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City Business Taxes and Retail Firm Relocation Decisions

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Abstract

There is very little literature on the impact of city taxes on firm relocation decisions. Using an ordered probit econometric model of selection, a national sample of U.S. retail establishments, and data on the existence of city business taxes for the largest 800 cities, I find that establishments are less likely to move to cities with a city business tax, and are more likely to move from cities having such a tax. Specifically, after controlling for other factors, I find that establishments are 30.4 percent less likely to move to a city having a city business tax, and are 22.5 percent more likely to move out of a city having such a tax. The results are consistent across econometric models. The paper contributes to the general literature on firm relocations, and to the literature on the impacts of local taxes. Future research on the impact of city taxes on the relocation decisions of other types of firms is called for.

Keywords: relocation, city taxes, retail

1. Introduction

There is a vast literature showing that taxes can affect firms' decisions. More specifically, the existing literature in general shows that taxes can affect firm location choice, and there is a small but growing literature showing that taxes can affect *re-location* decisions. Such studies have primarily focused on manufacturing and on cross-state (or cross country) moves, where local governments can offer incentives and tax breaks to lure firms into their jurisdictions. This study examines the role of municipal taxes on *retailer* relocation decisions, and in particular, decisions to locate in a different city but in the same state. Since governments typically do not offer tax incentives to retailers (unless they are very large), relocation decisions for retailers must be due primarily to tax structures. By examining intra-state moves, I can control for *state taxes*, and to focus on the impact of existence of *city taxes.*

Using a random sample of retail establishments from various states, I find that the existence of city business taxes based on activity has a statistically significant impact on relocation decisions. Specifically, retail establishments are more likely to move to cities without city business taxes, and are more likely to move out of cities with such taxes. This study contributes to the literature on location choice in general since it is *the first study to demonstrate the effects of municipal taxes on relocation*. Similarly, this study contributes to the public finance literature, since I find that municipal taxes—which can be relatively small—can have an impact on retailers' move decisions. This in turn supports the argument that taxes make a difference even in the setting where there is small economic impact.

2. Literature Review

2.1 Relocation

There have been many studies on firm location decisions, but the study of business *relocations*, however, is less common likely due to the limited availability of data on business moves. The business relocation literature usually discusses three frameworks: neo-classical, behavioral, and institutional (Pellenbarg et al., 2002).

The most widely adopted theoretical framework is neo-classical/supply side, where the underpinning driver of the neo-classical approach is profit-maximization. In this setting, it is assumed that all firms are assumed to have full information, be rational decision makers; and have the ability to fully process that information about the profitability prospects in each potential location. Here, firms decide whether a move is profit-maximizing by examining differences between expected profits across space relative to the current site. Many of the empirical studies in this are focus on manufacturing, and here cost minimization is considered more important for profit maximization than revenues. The literature finds that companies are attracted by labor force availability and cost (Erickson and Wasylenko, 1980;

Giuliano, 1989; Schmitt yet al., 1987), access to transportation (Holguin-Veras et al., 2005; and Ozmen-Ertekin, 2007), and agglomeration/concentration effects (Erickson and Wasylenko, 1980; Figueiredo et al., 2002; Giuliano, 1989; Strauss-Kahn and Vives, 2009).[1]

The behavioral approach assumes that a company has bounded rationality, with incomplete information about various locations, and limited ability to process that incomplete information

(van Dijk & Pellenbarg, 2000).[2] Empirical evidence shows that uncertainty and risk decrease the likelihood of relocation (Pennings & Sleuwaegen, 2000), and that both perceived and actual relocation costs increase with distance. Research finds that firms may fail to move because employees may not change their residence in order to keep the job (Carter, 1999; Lawson and Angle, 1998; Otto and Dalbert, 2010). Studies also find that have personal reasons for locations due to attachments (Halstead and Deller, 1997), or other connections (Knoben & Oerlemans, 2008), and these personal reason can dominate cost considerations (Figueiredo et al., 2002).[2]

The institutional approach to business relocations emphasizes the roles played by governments, regional economic development organizations, etc. Here, firms use negotiation with the local governments, suppliers, etc. (see Brouwer et al., 2004). Similarly, taxes, local laws and regulations, business-friendly locations, existence of unions, and other characteristics are important. For some studies using this framework, see Guimaraes et al. (1998), Lee(2008); and Oukarfi and Baslé (2009).

