Legislative Bargaining

(cf. *Persson and Tabellini*, pp. 104–108)

different from simple “pairwise majority rule” :
legislature has an **agenda**

only a limited number of proposals can be made

Framework

“standard” *Persson–Tabellini* framework :

policy is a level g of government spending

people have single–peaked preferences

high–income people prefer lower g

except now there are only **3** income groups,
and one party for each income group

$y_L < y_M < y_R$ (so that $g_L^* > g_M^* > g_R^*$)

Rules

one party gets to propose a policy

if no proposal is passed, the default "reversion" policy $\bar{g}$ implemented

no single group (L, M or R) has a majority of voters, so a policy needs the support of at least 2 groups — any 2 — to pass

1 Stage

some party is (randomly) chosen to make a proposal
that party introduces some policy g
if the proposing party, and one other party (or both other parties) vote for the proposal, then g is implemented
if both opposition parties votes against the proposed g, then the reversion policy $\bar{g}$ is implemented

[so "yes" is a vote for the proposal g, and "no" is a vote for the reversion policy $\bar{g}$]

1 Stage, government is M

if the middle party gets to propose, then it can get its most–preferred policy g_M passed

why?
if $\bar{g} > g_M$, then single–peakedness says that party R votes for g_M (over $\bar{g}$)

and if $\bar{g} < g_M$, then single–peakedness says that party L votes for g_M (over $\bar{g}$)

1 Stage, government is L

single–peakedness says that party L must get the support of party M to pass its proposals

case 1 : $g_L < \bar{g}$: M prefers g_L to $\bar{g}$, so party L proposes its most–preferred policy (and gets it passed)

case 2 : $g_M < \bar{g} < g_L$: the highest level of spending that party L can get passed is $\bar{g}$ (so it proposes the reversion level $\bar{g}$ and gets it passed)

case 3 : $\bar{g} < g_M$: find $\tilde{g}_M > g_M$ which leaves party M indifferent between $\bar{g}$ and $\tilde{g}_M$
that's the largest level of spending which can passed
and party L will propose that $\tilde{g}_M$ (unless $\tilde{g}_M$ is actually even bigger than what party L wants, in which case it proposes g_L)
so that the policy chosen (and passed) is $\min(\tilde{g}_M, g_L)$

2 Stages

now : one party (of $\{L, M, R\}$) is chosen to make an initial proposal g_1

if g_1 passes, that's it

if g_1 is defeated, we go to a second stage
in the second stage, some **other** party (one of the remaining 2) gets to propose some g_2 and that g_2 goes up against $\bar{g}$

second stage

if we ever get to the second stage, it's exactly like the one–stage bargaining :

in any 2nd stage, the proposal does get passed, and

party M proposes g_M, party L proposes g_L, or $\bar{g}$ or the biggest g which can defeat $\bar{g}$, party R proposes g_R, or $\bar{g}$ or the smallest g which can defeat $\bar{g}$

and all 3 parties can anticipate that this will happen if the initial proposal g_1 is defeated in the first stage

The "Continuation" Game

let $\hat{g}_i$ denote the proposal that party i ($i \in \{L, M, R\}$) proposes (and gets passed) in the 1–stage model
which is also the proposal party i will propose, if it gets the chance, in the second stage of the 2–stage model

if p_i is the probability that party i ($i \in \{L, M, R\}$) gets to make the proposal in the second stage (if we do get to a second stage)

then the outcome of the second stage will be $\hat{g}_L$ with probability p_L, $\hat{g}_M = g_M$ with probability p_M and $\hat{g}_R$ with probability p_R — if we get to a second stage
and let $\beta \leq 1$ indicate how much people value the future

so (for example), if the initial proposal (in the first stage) is defeated, party M's expected value from the resulting second stage is

$$V_M = \beta[p_L W_M(\hat{g}_L) + p_M W_M(\hat{g}_M) + p_R W_M(\hat{g}_R)] \tag{1}$$

which means that party M would vote for some initial 1st–stage proposal (by L or R) g_1 if and only if

$$W_M(g_1) \geq V_M = \beta[p_L W_M(\hat{g}_L) + p_M W_M(\hat{g}_M) + p_R W_M(\hat{g}_R)] \tag{2}$$

if party L gets the initial proposal..

they need party M's vote to get that proposal passed

so they will propose the largest g_1 that satisfies (2)

[that result depends on
1. party L wants to get party M's support initially, not party R's
2. party L wants to have its 1st–stage proposal passed

both these statements are true here]

if party M gets the initial proposal ..

then they can get their preferred policy g_M passed in the initial stage (for sure)

proof : let Eg_2 be the expected value of the policy which would be chosen in the second stage, if we were to get there :

$$Eg_2 \equiv p_L \hat{g}_L + p_M \hat{g}_M + p_R \hat{g}_R \tag{3}$$

if voters are risk–averse, then for any party i,

$$V_i = \beta E W_i(g_2) \leq \beta W_i(Eg_2) \leq W_i(Eg_2) \tag{4}$$

so any party would rather have Eg_2 (for sure), then have the vote go to a second stage if $Eg_2 > g_M$, then

party R prefers g_M to Eg_2, and prefers Eg_2 to having the vote go to a second stage
so party R would then vote in favour of g_M in the firsts stage

but if $Eg_2 < g_M$, then party L prefers g_M to Eg_2, and prefers Eg_2 to having the vote go to a second stage
so party L would then vote in favour of g_M in the first stage

Median voter rules?

if party L gets to choose the policy in period 1, then it will not necessarily have to choose g_M to get its policy passed

but if p_M is high, and β close to 1, it will have to choose a policy close to g_M

[since then party M will want to go to a second stage, unless the first–stage policy is almost as attractive to them as g_M]

Many Stages

if we have more than 2 stages, then party M will still choose its most–preferred policy g_M whenever it gets the chance

so with many stages, the policy is very likely to get to g_M

which means that the initial policy must be very close to g_M when there are many stages — if β is not too low