Can Leviathan City Governments Use Tax Policy to Attract the Creative Class?

Batabyal, Amitrajeet and Beladi, Hamid

Rochester Institute of Technology, University of Texas at San Antonio

9 January 2023

Can Leviathan City Governments Use Tax Policy to Attract the Creative Class?[1]

by

AMITRAJEET A. BATABYAL[2]

and

HAMID BELADI[3]

[2]

Departments of Economics and Sustainability, Rochester Institute of Technology, 92 Lomb Memorial Drive, Rochester, NY 14623-5604, USA. E-mail: aabgsh@rit.edu
[3]

Department of Economics, University of Texas at San Antonio, One UTSA Circle, San Antonio, TX 78249-0631, USA. E-mail: Hamid.Beladi@utsa.edu

Can Leviathan City Governments Use Tax Policy to Attract the Creative Class?

Abstract

We focus on an aggregate economy of two nearby cities A and B and study whether it is possible for the leviathan governments in these two cities to use taxes τ^A and τ^B to attract members of the so-called creative class. The creative class population is fixed and members locate either in city A or B depending on the utility from such location. In this setting, we accomplish five tasks. First, given the two taxes, we determine the value of a metric ζ that describes how the creative class population partitions into cities A and B. Second, for a given partition of the creative class population, we state the budget constraints confronting the governments in cities A and B. Third, we state and solve the decision problems of the two governments when they act as *independent leviathans* and maximize tax revenue. Fourth, we ascertain the efficient taxes that maximize the *sum* of tax revenues in the *aggregate* economy. Finally, we discuss the implications of our analysis for tax policy.

1. Introduction

1.1. Setting the Scene

Three questions that policy makers need to think about when contemplating regional economic growth and development are the following: First, what is the creative class? Second, what is distinctive about members of the creative class? Finally, should a regional government that is interested in stimulating economic growth and development in its region pay attention to the creative class?

Even though Andersson (1985) was the first to point to the importance of *creativity* for regional economic growth and development, it is fair to say that in the last two decades, the urbanist Richard Florida has provided the most comprehensive answers to the three questions posed in the preceding paragraph. Specifically, in his prominent tome titled *The Rise of the Creative Class* (2002, p. 68), Florida explains that the *creative class* "consists of people who add economic value through their creativity." This class is composed of a variety of professionals such as attorneys, computer scientists, medical doctors, university professors, and, markedly, bohemians such as artists, musicians, and sculptors. In other words, the creative class consists of a heterogeneous group of persons.

The specific attribute of the members of the so-called creative class that distinguishes them from other workers or, alternately, makes them unique in the labor force is that they possess *creative capital*. This is defined to be the "intrinsically human ability to create new ideas, new technologies, new business models, new cultural forms, and whole new industries that really [matter]" (Florida, 2005, p. 32). The creative capital possessing members of the creative class are important because, among other things, this group of persons can produce outputs that are significant for the growth and development of cities and regions.

We know that the governments in cities and regions typically face finite budget constraints---see section 2.3 below---that restrict the steps they can take to ensure the well-being of their respective cities and regions. As such, in this era of globalization, it makes sense to think of these governments as constrained optimizers in the sense that they would like to do all they can to attract and retain members of the creative class because this class, we are told, is the principal driver of economic growth and development. [4]

Houston *et al.* (2008), Oakley (2009), Batabyal and Beladi (2022), and Batabyal and Nijkamp (2022a) have now demonstrated that creative class members, in general, are mobile. This means that regions attempting to attract them will need to compete with other regions for their services. Second, Batabyal and Nijkamp (2022a, 2022b) tell us that regional governments can, in certain circumstances, use tax policy to perform this "attract" function. These researchers also demonstrate that competition between regions in setting tax rates leads to an inefficiently low level of the tax rate on creative capital.