In general, the neoclassical and institutional approaches seem to apply more to larger firms, since they have more resources to accurately examine costs across areas, and to negotiate with institutions. In contrast, the behavioral approach seems more applicable to smaller firms due to lack of resources, and the controlling preferences of individual owners. Across all studies/frameworks, the tendency to move declines with firm age and size (Brouwer et al., 2004; van Dijk and Pellenbarg, 2000; and Knoben and Oerlemans, 2008).[3] Studies also find that expansion is one common reason for relocations (Brouwer et al., 2004; and Knoben & Oerlemans, 2008). [4]

2.2 Local Taxes

While there is a significant literature indicating that *state* tax structures can influence business growth (see literature surveys in Buss, 2001; and McGuire, 2003), there is less evidence on the impact of *city* tax structures. This relatively sparse pre-1990 empirical work on the effectiveness of *local* fiscal variables on economic development was discussed in Bartik (1991, 1992), and he concluded that these studies generally indicated that local taxes resulted in a statistically significant impact on economic development. The city tax studies summarized in Bartik typically focused on property taxes, or on other taxes but only in a small number of municipalities. Bartik suggested that because non-tax factors are similar between neraby cities (i.e., they share local labor and other markets, as well as some infrastructure), municipal tax structure differences should matter because they are among the few distinguishing characteristics between such cities.

There have been very few studies of local taxes in the two decades following Bartik's literature reviews. Wasmer (1994) found ambiguous mixed of the effects of local incentives in the Detroit area. In contrast, Luce (1994) found that local taxes had a statistically significant influence on location of firms in the Philadelphia area. Wasmer and Anderson (2001) examined 112 Detroit area cities, finding that some incentives affect the local value of commercial and manufacturing property. Examining 351 Massachusetts municipalities, Wu (2010) found that property taxes had significant impact on business location, and also the related share of taxes borne. On similar note, Dye, McGuire, and Merriman (2001) found that Chicagoland property taxes (and their related classifications) had a negative influence on business activity. Analyzing the District of Columbia area (DC, and nearby Virginia and Maryland communities), Mark et al (2000) found that property and sales taxes reduced employment growth. Wu (2012) analyzed 18 northeastern Illinois cities and found that sales, property, and telecommunications taxes all had a negative effect on employment.

[1] See also (Greenhalgh, 2008; Kalnins and Chung, 2004; Stam, 2007; Kronenberg, 2013; and Conroy, Deller, and Tsvetkova, 2016).

[2] This effect has been found to be significant in smaller companies (Greenhalgh, 2008).

[3] See also Nguyen et al., 2013. On the other hand, this age relationship does not appear to apply to international business relocations, and to relocations of headquarters (Pennings and Sleuwaegen, 2000; Strauss-Kahn and Vives, 2009).

[4] See also van Dijk and Pellenbarg (2000). Here, companies may outgrow their existing facilities and need to relocate, often in the same general area.

In a the first (and only) national study of the impact of city business license taxes over a lengthy time period, Swenson (2016) found that such taxes are a relatively significant cost to business. He also found that such business taxes have statistically significant negative effects on the number of firms and their related revenues and employment.

In summary, while the above studies indicate that city business taxes can have a significant economic on businesses in general, none examined the impact of these taxes on business relocations.

3. Municipal Taxes

The major city-imposed taxes on businesses, is either general business taxes, often in the form of an income tax or other activity-based tax, or specific business taxes, licenses, permits, and fees. The structure of general business taxes varies widely by type, rate, industry, etc. [5] Other business taxes, licenses, and fees also vary widely.

I test whether the *existence of a city business tax structure (including an income tax)* based on *activity*, has an impact on retail relocation decisions of retail firms. While the rates at which such taxes are imposed can fluctuate to some degree, the existence of such taxes tends to stable over time. For example, for the over 800 cities examined here in the time period examined, there was very little change in the existence of such taxes. Since I measure the existence of such taxes in the form of a dummy variable, I argue that there is no endogeneity with this variable and observed business activity.

