

Rejoinder to Gordon Tullock

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If Gordon Tullock's comments were correct, they would be irrelevant. As they stand, they are both wrong and irrelevant. They are wrong for the three reasons that we discuss in the next three paragraphs. One of his mistakes is that his chart uses the wrong data, so we follow our discussion of his errors with a chart showing the data we used.

The first error is the excessive emphasis Tullock gives to the correlation coefficient. Our results do not rely on a 'high' value of the correlation coefficient. We do not even mention the correlation coefficients. None of the work that he cites by Good¹ has any bearing on the test of our hypothesis or on the evidence we present.

The second error is Tullock's discussion of the 'time trend'. Government has not grown in all western countries because we turn the pages on the calendar. Something else, perhaps something related to national, political and economic behavior is at work. Early speculation, made familiar in Wagner's 'law', suggested a relation between some measure of income and the relative size of government. Our hypothesis is more specific and, therefore, more easily tested. The hypothesis specifies a relation between the reciprocal of the decisive voter's income (median income in our tests) and our measures of the relative size of government. Further, our hypothesis specifies when there will be no relation between the level of income – and therefore no 'trend'. This occurs when marginal utility of consumption is independent of income.² Equation (14) of our paper, elsewhere in this issue, shows that when $\gamma = 0$, the size of government depends only on the ratio of mean to median income and is independent of the level of income.

The third error arises because Tullock chooses a measure of the size of government that is inappropriate for a test of our hypothesis. Tullock fails to mention that the variable called TRANS in his chart is not the variable specified by the hypothesis. Instead of showing the values of $t_i(1-F)$ for $i=2,3$ his chart shows t_3 per capita, base = 1 in 1955. Tullock ignores $1-F$.

Our charts show plots of the data that our theory specifies. The first chart, labelled 'Public Supply of Private Goods', compares the measure,

$t_2(1-F)$, to the measures of relative and absolute income specified in our paper. The second chart, labelled 'Pure Redistribution', compares $t_3(1-F)$ to the same measures. The charts show that when the correct data are used, the problems Tullock discusses disappear.

The reader who prefers to use slightly less primitive methods of evaluating hypotheses can look back at Table 1 of our paper. There he finds that median income has no significant effect on $\ln t_2(1-F)$; this measure of government spending – for publicly supplied private goods – depends only on the relation of mean to median income. For publicly supplied private goods, there is no evidence to support Wagner's 'law' or an effect of 'trend' when we use the hypothesis to guide our tests. For pure redistribution, there is evidence to support Wagner's law; our measure of income is significant. If we use the ratio of the t -statistics for the regression coefficients as approximate measures of partial correlation, the results in Table 1 suggest that $1/y_d$ has a larger partial effect than $\ln(m-1)$, but the difference is on the order of 3 to 2. Overall both tests support our hypothesis.³

Several of our comments on Wagner's law and the effect of income repeat points to which we called attention in the paper. It is best to close by repeating some caveats.

There are many conjectures about the size of government. Some are not well specified, so they cannot be tested. Ours is relatively parsimonious, is consistent with maximizing behavior and with at least one sample of data. We regard the test as only a first effort. The test is against a simple null hypothesis, not one of the alternative hypotheses. We assume linearity, neglect possible simultaneous equations bias and estimate an equilibrium relation, not a structural equation. Better data, better hypotheses or better estimation methods may reject our hypothesis. Irrelevant arguments about correlation and 'trends' do not.

NOTES

1. The papers by Good, referred to in Tullock's note 2 show that correlation coefficients are spuriously high, even in small samples, if one of the variables is a power function and the other is not. We do not dispute Good's result, only its use by Tullock.
2. We call attention to this in the text when we discuss Wagner's law.
3. The F -statistics are in the range 45 to 65.

