

# Comment on “Comparative Politics and Public Finance”\*

Jørgen Juel Andersen<sup>†</sup>

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## Abstract

Modelling and comparing procedures for legislative bargaining in legislatures, Persson, Roland and Tabellini (2000) show that presidential regime types produce lower taxes, a lower level of government spending and less diversion by politicians than do parliamentary regime types. However, these predictions rests on specific assumptions about the intensity for public goods not pointed out by the authors—namely that preferences for public goods are relatively weak. I show that when preferences for public goods are strong, the size of government and the levels of diversion and redistribution in the two regime types are equalized.

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**JEL:** H3, H4, H5.

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<sup>†</sup>Norwegian University of Science and Technology. Address: NTNU, Department of Economics, Dragvoll, NO-7491 Trondheim, Norway. Phone: +47 7359 8337. Fax: +47 7359 6954. E-mail: jorgen.juel.andersen@svt.ntnu.no.

## 1 Introduction

In a very interesting paper published in the *Journal of Political Economy*, Persson, Roland and Tabellini (2000) propose a model to analyze the comparative politics of the size and composition of government spending. Persson, Roland and Tabellini find that the rules guiding the processes of legislative bargaining in parliamentary and presidential-congressional regime types shape the incentives of legislators and voters, so as to produce different fiscal policy outcomes. In the presidential-congressional regime type, because agenda-setting powers are separated, the powers of the agenda setters are more limited than in the parliamentary regime type. Hence, the equilibrium level of diversion in the presidential-congressional regime type is relatively low, compared to the parliamentary regime type. Moreover, because taxes are decided on at an earlier stage than public expenditures, and because the voters of the ‘tax minister’ do not know with certainty whether they will benefit from redistribution at the later expenditure stage, the ‘tax minister’ and her voters are best off minimizing taxes, given the equilibrium level of diversion demanded by the legislators (defined by the incentive compatibility conditions). As a result, the levels of taxes, public goods provision, redistribution and diversion are all lower in the presidential-congressional regime type than in the parliamentary regime type.

The comparative predictions of Persson, Roland and Tabellini, however, are only valid in the case where citizens do not possess strong preferences for public goods. I show that when citizens have strong preferences for public goods, the equilibrium policies—the level of taxes, public goods provision, redistribution and diversion—are all equalized across the two regime types. In short, the argument goes as follows. Consider the presidential-congressional regime type. When public goods are very valuable, the ‘tax minister’ can be sure that it will always be in the best interest of the ‘public expenditures minister’ to spend the government budget on public goods, rather than on redistribution towards her own constituency. Moreover, as long as tax revenues are spent on highly valued public goods, voters will go along with higher taxes, even if this implies a higher equilibrium level of diversion. Hence, as public goods get more valuable, the level of taxes, public goods provision and diversion in the presidential-congressional regime type all rise, and eventually, when redistribution is perfectly ‘crowded out’ of the equilibrium, reach the same levels as in the parliamentary regime type.

## 2 Equilibrium in the presidential-congressional regime

The arguments sketched out above have consequences for the defining features of equilibrium policies in the presidential-congressional regime type, corresponding to Proposition 2 in Persson, Roland and Tabellini (2000).

Taking into account that citizens may possess both weak and strong preferences for public goods, the equilibrium of the presidential-congressional regime type is defined by the following proposition.<sup>1</sup>

**Proposition 1** *The equilibrium in the presidential-congressional regime is characterized by the following equilibrium features:*

$$\tau^C = \begin{cases} 1 - \frac{\delta}{(1+\frac{2}{3}\delta)} & \text{if } r^C > 0; \\ \min \left[ 1, \frac{1-\delta/3}{2\delta} H_g^{-1}(1) \right] & \text{if } r^C = 0 \text{ and } \frac{1-\delta/3}{2\delta} \leq 1; \\ \min \left[ 1, \frac{1-\delta/3}{2\delta} H_g^{-1} \left( \frac{1-\delta/3}{2\delta} \right) \right] & \text{if } r^C = 0 \text{ and } \frac{1-\delta/3}{2\delta} > 1; \end{cases} \quad (1)$$

$$s^C = \begin{cases} \frac{3(1-\delta)}{1+2\delta/3} & \text{if } r^C > 0; \\ \min \left[ \frac{3(1-\delta)}{2\delta} H_g^{-1}(1), \frac{3(1-\delta)}{1-\delta/3} \right] & \text{if } r^C = 0 \text{ and } \frac{1-\delta/3}{2\delta} \leq 1; \\ \min \left[ \frac{3(1-\delta)}{2\delta} H_g^{-1} \left( \frac{1-\delta/3}{2\delta} \right), \frac{3(1-\delta)}{1-\delta/3} \right] & \text{if } r^C = 0 \text{ and } \frac{1-\delta/3}{2\delta} > 1; \end{cases} \quad (2)$$

