonstrate that circumstances exist in which electoral pressures and specific divisions of policy-making responsibilities (agenda control and veto power) can generate improvements in the performance of government relative to a single chamber (player) with complete control over policy making. They also note that different assignments of policy-making power affect the relative bargaining power of the two chambers.

Overall, the rational choice literature on bicameralism predicts that (1) bicameral systems are somewhat more stable than unicameral systems insofar as majority cycles are fewer, (2) levels of consensus required for legislation to be adopted tend to be somewhat higher than under unicameral systems insofar as the interests represented in the two chambers differ, (3) in cases in which the chambers each have substantial influence, policy decisions tend to be more informed and faithful to the desires of the electorate, (4) the effect of bicameralism depends in part on the relative power of the two chambers, which is determined by the formal and informal procedures of negotiation between the chambers and the interests of the pivotal members of the two chambers.

The New Empirical Literature on Bicameralism

The first tests of the theoretical models of bicameralism were often conducted by the theorists themselves, as Tsebelis and Money (1997) and Rogers (1998) attempted to determine whether their theories of the effects of delay and information affected the pattern of intercameral bargaining. Recent empirical studies have focused attention on the policy consequences of bicameralism. Do bicameral bargains yield policies that *on average* differ systematically from unicameral legislatures, and do those policy differences have systematic effects on community welfare?

For example, empirical work by Bradbury and Crain (2002) suggests that the greater the difference in the interests represented by the chambers of a bicameral legislature, the smaller per capita state expenditures tend to be. They argue that when the two chambers represent different interests, legislation requires a broader consensus to pass, which limits opportunities for redistributive politics. Other estimates also imply that modern bicameral systems tend to accord relatively larger bargaining power to the lower (more numerous) chamber. Their estimates imply that the typical lower chamber has about 3.5 times as much bargaining power as the upper chamber. Bradbury and Crain (2001) also find evidence that a small chamber reduces the effect of the "fiscal commons problem" in the larger chamber, although it does not eliminate it. Their estimates suggest that expenditures as a fraction of GDP and in real per capita levels tend to increase as the number of seats in the lower chamber increases, but do so less rapidly in bicameral systems than in unicameral systems. For additional discussion of the fiscal commons problem, see Knight's discussion in chapter 9. The Bradbury and Crain results are discussed at length in chapter 7.

Most empirical work on constitutions and bicameralism is cross-sectional. To isolate the effects of institutions from other differences in circumstances, such studies have to account for a broad array of other differences among countries and states. This problem is reduced in cases in which a single country moves from one set of institutions to another, in that cultural and economic conditions are more homogeneous within a single country through time than across countries.

Congleton (2003a: ch. 12) explores the effects of Sweden's switch from bicameral to unicameral institutions in the early 1970's. His estimates suggest that representative bicameral legislatures tend to have policies that are more stable through time and more broadly supported than those adopted by otherwise similar unicameral legislatures, especially in settings in which political parties are important. Statistical evidence from Sweden and Denmark, both of which replaced bicameral with unicameral legislatures, are consistent with the simulations. These results are reviewed at length in sections II and III of this chapter.

Some political theorists suggest that unicameral institutions are more responsive to short-term political demands, which might increase policy uncertainty insofar as voter preferences or turnout varies from year to year. Such an effect might partly explain the very rapid expansion of the social welfare state in Sweden during 1970–85, as a leftward tide of ideology swept through the West. However, estimates of the Swedish demand for public services suggest that the Swedish government became less, rather than more, responsive to electoral demands under unicameralism. Within a proportional representation system, unicameralism tends to concentrates policy-making power in the hands of party leaders within a single chamber, who may implement policies that are

somewhat at odds with majoritarian interests. Survey evidence suggests that members of the Riksdag majority often have policy interests that are systematically different from those of their supporters (Esaiasson and Holmberg 1996).

Overall the rational choice literature on bicameralism takes issue with the claim that bicameralism can serve no purpose unless it is an antidemocratic one. Theoretical work suggests that bicameralism can improve public policy by making policy more predictable, more informed, and more responsive to voter interests—especially in settings in which policy deliberations are very partisan. Empirical work is largely consistent with these conclusions.

