

# RENT SEEKING AND ECONOMIC GROWTH: EVIDENCE FROM THE STATES

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Any significant government intervention beyond the limits defined by the minimal or protective state will counter, indeed may block, the dissipation of rents (Buchanan 1980: 7). Rent-seeking activity retards economic growth, because it merely redistributes wealth; rent seekers (unlike profit seekers in a competitive market) do not create wealth. To the extent that economic growth is a desideratum, a goal of public policy should be the restraint of government interventions that create and sustain artificial rents (i.e., payments above opportunity costs from contrived scarcities created by government grants of economic power).<sup>1</sup>

The seminal work of Robert Barro (1991) has spawned a huge empirical literature on the determinants of economic growth. Yet, as Robert Tollison (1995: 358) points out, an empirical question that remains largely unexplored is the extent to which economic growth is affected by rent seeking.<sup>2</sup> The purpose of this paper is to assess that issue empirically by examining data for the 48 contiguous states.

## Empirical Model Specification

The empirical literature on economic growth has identified a variety of possible determinants of the rate of economic growth. The basic

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<sup>1</sup>In addition to persistent *artificial* rents, which inevitably can be traced to government interventions of one sort or another, at any point in time there exist *natural* rents, which are inherent to the price system (Tollison 1982: 575).

<sup>2</sup>The author is aware of just two empirical studies that investigate the effect of rent seeking on economic growth: Murphy, Shleifer, and Vishny (1991), which examines data at the national level for a cross-section of 91 countries, and Rama (1993), which examines Uruguay time-series data at both the national and sectoral levels for the period 1925–83.

approach employed in many of those studies consists of estimating cross-sectional regressions of the form

$$(1) \quad GYP_i = \alpha + \beta x_i + \epsilon_i \quad (i = 1, \dots, n),$$

where  $GYP_i$  is the  $i$ th economy's growth rate of per capita output,  $x_i$  is a vector of explanatory variables,<sup>3</sup> and  $\epsilon_i$  is a spherical normal random error (Sala-i-Martin 1997: 178). In the present paper, a variant of this approach is employed. The specification adopted for equation (1) is<sup>4</sup>

$$(2) \quad GYP_i = \gamma_1 START_i + \gamma_2 POPG_i + \gamma_3 MTR_i \\ + \gamma_4 ISHARE_i + \gamma_5 YRS12_i + \gamma_6 RSA_i + \epsilon_i.$$

Data availability, discussed below, constrained temporal coverage and choice of variables for the analysis.  $GYP_i$  is the  $i$ th state's long-run economic growth rate,  $START_i$  is that state's initial-period per capita gross state product (GSP),  $POPG_i$  is the state's population growth rate,  $MTR_i$  is the burden of the state's tax structure,  $ISHARE_i$  is the long-run average rate of investment (including state government investment),  $YRS12_i$  is the state's human capital, and  $RSA_i$  is rent-seeking activity in the state.

None of the explanatory variables in equation (2) is endogenous. A novelty of the present study is its treatment of  $RSA$  as a *latent* variable, a theoretical construct that is a formal representation of a concept which is not directly measurable (Bollen 1989: 182).<sup>5</sup>  $RSA$  can be treated as exogenous, as it seems unlikely that causality would run from  $GYP$  to  $RSA$  or would occur simultaneously between the two. As explained in the next section, because data for each measurable explanatory variable were taken from a time period preceding the one from which data on  $GYP$  were taken, those explanatory variables are predetermined. Since none of the explanatory variables is endogenous, estimates of their coefficients will not be afflicted with simultaneity bias.

The signs anticipated for the estimated coefficients of the explanatory variables in equation (2) are those that have been obtained in some previous studies. The conditional convergence hypothesis, one of the predictions of the neoclassical growth model, is that a higher rate of growth will occur in response to a lower initial-period per

<sup>3</sup>Growth theories are not sufficiently explicit about exactly what explanatory variables belong in the "true" regression (Sala-i-Martin 1997: 178).

<sup>4</sup>The reason for excluding an intercept term is explained below. See *infra*, n. 8.

<sup>5</sup> $RSA$  does not have a unique metric. In an understatement, Murphy, Shleifer, and Vishny (1991: 522) point out that "it is hard to directly measure the allocation of talent to these two types of activities [i.e., rent seeking and entrepreneurship]."

capita output, once other variables that determine growth are held constant (Mankiw, Romer, and Weil 1992: 422):  $\gamma_1 < 0$ . That is, over time, relatively poor economies will tend to “catch up” to relatively rich ones, other things being equal.

