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Was Proposition 4 Really a Tax Reduction Mirage?

A Correction and Reinterpretation of Previous Findings

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PROPOSITION 4, passed by California's voters in 1979, sought: (a) to limit the growth of state plus local government spending and (b) to limit the growth of state plus local tax collections. In recent issues of this JOURNAL, Cebula and Chevlin (1981, 1983) have investigated the potential impact of Proposition 4 or its equivalent upon the growth of state plus local government spending. Cebula and Chevlin have compared the actual growth of state plus local government spending per capita from *FY* 1970 to *FY* 1976 to the growth in per capita state plus local government spending that *would have occurred* from *FY* 1970 to *FY* 1976 if Proposition 4 or its equivalent had been enacted in all the states plus the District of Columbia.

In comparing the *actual* growth in per capita spending to the *hypothetical* growth in per capita spending, Cebula and Chevlin (1981, p. 346) formulate the following *null hypothesis:* Proposition 4 would not have had a significant impact on the growth in per capita state plus local government spending levels over the period *FY* 1970-1976.

Based upon a simple and conventional comparison of the means and standard deviations of the two groups of numbers, Cebula and Chevlin (1981, p. 347) conclude that ". . .we cannot reject the null hypothesis at any reasonable level."

In point of fact, however, Cebula and Chevlin should have used a more rigorous test of the null hypothesis. Ideally, they should have resorted to the following statistical test:

$$T = \frac{D}{s_0/\sqrt{n}} \qquad (1)$$

where D is the difference in the sample means, s_0 is the difference in the sample standard deviations, and $\sqrt{n}$ is the square root of the sample size.

Using the data provided in Cebula and Chevlin (1981, Table 2), we find that:

$$D = 1284.49 - 1097.53 = 186.96$$

$$S_0 = 373.09 - 324.12 = 48.97$$

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Substituting into Equation [1] yields:

$$t = 186.96/48.97/\sqrt{51} = 27.25 \qquad [2]$$

The null hypothesis is given by:

$$H_0: \Delta = 0 \qquad [3]$$

where Δ is the mean difference between the actual and estimated expenditure levels in FY 1976.

Accordingly, the t-value in Equation [2) causes the rejection of the null hypothesis at far above the 99 percent confidence level.

Thus, using Cebula and Chevlin's data, this paper finds that they should in fact have rejected the null hypothesis. In other words, it *is* demonstrated here that the existence of Proposition 4 *would* have resulted in a *statistically significant reduction* in per capita nominal state plus local government spending. This finding is of obvious importance to taxpayers, as indicated by the following provision in Proposition 4:

> Revenues received by any entity of government in excess of that amount which is appropriated by such entity in compliance with this Article during the fiscal year shall be returned by a revision of tax rates or fee schedules.

Hence, the principal tax implication of the result in Equation [2) is that, for the period considered, Proposition 4 presumably could have led to a statistically significant *reduction* in *per capita tax* levels. Clearly, these findings are fundamentally at odds with Cebula and Chevlin (1981, 1983).

References

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