The above results notwithstanding, to the best of our knowledge, one question that has received *no* theoretical attention in the literature concerns the working of a *leviathan* city government. Here, we are using the word leviathan in the sense in which it was originally used by Geoffrey Brennan and James Buchanan in their prominent 1980 tome titled *The Power to Tax*.[5] In other words, we suppose that a leviathan city government maximizes tax revenues. As such, the question we propose to analyze in this note is the following: Is it possible for leviathan city governments (CGs) to use tax policy to attract members of the creative class? However, before we

---

[4]

See Florida *et al*. (2008) and Florida *et al*. (2012) for a more detailed corroboration of this point. Also, the reader should understand that we are using the word "region" in this note to refer to a sub-national geographic entity such as a state, a province, or a city. That said, our subsequent theoretical analysis makes most sense in the context of nearby cities and section 2.1 below makes this point clear.

[5] See Mueller (2014) for a discussion of related issues.

proceed to the details of the analysis itself, let us first substantiate the claim about "no theoretical attention" that we just made, by reviewing the related literature on the subject of our note.[6]

1.2. Literature review

Schmitz (2013) shows how the earmarked tax revenue from Colorado's Scientific and Cultural Facilities District (SCFD) can be used to provide a somewhat stable source of funding for the arts. As she points out, the tax revenue itself can be based on sales taxes---as in the SCFD---or on other kinds of taxes. Haisch and Klopper (2015) examine the extent to which taxes, in addition to the attribute of tolerance and other regional amenities, affect the location decisions of members of the creative class.

Buettner and Janeba (2016) study competition between cities for the creative class and point out that the incentive faced by cities to provide public amenities to the creative class is particularly potent when institutional restrictions preclude local governments from adjusting their tax structure. The subject of capital taxation in a creative region has been studied by Batabyal (2017). He delineates the circumstances in which a policy of subsidizing investment and raising the revenue for this subsidy with lump-sum taxes, increases economic welfare.

---

[6]
We have just stated our objective clearly. We would now like to emphasize the following seven points. First, the question that we are analyzing in this note is both interesting and it has *not* been studied previously in the regional science literature. That is why we are analyzing this question here. Second, the present contribution of ours is a *note* that concentrates on a single, specific question and this contribution is *not* a full length paper. Third, there clearly are many topics concerning the creative class---such as the provision of public goods---that are relevant topics for analysis but an analysis of these topics is *beyond the scope* of this note. In this regard, Batabyal and Yoo (2020) and Batabyal (2021) have recently studied how cities and regions can use local public goods to attract members of the creative class. Fourth, in an alternate analysis---see Riew (1973) and section 3---the decision by creative class members to move either to city A or B (see section 2 below) can be examined in the context of a migration model to determine, *inter alia*, how the use of tax policy influences the private and social incentives for migration and the impact that such migration has on the provision of public services. Fifth, following Tiebout (1956), one could study how successful cities A and B are in attracting members of the creative class when they act as a cartel and levy a single tax and also when they engage in tax competition among themselves. Sixth, following Tullock (1971), one could study the nexuses between the actions of CGs, the creation of what Tullock calls "public goods problem," and the extent to which these actions are successful in attracting creative class members. Finally, unlike the analysis conducted here, if there were three leviathan CGs---of cities, $A, B,$ and C---then the model would become more complicated and one would have to account for different kinds of potential interactions between the three CGs. One such potential interaction is where the CGs of any two cities collude to act collectively and to the detriment of the third city CG.

Khan *et al*. (2019) claim that there is a clear connection between the growth of a creative economy and the implementation of intellectual property rights. Therefore, adequate implementation of these rights is necessary to engender tax revenues that can then be used to provide incentives to creators for their investments of labor, finance, and expertise. Batabyal and Nijkamp (2022a, 2022b) study the extent to which taxes are useful in attracting mobile creative capital to a region when physical capital, the other factor of production, is and is not mobile across the regions being studied.