The neoclassical model also predicts that an increase in the rate of population growth will reduce the rate of economic growth (Mankiw, Romer, and Weil 1992: 407, 410):  $\gamma_2 < 0$ . A society that increases the rate at which its population grows is, in effect, shifting its saving in the form of capital formation to saving in the form of children (Barro and Becker 1989).

For any given state, MTR is that state’s marginal tax rate. Barro (1991: 430) argues that as economic distortions are introduced through increased taxation to finance government consumption, private-sector incentives will become skewed, thereby retarding economic growth. The use of government consumption as an explanatory variable for the purpose of capturing the market-distorting and growth-retarding effects of taxation is less direct than the use of MTR for that same purpose. The anticipated sign for the coefficient of MTR is negative—a state government that aggressively taxes away private wealth is likely to experience a relatively slow rate of economic growth:  $\gamma_3 < 0$ .

In the neoclassical growth model, the saving rate is equal to the ratio of aggregate investment to aggregate output. A higher saving rate raises the steady-state output level per “effective worker,”<sup>6</sup> which raises the growth rate for a given initial-period value of output. At least one model of endogenous growth (Romer 1990: 358–62) predicts that an increase in the rate of investment will increase the rate of output growth. Thus, the higher the investment ratio, the higher the rate of growth:  $\gamma_4 > 0$ . Similarly, the greater the stock of human capital, the larger the rate of growth (Mankiw, Romer, and Weil 1992: 415):  $\gamma_5 > 0$ .

Finally, rent seeking retards the rate of economic growth:  $\gamma_6 < 0$ . The private returns of rent seekers come from the redistribution of wealth, not from wealth creation. The tax that rent seeking imposes on the productive sector reduces the output growth rate by reducing the incentives of entrepreneurs to produce and innovate. Moreover, as the rent-seeking sector expands, it absorbs more and more productive resources—and so reduces the output growth rate (Murphy, Shleifer, and Vishny 1991: 505–6).

Measurement equations (Bollen 1989: 320) must be appended to equation (2) to close the model. This is accomplished by developing

<sup>6</sup>In the neoclassical model, technical progress is labor augmenting (Burmeister and Dobell 1970: 67–68).

an empirically tractable list of observable variables that provide an indication of rent-seeking activity in a state. James Buchanan (1980: 13–14) provides a suggestion: government bureaucrats, lawyers, and lobbyists. The corresponding measurement equations are

$$(3) \quad \text{GOVEMP}_i = \lambda_1 \text{RSA}_i + \delta_1$$

$$(4) \quad \text{LAWYER}_i = \lambda_2 \text{RSA}_i + \delta_2$$

$$(5) \quad \text{LOBBYIST}_i = \lambda_3 \text{RSA}_i + \delta_3.$$

$\text{GOVEMP}_i$  is a measure of relative employment in the  $i$ th state government,  $\text{LAWYER}_i$  is a measure of relative employment in the legal profession in the  $i$ th state, and  $\text{LOBBYIST}_i$  is a measure that reflects lobbying activity in the  $i$ th state legislature. (Hereafter, the state subscript  $i$  will be suppressed.) It is anticipated that the estimated  $\lambda_q$  ( $q = 1, 2, 3$ ) would be positive.<sup>7</sup>

Except for the latent variable,  $\text{RSA}$ , all variables in equations (2)–(5) are measurable. The dependent variables in the last three equations are  $\text{RSA}$  “indicators,” the coefficients are “factor loadings,” and the  $\delta$ s are random measurement errors (Bollen 1989: 2, 3, 18). No intercepts are included in equations (2)–(5) because the variables are deviated from their means, a common practice in the estimation of latent variable models.<sup>8</sup>

## Data and Description of Variables

Data on the variables used to derive aggregate net investment ( $\text{INV}$ ) are available for the years 1969–86, while data used to construct  $\text{GYP}$  are available for the years 1977–94 from a Web page maintained by the Bureau of the Census.<sup>9</sup> Thus, data availability constrained the period for the analysis to 1977–94. Table 1 lists the definitions and sources of the data for the measurable variables—or, in the case of variables that had to be constructed, the variables involved in those constructions.

The endogenous variable,  $\text{GYP}$ , is the annual average growth rate of per capita real GSP for the period 1985–94. The chain-type gross

<sup>7</sup>Murphy, Shleifer, and Vishny (1991: 518–19) refer to government employment as “official” rent seeking, and litigation and legislature lobbying as “unofficial” rent seeking.