II. Simulated Bicameral Bargains and Public Policy

To explore whether bicameralism, itself, has consequences for policy in the long run, the simulation models developed below assume that the same interests are represented in the two chambers. That is to say, an "unbiased" form of bicameralism is studied. A bicameral system is unbiased as long as the expected median of the two chambers is the same, as may be true of chambers with differently sized election districts or terms of office, as long as voter preferences are more or less similar among districts and through time. If bicameral effects are present in unbiased systems, they are also likely to be found in biased forms of bicameralism in which interests are, in effect, given different weights in the two chambers.

Simulations allow a variety of constitutional architectures to be analyzed in an artificial experimental environment in which all elements of constitutional design can be controlled. This allows one to determine how policy outcomes are affected by political institutions "on average" as electoral outcomes vary through time. In addition to the ease with which institutions can be varied and polity outcomes can be modeled, simulations allow the small sample properties of electorates and legislatures to be analyzed. Similar work, of course, can be undertaken using formal mathematical models, although institutional models are not always mathematically tractable and mathematical results are, for the most part, limited to expected values and other "asymptotic cases" in which the number of elections and/or chamber members approach infinity. Both these limitations suggest that simulation results may be more relevant for constitutional analysis than mathematical analyses, because existing legislature have finite memberships and most democracies have had fewer than 40 national elections. Simulations, however, often require a less general model structure than possible mathematical analyses, although it bears noting that most dynamic mathematical analyses also tend to rely upon fairly narrow concrete models.

A Simulation Model of Bicameral Legislation

The simulations developed below are similar to those developed in Congleton (2003b), but assume different legislature sizes and focus exclusively on the effects that political parties have on policy choices through time. The simulation of policy choices within democratically elected legislatures requires models of voters, parties, elections, and legislative outcomes.

Voters. Voters are assumed to be rational "spatial" voters. Each voter determines his or her ideal government service level within an existing fiscal system, and then votes for the candidate or party whose stated policies are closest to their preferred vector of service levels. For the purposes of the simulations, voter preferences over public services are mapped into a single-dimensioned issue space, interpreted as the voter's preferred growth rate for government services. [i] Voter ideal points within this issue space are assumed to be uniformly distributed between -10 %/year and +10 %/year. This distributional assumption implies that the median voter favors the status quo, because the median of distribution of preferred growth rate of public services is 0. Other voters prefer smaller or larger fiscal packages according to their tastes and circumstances, and so cast their votes for candidates favoring growth rates below or above zero.

Parties. All candidates are assumed to belong to political parties because of electoral advantages associated with party membership. Two partisan environments are simulated. In the first series of simulations, political parties select "undisciplined" slates of candidates who can vote as they wish without fear of being banished from the party after being elected to office. (This might be regarded as an extreme representation of the US system.) In the second series of simulations, the parties "force" their elected representatives to support their party's platform. (This might be regarded as an extreme representation of list voting in proportional representation systems.)

In both cases, it is assumed that only two parties or two viable coalitions exist, and that these parties or coalitions have adopted platforms at the Duverger (1954) blocking points. The Duverger blocking positions for the left of center (LoC) and right of center (RoC) coalitions will be governmental growth rates of 3.33 percent and -3.33 percent respectively given the assumed distribution of voter ideal points.

Political parties are assumed to support candidate with relatively similar policy positions. There are several reasons for doing so. For example, candidates with similar policy preferences will be able to work together more effectively after the election, because they have shared interests. It also allows voters to use party labels as information about the policy positions of candidates, which allows voters to economize on information, and also increases candidate incentives to join political parties.

277

Figure 2 characterizes a possible distribution of mainstream candidates from the LoC and RoC parties. In the illustration, party screening and candidate sorting have narrowed the range of viable candidates from the [-10, 10] interval that covers the entire political spectrum to the more moderate [-5.8, 5.8] interval. It seems natural to assume that the RoC candidates all take positions to the right of those of the LoC association of candidates, and that the RoC and LoC parties do not field candidates of the far right or left. [ii]

Figure 1 about here

Elections. The election of representatives for the two chambers is simulated as follows. Two candidates are drawn from the distributions of party candidates, and an electoral contest is held. The RoC candidate is selected if the draw from the electorate is less then 0.00; otherwise, the candidate of the LoC party is chosen. In effect, the median voter vote ignores differences among individual party candidates and votes on a party line basis. This process is repeated for successive pairs of candidates until all the positions in the two chambers are filled. The resulting composition of the legislative bodies is proportional to votes received by the party, as under proportional representation. Similar electoral results would occur under "first past the post" systems if voters are uniformly distributed among electoral districts and screening of candidates is undertaken by national political parties.

