# VETO GAMES

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# VETO GAMES

This expository paper sketches out solutions to a variety of "veto games" that provide much simplified but perhaps interesting representations of U.S. constitutional structure (and variations on that structure) with respect to the legislative powers of the President and Congress. The exposition is intended to illustrate informally some of the "technology" of social choice theory, spatial modeling, and game theory. It is in the spirit of recent work by Krehbiel (1996, 1998) and Tsebelis (1995, 2000)

## 1. Introduction

The exposition is based on the standard unidimensional spatial model with Euclidean preferences. This means that political choice is represented as choice of some point on the real number line, over which all political actors have preferences. Specifically, each actor has an *ideal* (most preferred) *point* on this line, prefers a point closer to this ideal point to one more distant from it, and is indifferent between two equally distant points. It is assumed that complete information exists and, in particular, that all preferences are common knowledge.

We consider three variations of constitutional structure:

(i) the President has *no veto*;
(ii) the President has an *absolute veto* (no Congressional override); and
(iii) the President has a *qualified veto*, where the required margin for Congressional *override* may range from simple majority to unanimity.

Clearly (i) and (ii) represent extreme possibilities with respect to Presidential veto power and (iii) covers the range of possibilities in between.[1] Actual U.S. practice is (iii) with a 2/3-majority required for override.

In a last section of this paper, we move to a multidimensional model, which allows us to consider one other constitutional variation:

(iv) the President has an (absolute or qualified) *item veto*, being able to veto one "dimension" of a bill without vetoing the entire (multidimensional) bill.

In these games, we treat the President (reasonably enough) as a *unitary* actor. We let $E$ designate the President's (or Executive's) ideal point. While we treat Congress as a *multi-member* but *unicameral* body, this simplification is not as restrictive as it may at first appear. As noted in the concluding section, the analysis can be extended relatively straightforwardly to allow for Congressional bicameralism.

We label the ideal points of the $n$ members of Congress (or the Legislature) as $L_1, \ldots, L_n$ from left to right, so that $L_1 < \ldots < L_n$. To keep things as simple as possible, we assume that $n$ is odd and that no ideal points, or other distinct points of interest, exactly coincide. Moreover, given

[1] In fact, a qualified veto with a simple majority override is identical to no veto (at least in the present simplified model). However, even if unanimity is required for override, a qualified veto is weaker than an absolute veto.

Euclidean preferences, we can focus exclusively on just three (indeed it comes down to two) members of Congress who are "pivotal" under the relevant "decision rules."

A *decision rule DR* is specified by the smallest fraction of voters $D$, where $½ < D \leq 1$, that can "win" under *DR*, i.e., whose support is required for point $x$ to be *collectively preferred* to $y$ under *DR*.

Congress perfects and passes ordinary legislation by simple majority rule, in which $D = (n+1)/2n$). Under simple majority rule the *median member* of Congress with ideal point $L_m$ (where $m = (n+1)/2$ ) is *pivotal*. This pivotal position results from Duncan Black's (1948, 1958) *Median Voter Theorem* in conjunction with Euclidean preferences: in any pairwise majority vote between two versions of a bill (two points on the line), the version preferred by the median member wins, so the preferences of the median member effectively represent the preferences of Congress as a whole when it operates under simple majority rule.

In addition, we must take account of the location of the *lower* and *upper veto pivots* in Congress, $q$ and $q'$ respectively, where $D$ is the decision rule for Congressional override of a Presidential veto, $q'$ is the smallest integer such that $q'/n \geq D$, and $q = n - q' + 1$. The member of Congress with ideal point $L_q$ is the least "extreme" left-of-center member who, combined with all members to his right, constitutes an override (e.g., 2/3) majority, and likewise for $L_{q'}$.

We examine veto games under several *behavioral* variations. The first is *sincere behavior* by both President and Congress, which allows us to examine the *mechanical effects* of different veto institutions. The second is *sophisticated behavior* by both President and Congress, which allows us to examine the *psychological* (or *strategic*) *effects* of different veto institutions. The third is sophisticated behavior with the possibility of *credible commitment* by the President only or by Congress only, which begins to set up a bargaining relationship between President and Congress (but one in which one actor is decisively advantaged). The fourth is a *balanced bargaining relationship* between President and Congress.

## 2. Notation, Terminology, and Mode of Analysis

A particular veto game is defined by a *constitutional structure*, which provides the *game form*, in conjunction with a *preference profile*, which is a complete specification of the preferences of all actors. In the present setup, a preference profile is fully specified by the location of all relevant ideal points and of the "status quo" point.

The set of possible alternatives for political choice is represented by the set of all points on a line (i.e., a unidimensional space). For analytical purposes, a preference profile is sufficiently specified by the location of five points along this line.

(1) $Q$ is the location of the *status quo* (or *reversion*) *point*, i.e., the outcome of a veto game in the event Congress fails to pass a bill or the President vetoes a bill and Congress does not override the veto.

(2) $E$ is the *President's ideal point*.