Several researchers have studied the working of leviathan governments from a variety of perspectives. For instance, Kluge *et al*. (2017) investigate how the intensity of political competitions affect the leviathan behavior of local politicians. Their empirical analysis shows that the local politicians under study behave like self-preserving leviathans. Millsap *et al*. (2019) use data for a number of United States metropolitan statistical areas to show that there is some support for the so-called *leviathan hypothesis* formulated by Brennan and Buchanan (1980) which holds that the potential for fiscal exploitation varies inversely with the number of competing governmental units. Finally, are environmental taxes better viewed as following the Pigouvian hypothesis or the leviathan hypothesis? Cadoret *et al*. (2021) use European data to analyze this question empirically. Their analysis shows that there is greater support for the Pigouvian and not the leviathan hypothesis.

This review of the literature yields two conclusions. First, there are a small number of studies that have examined the connections between creative capital use and the utilization of tax policy to influence this use in one or more ways. Second and consistent with our observation in section 1.1, there are *no* studies in the literature that have theoretically analyzed the implications of leviathan CGs using tax policy to attract members of the creative class.

Given this lacuna in the literature, the rest of this note is organized as follows: Section 2.1 describes the theoretical framework in which the object of our study is an aggregate economy consisting of two nearby cities denoted by A and B. The leviathan CGs in the two cities use taxes to attract members of the creative class. The creative class population is fixed and members of the creative class locate either in city A or B depending on the utility from such location. Given the two taxes, section 2.2 determines the value of a metric ζ that describes how the creative class population partitions into cities A and B. For a given partition of the creative class population, section 2.3 stipulates the budget constraints facing the governments in cities A and B. Section 2.4 states and then solves the decision problems of the two CGs when they act as *independent leviathans* and maximize tax revenues. We emphasize that the CGs in A and B maximize tax revenue because they are leviathan CGs and, as explained in section 1.1 and by Gifford and Kenney (1984) and Padovano (2003), this is what leviathan CGs do. Section 2.5 ascertains the efficient taxes that maximize the *sum* of tax revenues in the *aggregate* economy. Section 2.6 discusses the implications of our analysis for tax policy. Finally, section 3 concludes and then suggests two ways in which the research delineated in this note might be extended.

2. Analysis

2.1. The theoretical framework

Consider an aggregate economy consisting of two nearby cities indexed by $i = A, B$. Examples from the United States of the kind of cities we have in mind are Buffalo and Rochester in the state of New York, Minneapolis and Saint Paul in the state of Minnesota, and Dallas and Fort Worth in the state of Texas.[7] Because our model is static, we suppose that the creative class

---

[7] An important goal of ours in this *note* is to illustrate the key elements of competition between cities by constructing and analyzing a *parsimonious* model of this kind of competition. That is why we have chosen to focus on a model with two cities. In this regard, we emphasize that our focus on two cities is entirely consistent with some recent contributions in the regional science literature that have also studied competition and/or interactions between cities---see Batabyal and Beladi (2022) and Batabyal and Nijkamp

population in the aggregate economy is fixed and of size C.[8] This population locates either in city A or B depending on the utility obtained from such location.

Each member of the creative class is characterized by a metric ζ that measures the attachment this member feels for city A. Therefore, it follows that the attachment this member feels for city B is given by $1 - \zeta$. The metric ζ is assumed to be distributed uniformly across the entire creative class population with values that range from zero to one.[9]

The utility level in city A of a creative class member with attachment ζ is given by

$$U^A = I - \zeta - \tau^A, \tag{1}$$

where I is this member's income and τ^A is the tax rate levied by the CG in A. Similarly, the utility level in city B of the same creative class member can be written as

$$U^B = I - (1 - \zeta) - \tau^B, \tag{2}$$

where τ^B is the tax rate imposed by the CG in B. Observe that the two attachment factors ζ and $(1 - \zeta)$ in equations (1) and (2) enter the two utility functions with a negative sign. This is because we are capturing the idea that moving to a city, even when it is not far away, gives rise to friction and this friction enters the utility function as a disutility, meaning with a negative sign. Instead of following this approach, if we modeled the two attachment factors as entering the two utility

(2022a, 2022b)---by concentrating on two cities. That said, we acknowledge that, *ceteris paribus*, a model with three cities is "more interesting" than a model with two cities but, using this logic, one can also argue that a model with $n \in \mathbb{N}$ cities is "more interesting" than a model with $(n - 1)$ cities.