Because both parties have adopted Duverger platforms, the two parties (coalitions) receive very similar electoral support, although the positions of the party members who take places in the legislature may differ substantially.

Legislation. Legislative outcomes are determined by the composition of the two chambers, party discipline, and the bargaining process assumed. The median legislator in each chamber determines his or her own chamber's proposed legislation (growth rate). In undisciplined parliaments, the members are free to vote for their own preferred growth rate; in disciplined parties, the median member abides by his or her party's platform. The legislation adopted by a unicameral parliament is that proposed by its median member. Bicameral outcomes are assumed to "split the difference" between the median members of the two chambers; that is to say, an unweighted average of the two chamber medians is adopted.

Simulations of Legislation with Undisciplined Parties

Table 1 summarizes the legislative results from a series of 40 electoral cycles for two simulated legislatures with undisciplined political parties. The first legislature has chambers with the number of members for the U.S. Senate and House and the second has those of the old Swedish Bicameral Legislature.

The results allow four unicameral chambers to be compared with two bicameral outcomes, insofar as the median preference in each of the chambers can be interpreted as unicameral outcomes.

Table 1 about here

Note that the probabilistic pattern of voter turnout and party slates generates policy choices that deviate from the median voter's preferred policy (no change) in particular elections and over the course of the 40 electoral cycles. If we focus on the pseudo-U.S. legislature, the growth rates preferred by the median Senate member range from -1.611 to 2.002 percent a year, whereas the growth rates preferred by the median member of the House varied from -1.343 to 1.371 percent a year. If we focus on the pseudo-Swedish legislature, the growth rates preferred by the median legislature varied from -1.843 to 1.55 percent a year in the first chamber and from -1.15 to 1.41 percent a year in the larger second chamber.

These fluctuations occur even though median voter preferences are completely stable and favor the status quo in each electoral cycle. The average policy chosen over the course of the 40 elections, however, is approximately that preferred by the median voter. This is true for each chamber and for the bicameral compromise.

The numbers of greatest interest for the purposes of this chapter are the standard deviations of the median member of the various legislative chambers and that of the bicameral compromise. Note that the standard deviation of the median members of the individual chambers tends to fall as the number of members in a chamber increases. This is simply the usual relationship between estimated medians and sample size. As sample size increases, here chamber membership, the median estimate becomes more precise. For similar reasons, the standard deviation of the bicameral compromise is always smaller than that of either single chamber.

Insofar as the single chambers can be regarded as unicameral legislatures, the results suggest that unbiased forms of bicameralism produce public policies that are more faithful to the median preferences of the electorate and more predictable for the electorate as a whole, within a weak party system of governance. However, in the present case, with undisciplined parties, a similar increase in performance can also be generated by increasing the size of a single chamber, although it bears noting that the use of a single large chamber to promote policies that are more faithful to the median voter may induce other problems. For example it may increase fiscal commons problems.[iii]

Simulation of Legislation with Disciplined Parties

Political parties often do more than provide useful information about slates of candidates. The same platform that can be used to provide information about party members during an election can also be used as a legislative agenda after the election. In disciplined parties, party leaders can "force" elected representatives to support the party's announced legislative agenda by conditioning future campaign support (or positions on party lists) in the next election on voting behavior in the current session of parliament. For example, it is clear that party discipline contributed to the similar (although not identical) patterns of voting in the Swedish bicameral parliament (Tsebelis and Money 1997: 43).

Any effort by party leaders to coordinate voting within and across chambers reduces the independence of the policies preferred by the two chambers, and might be expected to weaken the statistical case for unbiased bicameralism by increasing chamber congruence.

To explore the effects of partisanship, an extreme form of party discipline is simulated below. In these simulations, each member of each party is assumed to propose its own party's announced platform, represented by its Duverger position. Because the party platforms at Duverger positions are significantly different, this implies that policies will now change significantly whenever the majority party changes. This contrasts with the previous simulations in which the ebb and tide of elections would not generally imply radically different median legislators or policies.[iv] In the previous case, the median member of a chamber was always one of the most moderate members of the majority party. In this present case, the party platforms determine the policies proposed and legislated.