<sup>8</sup>EQS (Bentler 1989), a software package specifically designed for estimating the parameters of latent variable models (Bollen and Ting 1991), was used to generate all of the empirical results reported here. EQS contains a variety of estimation routines, descriptions of which can be found in Bollen (1989: 425–32). Prior to implementing a given routine, EQS deviates all variables from their means.

<sup>9</sup>The author is indebted to Donna A. Hirsch, Bureau of the Census, from whom these data were obtained electronically.

TABLE 1  
VARIABLE DEFINITIONS AND SOURCES

Variable	Definition	Source
GSP	Gross state product, current dollars	See footnote 8.
POP	Size of state population	<i>Statistical Abstract of the United States,</i> <sup>a</sup> various years
TAX	Total state and local tax receipts, current dollars	See footnote 11.
TOTPub	End-of-year total public capital stock, 1982 dollars	See footnote 9.
PRIVCAP	End-of-year nonresidential private capital stock, 1982 dollars	See footnote 9.
YRS12	Percent of population with at least 12 years of school, 1980	<i>Statistical Abstract of the United States,</i> <sup>a</sup> 1985
GOVJOB	State government employment, 1988	<i>Statistical Abstract of the United States,</i> <sup>a</sup> 1990
TRADEJOB	Wholesale and retail trade employment, 1988	<i>Statistical Abstract of the United States,</i> <sup>a</sup> 1990
LEGALEMP	Legal services employment, 1987	<i>State and Metropolitan Area Data Book,</i> <sup>a</sup> 1991
BUSEMP	Business services employment, 1987	<i>State and Metropolitan Area Data Book,</i> <sup>a</sup> 1991
LOBBYIST	Index of lobbying law restrictions	Brinig, Holcombe, and Schwartzstein (1993)

<sup>a</sup>Published by U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census.

domestic product (GDP) price index, values of which can be found in the annual *Economic Report of the President*, was used to convert nominal GSP to real GSP expressed in constant 1982 dollars. To convert to per capita values, real GSP for a given year was divided

by state population size, POP, for that year. The choice of an initial year later than 1985 for GYP would have jeopardized the intent to explain the long-run rate of per capita GSP growth; the choice of an initial year earlier than 1985 would have jeopardized the attempt to capture over a sufficiently long period the growth rate effects of two of the explanatory variables, POPG and ISHARE. The former is state 1977–84 population growth rate. The latter is state 1977–84 average share of real investment in real GSP:  $ISHARE = \Sigma(INV_t/GSP_t)/8$ . The variable  $GSP_t$  is real GSP in year  $t$ , obtained by converting the Census Bureau's current-dollar GSP for that year to 1982 constant dollars, while  $INV_t$  is aggregate net investment, also denominated in constant 1982 dollars, in year  $t$ .

$INV_t$  was derived from the data constructed by Alicia Munnell (1990) for TOTPUB and PVTCAP, state-owned capital stock and private-sector capital stock, respectively, which she denominated in constant 1982 dollars.<sup>10</sup> She constructed these data for the years 1969–88 in the case of TOTPUB (Munnell 1990: 95), and for the years 1969–86 in the case of PVTCAP (Munnell 1990: 97). For the present paper,  $INV_t$  was constructed as the sum of state-government and private-sector investment:  $INV_t = PUBINV_t + PVTINV_t$ . The two investment variables were constructed by subtracting the previous year's capital stock, net of depreciation, from the current year's capital stock, e.g.,  $PUBINV_t = TOTPUB_t - (1 - d)TOTPUB_{t-1}$ , where  $d$  is the capital depreciation rate. For this calculation the depreciation rate assumed was .05, the same rate used by David Aschauer (1990: 38).

The first explanatory variable, START, is state per capita real GSP in 1985. The third explanatory variable, MTR, is state marginal tax rate, estimated by the regression method of Reinhard Koester and Roger Kormendi (1989). The regression is  $TAX_t = \alpha + \beta GSP_t + \epsilon_t$  for 1977–84, where TAX is total state and local tax receipts.<sup>11</sup> The estimate of  $\beta$  is the state's MTR. The fifth explanatory variable, YRS12, is the percentage of the population in 1980 that had completed at least 12 years of school.

The last explanatory variable, RSA, is measured with error (the  $\delta$ s) in equations (3)–(5). GOVEMP is state government employment, GOVJOB, as a percentage of employment in the state's wholesale and retail trade sector, TRADEJOB, in 1988; LAWYER is legal services employment, LEGALEMP, in the state as a percentage of business services employment, BUSEMP, in the state in 1987; and LOBBYIST

<sup>10</sup>The author is indebted to Randall W. Eberts, W. E. Upjohn Institute, for providing these data electronically.

