Framework

- Voters differ (only) in their income y^i.
- Voters have the same preferences,

$$w^i = c^i + H(g) \tag{1}$$

c^i : private consumption of a person of income y^i
g : per capita government spending
$H(g)$: increasing, concave, and the same for everyone

proportional income tax τ, so that

$$\tau \bar{y} = g \tag{2}$$

$\bar{y}$: average income in the jurisdiction

$$c^i = (1 - \tau) y^i \tag{3}$$

so that

$$W^i(g) = y^i - \frac{y^i}{\bar{y}} g + H(g) \tag{4}$$

Bureaucrats

ASSUMPTION : Government administrators want g as large as possible.

ASSUMPTION : Government administrators are the only people who can propose policies.

Take it or Leave It

i bureaucrat proposes g

ii voters vote

iii if a majority votes in favour of budget, government spending is g (and tax rate is $\frac{g}{\bar{y}}$)

iv if a majority votes against, $g = 0$, and no taxes

a voter of income y^i will vote in favour of the proposal if and only if

$$W^i(g) \geq W^i(0) \tag{5}$$

the most a voter will vote for..

for a voter of income y^i, there is some spending level $\hat{G}(y^i)$ which the voter finds exactly as good as no spending at all

$$W^i(\hat{G}[y^i]) = W^i(0) \tag{6}$$

$$\hat{G}(y^i) > g^*(y^i)$$

Poor Voters Tolerate More Spending

lower–income people have higher values for $\hat{G}(y^i)$ than do high–income people

This result follows from the following observation :

OBSERVATION : if a person of income y^i is indifferent between spending levels of 0 and $G > 0$, then everyone of lower income $y^j < y^i$ will strictly prefer the spending level G to the spending level of 0.

proof : From the definition of W^i, a person of income y^i will find a spending level of G at least as good as a spending level of 0 if (and only if)

$$y^i - \frac{y^i}{\bar{y}}G + H(G) \geq y^i + H(0) \tag{7}$$

This condition (7) is equivalent to

$$H(G) \geq H(0) + \frac{y^i}{\bar{y}}G \tag{8}$$

If condition (8) holds as an equality for some y^i, then it must be true that

$$H(G) > H(0) + \frac{y^j}{\bar{y}}G \tag{9}$$

for any $y^j < y^i$, so that a person of income $y^j < y^i$ would rather have a public expenditure level of G than a public expenditure level of 0 (if the person of income y^i was indifferent between the two). •

The Administrator's Choice

is

$$\hat{G}(y^m)$$

which is the largest level of public expenditure which the person of median income would ever vote for.

Since $\hat{G}(y^m) > g^*(y^m)$, the administrator can get a larger level of spending than the median voter's preferred level.

Bureaucratic Slack?

Suppose now that senior adminstrators are able to spend money on projects which do not directly benefit taxpayers.

total government expenditure : $g + r$

g : expenditure on public services which the taxpayers consume

r : expenditure which is "wasted"

$$\tau \bar{y} = g + r \tag{10}$$

assume that voters can observe the actual level of public expenditure g

bureau chiefs' problem is to choose g, r and τ to maximize their total budget $g + r$, subject to the budget constraint (10), and subject to approval by the voters

voter of income y^i will now vote in favour of a budget if

$$y^i - \frac{y^i}{\bar{y}}(g + r) + H(g) \geq y^i + H(0) \tag{11}$$

So the bureaucrat's budget–maximizing problem is to maximize $(r + g)$ subject to the approval constraint, which can now be written

$$y^m - \frac{y^m}{\bar{y}}(g + r) + H(g) \geq y^m + H(0) \tag{12}$$

RESULT : If the bureaucrat maximizes $r + g$ subject to the approval constraint (12), the policy chosen will be $g = \hat{G}(y^m)$ and $r = 0$.

proof Suppose that the bureau chief proposes some budget (g, r), satisfying the approval condition (12) with equality.
Is this the biggest budget she can get?
Suppose she replaces this budget with a new budget, with $g' = g + r > 0$, and $r = 0$.
Then the welfare of the median voter will be

$$y^m - \frac{y^m}{\bar{y}}(g') + H(g') = y^m - \frac{y^m}{\bar{y}}(g+r) + H(g') > y^m - \frac{y^m}{\bar{y}}(g+r) + H(g) =$$

So the median voter strictly prefers this new policy to the alternative of no spending at all. In other words, if condition (12) holds, and $r > 0$, then

$$g + r < \hat{G}(y^m)$$

So the bureaucrat can get a bigger budget than $g + r$ approved, by proposing $g = \hat{G}(y^m)$ and $r = 0$.

Changing the Reversion Level

if the budget is defeated. Instead g will equal some pre–specified low level $\bar{g} > 0$.

a voter will vote for the budget if and only

$$y^i - \frac{y^i}{\bar{y}} G + H(G) \geq y^i - \frac{y^i}{\bar{y}} \bar{g} + H(\bar{g}) \tag{13}$$

if g is very small, $W^i(g)$ is **increasing** in g. So raising the reversion level $\bar{g}$ increases the right side of (13)

Now the biggest level of public expenditure $\hat{G}(y^i; \bar{g})$ which a voter of income y^i will support is the level of spending for which

$$y^i - \frac{y^i}{\bar{y}}\hat{G} + H(\hat{G}) = y^i - \frac{y^i}{\bar{y}}\bar{g} + H(\bar{g}) \tag{14}$$

The higher the reversion level $\bar{g}$ is, the **lower** is the maximum level $\hat{G}(y^i)$ which the person is willing to vote for.