Table 2 summarizes legislative membership and policy outcomes from a series of 40 pairs of simulated U.S. and Swedish legislatures, selected as in the previous case. Party discipline within the legislature has several striking effects on the simulation results.

The range of policy outcomes is now completely determined by the party platforms and the compromise between them. Consequently, only three policy outcomes are observed, rather than a continuum among moderates, the result with undisciplined parties. The average policy observed in the entire series of elections is not significantly affected. On average, the median voter still gets approximately what he or she wants, although *he or she is never directly represented in the Parliament.*

However, *the volatility of policy outcomes, measured by the standard deviation of policy outcomes is substantially higher within disciplined partisan legislatures than in undisciplined legislatures.* The standard deviation of the growth rates adopted is approximately three times as large as in the previous simulations. The standard

error of the median legislator's policy now exceeds 3.0 in both chambers in both parliamentary systems; whereas previous sample variances had been approximately 1.0.

[Table 2 about Here]

Bicameralism continues to reduce policy volatility for statistical reasons, but now has an effect on the *volatility* of policies, as measured by sample variance, that is distinct from the sample size effect present in the first simulations. Note that the standard deviation of decisions by each of the four chambers are all greater than three in this case and *do not diminish with membership.* The sample size effect is not present in this round of simulations because asymptotic limits are evidently more rapidly approached in the binomial case.However, the standard deviations of the bicameral compromise is, nonetheless, approximately a third lower than any of the individual chambers in both series of the simulations.

This reduction in volatility occurs because of the occasional necessity of compromise in the bicameral systems. In about half the cases, different parties will control the chambers of a bicameral legislature, and compromise is necessary in those cases. These compromises are sufficient to reduce the variation in policy outcomes in the simulations by about a third of that found in the corresponding unicameral system.[v] This *stabilizing effect of bicameralism is not a result of sampling theory, but rather of the necessity of interchamber compromise in bicameral legislatures whenever the interests of the two chambers differ.*

Interparty compromise is unnecessary in unicameral legislatures regardless of chamber size, as long as majority parties or stable majority coalitions exist in the chamber of interest. No matter how large a single legislative chamber is, under the assumed Duverger platforms, the policies adopted by a unicameral legislature with a disciplined and partisan majority tend to oscillate back and forth between dominant party platforms. In partisan environments, bicameralism necessarily stabilizes political outcomes relative to unicameralism as long as compromises are worked out. In such cases, bicameralism allows intermediate policies to be reached whenever power is divided within the legislature and, consequently, yields a more stable time series of policies than the unicameral parliament.[vi]

III. Statistical Support: Bicameralism and the Median Vote

Within the real world, the median voter does not always favor continuation of the status quo, because her economic and personal circumstances may change through time. If democratic political institutions are "unbiased,"

however, it remains the case that the pivotal voters get what they want—at least on average. In such cases, the volatility of government policy will be jointly determined by the stability of the median voter's demand for government services and the response of government policy makers to variations in that demand.

In the usual rational choice models, voter preferences are not affected by constitutional arrangements. Given this assumption, the demand for government services can be approximated as:

$$G_t^d = v(Y_t, I_t),$$

where Y_t is the pivotal voter's income in period t and I_t is an index of the median or average voter's ideology or desire for government services. [vii] Within democracies, supply will approximately equal the average voter's electoral demand,

$$G_t^d \gg G_t^s = v(Y_t, I_t) + e_t.$$

The effects of institutions and turnout are reflected in the error term e_t. If institutions are unbiased, the mean of e_t will be zero. If institutions affect the volatility of public policies, the variance of error term e_t will be conditioned on the types of political institutions that are in place.

Several of the theories reviewed above and the simulation results suggest that the variance of e_t will be increased by a shift from bicameralism to unicameralism, although the basis of those predictions differs somewhat. The next two subsections attempt to determine whether this prediction is evident in two European countries that have recently changed from bicameral to unicameral systems.