(3) $L_m$ is the *ideal point of the median member of Congress.*

(4) $L_q$ is the *ideal point of the lower veto pivot* (in the event the President has a qualified veto).

(5) $L_{q'}$ is the *ideal point of the upper veto pivot* (in the event the President has a qualified veto).

By definition $L_q < L_m < L_{q'}$. Without loss of generality, we assume that $Q < L_m$ (if $L_m < Q$, mirror-image conclusions result), so $L_q$ is always the relevant veto pivot (and $L_{q'}$ plays no further role). Probably the most relevant situations are those in which $Q$ is "extreme," i.e., located below all relevant ideal points, as would likely be the true for any veto game involving an appropriations or similar bill. However, we allow $Q$ to range across the half of the political spectrum below $L_m$. Finally, we allow the President's ideal point $E$ to range across the entire political spectrum.

We may note that the locations of $L_q$ and $L_{q'}$ — and in particular the magnitude of the distance between them — depend on two entirely independent factors: one pertains to constitutional structure, namely the *magnitude of the override decision rule D*; the other pertains to the preference profile, namely the *degree of dispersion in the distribution of Congressional ideal points*. For a fixed profile, the distance between the pivots increases with the magnitude of $D$. For a fixed $D$, the distance between the pivots increases with the dispersion of ideal points (indeed, it is a *range* measure of that dispersion).

We use this additional notation and terminology to identify other points on the line. We let $X$ represents a generic point on the line, i.e., any possible bill or law. We let $B$ (where $B \neq Q$) represent a *bill* actually passed by Congress. Finally, we let $\boldsymbol{L}$ represent *the legislative outcome* of a veto game; either $\boldsymbol{L} = Q$ (if Congress fails to pass a bill or passes a bill the President vetoes and Congress does not override), or $L = B$ (if Congress passes a law $B$ which is signed by the President or enacted over his veto).

Let $I$ designate the ideal point of any actor (i.e., $E$, $L_q$, or $L_m$) and consider any possible bill $X$. Suppose, without loss of generality that $X < I$. Then $I$ prefers any other bill $Y$ such that $X < Y < I$ to $X$. Moreover, there is a bill $X'_I$ such that $I < X'_I$ and $I$ is indifferent between $X'_I$ and $X$. Given Euclidean preferences, $I$ is equidistant between $X$ and $X'_I$. Considering points on both sides of $I$'s ideal point, $I$ prefers all points $Y$ such that $X < Y < X'_I$ to $X$ (and to $X'_I$). We designate the set of all points $I$ prefers to $X$ as $P_I(X)$. (For example, the President is indifferent between $Q$ and $Q'_E$ and prefers any bill $B$ such that $Q < B < Q'_E$, i.e., any $B$ in $P_E(Q)$, to $Q$. We let $\sim X'_I$ designate a point in $P_I(X)$ that is arbitrarily close to $X'_I$.[2] If $S(X)$ is any set of points, $C_I[S(X)]$ is $I$'s most preferred point in $S(X)$. For example, $C_m[P_E(Q)]$ is the point most preferred by the median member of Congress from among the points the President prefers to $Q$. Figure 1 illustrates much of this notation.

A veto game proceeds in several stages as follows.

*Stage 1*. Congress passes a bill $B$ or not. If the President has no veto power, the game ends. The outcome is $\boldsymbol{L} = B$ or $\boldsymbol{L} = Q$, according to what Congress does.

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[2] The need for this notation is discussed in footnote 5.

*Stage 2*. If Congress has passed a bill $B$ and if the President has a veto, the President either signs and the game ends with $\boldsymbol{L} = B$, or he vetoes $B$, in which case, if the President has an absolute veto, the game ends with $\boldsymbol{L}$ = Q.

*Stage 3*. If Congress has passed a bill B and if the President has vetoed it and if the President has only a qualified veto, Congress either overrides or sustains the veto. In either event, the games ends with outcomes $\boldsymbol{L} = B$ or $\boldsymbol{L} = Q$ respectively.

Figure 2 depicts the extensive form of the full three-stage veto game. In addition, we consider the following possible prior stage

*Stage 0*. [If we allow credible commitment by the President, this stage is inserted before Stage 1, i.e., before Congress first acts.] The President announces a partition of the set of possible bills into two subsets: those bills he will sign and those he will veto.

If behavior is sincere, veto games are analyzed by *forward induction*. We first determine what will happen at the first stage, given Congress's preferences (i.e., the location of $L_m$). We next determined what will happen at the second stage (if any), given what Congress has done and the President's preferences (i.e., the location of $E$). We finally determine what will happen at the third stage (if any), given light of what the Congress and the President have done and the veto pivot's preferences (i.e., the location of $L_q$). We can conduct such forward analysis precisely because sincere actors are "myopic" and do not "look ahead" to the end of the game. For example, what a sincere Congress does at Stage 1 (whether it passes a bill and, if so, what bill) is independent of both constitutional structure, i.e., whether the game includes other stages, and the preferences of other actors (specifically of the President and veto pivot).

