

“CLEAN AND SAFE” FOR ALL? THE INTERACTION BETWEEN BUSINESS IMPROVEMENT DISTRICTS AND LOCAL GOVERNMENT IN THE PROVISION OF PUBLIC GOODS

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Business Improvement Districts (BIDs) privately supplement local public goods, and theory predicts that the public sector will interact with BIDs in their provision of local services. This paper provides the first empirical study of the sub-municipal effect of BIDs on the allocation of publicly provided services. Using unique, neighborhood-level data from New York City, I find that BIDs are associated with a significant, but substantively small, shift in the allocation of police and sanitation services. However, after instrumenting for BID presence, any significant effect of BIDs on public spending and service provision disappears. Together the results indicate that there is little or no interaction between public and private governments in the provision of local services.

Keywords: Business Improvement Districts, private governments, strategic interaction, public goods

JEL Codes: H00, H40, R00

I. INTRODUCTION

The motto “Clean and Safe” has long been synonymous with Business Improvement Districts (BIDs). These “private governments” are established to enhance the cleanliness and safety of urban commercial corridors for consumers who demand more services than the local municipality provides publicly and are willing to pay for them. They do so by levying binding assessments on their members to provide supplemental services, such as street cleaning, maintenance, security, and marketing to the prescribed BID area. However, how do the additional public goods provided by BIDs affect the services provided by the public sector? Theoretically, the response to private BID services on the part of the public sector is ambiguous. One expectation is that the public sector will withdraw services from neighborhoods with BIDs, and pass responsibility for service

provision (i.e., “download”) onto private actors in those neighborhoods, due to perceived gains in efficiency, redundancy in service provision, or decreased demand for public services. Alternatively, the local government may funnel more investments into BID neighborhoods due to service complementarities or increased political leverage, perhaps exacerbating any inter-neighborhood service disparities (Inman, 2009; Pack, 1992).

A growing body of literature examines the “strategic interaction” of overlapping or neighboring governments in their fiscal behavior and provision of public goods (Case, Rosen, and Hines, 1993; Brueckner, 1998, 2003; Wilson, 1999; Helsley and Strange, 1998, 2000a, 2000b; Cheung, 2008). Under this framework, decisions about the service levels and investments of private government entities, such as BIDs, are made strategically based on decisions about the levels of publicly provided services. However, the empirical evidence on such interactions, and those that pertain to public and private governments in particular, is limited in scope and geographic detail. BIDs offer a useful context within which to test empirically the outcomes of these interactions at a sub-municipal level, as their services differ in substitutability and the BIDs themselves vary with respect to size and location. Using a unique, neighborhood-level dataset of BID and local government service expenditures and inputs in New York City, I test the extent and type of interaction between private and public service providers. Theoretically, BIDs, spatially defined and commercially-oriented, have the potential to shift the distribution of resources across neighborhoods and commercial and residential properties. This raises important, unanswered questions about BIDs and their implications for equitable public goods provision. This sub-municipal level of analysis, not yet applied to BIDs and other private governments, offers the opportunity to study inter-neighborhood tradeoffs instead of citywide outcomes.

Results from OLS regression analyses indicate that BIDs are associated with a significant, but substantively small, shift in the allocation of public sanitation and police expenditures and police vehicles. This interaction varies most consistently with the extent of BID presence, as the local government substitutes away in its provision of sanitation and police services in neighborhoods with greater BID presence. However, when I account for potential endogeneity between BID presence and public spending and service provision, any effect of the BID goes away. At best, BIDs have a modest impact on public spending and service allocation across the municipality.

This paper proceeds in the following way. The next section provides background on BIDs, followed by a section reviewing the relevant empirical literature and the theoretical framework for the current analysis. The subsequent two sections describe the data, methodology, and results from the empirical analysis. The final section concludes and offers policy recommendations.

