



Rent seeking and the excess burden of taxation



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ABSTRACT

The social costs of rent seeking and the excess burden of taxation have been studied and evaluated independently. We show that, when rent seekers earn taxable income, there is interdependence between the two types of social losses. Rent seeking increases the excess burden of taxation under risk neutrality when leisure is non-inferior. We derive a condition for rent seeking to increase the excess burden of taxation under risk aversion. When rent seekers can earn taxable income, rent seeking is more socially costly than is inferred from contest models alone, because of an increased excess burden of taxation.

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1. Introduction

Gordon Tullock (1967) observed that a social cost is incurred when time and resources are attracted into contesting available benefits or rents. The primary concern of the literature (see Congleton et al., 2008) that followed on from Tullock's observation has been evaluation of the social cost of rent seeking. With no official data on rent seeking available and contested rents in general not observable, the approach to measurement of the social cost of rent seeking has been through modeling the behavior of rent seekers in the theory of contests (Konrad, 2009; Long, 2013). Empirical studies have used the conclusions from the models to infer social costs through dissipation of rents, usually under the assumption of complete dissipation (Hillman, 2013).

The studies of the social cost of rent seeking have had in common the assumption that contests occur in isolation from other sources of income and from leisure. Yet in general rent seekers can also earn incomes in labor markets and allocate time to leisure. The incomes are subject to taxation. We show that when rent seekers earn – or can earn – taxable income and can allocate time to leisure, under reasonable conditions the social cost of rent seeking exceeds the social losses inferred from the presence of a rent-seeking contest alone.¹

The excess burden of taxation is associated with the Harberger triangle (see Harberger, 1964; Hines, 1999). In the special case in which the compensated labor supply is linear, the excess burden of taxation can be measured by using a formula for the Harberger triangle that includes the tax rate and the compensated elasticity of labor supply (for an exposition, see Hillman, 2009 chapter 4). We use the equivalent variation to measure the excess burden of taxation.²

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¹ There has been recognition that rent seeking is included in possible allocation of time. See Weiss (2009). The interdependence between the social costs of rent seeking and the excess burden of taxation has not been studied.

² Although the formula for the area of the Harberger triangle can be used as an approximation for measuring the specific excess burden with infinitesimal rate of taxation, because of the possible different direction and magnitude of errors in consequence of using an approximation, to compare between different excess burdens, we require an accurate measure such as the equivalent variation. On measurement of the excess burden, see Willig (1976) and Hausman (1981).

In Section 2 we add a rent-seeking opportunity to time-allocation options of earning taxable income or having utility from leisure. We do not introduce further time allocation options such as home production or an informal sector, which, unlike rent seeking, can be non-strategic and risk-free. In Section 3, with leisure non-inferior, we obtain the quite intuitive result using the equivalent variation that the excess burden of taxation is greater in the presence of a rent-seeking opportunity. The core intuition is that a tax on earned income decreases the opportunity cost of leisure and when present, also of rent seeking. Therefore time is substituted not only from labor to leisure but also from labor to rent seeking. An adverse effect of a tax on earned income on a rent seeker is that, unlike leisure, the expected return from participating in a strategic rent seeking contest may not increase when substituting more time into a contest. With identical individuals the expected return is unchanged. These effects increase the excess burden of taxation. We also provide a more technical detailed explanation of the increase in the excess burden of taxation.³

In Section 4 we introduce risk-aversion. Rent seeking in addition to being strategic is also risky. The excess burden of taxation with risk aversion regarding rent seeking includes the effect of risk on time substitution and a reevaluation of the uncertain income from rent seeking due to a change that can occur in the individual's risk premium. With additive utility, constant absolute risk aversion is a sufficient condition for the result that rent seeking increases the excess burden of taxation.⁴

Section 5 notes applicability of the conclusions to extensions of the basic rent-seeking model. We note studies that, in distinction to the separation common in the literature, recognize interdependence between issues of public finance and rent seeking. We give examples of coexistence of rent-seeking opportunities with taxable income and note the implications of our results for the socially desirable size of government.

2. Labor supply, leisure, and rent seeking

We begin with the standard labor-supply model of an individual who earns taxed income and confronts a labor/leisure choice with no rent seeking opportunity. The individual i assigns time to leisure l_i and time to productive work, $L_i = \bar{T} - l_i$, where \bar{T} is available time, and receives a net-of-tax wage rate of W_i per hour. The individual also has non-contestable non-labor income M_i . There is no savings. Utility U_i depends on consumption of market goods C_i and leisure l_i . Individual i solves the time allocation problem (Becker, 1965):

$$\max_{l_i} U_i(C_i, l_i), \tag{1}$$

where $C_i = (\bar{T} - l_i)W_i + M_i$. In an interior solution,

$$\frac{dU_i}{dl_i} = U_{il_i} - W_i U_{ic_i} = 0, \tag{2}$$

and

$$\frac{d^2 U_i}{dl_i^2} = U_{il_i l_i} + W_i^2 U_{ic_i c_i} - 2W_i U_{ic_i l_i} < 0, \tag{3}$$

where

$$U_{ik} \equiv \frac{\partial U_i}{\partial k}, \quad U_{ikk} \equiv \frac{\partial^2 U_i}{\partial k^2}, \quad k = C_i, l_i, \quad \text{and} \quad U_{ic_i l_i} \equiv \frac{\partial^2 U_i}{\partial C_i \partial l_i}.$$

Applying the implicit function theorem in (2) results in:

$$\frac{\partial l_i}{\partial M_i} = \frac{U_{il_i c_i} - W_i U_{ic_i c_i}}{-\frac{d^2 U_i}{dl_i^2}} \tag{4}$$

and

$$\frac{\partial l_i}{\partial W_i} = (\bar{T} - l_i) \frac{\partial l_i}{\partial M_i} + \frac{U_{ic_i}}{\frac{d^2 U_i}{dl_i^2}}. \tag{5}$$

Leisure is a normal, neutral or inferior good according to whether $U_{il_i c_i} - W_i U_{ic_i c_i} \gtrless 0$, respectively. With leisure normal, the response to an increase in the net-of-tax wage is ambiguous. Under the standard assumption that, with leisure normal, the substitution effect of an increase in the net wage $\frac{U_{ic_i}}{\frac{d^2 U_i}{dl_i^2}} < 0$ dominates the income effect $(\bar{T} - l_i) \frac{\partial l_i}{\partial M_i}$, labor supply increases with the net-of-tax wage.

³ Rent seeking increases the excess burden of taxation and at the same time, because of the greater excess burden of taxation, the social cost of rent seeking is greater when rent seekers earn taxed productive income. There is only one additional social loss.

⁴ Risk aversion was introduced in models of rent seeking in Hillman and Katz (1984) under the assumption of constant relative risk aversion, which results in diminished rent-seeking outlays as risk aversion increases. More generally, risk-aversion introduces ambiguities into rent-seeking models (Skaperdas and Gan, 1995; Konrad and Schlesinger, 1997; Treich, 2010).

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