This variable is not reported in any comprehensive data source.[6] Instead, I use the tax data I gathered in a previous study (for details on the tax by city, and methodology, see Swenson, 2016). Here, I assign a dummy variable set to one if a city has any tax at all. Note that this dummy variable does not indicate whether the city imposes other taxes, fees, or licenses, and as such measures only the presence or absence of a general business tax based on economic activity (including an income tax). However, the general business tax typically accounts for over half of the total business taxes imposed by cities (excluding property and sales taxes), and is easily the most visible tax to businesses.

4. Data

Data on firm relocations is obtained from the 2019 National Establishment Time-Series (NETS) Database. This data has establishment-level data which not only allows for more powerful tests, but also has additional information allowing for more specific tests. NETS is a unique, establishment- specific database derived from the Dun & Bradstreet data, the latter of which is used commercially. This data set became available to academics in 2007, and has been used in a number of economics papers (e.g., Decker et al 2014; Groizard et al 2015; Haltiwanger, et al, 2015; and Neumark et al 2011). The database has recently been used for a few peer-reviewed studies in tax; see Swenson (2014). The 2019 national NETS Database includes an annual time-series of information on over 36.5 million U.S. establishments from 1990 to 2019. This database reports numerous establishment-level items, including employment, sales, industry (at 8 digit NAICS levels), affiliation with other establishments (parents, subsidiaries, number of other establishments within the same legal entity), and exact location. The NETS also reports information on establishment "moves"-- where the establishment moved to/from, year of move, as well as sales and employment moved. Details of the NETS database are reported in an on-line technical Appendix.[7] Neumark et al. (2007) conducted a detailed analysis of the quality of the NETS data along various dimensions, and concluded that the NETS by and large provides reliable measurement of employment levels, births and deaths, business relocations, etc.[8]

Because the NETS data is expensive,[9] I randomly select 250,000 retail establishments from 21 states, with the number of establishments sampled from each state proportional to that state's population (see Appendix for details). I then examine the most recent moves for all of these establishments occurring from 1994 through 2019. Since city information is given with each NETS establishment, I am able to match city taxes to this database.

[5] For example,Baton Rouge, Louisiana has a .1% tax on gross receipts, except that retail has a separate tax structure; Jacksonville, Florida has a per employee tax, but retailers and wholesalers have a separate tax structure; and Akron, Ohio, has a 2.5% tax on gross payroll plus a 2.5% income tax on firms that pay a state income tax. Numerous cities have taxes with no maximums, such as New York City's income tax and Los Angeles' gross receipts tax.

[6] Even on-line tax research databases provided by Thompsen-Reuters (RIA), Commerce Clearing House (CCH), etc., only provide business tax information for certain large cities.

[7] This online Appendix will be made available upon publication decision.

[8] Because D&B sales and employment data are sometimes missing, the NETS vendor imputes such missing values where feasible. These estimates tend to smooth out variability in the data and bias *against finding statistically significant results*. See Appendix 1 where I argue that this is not an issue in this study.

[9] Purchased from Walls and Associates, this data cost $7,500.

5. Econometric Specification

As noted in Kronenberg (2013), relocation choice can be broken into at least two stages. In the first stage, the firm decides if it wants to move. In the second stage, it picks a location.[10] This becomes the classic ordered response probit model with sample selection, which can be represented through the following bivariate threshold-crossing model

$$Y^*_j = \beta_j \boldsymbol{X}_j + U_j \qquad j = 1, 2 \quad (1)$$

$$Y_1 = I(Y^*_1) \geq 0 \quad (2)$$

$$Y_2 = \sum_{h=0}^{H} hI(\alpha_h < Y^*_2 \leq \alpha_{h+1}) \qquad \text{if } Y_1 = 1 \quad (3)$$