$$g^C = \begin{cases} \min \left[ H_g^{-1}(1), \frac{2\delta}{1-\delta/3} \right] & \text{if either } r^C > 0 \text{ or } \frac{1-\delta/3}{2\delta} \leq 1; \\ \min \left[ H_g^{-1} \left( \frac{1-\delta/3}{2\delta} \right), \frac{2\delta}{1-\delta/3} \right] & \text{if } \frac{1-\delta/3}{2\delta} > 1; \end{cases} \quad (3)$$

$$r^C = \begin{cases} \frac{2\delta}{1+\frac{2}{3}\delta} - g^C & \text{if } H_g^{-1}(1) < 2\delta W; \\ 0 & \text{otherwise;} \end{cases} \quad (4)$$

$$b^{a_g C} = \begin{cases} H(g^A) - g^A + \frac{2\delta}{1+\frac{2}{3}\delta} & \text{if } r^C > 0 \text{ and } \frac{1-\delta/3}{2\delta} \leq 1; \\ H(g^C) & \text{otherwise;} \end{cases} \quad (5)$$

$$b^{a_\tau C} = \begin{cases} H(H_g^{-1}(1)) & \text{if } \frac{1-\delta/3}{2\delta} \leq 1; \\ H \left( H_g^{-1} \left( \frac{1-\delta/3}{2\delta} \right) \right) & \text{otherwise;} \end{cases} \quad (6)$$

$$b^{iC} = H(g^C), \quad i \neq a_g, a_\tau. \quad (7)$$

*All politicians are reelected.*

**Proof.** First, note that voters  $a_\tau$  are not direct residual claimants of higher taxes. Hence, voters  $a_\tau$  demand the lowest tax rate possible, given incentive compatibility and that the tax revenues are high enough to finance the optimal choice of public goods provision determined on stages 5 and 6. To see this, note that all legislators  $i \neq a_g$  are in the winning coalition (on stages 5 and 6) in any subgame with a probability of 1/2. Thus, the junior partner at stages 5 and 6,  $m$ , demands diversion  $s^m$  to satisfy  $s^m/2 +$

<sup>1</sup>Note that the model, the notation and the sequence of events are exactly the same as in Persson, Roland and Tabellini (2000). To save space, the reader is referred to the source for details about the model.

$\delta W \geq v^d$ , where  $v^d$  is defined by  $v^d = \frac{1}{2}$  and is the expected payoff in a disequilibrium history with maximized taxes and diversion. In equilibrium, incentives must be compatible such that  $s^m = \tau - \delta W \geq 1 - \alpha - 2\delta W$ . The implied tax rate must satisfy  $\tau^A \geq 1 - \delta W$ .<sup>2</sup>

If compatible with a level of public goods provision of  $H_g^{-1}(1)$  on stage 5 and 6, voters  $a_\tau$  demand a tax rate of  $1 - \frac{1}{1-\alpha}\delta W$ . If such a tax rate is too low to ensure a level of public goods provision of  $H_g^{-1}(1)$ , and given that  $a_g$  will spend the tax revenues on public goods provision rather than redistribution toward her own constituency, voters  $a_\tau$  demand higher taxes.

The perceived marginal cost of public goods of voters  $a_\tau$  equals  $\frac{1-\delta/3}{2\delta}$ , which may be lower than unity, depending on the discount factor  $\delta$ . When  $\frac{1-\delta/3}{2\delta} \leq 1$ , voters  $a_\tau$  demand higher taxes up to the point where tax revenues are just enough to finance the maximum attainable level of public goods compatible with the equilibrium strategies of legislator  $a_g$  and her voters—implying a provision of public goods equal to  $H_g^{-1}(1)$ .<sup>3</sup> If necessary, the tax rate may be set as high as one. If a tax rate equal to one does not cover the optimal public goods provision on stages 5 and 6, we get a corner solution for the provision of public goods.

When  $\frac{1-\delta/3}{2\delta} > 1$ , the perceived marginal cost of public goods to voters  $a_\tau$  exceeds unity, and voters  $a_\tau$  hence demands taxes to be raised only to the point where revenues are just high enough to finance a level of public goods equal to  $H_g^{-1}\left(\frac{1-\delta/3}{2\delta}\right)$ .<sup>4</sup>  $H_g^{-1}\left(\frac{1-\delta/3}{2\delta}\right)$  is the optimal level of public goods as perceived by voters  $a_\tau$ , and will be realized by legislator  $a_g$  and his junior partner at stage 5 and 6. The reason for this is that this is the optimal outcome for voters  $a_g$  given the restricted budget imposed by legislator  $a_\tau$  and her junior partner at stages 3 and 4. The implied equilibrium tax rate is summarized in eq. (1).