The Effect of the Shift from Bicameralism to Unicameralism in Sweden

Several countries have replaced bicameral institutions with unicameral ones during the past half century: Denmark (1953), Sweden (1970), New Zealand (1951), and Peru (1993) all switched from bicameral to unicameral legislatures. Temporary switches also occurred in Turkey (1982–89), Sri Lanka (1971–72), and Panama (1979–89). Unfortunately, most of these changes in legislative structure took place during politically "extraordinary" times. All but Sweden appear to have adopted or left bicameralism during or immediately following periods of domestic or international crisis. Consequently, Sweden's recent constitutional history is likely to provide the best available evidence.

In 1970, the Swedish Constitution (Riksdag Act) was modified after approximately 20 years of peaceful deliberations with very high levels of agreement within the parliament. The revised Riksdag Act effectively merged

the two chambers of the 100-year-old Swedish bicameral legislature into a single large chamber.

To determine whether Swedish policies became less predictable after the change from bicameral to unicameral governance, an electoral demand equation is estimated in linear and log linear forms. Increased policy volatility will be evident as an increase in the variance of the residuals of the estimated demand equation.

Government service levels are measured in two ways: as real per capita government consumption and as government consumption as a fraction of Swedish gross domestic product.[viii] The median voter's income is approximated by real per capita private consumption. The median voter's preference for government services is represented by average voter ideology, as calculated for Swedish voters by Kim and Fording (1998). Economic data from the World Bank is used for real per capita government consumption levels and for average voter income (after tax), which is proxied by per capita private consumption.

There is considerable evidence that Sweden's switch from bicameralism to unicameralism in 1970 had significant effects on Swedish politics and, consequently, on Swedish policies. Congleton (2003a) analyzes several effects that Sweden's 1970 constitutional reforms would have on Swedish public policy and welfare. Political leaders became relatively more powerful, the time horizon of policy formation and feedback was reduced (by eliminating the longer terms of the first chamber and adoption of a shorter legislative cycle), and politics became less stable. Immergut (2002) reconstructed the majority coalitions that would have emerged had bicameralism been left in place and finds that the Social Democrats and their allies on the left would have had a solid majority in the eliminated chamber that would have prevented the center-right coalition from coming to power.

Four estimated supply equations for government services are reported in table 3, adjusted for institutional effects. Two of the estimates assume that institution of bicameralism has no systematic effect on the supply of services. The two others allow bicameralism (and the other institutional reforms) to affect service levels directly. The coefficients all have the anticipated signs. Both an increase in after-tax income and an ideological shift to the left increase the demand for and therefore the supply of government services. The negative sign of the interaction term (voter ideology and unicameralism) suggests that the Swedish government became less responsive to short-term changes in voter demand for government services after elimination of the first chamber, possibly by making party leaders and their platforms relatively more important.[ix]

[Table 3 around here]

Of particular interest for the purposes of this chapter are the residuals of the estimates. The simulations imply that systematic differences will exist in the residual variance of the bicameral and unicameral periods. In each case, the White's tests are consistent with this hypothesis. They all reject the hypothesis that the error term is homoscedastic during the bicameral and unicameral sub-periods of the estimates.

The bottom of table 3 lists the sample standard deviations of the residuals for 1960–70 bicameral period and for the 1971–97 unicameral period. In each case, the standard error of the unicameral period is greater than that of the bicameral period. Moreover, F-tests for the hypothesis that the residual variance is not higher in the unicameral period than in the bicameral period can be rejected at the 0.001 level of significance in every case. Overall, the results support the hypothesis that government policy during the unicameral period is less predictable and more highly variable than in the bicameral period. [x]

Indeed, the difference in the policy volatility after the adoption of unicameralism is sufficiently large that it can be directly observed in the data. Figure 2 plots the observed and estimated real Swedish per capita government consumption and the residuals. Note that the effect is sufficiently large that the residuals in the unicameral period after 1970 are noticeably larger than in the bicameral period before 1970. Note also that the increase in the residuals associated with the shift to unicameralism is clearly not the result of a spurious upward trend in residual variance, but rather a change in regime.

[Figure 2 about Here]

Further Evidence of Unicameral Policy Volatility from Denmark

Shortly after World War II, Denmark eliminated its long-standing upper chamber, the Landsting, by constitutional amendment, transforming its bicameral Rigsdag to a unicameral system on June 5, 1953. Unfortunately, isolating the effects of the Danish shift to unicameralism is not as straightforward as in the Swedish case, because it occurred relatively shortly after World War II. Consequently, the effects of the war affect both the data collected in the period before the unicameral Riksdag was adopted and the government policies adopted prior to the 1953 constitutional reform.