where Y^*_1 and Y^*2 represent continuous latent variables for the selection process and the outcome of interest, respectively; β_j the are k_j vectors of unknown parameters; the $\boldsymbol{X}_j$ are k_j vectors of exogenous variables; and the U_j are random errors. The latent variable Y^*_1 is related to the binary indicator Y_1 through the observational rule (2), where $I(A)$ denotes the indicator function of the event A. The latent variable Y^*_2 is related to the outcome Y_2 through the observational rule (3), where $\alpha = (\alpha_1, ..., \alpha_H)$—with $\alpha_h < \alpha_{h+1}$, $\alpha_0 = -\infty$, and $\alpha_{H+1} = +\infty$—is a vector of H strictly increasing thresholds that partition Y^*_2 into $H + 1$ exhaustive and mutually exclusive intervals. As in a classical sample Heckman selection model, observability of Y_2 is confined to the subsample of observations for which $Y_1 = 1$ (the selected sample). Selectivity effects are allowed to operate through the correlation between the latent regression errors U_1 and U_2.

Operationally[11], I specify stage one (the decision to move) as:

$$Move_i = \alpha + \alpha_1 Saleschange\text{-}h_{i,t} + \alpha_2 Saleschange\text{-}l_{i,t} + \alpha_3 Branch_{i,t} + \alpha_4 Standalone_{i,t} +$$

$$\alpha_5 Public_{i,t} + \alpha_6 Corp_{i,t} + \alpha_7 PS_{i,t} + \beta_1 Related_{i,t} + \beta_2 Age_{i,t} + \mathcal{E}_i, \quad (4)$$

and the second stage decision, which city (within the same state) to move to, as[12]:

$$DiffCity_i = \xi_1 Origintax_{i,t} + \xi_2 Desttax_{i,t} + \epsilon_i \quad (5)$$

where *Move* is a dummy variable if the establishment moves during the time period examined, *Saleschange-h* is a dummy variable set to one if, in the three years prior to the move, the establishment experiences higher percentage sales growth, and *Saleschange-l* is a dummy variable set to one if, in the three years prior to the move, the establishment experiences lower percentage sales growth, and the omitted group is establishments falling in between.[13] The idea here is that higher growth establishments outgrow their facilities and need to move to a larger facility, while lower growth firms are contracting and need to move to smaller facilities, or to cheaper ones.

[10] In theory, these two stages can be a simultaneous decision. That is, the firm decides whether to move based on whether there are any viable locations for relocation. The ordered logit approach was also used in van Dijk and Pellenbarg (2000).

[11] This econometric model is estimated in STATA using the ordered probit routine.

[12] In theory, this decision also can depend on other unobserved factors such as rent rates in the cities (no comprehensive database exists for this), as well as labor costs and availability (which tend not to vary across close geographic areas). Note that since I am examining moves within the same state, and that most of these moves are reasonably close together, these latter variables (and related assumption) may not be an issue. See Bartik (1991, 1992) who suggests that because non-tax factors are similar between adjoining cities (i.e., they share local labor and other markets, as well as some infrastructure), municipal tax structure differences should matter because they are among the few distinguishing characteristics between such cities. Further, labor rates and wages in the retail industry at the detail level (ZIP code) are not collected for all years in this study.

[13] 72 percent of establishment are lower growth (which includes sales decline), 26 percent are higher growth, and 2 percent are in between, according to my measurements.

Branch is a dummy variable if the establishment is a branch of a firm, and standalone is a dummy variable if the establishment has no other locations (the omitted group is a headquarters location). *Public* is a dummy variable if the establishment is owned by a publicly-traded firm, *Corp* and *PS* are dummy variables if the establishment is legally a corporation and a partnership, respectively (the omitted group is if it is a sole proprietorship), *Related* is the number of entities related to the establishment, and *Age* is the age of the establishment. All of the variables may have an expected influence on the decision to move (as noted in the literature).

In equation 2, *Diffcity* is a dummy variable set to one if the firm moves to a different city in the same state, *Origintax* is a dummy variable set to one if the city in which the establishment currently operates has a license tax, and *Desttax* is a dummy variable set to one if the city in which the establishment moves to has a license tax.