PUBLIC SUPPLY OF PRIVATE GOODS

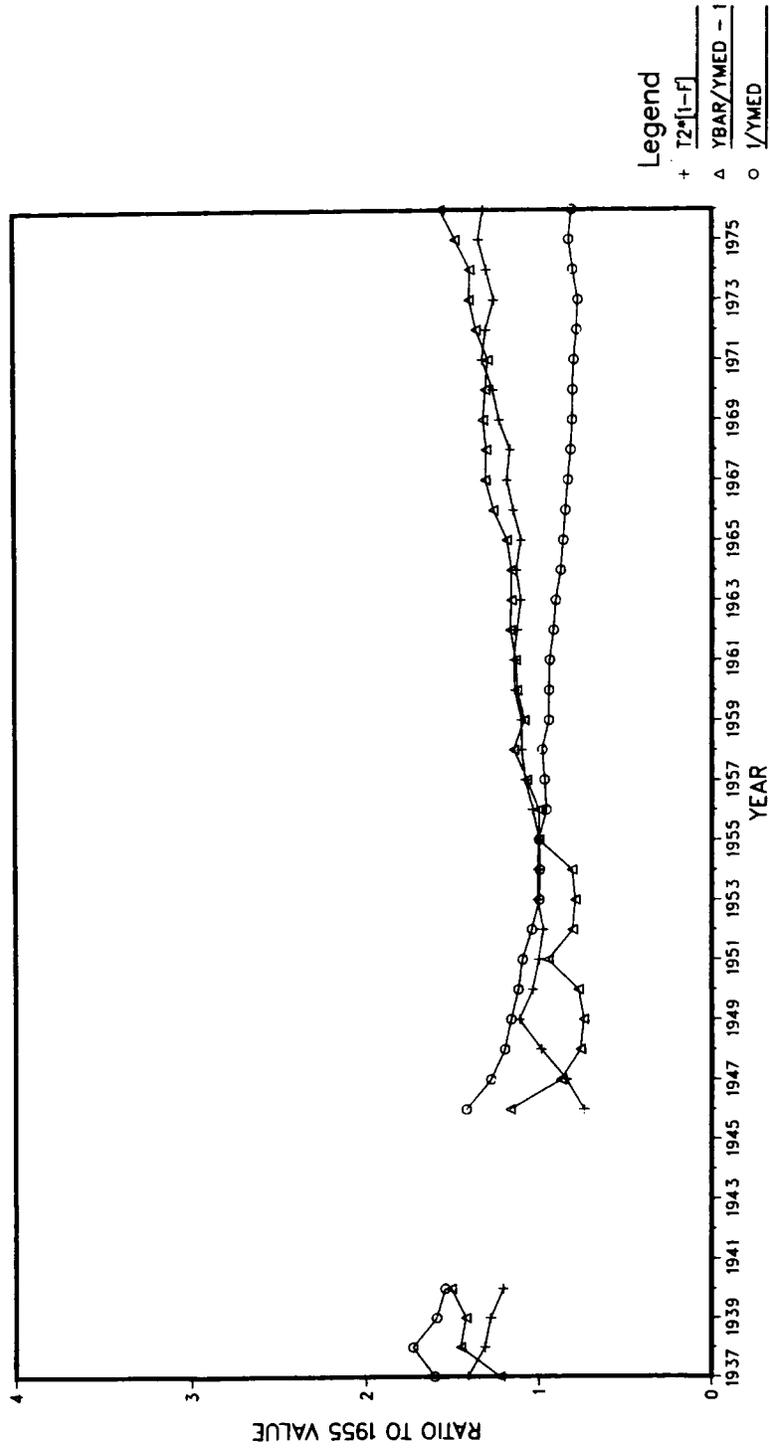


Chart 1. Rational theory data $\frac{1}{n}$ public supply of private goods

PURE REDISTRIBUTION

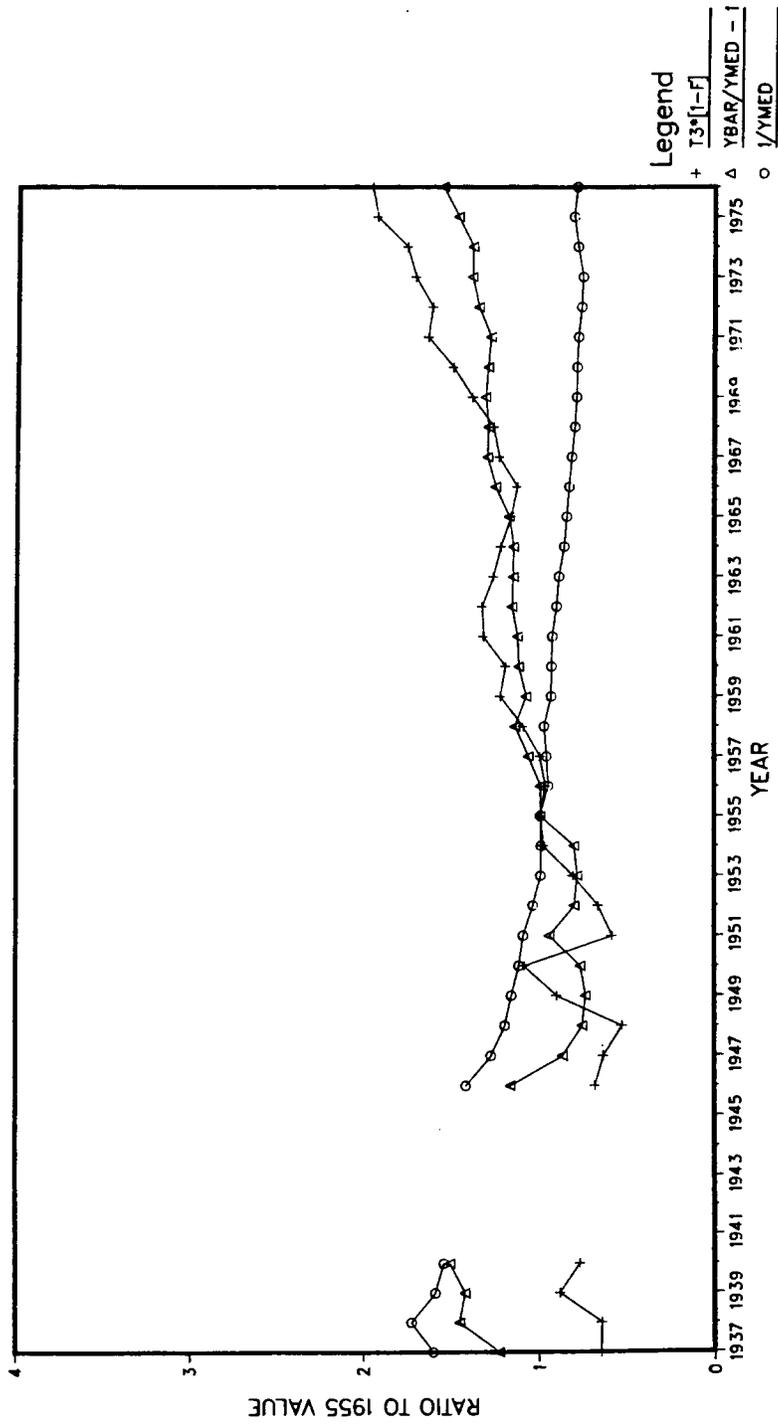


Chart 2. Rational theory data $\frac{1}{n}$ pure redistribution