

# Title of the paper

First Last Name\*

Department of Economics, University of Illinois at Urbana-Champaign (UIUC)

May 17, 2010

**Abstract** write your abstract here. .

**Keywords:** Urban growth control; Land use regulation; Development; Regional Inequality; Labor supply.

**JEL Classification Numbers:** R14, H0, XY.

---

\*Address: 484 Wohlers Hall, 1206 South Sixth St., Champaign, IL 61820, USA, telephone: 1-217-367-XXXX, e-mail: *xxxx@uiuc.edu*. The author is grateful to XXXX for advice and suggestions, and to XXX, XXX, XXX, and seminar participants at the XXXXXXXXX for helpful comments.

# 1 Introduction

This paper.<sup>1</sup> Theoretically, a city ...

The issue of ...

This paper is organized as follows. The next section presents ... Then, Section 3 discusses the ... Section 4 analyzes the ... Concluding remarks are offered in Section 5.

## 2 The model

This section presents a .

### 2.1 Setup

Consider a closed economy with regions indexed by  $i = 0, 1$ . There is a linear city in each region, with width one and length  $\bar{x}_i$ . The distance between the CBDs of the two cities is  $\Gamma$ . Urban land is occupied by mobile renters, who demand one unit of land each. Thus,  $\bar{x}_i$  equals the city population  $P_i$ , and  $\bar{x}_0 + \bar{x}_1 = P_0 + P_1 = P$ , where  $P$  is the total population of renters in this economy.

Each renter pays a land rent  $r_i(x_i)$ , which is a decreasing function of  $x_i$  because individuals are willing to bid more to live closer to their work place in order to avoid commuting costs. Utilities are given by the consumption of the non-land good, with the indirect utility function of a renter who lives in  $i$  and works in  $j$  being

$$u_{i,j}(x_i) = \begin{cases} w_i - tx_i - r_i(x_i) & \text{if } j = i \\ w_j - t\Gamma - tx_i - r_i(x_i) & \text{otherwise.} \end{cases} \quad (1)$$

---

<sup>1</sup>Availotis et. al [1] uses a ...

## 2.2 Controls in city 0

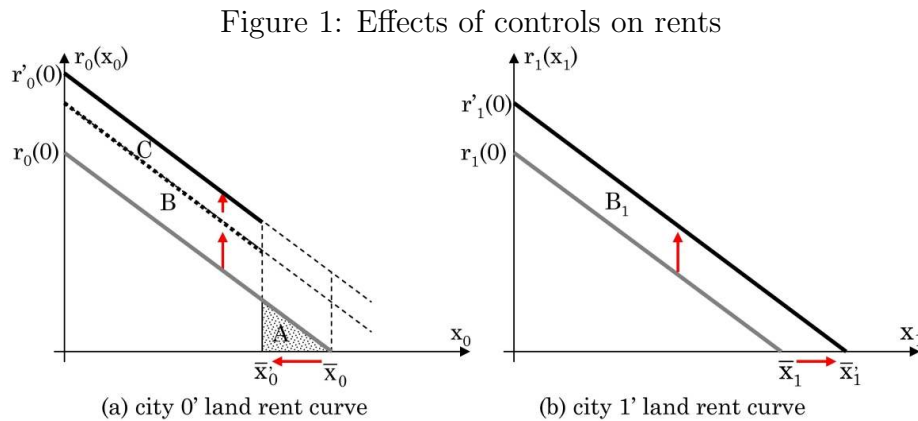
To understand the adoption of growth controls and its effects, start by considering the case with no controls. Land rent at the boundary of each city must equal the opportunity cost of land outside the city, which is zero:  $r_i(\bar{x}_i) = 0$ . Rents at other places are determined by utility equalization:  $u_{i,i}(x_i) = u_{i,i}(\bar{x}_i)$  for all  $x_i$ . Consequently,

$$r_i(x_i) = t(\bar{x}_i - x_i). \quad (2)$$

Now, suppose that growth controls are introduced ( $\bar{x}_0$  is restricted to below  $\frac{1}{2}P$ ), increasing total land rents. There is no control in city 1, therefore (2) is still valid there. For city 0, however, the land rent function is changed. Recall that residents must be equally well-off in the two cities and suppose for the moment that IC does not occur, meaning that the first of the expressions in (1) is relevant. Noting that  $u_{1,1}(\bar{x}_1) = w_1 - t\bar{x}_1$ , set this expression equal to  $u_{0,0}(x_0) = w_0 - tx_0 - r_0(x_0)$ , yielding

$$r_0(x_0) = t(\bar{x}_1 - x_0) + w_0 - w_1 = t(P - \bar{x}_0 - x_0) + F'(N_0) - F'(P - N_0), \quad (3)$$

where the second equality uses  $\bar{x}_1 = P - \bar{x}_0$  and ... Figure 1 illustrates the effects of controls on land rents in each city.