6. Results

Table 1. Descriptive Statistics

Variable	Mean	Minimum	Maximum
move	.118	0	1
Cities with tax	.529	0	1
High sales growth	.261	0	1
Low sales growth	.724	0	1
Branch	.186	0	1
Standalone	.789	0	1
Publicly-traded	.087	0	1
Corporation	.189	0	1
Partnership	.034	0	1
Age	14.586	1	30
No. Related Entities	1.129	0	10.774

N=249,705 (18,048 for city tax variables)

Table 1 shows descriptive statistics for the data. There are 249,705 firm years in the baseline data (retail establishments which can either move or not move); 11.89 percent of the establishments move at some point; roughly 52% of establishments are in cities with a business tax (although the sample size decreases due to the data covering only the largest 800 cities); 18 percent are branches; 78.9% are standalone operations; 8.7% are part of a publicly-traded company; 18.9% and 3.3% are corporations and partnerships, respectively (the remaining are sole proprietorships); the average age of establishments is 14.58 years; and on average establishments have 1.13 related entities. Correlation statistics are reported in Table 2. While many of the correlations are consistent with predictions, caution should be exercised since regression results are more suitable for inference. Importantly, there is no indication of multicollinearity, which could create economic estimation issues.

Table 2. Correlations

	DiffCity	Dest tax	Origin tax	Sales change-h	Sales change-l	Branch	Standalone	Public	Related
DiffCity	1								
Desttax	-0.044	1							
Origintax	-0.0038	0.847	1						
Saleschange-h	-0.0156	-0	-0.0024	1					
Saleschange-l	0.0143	0.009	0.0068	-0.9604	1				
Branch	-0.02	0.017	0.0044	0.1335	-0.1169	1			
Standalone	0.0064	-0.01	0.0017	-0.1619	0.1423	-0.7387	1		
Public	-0.0256	0.025	0.0205	0.1204	-0.1105	0.5086	-0.398	1	
Related	-0.038	0.02	0.0084	0.1635	-0.1479	0.7864	-0.674	0.7435	1
Corp	0.0211	-0.01	-0.0014	0.1066	-0.1157	-0.3142	0.0685	-0.137	-0.195
PS	0.0165	0.007	0.0079	0.0018	0.0005	-0.1005	0.0787	-0.051	-0.083
Age	-0.023	-0.05	-0.0394	0.3059	-0.3198	0.0719	-0.201	0.0728	0.129

	Corp	PS	Age
Corp	1		
PS	-0.2026	1	
Age	0.3174	-0.06	1

Table 3. Two Stage Ordered Probit Regression Results

Panel A	**Move**
Saleschange-h	0.113*** (0.038)
Saleschange-l	-0.004 (0.038)
Branch	-0.298 (0.033)
Standalone	-0.446***(0.024)
Public	-0.030 (0.034)
Related	-0.046***(0.005)
Corp	0.336***(0.013)
PS	0.351***(0.024)
Age	0.016***(0.001)
Constant	-1.714***(0.047)
Panel B	**Different City**
Desttax	-0.304***(0.047)
Origintax	0.225***(0.047)

*p < .05, **p < .01, ***p < .001 ***. Standard errors in parentheses. Overall model log likelihood is -38842.6

Table 3 shows regression statistics. Panel A shows results for the first stage probit regression (move or not move). Most of the regression coefficients are significant at .001 or better. Retail establishments with high growth are 11 percent more likely to move, and standalone retail establishments are 44 percent less likely to move than other establishments. Both retail corporations and partnerships are more likely to move than sole proprietorships, and retail establishments having other related entities are less likely to move. Retail establishments are 1.6 percent more likely to move with each year of age.

Panel B of Table 3 shows the second stage probit results where the dependent variable is set to 1 if an establishment, which has moved, moves to a different city but in the same state.[14] Establishments are 30.4 percent less likely to move to a city having a city business tax, and are 22.5 percent more likely to move out of a city having such a tax. Both coefficients are significant at .001 or better. These results are consistent with predictions. Overall model fit for the two regressions shows a log likelihood significant at .001 or better.