[8]

Our focus in this note is on the *creative class* population in our aggregate economy. If we denote the total population of the aggregate economy by T, then it follows that the creative class population or C can be represented by $C = \alpha T$, where $\alpha \in (0, 1)$ is an appropriate fraction. In other words, the creative class population is a proper subset of the total population. With this schema, the non-creative class population in the aggregate economy or NC can be represented by $NC = (1 - \alpha)T$ and so it follows that $C + NC = T$. Using this relationship, if we were interested, then, when discussing our subsequent results, we could easily move between the creative and either the non-creative population or the total population in our aggregate economy.

[9]

Observe that because ζ is distributed uniformly over $[0, 1]$ across the *entire* creative class population in our aggregate economy, its value over the population in *just* city A will *not* be equal to one. In addition, if $\zeta = 1$ then $1 - \zeta = 0$ and this would tell us that creative class members have no attachment at all for city B. If this were the case then the question of using tax policy to attract creative class members to city A would be a non-issue. See Haedo and Mouchart (2017) and Gaspar *et al.* (2021) for additional examples of the use of the uniform distribution in regional science.

functions with a positive sign then analysis shows that $\tau^A = \tau^B = -1$ meaning that the two taxes we are interested in analyzing are, in fact, not taxes but subsidies. Since the basic objective of this note is to study tax and not subsidy policy, we stay with the approach shown in equations (1) and (2).

The reader will also notice that we have used a common value for the income I that the creative class member can earn in either city A or B. We believe this approach is defensible because, as we have pointed out above, the two cities we have in mind are, like Buffalo and Rochester in New York, located close to each other and hence a member of the creative class can expect to earn very similar amounts of income in each of these two cities. That said, we emphasize that we make no additional assumptions about the valuation of the characteristics of either city or their amenities or the cost of living in them.

In the remainder of this note, we assume that there always exists a value of the metric ζ that partitions the creative class population into those who wish to locate in city A and those who wish to locate in city B. In addition, observe that the fixed size C of the creative class population in our aggregate economy does not affect the location decision of creative class members. This is because our model is static and hence the central issue is how tax policy influences the partitioning of this fixed population. The question of the creative class population changing---an issue that would be pertinent in a dynamic model---does not arise in our analysis. Now, given the two taxes τ^A and τ^B, our next task is to determine the value of the metric ζ that describes how the creative class population partitions into cities A and B.

2.2. The value of ζ

The value of ζ at which the creative class population in our aggregate economy partitions into cities A and B is given by the condition

$$U^A = U^B. \tag{3}$$

Using equations (1) and (2), the condition in equation (3) can be written as

$$I - \zeta - \tau^A = I - (1 - \zeta) - \tau^B. \tag{4}$$

Solving equation (4) for ζ gives us

$$\zeta = \frac{1}{2} + \frac{\tau^B - \tau^A}{2}. \tag{5}$$

In words, the value of ζ that effectively partitions the creative class population into those that wish to locate in city A and those that wish to locate in city B is the sum of one-half and a ratio whose magnitude depends on the difference between the city B and A tax rates. For a given partition of the creative class population, we now state the budget constraint facing the CGs in the two cities under study.

2.3. The budget constraints

Let us denote the tax revenue in the ith city, $i = A, B$, by R^i. Then, we can write $R^A = \tau^A \zeta$. Using equation (5), the tax revenue in city A can be expressed as[10]

$$R^A = \tau^A \zeta = \tau^A \left(\frac{1}{2} + \frac{\tau^B - \tau^A}{2} \right). \tag{6}$$

Similarly, we can write the budget constraint for city B. This gives us

---

[10]
The reader should understand that the city A attachment metric ζ is *not* the inverse of the creative class population in city A. As such, it does *not* make sense to write the tax revenue in city A as $R^A = \tau^A/\zeta$. In addition, it is also *not* meaningful to write the tax revenue as $R^A = \tau^A \times Population^A$ because we are *not* working with the fixed total creative class population or C but instead with the city A and city B attachment metrics given by ζ and $(1 - \zeta)$.

$$R^B = \tau^B(1 - \zeta) = \tau^B\left(\frac{1}{2} + \frac{\tau^A - \tau^B}{2}\right). \tag{7}$$

Using the results from sections 2.2 and 2.3, we can now state and then solve the decision problems of the two CGs when they act as *independent leviathans* and maximize tax revenues.