II. BUSINESS IMPROVEMENT DISTRICTS

BIDs, as a method to supplement public services, have been supported by local governments and used by property owners for several decades. BIDs were pioneered in Toronto, Canada in the early 1970s and came to the United States in 1974 with the

Downtown Development District in New Orleans (Houstoun, 2003). Since then, BIDs have emerged in cities across the country and the world. As of 1999, there were 404 BIDs in the United States and another 400 in Canada; by 2005, BIDs had spread to New Zealand, South Africa, the United Kingdom, Jamaica, Serbia, and Albania (Hoyt, 2006). The most recent survey (Becker, 2008) estimates nearly 700 BIDs in the United States.¹

BIDs are managed either by quasi-public agencies or non-profit organizations, both of which are governed by boards of directors, and function relatively independently from the general purpose government with respect to their spending and program decisions (Houstoun, 2003). BIDs are somewhat of a reincarnation of special districts, as they are public in nature, providing services often thought to be the purview of the public sector and subject to public approval (Briffault, 1999). Unlike special districts, BIDs are not considered public entities, have a more limited geographic focus, and offer a much more diverse portfolio of services. Most importantly, like special districts, they possess the power to tax in that they levy binding assessments on all the member properties, which are used to fund supplementary services, such as street cleaning, security, and marketing, to the prescribed BID area.² This solves the free-rider problem, i.e., the potential for recipients of the service to pay for less than the amount of the service that they consume, which is not overcome by the voluntary nature of non-profit or merchant association participation (both financially and administratively) (Hansmann, 1980). At the same time, BIDs satisfy unmet demand for public services in a highly targeted way. In many ways, the BID assessment acts like a user charge or benefit tax, and establishes an obvious nexus between the marginal tax levied and the marginal dollars spent on local services (and benefits received), perhaps more so than the local property tax (Inman, 2009).³

A. BIDs in New York City

As of 2008, there were 60 BIDs in existence in New York City. The first official BID formed in 1984 in the Union Square area of Manhattan. Currently, there is at least one BID in every borough of New York City, but the majority are located in Manhattan and Brooklyn, with 20 and 18 BIDs, respectively (Table 1).

The BIDs in New York City are very diverse, and vary with respect to the number of member properties, the land area coverage, and the total assessment (or “tax”) levied by the BID on member properties.⁴ The largest BIDs are located in Manhattan, in terms

¹ It is difficult to verify the exact number, because there is no official count.

² BID assessments are formula-based and specific to each BID. They are typically a function of the assessed value, square footage, and/or frontage of the property.

³ Some would argue that the property tax is a perfect user charge for residential public services, but this is only partially true for the business property tax. In the latter case, commercial property owners and businesses receive some benefits from local services and expenditures.

⁴ BIDs can collect revenue from sources other than assessments levied on the individual properties; therefore, while the total assessment is a good approximation for relative budget size, it does not include all budgeted expenditures.

Table 1
Overview of BIDs in New York City

Borough	Number of BIDs	Number of Properties per BID		Average BID Land Area (Square Miles)		Average Total Assessment (Current; 2006\$)	
		Mean	Standard Deviations	Mean	Standard Deviations	Mean	Standard Deviations
NYC (Totals)	55	312	949	0.146	0.473	1,329,164	2,801,513
Manhattan	20	388	855	0.256	0.583	3,068,500	4,112,718
Bronx	6	89	101	0.085	0.106	270,821	150,853
Brooklyn	18	336	697	0.081	0.170	403,042	630,988
Queens	10	247	383	0.080	0.131	270,431	181,400
Staten Island	1	100		0.027		150,000	

Notes: Statistics are based on 55 BIDs with assessments available as of 2007.

Sources: NYC Department of Small Business Services, NYC Real Property Assessment Dataset.

of the number of properties (on average, 388), the land area coverage (on average, 0.26 square miles, or approximately 25 square blocks), and the total assessment (on average, \$3,068,500). Manhattan also has the most variation in BID size. On the other hand, the smaller BIDs are concentrated in the Bronx, covering only a third of the territory with a total assessment nearly one-tenth the size of those in Manhattan (Table 1). Indeed, most of the office-driven, corporate BIDs are located in Manhattan and downtown Brooklyn, while the more retail-driven, community BIDs are located in the Bronx and Queens (Meltzer, 2010; Ellen, Schwartz, and Voicu, 2007).

In terms of service provision, BIDs in New York City provide a range of supplemental services to the local area, but primarily focus on keeping the streets “clean and safe.” On average, BIDs spend about half of their budgets on sanitation and safety services combined. Only 10 percent and 12 percent, however, are spent on marketing and capital improvement projects, respectively; other than administrative cost, which averages about 23 percent of the budget, these are the next two largest spending categories. These service investments vary by borough as well: most of the capital project expenditures are concentrated in Manhattan, and BIDs in the outer-boroughs (i.e., those other than Manhattan) spend up to twice as much on administration costs and, in some cases, nearly half as much on security, relative to the citywide average (Table 2). That said, BID assessments constitute a relatively small portion of the City’s entire budget — for the 2006–2007 fiscal year, the aggregate assessment across all of the BIDs was about \$73 million, constituting just 0.13 percent of the City’s total budget.