Table 4. Probit Regression Results

	Move-Different City
Desttax	-0.308***(0.050)
Origintax	0.226***(0.050)
Saleschange-h	-0.059 (0.117)
Saleschange-l	-0.035 (0.116)
Branch	0.108 (0.090)
Standalone	-0.130** (0.060)
Public	0.120 (0.123)
Related	-0.062***(0.018)
Corp	0.098*** (0.039)
PS	0.128* (0.067)
Age	-0.005***(0.001)
Constant	-0.709***(0.140)

*p < .05, **p < .01, ***p < .001 l. Standard errors in parentheses. Overall model log likelihood is -3894.226

Table 4 shows probit results with a single regression equation. Here, I assume the move/move to a different city (same state) is a simultaneous choice. The coefficients on city taxes are similar to those of the two stage selectivity model; retail establishments are 30.8 percent less likely to move to a city having a city business tax, and are 22.6 percent more likely to move out of a city having such a tax. Both coefficients are significant at .001 or better. On the other hand, for other variables, coefficients signs are counter to expectations and many of them are not significant. Combined with the lower log likelihood of this model, I conclude that the two stage model is more consistent with predictions.

[14] Sample size for this second stage regression is of course smaller than the first stage, due to the smaller number of cities for which I have tax data, and the smaller number of establishments which have decided to move within the same state.

7. Conclusion

Results show that establishments take into account the existence of city business taxes in their decisions to relocate. Specifically, using an ordered probit econometric model of selection, a national sample of U.S. retail establishments, and data on the existence of city business taxes for the largest 800 cities, I find that city business taxes encourage firms to move to cities (in the same state) without such taxes. Specifically, I find that establishments are 30.4 percent less likely to move to a city having a city business tax, and are 22.5 percent more likely to move out of a city having such a tax. These findings are consistent across econometric models. Since prior studies have not considered the impacts of local taxes on relocation decisions, this paper contributes to the literature in this area. Similarly, since there is only limited evidence on the impact of city business license taxes on business decisions, this paper adds to the taxation/public finance literature. The results can only be suggestive at this point, since the data is a sample of only retail establishments, other factors may need to be controlled for in the relocation decision, and only the largest 800 cities are potentially part of the sample. Future research into the impacts of cities taxes on the relocation decision is called for. Specifically, future research could examine the impacts of city business taxes on relocation decisions for firms on other (non retail) industries. One practical suggestion of this study is that cities which desire to attract business should consider not having business license taxes (subject to revenue constraints).

References

Bartik, T. J. (1991). *Who benefits from state and local economic development policies?* Kalamazoo, MI W.E. Upjohn Institute. https://doi.org/10.17848/9780585223940

Bartik, T. J. (1992). The effects of state and local taxes on economic development: a review of recent research. *Economic Development Quarterly, 6,* 102-111. https://doi.org/10.1177/089124249200600110

Brouwer, A. E., Mariotti, I., & van Ommeren, J. (2004). The firm relocation decision: An empirical investigation. *The Annals of Regional Science, 38,* 335-347. https://doi.org/10.1007/s00168-004-0198-5

Buss, T. (2001). The effect of state tax incentives on economic growth and firm location decisions: an overview of the literature. *Economic Development Quarterly, 15,* 90-105. https://doi.org/10.1177/089124240101500108

Carter, S. (1999). Relocation or dislocation? Key issues in the specialist management of group moves. *Management Research News, 22*(5), 22-36. https://doi.org/10.1108/01409179910781670

Christopherson, S., & Clark, J. (2007). Power in firm networks: what it means for regional innovation systems. *Regional Studies, 41*(9), 1223-1236. https://doi.org/10.1080/00343400701543330

Conroy, T., Deller, S., & Tsvetkova, A. (2016). Regional business climate and interstate manufacturing relocation decisions. *Regional Science and Urban Economics, 60,* 155-168. https://doi.org/10.1016/j.regsciurbeco.2016.06.009

Dye, R., McGuire, T., & D. Merriman. (2001). The impact of property taxes and property tax classifications on business activity in the Chicago metropolitan area. *Journal of Regional Science, 41,* 757-778. https://doi.org/10.1111/0022-4146.00242

Erickson, R., & Wasylenko, M. (1980). Firm relocation and site selection in suburban municipalities. *Journal of Urban Economics, 8,* 69-85. https://doi.org/10.1016/0094-1190(80)90056-X