If behavior is sophisticated, veto games are analyzed by *backwards induction*. We (and sophisticated actors) first determine (in the case of a full veto game) what the veto pivot will do at the *final* stage. Since there is no subsequent stage to "look ahead" to, the pivot's action depends only on the pivot's preferences (i.e., the location of $L_q$), in conjunction with what has already happened (i.e., the locations of $B$ and $Q$). Thus the President and median member of Congress can anticipate whether Congress will override a veto of any particular bill $B$ or not. Once having determined what will happen at the final stage, we (and the President and the median member of Congress) can determine whether the President will sign or veto a given bill $B$, which depends additionally on the President's preferences (i.e., the location of $E$). Finally having now determined what will happen at the second stage, we (and the median member of Congress) can determine what bill **B** (if any) Congress will pass at the first stage, which depends additionally on Congress's preferences (i.e., the location of $L_q$).

It should be noted that in a multistage game of this sort, the same outcome may be reached by different routes. For example, the status quo is maintained ($\boldsymbol{L} = Q$) if either (i) Congress passes no bill or (ii) Congress passes a bill which the President vetoes (and Congress fails to override, if the veto is not absolute). Likewise a particular law $\boldsymbol{L} = B$ is enacted either because (i) Congress passes $B$ and the President signs it or (ii) Congress passes $B$, the President vetoes it, and Congress overrides the veto. Implicit in the whole setup is the (often unrealistic) assumption that actors have

preferences over *outcomes*, not *routes to outcomes*. Given this, we can predict the outcome resulting from sophisticated behavior, even though we can't definitively determine the sophisticated choices that lead to that outcome. When it is the case the same outcome results (given subsequent sophisticated behavior) whatever choice an actor makes, we will say the actor makes a *futile choice* when that choice leads through several stages to outcome that would result immediately if the actor had made the opposite choice. We may wish to suppose that actors do not make futile choices.

## 3. Sincere Veto Games

We first examine veto games with sincere behavior under the different constitutional structures. Outcomes under sincere behavior reflect the *mechanical effects* of constitutional provisions — that is, varying the constitutional provisions (while preferences remain fixed) has *no effect on the behavior of actors* but *does affect the way that this unchanged behavior gets translated into outcomes*.

### 3.1 *No veto power*

Ignoring any agenda control and strategizing *within* Congress (e.g., between a committee and the floor), we conclude that Congress simply enacts its most preferred bill, so $\boldsymbol{L} = L_m$. Obviously the preferences of the President and the veto pivot and the location of the status quo have no impact on the location of the outcome $\boldsymbol{L}$.

### 3.2 *Absolute veto power*

A sincere Congress, lacking foresight, goes ahead and passes the bill $B = L_m$, just as if the President had no veto power. The President in turn signs $B$ if he prefers $L_m$ to $Q$ and vetoes it otherwise. Thus $\boldsymbol{L} = L_m$ if $L_m < Q'_E$ and $\boldsymbol{L} = Q$ if $Q'_E < L_m$.

This summary conclusion may be elaborated by considering all possible configurations of points $Q$, $E$, $Q'_E$, and $L_m$ on a line (given that $Q < L_m$ and $Q$ and $Q'_E$ are on opposite sides of $E$). (In given verbal interpretations of these configurations, we speak of an actor "wanting to shift the status quo in a given direction," i.e., wanting to pass a bill [that would create a new status quo] that lies in that direction. Actor I "most prefers" to shift the status quo to his ideal point I and is "willing" to shift the status quo to $Q'_I$.)

(a) $E < Q$. (In words, the President and Congress want to shift the status quo in opposite directions.) Congress passes $L_m$, which the President vetoes, so $\boldsymbol{L} = Q$.

(b) $Q'_E < L_m$. (In words, the President and Congress want to shift the status quo in the same direction but the President is not willing to shift it to the point the median member of Congress most prefers.) Congress passes $L_m$, which the President vetoes, so $\boldsymbol{L} = Q$.

(c) $L_m < Q'_E$. (In words, the President is willing to shift the status quo at least to the point the median member of Congress most prefers.) Congress passes $L_m$, which the President signs, so $\boldsymbol{L} = L_m$.

Note that in configuration (b), the legislative outcome is *suboptimal*, in that there are (potential) bills between $E$ and $Q'_E$ preferred to $Q$ by both the President and the median member of Congress (and thus a by majority of, perhaps most, and possibly all — if Congressional preferences are sufficiently concentrated — members).

### 3.3 *Qualified veto power*

Congress passes $L_m = B$ (just as if the President had no veto power), and the President signs $B$ or vetoes it based on the conditions set out above (just as if Congress could not override). We now need to analyze the override decision.