2.4. The optimization problems

As noted in section 1.1, as leviathans, the two CGs seek to maximize the revenue from taxation. In the following derivation of the two taxes τ^A and τ^B, we suppose that they are both non-negative. Now, using equation (6), the decision problem of the government in city A can be expressed as

$$max_{\{\tau^A\}}\tau^A\left(\frac{1}{2} + \frac{\tau^B - \tau^A}{2}\right). \tag{8}$$

Similarly, using equation (7), the optimization problem of the government in city B can be written as

$$max_{\{\tau^B\}}\tau^B\left(\frac{1}{2} + \frac{\tau^A - \tau^B}{2}\right). \tag{9}$$

It is understood here that when solving the two maximization problems stated in (8) and (9), each CG takes the tax rate chosen by the other CG as given.

Differentiating (8) with respect to the tax rate τ^A and then simplifying the resulting expression, the first-order necessary condition (FONC) for a maximum---the second-order sufficiency condition is satisfied---is

$$\tau^A = \frac{1}{2} + \frac{\tau^B}{2}. \tag{10}$$

Similarly, differentiating (9) with respect to the tax rate τ^B, the corresponding FONC for an optimum---the second-order sufficiency condition is satisfied---is

$$\tau^B = \frac{1}{2} + \frac{\tau^A}{2}. \tag{11}$$

Solving equations (10) and (11) simultaneously, we get the optimal values of the two city tax rates. These rates satisfy

$$\tau^A = \tau^B = 1. \tag{12}$$

Equation (12) tells us that when the two CGs in our aggregate economy act as *independent leviathans* and maximize the tax revenue in their city, it is optimal for them to set the equilibrium tax rates to equal unity.[11] How is this result impacted when we compute the *efficient* taxes that arise from the maximization of the *sum* of the tax revenues in the *aggregate* economy? We now proceed to answer this question.

2.5. Efficient tax rates

We begin by pointing out that the two efficient tax rates maximize the objective function given by $R^A + R^B$. Therefore, using equations (6) and (7), the optimization problem of interest now is to solve

---

11

The reader will note that there is no feedback mechanism in the actions (tax choices) of the two CGs in A and B. This is because of two reasons. First, our analysis is *static* and a feedback mechanism is best modeled and studied in a dynamic setting. Second, even if we were to restrict attention to a static model as we do in this note, for there to be a (relatively straightforward) feedback mechanism, we would have to model a scenario in which one CG acts (the leader) and the other reacts (the follower) as in Stackelberg or price leadership games. Since we have no reason to and therefore have not imposed a leader/follower structure in our model, we do not have a feedback mechanism to contend with.

$$max_{\{\tau^A, \tau^B\}} \tau^A \left(\frac{1}{2} + \frac{\tau^B - \tau^A}{2} \right) + \tau^B \left(\frac{1}{2} + \frac{\tau^A - \tau^B}{2} \right). \tag{13}$$

Differentiating the maximand in (13) with respect to the two tax rates τ^A and τ^B and then simplifying the resulting expressions gives us the two FONCs for an interior maximum. Specifically, these two FONCs---the second-order sufficiency conditions are satisfied---are

$$\frac{\partial(R^A + R^B)}{\partial \tau^A} = \frac{1}{2} + \tau^B - \tau^A = 0 \tag{14}$$

and

$$\frac{\partial(R^A + R^B)}{\partial \tau^B} = \frac{1}{2} + \tau^A - \tau^B = 0. \tag{15}$$