III. PREVIOUS EMPIRICAL RESEARCH

The role of BIDs in local service provision is unique in that they privately supplement local public services, but their members simultaneously pay for and expect continued

Table 2
New York City BID Services by Borough
(As a Percentage of Total BID Assessment)

	Total	Manhattan	Bronx	Brooklyn	Queens	Staten Island
Average total assessment (2006\$)	1,446,986	3,237,781	277,456	433,187	279,155	154,839
Security	23.8	24.7	6.4	26.9	8.2	0.0
Sanitation	23.4	23.1	34.4	17.5	39.0	30.0
Marketing ¹	10.2	9.7	19.5	9.7	17.0	24.7
Capital improvement	11.5	11.8	1.1	14.8	1.8	12.0
Parks	1.6	1.8	0.1	0.4	0.3	0.0
Administration	22.8	22.0	28.8	25.1	30.0	32.3
Other ²	6.7	6.9	9.7	5.7	3.7	1.0
N (sample size)	51	19	6	15	10	1

Notes: The table uses data for 51 BIDs with budget information as of 2006. As of 2008, there were 60 BIDs in New York City.

(1) Marketing includes holiday decorations, promotion and tourism programs.

(2) Other includes contingency funds and other services, i.e. business development and community service.

Source: NYC Department of Small Business Services

public service provision. Empirical treatments of this kind of public-private “strategic interaction” are few and far between, and much of the literature on strategic interaction among overlapping or neighboring governing entities has been theoretical (Wilson, 1999; Brueckner, 2003; Helsley and Strange, 1998, 2000a, 2000b). No study to date has rigorously examined the relationship between BID spending and public sector service expenditures and inputs. A few studies have described the service patterns of BIDs in detail (Mitchell, 1999, 2001; Hoyt 2002) and how they relate to neighborhood resources and stakeholder compositions (Gross, 2005). However, none of these papers discusses the public sector response to BID service provision.

As an extension to her analysis of local crime, Brooks (2008) provides some estimates of public spending on crime and compares them to BID policing expenditures. Using the estimated coefficient for BID security spending and data on BID expenditures, she concludes that compared to an average social cost of \$57,000 per violent crime, BIDs are a cheap solution at \$2,000 to \$3,000 per violent crime averted. (While she does not test whether these crimes are simply pushed to other neighborhoods, she does find little or no evidence of reduced enforcement in non-BID neighborhoods.) Although these estimates suggest an efficiency gain from BID service provision, they do not address the interaction between publicly and privately provided services.

The strategic interaction of local governments has been directly tested in the context of growth control policies and Residential Community Associations. Brueckner (1998) executed the first empirical study on strategic interaction across local jurisdictions in

the choice of growth controls. He looks at the adoption of growth control measures by cities in California, and he finds evidence of policy interdependence among cities within the same region, largely due to tightness in regional housing markets (and therefore the growth control choices of neighboring cities). Brueckner and Saavedra (2001) find similar outcomes for the adoption of property tax rates by local governments in the Boston metropolitan area. Their analyses, however, focus on policy adoption rather than specific service expenditures and do not address interaction at a sub-city level.

Cheung (2008) looks at the impact of private government service provision on public service expenditures in the context of Residential Community Associations (these include homeowners associations and planned unit developments, which are often thought to be the residential counterpart to BIDs). He uses a panel of cities in California, and estimates the impact of planned unit developments on public service expenditures over three decades. He finds evidence of service downloading, such that for a 10 percent increase in per capita planned unit development units in a city, local expenditures fall by 1.5 percent. The extent of service downloading depends on the substitutability of the service and the size of the city (smaller cities have less opportunity to download, or “strategically substitute”). He also finds that strategic substitution is less likely to occur in smaller cities, where targeting service provision, as opposed to exploiting economies of scale, is not necessarily efficiency enhancing. His analysis, however, is citywide and does not measure the intra-city distribution of expenditures.