In general (and, since this is the last move of a veto game, whether behavior is sincere or sophisticated), Congress overrides a veto of a bill $B$ only if *both* of these necessary conditions hold:

(i) $Q < B$ (for if $B < Q$ ($< L_m$) a majority of Congress prefers $Q$ to $B$ and certainly there is no override majority in favor of $B$ over $Q$); and

(ii) $Q < L_q$ (for if $L_q < Q$ ($< B$), at least $q = n - q' + 1$ members prefer $Q$ to $B$, leaving less than an override majority preferring $B$ to $Q$).

Given (i) and (ii), the obvious sufficient condition for Congress to override a veto of a bill B is that:

(iii) $B < Q'_q$.

Since (i) and (iii) together imply (ii), the *necessary and sufficient condition* for Congress to *override* a veto of bill $B$ is that:

(iv) $Q < B < Q'_q$ (or equivalently that $Q < B$ and $B$ belongs to $P_q(Q)$).

As we have seen, in the override circumstance resulting from prior sincere behavior, $B = L_m$, so Congress overrides if and only $Q < L_m < Q'_q$. Thus the outcome with qualified veto power and sincere behavior is $\boldsymbol{L} = L_m$ provided *either* of these two conditions holds: (i) $L_m < Q'_E$ (so the President signs $B = L_m$) *or* (ii) $L_m < Q'_q$ (so a veto, if any, is overriden). Otherwise $\boldsymbol{L} = Q$.

This summary conclusion may be elaborated by considering all possible configurations of points $Q$, $E$, $Q'_E$, $L_q$, and $L_m$ on a line (given that $Q < L_m$, $L_q < L_m$, and $Q$ and $Q'_E$ are on opposite sides of $E$ ).

(a) Both $Q'_E < L_m$ and $Q'_q < L_m$. (In words, neither the President nor the veto pivot is willing to shift the status quo to the point the median member of Congress most prefers.) Congress passes $L_m$, which the President vetoes, and the veto is sustained, so $\boldsymbol{L} = Q$.

(b) $L_m < Q'_E$. (In words, the President is willing to shift the status quo to the point the median member of Congress most prefers.) Congress passes $L_m$, which the President signs, so $\boldsymbol{L} = L_m$.

(c) $Q'_E < L_m < Q'_q$. (In words, the veto pivot is willing to shift the status quo to the point the median member of Congress most prefers, but the President is not.) Congress passes $L_m$, which the President vetoes, but Congress overrides the veto, so $\boldsymbol{L} = L_m$.

Note that in configuration (a), the legislative outcome may again be *suboptimal*, in that there are (potential) bills between $E$ and both of $Q'_E$ and $Q'_q$ (both of which may be above $Q$) preferred to $Q$ by the President, the veto pivot, and the median member of Congress.

### 3.4 *Sincere Veto Games with Credible Commitment*

A sincere Congress cannot be influenced by a Presidential commitment to veto "unacceptable" bills (which in any case a sincere President cannot make), nor can a sincere President be influenced by a Congressional commitment to override any veto (which in any case a sincere Congress cannot make), so the preceding discussion applies in this circumstance as well.

### *3.5 Summary*

Given sincere behavior, either the status quo $Q$ is maintained or $L_m$ is enacted into law. Both the Presidential veto power and the Congressional override power, if constitutionally permitted, are actually exercised in certain preference profiles. Given a veto override provision, (the median member of) Congress has greater success in enacting its preferred outcome as the distance from $L_q$ to $L_m$ decreases, i.e., as the magnitude of the override rule D decreases and/or the dispersion of the ideal points of its members decreases.

## 4. Sophisticated Veto Games without Credible Commitment

We now examine veto games with sophisticated behavior under the different constitutional structures. Outcomes under sophisticated behavior reflect the *psychological* (or *strategic*) *effects* of constitutional provisions — that is, varying the constitutional provisions *influences not only the way behavior gets translated into outcomes* but *also affects the behavior itself* (because actors "look ahead" and anticipate what will happen at subsequent stages). In this section, we assume that play is strictly non-cooperative, i.e., actors cannot make credible commitments.[3]

### 4.1 *No veto power*

Since the game has only one-stage, there is no room for foresight. As before, Congress simply enacts $\boldsymbol{L} = L_m$.

### 4.2 *Absolute veto power*

Given common knowledge of preferences, Congress can calculate what potential bills the President will sign (or veto) and a sophisticated Congress tailors its bill accordingly. In particular, Congress knows the Present will sign a bill $B$ if and only if $Q < B < Q'_E$, i.e., $B$ belongs to $P_E(Q)$. So Congress is effectively choosing between $Q$ and some $B$ such that $Q < B < Q'_E$. Thus the question is whether there are any such bills that the median member of Congress prefers to $Q$. If so, Congress passes a bill corresponding to its most preferred such point, i.e., $C_m[P_E(Q)]$, which the President signs. Otherwise Congress passes no bill, preserving the status quo Q (or possibly passes $\boldsymbol{L}_m$ or some

[3] That is, we identify outcomes resulting from "subgame-perfect equilibria."

nearby bill, knowing that the President will veto it but apparently believing that a futile gesture is called for).[4]

This summary conclusion may be elaborated by considering all possible configurations of points $Q$, $E$, $Q'_E$, and $L_m$ on a line (given that $Q < L_m$ and $Q$ and $Q'_E$ are on opposite sides of $E$ ). Futile actions are shown in [brackets].