However, although World War II clearly disrupted ordinary political life, the effects of the German occupation (1941–45) were not as disruptive as in many other countries in Europe. Elections continued to be held, and most national

policies were made by the governments elected—except toward the end of the occupation, when the government resigned in block, leaving governance for a year or so in the hands of unelected officials. The effects of the war on demands for government services are doubtless present, but the estimates developed below find little that is systematic. (Estimated coefficients for dummy variables for the period of occupation were not statistically different from zero and are not included in the model estimates reported below.) In any case, the effect of the turbulent period prior to the 1953 constitutional reform would tend to *bias the results away* from finding a significant increase in policy volatility from the subsequent shift to unicameralism.

Another data problem that needs to be confronted in the Danish case is the lack of ideological data for the period of interest. Data on voter preferences for government services are proxied by voter support for the Social Democrats. Voter support for the Social Democrats should be highly correlated with the pivotal voter's increase in expanding government services. Social democrats routinely support expansion of government services, and increases in their vote share implies that more voters share that view. During the period examined here, the Social Democrats were the largest party in the Folkesting. Increased support suggests that the distribution of voter opinion shifts to the left. Support for the Social Democrats is instumented by regressing vote shares in national elections as a linear function of the previous years' per capita income, a time trend, and unicameralism. The estimated support—the systematic part of voter demands for services—is used as a measure of voter ideology.

Economic data were assembled from Mitchell (1992) and political data from Cook and Paxton (1986) for the period 1930–76. The supply of Danish government services is represented by real per capita government consumption. Estimates for linear and (log linear) exponential demand equations are reported. Voter income is represented as real per capita gross domestic product, and voter preferences or ideology is represented as estimated support for the Social Democrats. Several alternative measures and functional forms are reported below in table 4.[xi] The results are similar to those developed for the Swedish case despite the historical and data problems. Government services tend to rise as support for the Social Democrats increases and the average voter's income increases.

Table 4 Around Here

The variance of the residuals in the bicameral and unicameral periods are analyzed at the bottom of the table. In each case, the Whites heterogeneity test statistic again rejects the hypothesis that the residuals are from an error distribution with a constant variance. Inspection affirmed by F-tests indicates that the residual variance of the bicameral period is systematically smaller than

in the unicameral period. As in the Swedish case, Danish government policy became less predictable after the adoption of its unicameral parliament.

IV. Conclusion

This chapter has summarized the rational choice literature on bicameralism and recent empirical work on the effects that bicameralism tend to have on public policy. Previous theoretical literature has demonstrated that bicameral legislatures avoid some majority cycling problems, tend to discover policies with supermajority support, and may be more informed and faithful to the policy aims of the electorate.

It also presents in condensed form some results from my own research on bicameralism. That work, both historical and simulation, implies that bicameralism can systematically affect the course of public policy without giving particular interests special consideration. In the circumstances examined, bicameral legislatures adopted policies that were more faithful to the long-run interests of the median voter and more predictable than those adopted by unicameral legislatures. Statistical evidence from Sweden and Denmark is consistent with the simulation analysis. Both nations had somewhat less predictable public policy in the years following their shift to unicameralism. Bicameralism need not overweight some interests nor act as a counter to majoritarian pressures to achieve systematically better performance in terms of advancing median voter's interests.

Nonetheless, the fact that bicameralism makes it possible to design legislatures that address other concerns can be an important consideration. For example, the possibility of overweighting regional interests may be an added advantage when designing new federal states and treaty organizations. Similarly, specifying different electoral periods for the two chambers can ensure a longer-term perspective in policy making. Such additional institutional flexibility clearly accounts for recent historical development of bicameral legislatures in a number of countries and, as argued below by Crain and Bradbury, is another reason why bicameralism is widely used in democratic constitutional designs. This chapter suggests that the process of compromise within bicameral institutions has desirable effects on the course of public policy even in cases in which the two chambers represent similar interests.

References

Alesina, A. and Rosenthal, H. (1996) "A Theory of Divided Government." *Econometrica* 64: 1311-1341.

Aristotle (330BC/1969) *The Politics.* Baltimore, MD: Penguin Books

Arrow, K. J. (1963) *Social Choice and Individual Values* 2nd Edition, New Haven: Yale University Press.