Second, consider the determination of the level of diversion. The level of taxes chosen by  $a_\tau$  on stages 3 and 4 will be decisive for the maximum level of diversion available to legislator  $a_g$  at stages 5 and 6. In particular, incentive compatibility implies that  $s^m \geq \tau - \delta W$  and  $s^{a_g} \geq 3\tau - \tau - \delta W$ , and hence that  $s = s^{a_g} + s^m \geq 3\tau - 2\delta W$ . If  $H_g^{-1}(1) < 2\delta W$  and  $\frac{1-\delta/3}{2\delta} \leq 1$ , it is straight forward to calculate  $W$  and then substitute to find the equilibrium diversion  $s^A$ . If the non negativity constraint on  $r$  is binding and  $\frac{1-\delta/3}{2\delta} \leq 1$ ,  $g = 2\delta W$  and it is optimal for voters  $a_\tau$  to demand higher taxes—causing a rise in the equilibrium continuation value  $W$ —up to the point where the public goods provision equals  $H_g^{-1}(1)$ . If  $H_g^{-1}(1) > 2\delta W$ , and  $\frac{1-\delta/3}{2\delta} \leq 1$ , public goods

<sup>2</sup>Note that the equilibrium continuation value,  $W$ , is an implicit function of equilibrium taxes.

<sup>3</sup>Optimally, voters  $a_\tau$  would demand even higher taxes and public goods provision, but since this is not feasible considering the strategy of  $a_g$  and her voters, voters  $a_\tau$  opt for the second best alternative; a provision of public goods equal to  $H_g^{-1}(1)$ .

<sup>4</sup>Note that  $H_g^{-1}\left(\frac{1-\delta/3}{2\delta}\right) < H_g^{-1}(1)$ , given that  $\frac{1-\delta/3}{2\delta} > 1$ .

are so valuable that it is optimal for  $a_\tau$  to maximize tax revenues, even if this further raises the equilibrium level of diversion. Finally, if  $\frac{1-\delta/3}{2\delta} > 1$ , the marginal costs from diversion are so high that the marginal costs of public goods are higher for voters  $a_\tau$  than for voters  $a_g$ . Hence, legislator  $a_\tau$  and her junior partner have incentives to constrain the government budget by restricting tax revenues, and thereby reduce the equilibrium diversion  $s^C$ .

Third, because of Bertrand competition for redistribution among voters  $i \neq a_g$  on stages 5 and 6, all residual government revenues accrue to voters  $a_g$ . Moreover, redistribution only occurs if legislator and voters  $a_\tau$  allows for it by raising taxes above what is needed to cover equilibrium diversion and public goods provision. From the discussion above, this only happens when  $H_g^{-1}(1) < 2\delta W$  and  $\frac{1-\delta/3}{2\delta} \leq 1$ . The equilibrium level of redistribution,  $r^C$ , follows directly from the government budget constraint. Higher tax costs and/or stronger preferences for public goods, induces legislator  $a_\tau$  to adjust taxes so that there is less, or eventually no, room for redistribution towards voters  $a_g$ . This proves eq. (4).

Fourth, note that for any given level of taxes, voters  $a_g$  trade off public goods provision and redistribution one for one, cf. eq. (5). Knowing this, voters  $a_\tau$  prefer public goods provision to be supplied at the optimal level of legislator  $a_g$ , as long as the (perceived) marginal benefit,  $H_g$ , exceed the marginal cost,  $\frac{1-\delta/3}{2\delta}$ . On the other hand, if  $\frac{1-\delta/3}{2\delta} > 1$ , voters  $a_\tau$ —equating marginal benefits and costs of public goods consumption—demand even lower taxes, cf. eq. (6). Voters  $i \neq a_\tau, a_g$  have no agenda-setting powers, and goes along with any equilibrium level of public goods chosen by the other groups of voters and the representatives in the legislature, cf. eq. (7). This completes the proof of Proposition 1. ■

Comparing the proposition above with Propositions 2 and 3 in Persson, Roland and Tabellini (2000), it is straight forward to verify that when preferences for public goods are sufficiently strong, the model predicts the two political regime types to produce the same levels of taxes, public goods provision, diversion and redistribution.

## References

Persson, T., Roland, G., and G. Tabellini (2000). “Comparative Politics and Public Finance.” *Journal of Political Economy* 108: 1121-1161.