Equation (14) tells us that $\tau^A = (1/2) + \tau^B$ and equation (15) tells us that $\tau^A = \tau^B - (1/2)$. Simplifying these last two results, we get $1 + \tau^B = \tau^B$, which is clearly impossible. Therefore, the logical implication of this analysis is that the two FONCs in equations (14) and (15) *cannot* hold simultaneously. This finding also tells us that interior solutions---efficient tax rates---to the maximization problem in (13) do *not* exist. As such, we now look for potential corner solutions. After some algebra, it is straightforward to confirm that the objective function in (13) attains a maximum when $\tau^A = \tau^B = I$. In other words, the two efficient tax rates that maximize the sum of the tax revenues in the aggregate economy under study are to be set so that they confiscate *all* the income from the members of the creative class population who choose to locate in either region A or B. We emphasize that this extreme result arises in our model because income

I is *fixed* when viewed from the standpoint of the aggregate economy. Our last task in this note is to discuss the implications of our analysis thus far for tax policy.

2.6. Discussion

The analysis we have undertaken in this note, particularly the analysis in sections 2.4- 2.5, shows that leviathan city governments engage in extreme behavior as far as the formulation of tax policy is concerned. Although the tax policy that results from this extreme behavior maximizes the sum of tax revenues, such policy is unlikely to have much success in attracting members of the creative class to either of the two cities under consideration because of two reasons.

First, when the CGs of the two cities use tax policy to *compete* among themselves to attract members of the creative class to their respective cities, this competition is very likely to constrain the behavior of leviathan governments. Second, if members of the creative class population are mobile, and there is no *a priori* reason to believe that they are not, then by migrating between cities, these members can escape punitive taxes on their income. This completes our analysis of whether leviathan city governments can use tax policy to attract the creative class to their respective cities.

3. Conclusions

In this note, we concentrated on an aggregate economy of two proximate cities *A* and *B* and then studied whether it was possible for the leviathan governments in these two cities to use taxes τ^A and τ^B to attract members of the creative class. The creative class population in our model was fixed and members located either in city *A* or *B* depending on the utility from such location. In this setting, given the two taxes, we first determined the value of a metric ζ that delineated how the creative class population partitioned into the two cities *A* and *B*. Second, for a given partition of the creative class population, we stated the budget constraints confronting the governments in

cities *A* and *B*. Third, we specified and then solved the decision problems of the two governments when they acted as independent leviathans and maximized tax revenues. Fourth, we ascertained the efficient taxes that maximized the sum of the tax revenues in the aggregate economy. Finally, we discussed the implications of our analysis for tax policy.

The analysis in this note can be extended in a number of different directions. Here are two possible extensions. First and consistent with the discussion in section 2.6, it would be interesting to explicitly model the mobility of individual creative class members and to then analyze how this mobility affects the taxing behavior of leviathan CGs. Second, it would be instructive to model the interaction between leviathan CGs and the creative class in a repeated game framework to see how repeated interactions between these two parties affects the location decisions of creative class members and the taxing behavior of leviathan CGs. Studies that analyze these aspects of the underlying problem will provide additional insights into the characteristics of tax policy induced interactions between CGs and creative class members.

References

Andersson, A. 1985. Creativity and regional development, *Papers in Regional Science*, 56, 5-20.

Batabyal, A.A. 2017. On capital taxation and economic growth and welfare in a creative region, in H. Shibusawa, K. Sakurai, T. Mizunoya, and S. Uchida, Eds., *Socioeconomic Environmental Policies and Evaluations in Regional Science*, 147-159. Springer Nature, Singapore.

Batabyal, A.A. 2021. Monopoly vs. individual welfare when a local public good is used to attract the creative class, *International Regional Science Review*, 44, 605-614.

Batabyal, A.A., and Beladi, H. 2022. The response of creative class members to regions vying to attract them with subsidies, *International Regional Science Review*, 45, 581-600.