(a) $E < Q$. (In words, President and Congress want to move the status quo in opposite directions.) Congress passes no bill (or futilely passes a bill that it knows the President will veto), so $\boldsymbol{L} = Q$.

(b) $Q < Q'_E < L_m$. (In words, Congress and the President want to shift the status quo in the same direction but the President is not willing to shift it to the point the median member of Congress most prefers.) Congress passes $\sim Q'_E$ (i.e., the best bill the President is willing to sign), which the President signs, so $\boldsymbol{L} = \sim Q'_E$.[5]

(c) $L_m < Q'_E$. (In words, the President is willing to shift the status quo at least to the point the median member of Congress most prefers.) Congress passes $L_m$, which the President signs, so $\boldsymbol{L} = L_m$.

We may note that the influence of the President over the outcome depends largely on the "extremity" of $Q$. If $Q$ is located far below $E$, $P_E(Q)$ is a large interval, covering much of the legislative "playing field" and may well include $L_m$ (or at least points close to $L_m$), in which case the fact that the President has a veto — even, an absolute one — has no (or little) influence on the outcome. Moreover, the outcome $\boldsymbol{L}$ may be greatly disliked by the President, since $E$ may be quite distant from $L_m$. On the other hand, if $Q$ is located near $E$, Congress is severely constrained it what bill it can enact into law, and the outcome will be close to the President's ideal point.

Comparing these conclusions with those in Section 3.2, we note that, provided it avoids futile choices, a sophisticated Congress is less likely to pass a bill than a sincere one but, at the same time, it is more likely to succeed in changing the status quo (because it no longer "sticks to its guns" and

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[4] This is the standard monopoly agenda formation case classically set out by Romer and Rosenthal (1978) and discussed in Miller (1995: 115-118), in which the agenda setter (first acting player) proposes an alternative that the second acting player can only accept or reject. Typically the first acting player is thought of as a legislative committee sending a bill to the floor under a closed rule. Here the first acting player is itself a legislature, and bills passed by Congress go to the President in effect under a closed rule, because the President (without an item veto) cannot amend the bill.

[5] In this event, a mathematical problem in arises in that Congress wants to pass a bill that lies within $P_E(Q)$ and at the same time is as close to $L_m$ and therefore as close to $Q'_E$ (the upper bound on $P_E(Q)$) as possible, but for every possible bill that might proposed there is another one ever so slightly closer. (The mathematical problem is that of "maximizing on an open set.") Here we simply say congress passes as bill $\sim Q'_E$. The real-world problem of course is different and more substantial: information is not entirely complete and Congress doesn't know exactly where this boundary of $P_E(Q)$ is.

asks for $L_m$ or nothing, i.e., $Q$) and, in particular, the kind of suboptimal outcome noted there can no longer occur. Moreover, while the President's veto power may decisively influence the outcome, this influence is exerted entirely through the "rule of anticipated reactions." In the absence of futile gestures by Congress, the President never overtly exercises his veto power (and, because credible commitment is excluded, never has the opportunity to make veto threats).

### 4.3 *Qualified veto power*

Supposing Congress has passed a bill $B$ and the President has vetoed it, and looking to the final stage of this three-stage veto game, we (and the President and the median member of Congress) know (from 3.3) that Congress will override a veto of bill $B$ if and only if $Q < B < Q'_q$. Moving back one stage, we (and Congress) can determine that President will veto $B$ (perhaps futilely) if $Q'_E < B$ and the veto will be sustained if $Q'_q < B$. Thus at the first stage Congress is effectively choosing between $Q$ and some point in the more inclusive of $P_E(Q)$ and $P_q(Q)$. In one dimension, one of these sets is a subset of the other; let us designate the more inclusive one $P^*(Q)$. Thus the question is whether there are points within $P^*(Q)$ that the median member of Congress prefers to $Q$. If so, Congress passes the most preferred of these points, i.e., $C_m[P^*(Q)]$, as bill $B$, which the President signs; otherwise Congress passes no bill, preserving the status quo Q (or futilely passes $L_m$ or some nearby bill, knowing that the President will veto it and be sustained).

This summary conclusion may be elaborated considering all possible configurations of points $Q$, $E$, $Q'_E$, $L_q$, and $L_m$ on a line (given that $Q < L_m$, $L_q < L_m$, and $Q$ and $Q'_E$ are on opposite sides of $E$).

(a) $E < Q$ and $L_q < Q$. (In words, both the President and the veto pivot want to move the status quo in the direction opposite that favored by the median member of Congress.) There is no bill that Congress can pass that the President will or that Congress can enact over his veto that the median member prefers to $Q$, so Congress passes no bill [or futilely passes some $B$, where $Q < B$, which it knows that the President will veto and be sustained]. So the outcome is $\boldsymbol{L} = Q$.