<sup>11</sup>See *supra*, n. 9.

is a measure, developed by Margaret Brinig, Randall Holcombe, and Linda Schwartzstein (1993), of the state's lobbying law restrictions.

## Empirical Results

The principal objective of an empirical analysis of a latent variable model is the estimation of the population covariance matrix,  $\Sigma$ , of the measurable variables in such a way as to minimize the difference between the estimate of  $\Sigma$  and the sample covariance matrix of those variables. This type of analysis is often referred to as *analysis of covariance structures* (Aigner et al. 1984: 1370). A basic assumption of this econometric methodology is that  $\Sigma$  is a function of the model's free parameters—the coefficients of all the independent variables in the model's equations, the variances of the equations' random errors, and the model-predicted variances and covariances of the measurable independent variables—the elements of a vector  $\theta$ . The hypothesis to be tested is  $\Sigma = \Sigma(\theta)$ , where  $\Sigma(\theta)$  is the model-implied covariance matrix of the observable variables. If the hypothesized model were the true state of nature and if the parameters were known, then  $\Sigma$  would be exactly reproduced (Bollen 1989: 1–2).

Generalized least squares (Bollen 1989: 334) was the method used to estimate the model. Robust tests of the statistical significance of the coefficient estimates were implemented by using Browne's (1982) method for adjusting the estimated coefficient standard errors.<sup>12</sup>

The estimated equations are presented in the first section of Table 2. The signs of the estimated coefficients are the ones anticipated. One-tail tests of significance are appropriate for testing the null hypotheses that the signs are not as predicted. In parentheses beneath each estimated coefficient is the absolute value of the corresponding *t*-statistic. The estimated factor loadings have the signs anticipated; the relatively large *t*-statistics for the estimates in the first two measurement equations suggest that GOVEMP and LAWYER are good indicators of RSA. The estimated coefficients for START, MTR, and RSA are significant at the .05 level, and have the signs anticipated. The other estimated coefficients also have the signs anticipated, but they are not significantly different from zero.

<sup>12</sup>Conventional tests of significance are valid only if the observed variables are distributed multivariate normal (Bollen 1989: 418). EQS's output includes an estimate of Mardia's statistic for testing of the null hypothesis joint normality (Bollen 1989: 423). This estimate was sufficiently large (greater than the .05 significance level of 1.96) to reject the hypothesis.

TABLE 2  
ESTIMATED EQUATIONS

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Unstandardized Coefficients

$$\text{GYP} = -.0507 \text{ START} - .0287 \text{ POPG} - .1796 \text{ MTR} + .1473 \text{ ISHARE} + .0001 \text{ YRS12} - .0119 \text{ RSA}$$

(4.3923) (1.2074) (2.2468) (.2652) (.4771) (3.3465)

$$\text{GOVEMP} = 12.0774 \text{ RSA}$$

(6.3548)

$$\text{LAWYER} = 13.1005 \text{ RSA}$$

(8.1761)

$$\text{LOBBYIST} = .8339 \text{ RSA}$$

(1.1101)

Standardized Coefficients

$$\text{GYP} = -.5306 \text{ START} - .1388 \text{ POPG} - .2218 \text{ MTR} + .0631 \text{ ISHARE} + .0606 \text{ YRS12} - .8523 \text{ RSA}$$

$$\text{GOVEMP} = .8575 \text{ RSA}$$

$$\text{LAWYER} = .9027 \text{ RSA}$$

$$\text{LOBBYIST} = .2597 \text{ RSA}$$


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NOTE: Absolute values of t-statistics are in parentheses.

The second section of Table 2 presents estimates of the standardized coefficients.<sup>13</sup> These results suggest that, of all the explanatory variables in equation (2), RSA has the greatest effect on GYP—and that effect is decidedly negative. Indeed, for each 10 percentage point increase in RSA, we can expect GYP to decline by nearly 1 percentage point.

## Conclusion

The present study reports empirical evidence on the effect that rent-seeking activity has had on the 1985–94 rate of economic growth of the 48 contiguous states. In this study, rent-seeking activity is treated as a latent variable. Estimation of latent variable models requires the use of a nontraditional econometric methodology, analysis of covariance structures (Aigner et al. 1984: 1370).