Figueiredo, O., Guimar ães, P., & Woodward, D. (2002). Home-field advantage: location decisions of Portuguese entrepreneurs. *Journal of Urban Economics, 52,* 341-361. https://doi.org/10.1016/S0094-1190(02)00006-2

Giuliano, G. (1989). Research policy and review 27. New directions for understanding transportation and land use. *Environment and Planning A, 21*(2), 145-159. https://doi.org/10.1068/a210145

Greenhalgh, P. (2008). An examination of business occupier relocation decision making: Distinguishing small and large firm behaviour. *Journal of Property Research, 25*(2), 107-126. https://doi.org/10.1080/09599910802605368

Guimaraes, P., Rolfe, R. J., & Woodward, D. (1998). Regional incentives and industrial location in Puerto Rico. *International Regional Science Review, 21*(2), 119-138. https://doi.org/10.1177/016001769802100202

Kalnins, A., & Chung, W. (2004). Resource-seeking agglomeration: a study of market entry in the lodging industry. *Strategic Management Journal, 25*(7), 689-699. https://doi.org/10.1002/smj.403

Knoben, J., & Oerlemans, L. A. G. (2008). Ties that spatially bind? A relational analysis of the causes of spatial firm mobility. *Regional Studies, 42*(3), 385-400. https://doi.org/10.1080/00343400701291609

Kronenberg, K. (2013). Firm relocations in the Netherlands: Why do firms move, and where do they go? *Papers in Regional Science, 92*(4), 691-713. https://doi.org/10.1111/j.1435-5957.2012.00443.x

Lane, J., Glennon, D., & McCabe, J. (1989). Measures of local business climate: Alternative approaches. *Regional*

Science Perspectives, 19, 89-106.

Lawson, M. B., & Angle, H. L. (1998). Upon reflection: commitment, satisfaction, and regret after a corporate relocation. *Group & Organization Management, 23*(3), 289-317. https://doi.org/10.1177/1059601198233006

Lee, Y. (2008). Geographic redistribution of US manufacturing and the role of state development policy. *Journal of Urban Economics, 64*(2), 436-450. https://doi.org/10.1016/j.jue.2008.04.001

Luce, T. (1994). Local taxes, public services, and the intra-metropolitan location of firms and households. *Public Finance Quarterly, 22,* 139-167. https://doi.org/10.1177/109114219402200201

Mark, S., McGuire, T., & L. Papke. (2000). The influence of taxes on employment and economic growth: evidence from the Washington D.C. metropolitan area. *National Tax Journal, 53,* 105-123. https://doi.org/10.17310/ntj.2000.1.06

McGuire, T. (2003). *Do taxes matter? Yes, no, maybe so.* State Tax Notes 28 (June 9).

Neumark, D., Zhang, J., & Kolko, J. D. (2006). *Interstate business relocation: An industry-level analysis: Public Policy.* Institute of California. https://doi.org/10.3386/w11647

Neumark, D., Zhang, J., & Wall, B. (2005). *Employment dynamics and business relocation: New evidence from the National Establishment Time Series: National Bureau of Economic Research.* https://doi.org/10.3386/w11647

Neumark, D., Zhang, J., & Wall, B. (2006). *Employment dynamics and business relocation: New evidence from the National Establishment Time Series: University of California-Irvine, Department of Economics.*

Nguyen, C., Sano, K., Tran, T., & Doan, T. (2013). Firm relocation patterns incorporating spatial interactions. *The Annals of Regional Science, 50*(3), 685-703. https://doi.org/10.1007/s00168-012-0523-3

Otto, K., & Dalbert, C. (2010). New challenges for human resource management: readiness to perform a mobile job and its antecedents. *The International Journal of Human Resource Management, 21*(4), 600-614. https://doi.org/10.1080/09585191003612109

Oukarfi, S., & Baslé, M. (2009). Public-sector financial incentives for business relocation and effectiveness measures based on company profile and geographic zone. *The Annals of Regional Science, 43*(2), 509-526. https://doi.org/10.1007/s00168-008-0223-1

Ozmen-Ertekin, D., Ozbay, K., & Holguin-Veras, J. (2007). Role of transportation accessibility in attracting new businesses to New Jersey. *Journal of Urban Planning and Development, 133*(2), 138-149. https://doi.org/10.1061/(ASCE)0733-9488(2007)133:2(138)

Pellenbarg, P. H., Wissen, L. J. G. V., & Dijk, J. V. (2002). *Firm relocation: State of the art and research prospects.* University of Groningen, Research Institute SOM (Systems, Organisations and Management).