(b) $E < Q < Q'_q < L_m$ or $Q < Q'_E < Q'_q < L_m$. (In words, the veto pivot wants to shift the status quo in the same direction as the median member of Congress, and further than the President wants to [if the President wants to move in that direction at all], but is not willing to shift it to the point the median member most prefers.) Congress passes $\sim Q'_q$, which the President signs [or futilely vetoes and is then overriden], so $\boldsymbol{L} = \sim Q'_q$.

(c) $L_q < Q < Q'_E < L_m$ or $Q < Q'_q < Q'_E < L_m$. (In words, the President wants to shift the status quo in the same direction as the median member of Congress, and further than the veto pivot wants to (if the pivot wants to move in that direction at all), but is not willing to shift it to the point the median member most prefers.) Congress passes $\sim Q'_E$, which the President signs, so $\boldsymbol{L} = \sim Q'_E$.

(d) $L_m < Q'_q$. (In words, veto pivot is willing to shift the status quo to the point the median member of Congress most prefers.) Congress passes $L_m$, which the President signs [or futilely vetoes and is then overriden], so $\boldsymbol{L} = L_m$.

(e) $L_m < Q'_E$. (In words, the President is willing to shift the status quo to the point the median member of Congress most prefers.) Congress passes $L_m$, which the President signs, so $\boldsymbol{L} = L_m$.

Comparing these conclusions with those in Section 3.3, we note again that, provided it avoids futile choices, a sophisticated Congress is less likely to pass a bill than a sincere one but, at the same time, it is more likely to succeed in changing the status quo and, in particular, the kind of suboptimal outcome noted there can no longer occur. Moreover, while both the President's veto power and Congress's override power may decisively influence the outcome, this influence is again exerted covertly and, in the absence of futile actions by either Congress or the President, these powers are never overtly exercised.

## 5. Veto Games with Credible Commitment

We now place Stage 0, as previously described, on top of a two-stage (absolute) veto game or a three-stage (qualified) veto game. Most generally, we might expect the President to announce an *acceptable interval* of bills about his ideal point, committing himself to sign any bill passed by Congress that lies within the interval and to veto any bill that lies out side of it. However, all that the President (and we) really need to focus on is the range of difference between himself and Congress, i.e., the interval (or "contract curve") between $E$ and $L_m$, and to announce the *boundary* $B_E$ of this (closed) acceptable interval that lies between $E$ and $L_m$ — that is, to specify the bill $B_E$ that is the least acceptable to him (and the most acceptable to Congress) but that he is still willing to sign. We may also note that, since what the President does at Stage 0 is to credibly and irrevocably commit himself to sign or veto a bill, depending on whether the bill passed by Congress lies in his acceptable interval, Stage 2 is effectively cut out of the veto game.

### 5.1 *Absolute veto power*

Stage 1 is now effectively the final stage of the veto game, at which Congress has two options: it can comply with the President's demand and pass bill $B_E$ (there is no reason for Congress to give the President a bill he prefers to, and Congress likes less than, $B_E$), or it can defy the President and pass $L_m$ or some other bill unacceptable to the President, or pass no bill at all. Regardless of how it does so, if Congress defies the President, the outcome is $\boldsymbol{L} = Q$. If Congress complies, the outcome is $\boldsymbol{L} = B_E$. Thus Congress complies with a Presidential demand if and only if the median member of Congress prefers $B_E$ to $Q$, i.e., $Q < B_E < Q'_m$. Knowing this, the President recognizes the best bill he can induce Congress to pass is $C_E[P_m(Q)]$. [6] Thus $B_E = C_E[P_m(Q)]$, unless this is worse than $Q$ in which case the President can make no effective veto threat.

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[6] In the event that $E$ does not belong to $P_m(Q)$, the same mathematical problem exists as was note in footnote 5. We assume that the President defines the acceptable interval so that $B_E$ lies just in the interior of $P_m(Q)$.

This summary conclusion may be elaborated by considering all possible configurations of points $Q$, $E$, $Q'_E$, $L_m$, and $Q'_m$ on a line (given that $Q < L_m < Q'_m$. and $Q$ and $Q'_E$ are on opposite sides of $E$ ).

(a) $E < Q$. (In words, President and Congress want to move the status quo in opposite directions.) No veto threat can influence Congress in a way that favors the President's preferences. Congress passes no bill [or futilely passes a bill that it knows — even in the absence of an announcement to that effect — that the President will veto], so $\boldsymbol{L} = Q$.

(b) $Q < E < Q'_m$. (In words, Congress and the President want to shift the status quo in the same direction but the President does not want to shift it beyond the point the median member of Congress is willing to go.) The President announces he will sign $B_E = E$, which Congress passes (and of course the President signs), so $\boldsymbol{L} = E$.

(c) $Q'_m < E$. (In words, the President most prefers to shift the status quo beyond the point the median members is willing to go.) The President announces he will sign $B_E = \sim Q'_m$ which Congress passes (and of course the President signs), so $\boldsymbol{L} = \sim Q'_m$.