Black, Duncan (1948a) "On the Rationale of Group Decision-Making," *Journal of Political Economy* 56: 23-34.

Black, D. (1948b) "The Decisions of a Committee Using a Special Majority," *Econometrica* 16: 245-261.

Bradbury, J. C. and W. M. Crain (2001) "Legislative Organization and Government Spending: Cross Country Evidence," *Journal of Public Economics* 82: 309-25.

——— (2002). "Bicameralism Legislatures and Fiscal Policy." *Southern Economic Journal*, 68: 646-659.

Brennan, G. and A. Hamlin (1992) "Bicameralism and Majority Equilibrium," *Public Choice* 74:169-179.

Buchanan, J. M., and Tullock, G. (1962) *The Calculus of Consent.* Ann Arbor: University of Michigan Press.

Cook, C. and Paxton, J. (1986) *European Political Facts 1918-84.* New York: Facts on File Publications.

Congleton, R. D. (2003a) *Improving Democracy through Constitutional Reform, Some Swedish Lessons,* Dordrecth: Kluwer Academic Press. Also available in Swedish(2002) as *Att Förbätta Demokratin.* Stockholm: SNS Förlag (2002).

——— (2003b) "On the Merits of Bicameral Legislatures: Policy Predictability within Partisan Polities," *Year Book of New Political Economy* 22: 29-49.

De Vanssay, X. and Z. A. Spindler (1994) "Freedom and Growth: Do Constitutions Matter?" *Public Choice* 78: 359-72.

Diermeier, Daniel and Myerson, Roger B. (1999). "Bicameralism and Its Consequences for the Internal Organization of Legislatures." *American Economic Review*, 89: 1182-1196.

Dixit, A., Grossman, G. and Gul, Faruk (2000). "The Dynamics of Political Compromise." *Journal Political Economy*, 108:531-568.

Duverger, M. (1954) "Political Parties, Their Organization and Activity in the Modern State." London: Wiley

Esaiasson, P. and S. Holmberg (1996) *Representation from Above: Members of Parliament and Representative Democracy in Sweden.* Aldershot, England: Dartmouth Publishing Co.

Ferejohn, J. A. and Weingast B. (1997) *The New Federalism: Can the States Be Trusted?* Stanford, Calif. : Hoover Institution Press.

Field, J. (2002) *The Story of Parliament.* London:James and James.

Fording, R. and H. M. Kim. 1998. "Voter Ideology in Western Democracies, 1946–1989." *European Journal of Political Research* 33: 73–97.

Gordon, S. (1999) *Controling the State.* Cambridge, Mass:Harvard University Press.

Hammon, T. and Miller, G. J. (1987) "The Core and the Constitution," *American Political Science Review* 81:1155–74.

Immergut, E. M. 2002. "The Swedish Constitution and Social Democratic Power: Measuring the Mechanical Effect of a Political Institution." *Scandinavian Political Studies* 25: 231-257.

Lijphart, A. (1994). *Electoral Systems and Party Systems: A Study of Twenty-Seven Democracies, 1945–1990.* New York: Oxford University Press

Mitchell, B. R. (1992) *International Historical Statistics, Europe 1750-1988.* New York: Stockton Press.

Montesquieu, C. S. (1748/1966) *The Spirit of the Laws.* New York: Hafner.

Mueller, D. C. (2000) *Constitutional Democracy.* New York: Oxford University Press.

Patterson, S. C. and A. Mughan, Eds. *(1999) Senates: Bicameralism in the Contemporary World.* Columbus: Ohio State University Press.

Persson, T., Roland, G. and Tabellini, G. (1997) "Separation of Powers and Political Accountability," *Quarterly Journal of Economics* 112: 1163-1202.

Riker, W. H. (1992) "The Justification of Bicameralism." *International Political Science Review* 13: 101-16.

Roger, J. R. (1998) "Bicameral Sequence: Theory and State Legislature Evidence," *American Journal of Political Science.* 42:1025-60.

Shepsle, K. and B. Weingast. 1981. "Structure-Induced Equilibrium and Legislative Choice." *Public Choice* 37: 503-19.

——— (1987) "The Institutional Foundations of Committee Power," *The American Political Science Review* 81: 85-104.