Schmitt, N., Gleason, S. E., Pigozzi, B., & Marcus, P. M. (1987). Business climate attitudes and company relocation decisions. *Journal of Applied Psychology, 72*(4), 622-628. https://doi.org/10.1037/0021-9010.72.4.622

Stam, E. (2007). Why butterflies don‘t leave: Locational behavior of entrepreneurial firms. *Economic Geography, 83*(1), 27-50. https://doi.org/10.1111/j.1944-8287.2007.tb00332.x

Strauss-Kahn, V., & Vives, X. (2009). Why and where do headquarters move? *Regional Science and Urban Economics, 39*(2), 168-186. https://doi.org/10.1016/j.regsciurbeco.2008.07.001

Swenson, C. (2015). The Cash Flow and Behavioral Effects of Switching to a Single Sales Factor on State Taxation. *The Journal of the American Taxation Association, 37*(2), 75-107. https://doi.org/10.2308/atax-51203

Swenson, C. (2016). Empirical evidence on municipal tax policy and firm growth. *International Journal of Public Policy and Administration Research, 3*(1), 1-13. https://doi.org/10.18488/journal.74/2016.3.1/74.1.1.13

van Dijk, J., & Pellenbarg, P. H. (2000). Firm relocation decisions in The Netherlands: An ordered logit approach. *Papers in Regional Science, 79*(191-219), 191. https://doi.org/10.1111/j.1435-5597.2000.tb00768.x

Wasmer, R., & J. Anderson. (2001). Bidding for business: new evidence on the effect of locally offered economic development incentives in a metropolitan area. *Economic Development Quarterly, 15*(June), 132-148. https://doi.org/10.1177/089124240101500203

Wu, Y. (2010). Property tax exportation and its effect on local business establishments: the case of Massachusetts municipalities. *Economic Development Quarterly, 24*(1), 3-12. https://doi.org/10.1177/0891242409341579

Wu, Y. (2012). How major local taxes affect private employment: an empirical analysis of Northeastern Illinois municipalities. *Economic Development Quarterly, 26*(3), 351-360. https://doi.org/10.1177/0891242412465109

Appendix

Selecting a Random Sample from NETS Data

20 states were selected. From this, randomly-drawn establishments from each of the states were selected, for roughly 250,000 establishments. The samples were proportional to populations, as shown in Table A1 below. Establishments which went out of business before 2018, or without (or missing) sales and/or employment were eliminated. Only retailers with NAICS codes which were not primarily online were selected; a list of these 828 8 digit NAICS codes are available from the author. Retailers with delivery/ecommerce based business (NAICS codes greater than 454390) were eliminated.

Table A1. Sample Selection for NETS Data

State	2019 population	population%	Number of establishments in sample
Alabama	4,903,185	0.045429371	11,357
Colorado	5,758,736	0.053356289	13,339
Connecticut	3,565,287	0.033033375	8,258
Hawaii	1,415,872	0.013118447	3,279
Illinois	12,671,821	0.117407942	29,351
Indiana	6,732,219	0.062375879	15,593
Kentucky	4,467,673	0.041394232	10,348
Maine	1,344,212	0.012454498	3,113
Maryland	6,045,680	0.056014905	14,003
Michigan	9,986,857	0.092531005	23,132
Minnesota	5,639,632	0.052252757	13,063
Mississippi	2,976,149	0.027574847	6,893
Nevada	3,080,156	0.028538501	7,134
New Jersey	8,882,190	0.082295958	20,573
North Carolina	10,488,084	0.097175012	24,293
North Dakota	762,062	0.007060716	1,765
South Carolina	5,148,714	0.047704266	11,926
Vermont	623,989	0.005781431	1,445
Washington	7,614,893	0.070554099	17,638
Wisconsin	5,822,434	0.053946469	13,486
Totals	107,929,845		249,989