The present study finds the growth rate of real gross state product (GSP) per capita to be negatively correlated with the initial level of real GSP per capita, the burden of state tax structure, and—most notably—the level of rent-seeking activity in the state. On the basis of the estimates obtained for the standardized coefficients of the explanatory variables in the growth rate equation, the conclusion reached here is that rent-seeking activity has a relatively large negative effect on the rate of state economic growth. An implication of this finding is that a state government which promulgates policies that foster sustained artificial rent seeking does so at considerable expense to its economic growth.

## References

- Aigner, D.J.; Hsiao, C.; Kapteyn, A.; and Wansbeek, T. (1984) “Latent Variable Models in Econometrics.” In Z. Griliches and M.D. Intriligator (eds.) *Handbook of Econometrics*, Vol. 2, 1321–93. Amsterdam: North-Holland.
- Aschauer, D.A. (1990) “Why Is Infrastructure Important?” In A.H. Munnell (ed.) *Is There a Shortfall in Public Capital Investment?* 21–50. Boston: Federal Reserve Bank of Boston.
- Barro, R.J. (1991) “Economic Growth in a Cross-section of Countries.” *Quarterly Journal of Economics* 106: 407–43.
- Barro, R.J., and Becker, G.S. (1989) “Fertility Choice in a Model of Economic Growth.” *Econometrica* 57: 481–501.

<sup>13</sup>The standardized coefficient of a particular independent variable is the expected change in standard deviation units of the dependent variable due to a one standard deviation change in the independent variable when the other variables are held constant. When the independent variables in a given equation are scaled in different units, standardizing the coefficients permits a direct comparison of each independent variable's relative effect on the dependent variable as compared to that of every other independent variable.

- Bentler, P.M. (1989) *EQS Structural Equations (Version 3.0)*. Los Angeles: BMDP Statistical Software.
- Bollen, K.A. (1989) *Structural Equations with Latent Variables*. New York: Wiley.
- Bollen, K.A., and Ting, K. (1991) "Statistical Computing Software Review of EQS (Version 3.0) and LISREL (Version 7.16)." *American Statistician* 45: 68–73.
- Brinig, M.F.; Holcombe, R.G.; and Schwartzstein, L. (1993) "The Regulation of Lobbyists." *Public Choice* 77: 377–84.
- Browne, M.W. (1982) "Covariance Structures." In D.M. Hawkins (ed.) *Topics in Multivariate Analysis*, 72–141. Cambridge: Cambridge University Press.
- Buchanan, J.M. (1980) "Rent Seeking and Profit Seeking." In J.M. Buchanan, R.D. Tollison, R.D., and G. Tullock (eds.) *Toward a Theory of the Rent-Seeking Society*, 3–15. College Station: Texas A&M University Press.
- Burmeister, E., and Dobell, A.R. (1970) *Mathematical Theories of Economic Growth*. New York: Macmillan.
- Koester, R.B., and Kormendi, R.C. (1989) "Taxation, Aggregate Activity, and Economic Growth: Cross-Country Evidence on Some Supply-Side Hypotheses." *Economic Inquiry* 27: 367–86.
- Mankiw, N.G.; Romer, D.; and Weil, D.N. (1992) "A Contribution to the Empirics of Economic Growth." *Quarterly Journal of Economics* 107: 407–37.
- Munnell, A.H. (1990) "How Does Public Infrastructure Affect Regional Economic Performance?" In A.H. Munnell (ed.) *Is There a Shortfall in Public Capital Investment?* 69–103. Boston: Federal Reserve Bank of Boston.
- Murphy, K.M.; Shleifer, A.; and Vishny, R.W. (1991) "The Allocation of Talent: Implications for Growth." *Quarterly Journal of Economics* 106: 503–30.
- Rama, M. (1993) "Rent Seeking and Economic Growth: A Theoretical Model and Some Empirical Evidence." *Journal of Development Economics* 42: 35–50.
- Romer, P.M. (1990) "Capital, Labor, and Productivity." In M.N. Baily and C. Winston, C. (eds.) *Brookings Papers on Economic Activity: Microeconomics*, 337–67. Washington, D.C.: Brookings Institution.
- Sala-i-Martin, X.X. (1997) "I Just Ran Two Million Regressions." *American Economic Review* 87: 178–83.
- Tollison, R.D. (1982) "Rent Seeking: A Survey." *Kyklos* 35: 575–602.
- Tollison, R.D. (1995) "Gordon Tullock's Contributions to the Theory of Public Choice." *Economic Inquiry* 33: 355–64.