Batabyal, A.A., and Nijkamp, P. 2022a. Interregional competition for mobile creative capital with and without physical capital mobility, *International Regional Science Review*, 45, 58-73.

Batabyal, A.A., and Nijkamp, P. 2022b. Efficient regional taxes in the presence of mobile creative capital, *Review of Regional Studies*, 52, 198-209.

Batabyal, A.A., and Yoo, S.J. 2020. Using a local public good to attract representative creative class members: The inefficient equilibrium case, *Theoretical Economics Letters*, 10, 40-46.

Brennan, G., and Buchanan, J. 1980. *The Power to Tax*. Cambridge University Press, Cambridge, UK.

Buettner, T., and Janeba, E. 2016. City competition for the creative class, *Journal of Cultural Economics*, 40, 413-451.

Cadoret, I., Galli, E., and Padovano, F. 2021. Environmental taxation: Pigouvian or leviathan? *Journal of Industrial and Business Economics*, 48, 37-51.

Florida, R. 2002. *The Rise of the Creative Class*. Basic Books, New York, NY.

Florida, R. 2005. *The Flight of the Creative Class*. Harper Business, New York, NY.

Florida, R., Mellander, C., and Stolarick, K. 2008. Inside the black box of regional development---human capital, the creative class, and tolerance, *Journal of Economic Geography*, 8, 615-649.

Florida, R., Mellander, C., Ross, A., and Stolarick, K. 2012. Cities, skills, and wages, *Journal of Economic Geography*, 12, 355-377.

Gaspar, J.M., Ikeda, K., and Onda, M. 2021. Global bifurcation mechanism and local stability of identical and equidistant regions: Application to three regions and more, *Regional Science and Urban Economics*, 86, 103597.

Gifford, A., and Kenney, R.W. 1984. Socialism and the revenue maximizing Leviathan, *Public Choice*, 42, 101-106.

Haedo, C., and Mouchart, M. 2017. A stochastic independence approach for measuring regional specialization and concentration, *Papers in Regional Science*, 97, 1151-1168.

Haisch, T., and Klopper, C. 2015. Location choices of the creative class: Does tolerance make a difference? *Journal of Urban Affairs*, 37, 233-254.

Houston, D., Findlay, A., Harrison, R., and Mason, C. 2008. Will attracting the "creative class" boost economic growth in old industrial regions? A case study of Scotland, *Geografiska Annaler. Series B, Human Geography*, 90, 133-149.

Khan, M.D., Habib, R.I., Mehmood, A., and Basit, A. 2019. Intellectual property rights and creative economy: Way forward for Pakistan, *Review of Economics and Development Studies*, 5, 469-478.

Kluge, J., Markwardt, G., and Thater, C. 2017. Self-preserving leviathans: Evidence from local-

level data, *Kyklos*, 70, 594-621.

Millsap, A., Hobbs, B.K., and Stansel, D. 2019. Local governments and economic freedom: A test of the leviathan hypothesis, *Public Finance Review*, 47, 493-529.

Mueller, D.C. 2014. Constraining Leviathan, *Constitutional Political Economy*, 25, 88-102.

Oakley, K. 2009. Getting out of place: The mobile creative class takes on the local. A UK perspective on the creative class, in L. Kong and J. O'Connor, Eds., *Creative Economies, Creative Cities*, 121-134. Springer, Berlin.

Padovano, F. 2003. Leviathan models of government, in C.K. Rowley and F. Schneider, Eds., *Encyclopedia of Public Choice*, 680-684. Springer, New York, NY.

Riew, J. 1973. Migration and public policy, *Journal of Regional Science*, 13, 65-76.

Schmitz, L.L. 2013. Do cultural tax districts buttress revenue growth for arts organizations? in M. Rushton, Ed., *Creative Communities*, 80-96. Brookings Institution Press, Washington, DC.

Tiebout, C.M. 1956. A pure theory of local expenditures, *Journal of Political Economy*, 64, 416-424.

Tullock, G. 1971. Public decisions as public goods, *Journal of Political Economy*, 79, 913-918.