Steunenberg, B., Schmidtchen, D., and Kolboldt, C. (1999) "Strategic Power in the European Union: Evaluating the Distribution of Power in Policy Games." *Journal of Theoretical Politics* 11: 339-66.

Tsebelis, G. and J. Money (1997) *Bicameralism.* Cambridge: Cambridge University Press.

Verney, D. V. 1957. *Parliamentary Reform in Sweden 1866-1921.* London: Oxford University Press.

---

[1]   The utility maximizing choice of a typical voter can be represented as follows. Suppose that voters have preferences over government service *G* and private consumption *C.* Suppose also that voters are characterized by their income levels Y_i and ideology I_i and that the public service is financed by an income tax $T_i = t(Y_i,G)$. In this case, voter *i* will prefer the service level that maximizes $U_i = u(G, Y_i-t(Y_i,G), I_i)$ which requires G* to be such that $U_C T_G = U_G$. For the purposes of the simulations, it is assumed that the status quo level of service, G_0, is that preferred by the median voter, as would be the case in a pure median voter model. A voter's demand for government services is $G_i^* = g_i (Y_i,I_i)$ and the preferred change in service level is *(G_i^*/G_0) -1.*

Voting in this dimension by utilility maximizing voters is approximately spatial, in the sense that the closer of two candidates is usually preferred to the other. (The distribution of voter ideal growth rates has, in effect, been normalized in the simulations by subtracting the median voter's preferred growth rate from the unnormalized distribution.)

[2]   There is considerable evidence that policy positions of representatives in the House and Senate of the United States do not converge to identical positions, but remain clustered a bit to the right and left of center. See, for example, Poole and Rosenthal (1991) or Francis and others (1994).

[iii] These simulations do not attempt to account for the effect that legislative size has on the fiscal commons problem. See the Bradbury and Crain discussion of this in Chapter 7. To the extent that an increase in chamber size produces an upward bias in the government spending, dividing a single large chamber into two smaller chambers will produce a smaller bias. In that case, bicameralism allows the sampling or representative advantage of increased overall chamber size to realized with a smaller upward bias, than would be associate with a single large chamber.

[iv]   In this setting, the random electoral outcomes should be regarded as a consequence of indifference by voters in the middle of the distribution rather than confusion about which party is which. Independence also has a somewhat different interpretation in this setting. Here, centrist voters, in effect, toss a coin

before casting votes for the upper chamber and then toss the coin again before voting for the second chamber.

[5]   The theoretical result is exactly half. Under unicameralism, the policy chosen is either -3.3 or +3.3 with probability 0.5, which implies a variance of 10.89. Under bicameralism the implied policy is -3.3 or 3.3 with probability 0.25, and 0.0 with probability .5, so the policy variance is exactly half that of unicameralism, 5.45.

[6]   Note that for this particular alignment of parties and institutions, the same result would hold if neither party compromised. A compromise generates the status quo, which is the same result that occurs if each chamber simply vetoes every proposal backed by a majority in the other chamber.

[7]   Recall, as noted above, that a voter's demand for government services can be modeled as follows. Voters are assumed to have preferences over government service G and private consumption C. Voters are characterized by their income levels Y_i and ideology I_i. Public service G is financed by an income tax or other tax that varies with income such as a VAT, $T_i = t(Y_i, G)$. In this case, voter i will prefer the service level that maximizes $U_i = u(G, Y_i - t(Y_i, G), I_i)$ which requires G_i^* to be such that $U_C T_G = U_G$. A voter's demand for government services is $G_i^* = g_i (Y_i, I_i)$.

[8]   In the usual model of consumer choice, consumers are self-interested, and unconcerned with the consumption levels of other individuals. In this case, government consumption is what is demanded by the typical voter citizen, and transfers are of interest only insofar as they affect an individual's before tax income. However, if voters are modeled as altruistic, government expenditures, including transfers, would be a better measure of G. For the present analysis, the usual economic assumption is adopted.

[9]   These statistical results are from Congleton (2003a: ch. 12).

[10]   Of course, the seventies are well known for other important international economic events. The Bretton Woods system ended, energy prices increased, and inflation became more problematic. However, similar results are obtained if the performance of Sweden and other small European countries are compared. Moreover, as developed below the increase in variance associated with leaving bicameralism is also present in the Danish experience during the relatively more stable 1950's.

[11]   These statistical results are from Congleton (2003b).