Note: A is the border rent loss, B is the supply restriction gain, and C is wage increase gain.

## 2.3 Equilibrium characterization

This relationship could create a problem for the empirical estimation, since tighter controls would not be generating IC. Fortunately, all cities in the sample have neighbors close enough that allow some IC to occur.

## 3 The empirical model

In the empirical estimation,  $y_i$  is the percentage of workers residing in city  $i$  who commute to work in other cities. It is expected that this proportion will be larger if the surrounding cities have adopted a large number of control measures.<sup>2</sup>

## 4 Data

Table 1 presents descriptive statistics of those variables: the number of observations, the mean, the standard deviation, and the minimum and the maximum values.

## 5 Estimation results

The results for the estimation of the model ...

## 6 Concluding remarks

This paper examines the relationship between IC by workers and the adoption of growth-control by jurisdictions.

---

<sup>2</sup>Cervero (1989) notes that some jobs-housing mismatch is expected.

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Minimum	Maximum
wkoutpc	219	68.72	18.11	18.9	92.7
black	219	5.58	7.98	0.1	54.9
hispanic	219	24.26	18.67	3.0	93.1
asian	219	9.76	8.87	0.8	57.5
age-17	219	26.01	5.72	7.1	40.2
age18-24	219	11.41	3.90	5.3	33.5
age35-44	219	15.70	2.40	7.8	22.8
age45-64	219	17.21	3.68	9.2	32.7
age65-	219	10.50	4.92	3.8	42.1
female	219	44.35	2.47	36.4	54.6
ba	219	23.67	12.92	1.6	65.2
married	219	52.81	8.14	25.0	71.8
homeowner	219	57.29	13.26	22.3	90.9
area	219	23.51	41.95	1.2	469.3
unemploym	219	6.22	2.70	2.3	17.0
n-govnmnt	203	69.38	41.88	5	358
jobs	158	35.24	91.79	2.5	1057.2
jobs-ngb <sup>a</sup>	219	1621.18	1105.78	0	2985.6
ugc	144	1.53	1.52	0	6
wd-ugc <sup>b</sup>	219	2.66	1.95	0	19.2
w1-ugc <sup>b</sup>	219	47.15	22.65	0	84

<sup>a</sup>*jobs-ngb* is calculated using the 158 observations for *jobs*

<sup>b</sup>*wd-ugc* and *w1-ugc* are calculated using the 144 observations for *ugc*

## Appendix

### List of cities included in the sample

blah-blah-blah...

Alameda city\*, Alhambra city, Anaheim city, Antioch city, Apple Valley town\*, Arcadia city, Azusa city, Bakersfield city, Baldwin Park city, Bell city, Bell Gardens city, Bellflower city\*, Berkeley city\*, Beverly Hills city\*, Brea city, Buena Park city, Burbank city, Burlingame city, Camarillo city, Campbell city, Carlsbad city, Carson city\*, Cathedral City city\*, Ceres city\*, Cerritos city\*, Chico city, Chino city, Chula Vista city, Claremont city\*, Clovis city\*, Colton city, Compton city\*, Concord city, Corona city, Coronado city\*, Costa Mesa city, Covina city, Culver City city, Cupertino city, Cypress city, Daly City city\*, Dana Point city\*, Danville city\*, Davis city, Diamond Bar city\*, Downey city, El Cajon city, El Centro city, El Monte city\*, Encinitas city\*, Escondido city, Eureka city, Fairfield city, Folsom city\*, Fontana city, Foster City city\*, Fountain Valley city, Fremont city, Fresno city, Fullerton city\*, Garden Grove city, Gardena city\*, Gilroy city, Glendale city, Glendora city, Hanford city, Hawthorne city, Hayward city, Hemet city, Hesperia city\*, Highland city\*, Huntington Beach city, Huntington Park city, Imperial Beach city\*, Indio city\*, Inglewood city, Irvine city, La Habra city, La Mesa city\*, La Mirada city, La Puente city\*, La Verne city, Laguna Niguel city\*, Lakewood city, Lancaster city\*, Lawndale city\*, Livermore city, Lodi city, Lompoc city\*, Long Beach city, Los Altos city\*, Los Angeles city, Los Gatos town, Lynwood city, Madera city\*, Manhattan Beach city\*, Manteca city, Marina city\*, Martinez city\*, Maywood city\*, Menlo Park city\*.

## References

J. Aivalotis, D. Spaulding, G. Stockmayer, The bay area jobs-housing mismatch, Applied Demography - University of California at Berkeley working paper (2001).

J.K. Brueckner, F-C. Lai, Urban growth controls with resident landowners, Regional Science and Urban Economics 26 (1996) 125-144.

J.K. Brueckner, Modeling urban growth controls, in: A. Panagariya, P. Portney, R.M. Schwab (Eds.), Environmental and Public Economics: Essays in Honor of Wallace E. Oates, Edward Elgar Publishers, 1999, pp. 151-168.