We observe that the President's opportunity to make a credible commitment has no effect in circumstance (a) but does advantage him in the other circumstances, shifting the outcome from $Q'_E$ or $L_m$ to $E$ in (c), and from $L_m$ to $\sim Q'_m$ in (d). We may also note that credible commitment allows a President whose ideal point lies above $L_m$ (given that $Q$ is always assumed to lie below $L_m$) to bring about an outcome that also lies above $L_m$. For example, a free-spending President with credible commitment can induce Congress to appropriate more money than it would most prefer to do (or would do in the absence of a veto threat), something that cannot occur without credible commitment by the President.

### 5.2 *Qualified veto power*

As we saw in 3.3, Congress will override a veto of bill $B$ if and only if $Q < B < Q'_q$. Congress has the occasion to override a veto if and only if it defies the President by passing an bill he has declared unacceptable. Thus, when the Congress decides whether to comply with or defy the President's demand, it is choosing between $B_E$ (if it complies) and either $C_m\,[P_q(Q)]$ (if it defies the President and overrides his veto) or $Q$ (if it defies the President and fails to override his veto). Thus, in order to induce Congress to comply with his demand, the President must offer a bill $B_E$ that Congress prefers to both $C_m\,[P_q(Q)]$ and $Q$, and the President selects as $B_E$ his most preferred point that meets this criterion. However, there are circumstance in which the President cannot make any veto threat that will change the legislative outcome in a way he prefers, and he may as well refrain from making any threat.

This summary conclusion may be elaborated considering all possible configurations of points $Q$, $E$, $Q'_E$, $L_q$, and $L_m$ $Q'_m$ on a line (given that $Q < L_m$, $L_q < L_m$, and $Q$ and $Q'_E$ are on opposite sides of $E$).

(a) $L_q < Q$ and $E < Q$. (In words, both the President and the veto pivot want to move the status quo in the direction opposite that favored by the median member of Congress.) Given $L_q <$

$Q$, there is no bill that Congress that Congress can pass over the President's veto that the median member prefers to $Q$, so the President's veto power is effectively absolute, and the strategic situation is identical to that in 5.1. Given $E < Q$, there is no bill that Congress can pass over the President's veto that the median member prefers to $Q$, so Congress passes no bill (or futilely passes some $B$, where $Q < B$, that it knows — even in the absence of an explicit threat — that the President will veto. So the outcome is $\boldsymbol{L} = Q$.

(b) $L_q < Q < E < Q'_m$. (In words, the veto pivot wants to move the status quo in the direction opposite that favored by the median member of Congress. The President most prefers to shift the status quo in the same direction as the median member but not beyond the point the median members is willing to go.) The President announces he will *sign* $B_E = E$, which Congress passes.

(c) $L_q < Q < Q'_m < E$. (In words, the same above but the President most prefers to shift the status beyond the point the median member is willing to go.) The President announces he will sign $B_E = \sim Q'_m$, which Congress passes.

(d) $E < Q'_E < Q'_q < L_m$. (In words, the veto pivot wants to move the status quo in the same direction as the median member of Congress, is willing to shift further than the President is, but is not willing to shift it to the point the median member most prefers.) As we have seen, a sophisticated Congress would pass $\sim Q'_q$. The President can make no veto threat that can improve on that outcome in terms of his preferences. The President makes no veto threat [or only a futile threat] and Congress passes $\sim Q'_q$, which the President signs [or futilely vetoes and is then overriden], so $\boldsymbol{L} = \sim Q'_q$.

(e) $E < Q'_E < L_m < Q'_q$. (In words, the same as above but he veto pivot is willing to shift the status beyond the point the median member most prefers.) As we have seen, a sophisticated Congress would pass $L_m$. The President can make no veto threat that can improve on that outcome in terms of his preferences. The President makes no veto threat [or only a futile threat] and Congress passes $L_m$, which the President signs [or futilely vetoes and is then overriden], so $\boldsymbol{L} = L_m$.

(e) $Q < Q'_q < E < Q'_m$.(The President wants to move the status quo in the same direction as the median member of Congress but not beyond the point that the median member is willing to move it to.) A sophisticated Congress would pass $\sim Q'_E$ (if $Q'_E < L_m$) or $L_m$ (otherwise), but the President announces that he will sign only $B_E = E$ and, knowing a veto will be sustained, Congress complies, so $\boldsymbol{L} = E$.

(f) $Q < Q'_q < Q'_m < E$. (The President wants to move the status quo beyond point the median member of Congress is willing to move it to.) the President announces that he will sign only $B_E = Q'_m$ and, knowing a veto will be sustained, Congress complies, so $\boldsymbol{L} = Q'_m$.

### 5.3 Credible Congressional Commitment

Given qualified Presidential veto power, one can imagine a norm of Congressional courtesy arising, according which member of Congress would enter into a "social contract" to override any

Presidential veto (regardless of their individual preferences on the bill at stake). The effect of such a contract would be to deprive the President of his veto power. Thus invariably $\boldsymbol{L} = L_m$.

Such a commitment would have to be a "global" commitment (undertaken behind a "veil of ignorance"), however, unlike the kinds of Presidential commitments considered above, which are tailored to specific veto games. In particular, in any given veto game, a veto pivot would be obliged to override a veto — even though the pivot might not only have an incentive to vote otherwise in the event of a veto (just as a President typically has an incentive to renege on a veto threat if the threat is defied) but might also have an incentive not to renew the commitment to override in the first place (in the circumstance of this particular game).

## 6. Veto Games with Bargaining [highly preliminary]

We now suppose that all actors can make commitments — in effect, that a "cooperative" veto game is being played. However, the President obviously has nothing to bargain with unless he has veto power.

### 6.1 Absolute Veto Power

If the President has an absolute veto, we have a bilateral bargaining game, with Q as the no agreement point. The set of outcomes the President and (the median member of) Congress both prefer to no agreement is the intersection of $P_E(Q)$ and $P_m(Q)$, and the President and Congress would agree to some bill on that portion of their contract curve that lies within this intersection. But in one dimension, either these two sets are disjoint (if $E < Q$) or one is a subset of the other, so the outcome is either $Q$ or the portion of the line both within this intersection and between the two ideal points.

### 6.2 Qualified Veto Power

If the President has a qualified veto, we have a trilateral bargaining game, with $Q$ as the no agreement point. Two coalitions can deal together change the status quo: (the median member of) Congress together with the President and (the median member of) Congress together with the veto pivot. However, if $L_q < Q$, the President again has effectively an absolute veto, so the previous conclusions apply. If all three ideal points lie above$Q$, let $M$ designate the ideal point of the median of the three actors

outcome is interval from M to $Q'_M$ if $Q'_M < L_m$ and from M to $L_m$ otherwise [?]

[In two or more dimensions, all this is rather more interesting.]

## 7. Item Veto Games

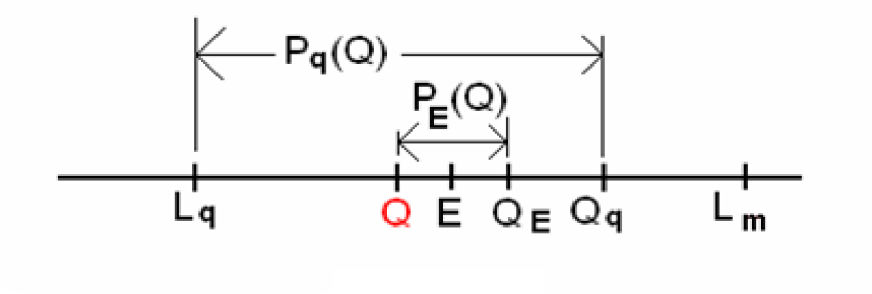


*Figure 1*

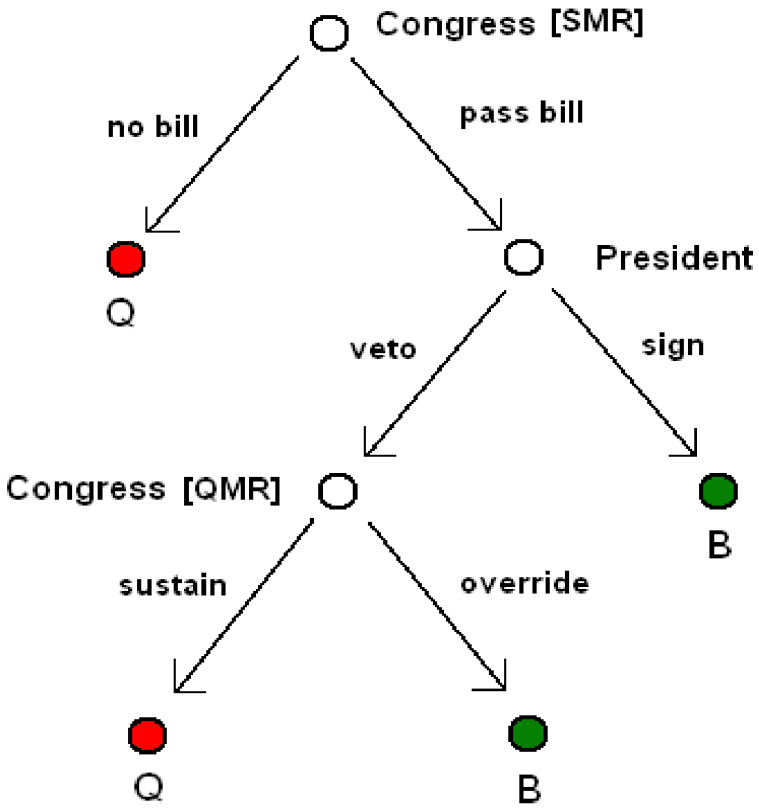


*Figure 2*