IV. PUBLIC-PRIVATE SERVICE INTERACTION

According to the standard median voter demand model for public good provision, the local government will allocate its public goods evenly across neighborhoods based on a measure of median demand for services across the municipality (Bowen, 1943; Barr and Davis, 1966; Bergstrom and Goodman, 1973).⁵ We can refine this model for a large municipality such as New York City, where there exist sub-municipal political jurisdictions. In this scenario, median demand may be determined at a finer geography. New York City provides a useful illustration, where citywide information on the demand for public goods is supplemented by neighborhood level needs surveys, which are provided during the budget approval process. The neighborhoods, known as “community districts,” are explicitly defined sub-municipal areas with representative bodies comprised of appointed community members that, among other responsibilities, collect information about their communities. They convey this information to the City’s cen-

⁵ The following framework only applies to decisions about the allocation of *resources* with respect to services and says nothing about the actual service outcomes. It may be the case that service outcomes are not entirely or inaccurately reflected in service inputs (Behrman and Craig, 1987), but due to data availability (discussed in more detail in the following section) the following analysis focuses on service inputs and not outputs. Regardless, the influence of BIDs on the distribution of resources on the part of the City is an important issue, apart from correlations to service outputs.

tral budget office through an annual, obligatory document called the District Resource Statement.⁶ Representatives from the boards that govern the community districts also meet regularly with the borough president and city council to convey the needs of local communities with respect to spending, services, and policy. In the absence of such information, the City is constrained to allocate public goods evenly across all sub-municipal areas; the input by community districts creates the opportunity to vary this provision based on the median demand in each particular sub-municipal area (within those areas, however, the resources are assumed to be uniformly distributed).⁷ Therefore, in the case that the median demand accurately reflects the demand of each consumer throughout the sub-municipal area, there is no need for private supplementation of public goods.

A. Public Service Provision in BID Neighborhoods

However, it is more likely the case that consumers within each sub-municipal area will vary in terms of their demand for public goods and there will be those that demand more than the median consumer. The public sector is not set up to adequately address this heterogeneity in demand at the neighborhood level, thus creating the conditions for a BID. Those firms that are willing and able to pay into the BID will receive supplemental goods and services that fill the perceived void in public sector provision. These BID members, however, remain consumers of the publicly provided goods as well.

According to the “strategic interaction” framework (Cheung, 2008; Helsley and Strange, 1998, 2000a, 2000b; Brueckner 2003), the BIDs and the public sector determine their service levels competitively, or “strategically,” where the former makes decisions based on the needs of its members and the latter based on the needs of constituents in the municipality. Since the BID members are now receiving goods and services from a private provider, the “strategic interaction” theory predicts that their demand for publicly provided services will change depending on BID presence; the extent and nature of this change can vary by the extent and nature of BID activity and is discussed in more detail below. Assuming both substitutability and complementarity in BID and public service provision, there are two ways in which the public sector could respond in its service allocation. First, the City may respond to BID service provision by decreasing expenditures on comparable services in the neighborhoods where BIDs reside. Political theorists have suggested that private governments that supplement public services decrease the demand for public services (and public involvement in general) among those who opt for the private provision of services, and that the City responds accordingly (Scott, 1967; Gordon, 2003). Alternatively, local districts may decide that BIDs are replicating services (i.e., “over-providing”) services or providing the same

⁶ Since not all municipalities possess formal sub-municipal districts with the ability to participate in the budget approval process, the implications of our analysis for less formal systems will be addressed in the results section of this paper.

⁷ Throughout the analysis, the demand for services is assumed to be positively correlated with tax payments.

services at lower cost, and download those services onto the private BID. This latter response may manifest itself in overall fiscal adjustments, or targeted shifts in service inputs depending on what types of services are being provided by the BID in that area.

Second, the City may respond with increased public investment in the BID area.⁸ The BID resolves the problem of collective action by establishing an organized vehicle through which the local businesses can voice their concerns to the municipal government. Faced with more concentrated lobbying pressures, the City may funnel more funds into the BID area through capital improvement projects and improved service response. This is consistent with Molotch's (1976) urban "growth machine" theory, whereby the land-owning elite support growth-inducing policies and influence public spending through their political actions. Conversations with BID representatives suggest that, irrespective of political clout, requests may generate more immediate and effective responses on the part of the City because the BID employs individuals whose primary responsibilities are to monitor district needs. Alternatively, the city may, apart from private business and property owner influences, see spillover benefits from BID service efforts. For example, graffiti removal on the part of the City may have a more lasting impact should the streets be regularly swept and maintained by the BID. Another illustrative example comes from the Los Angeles/Hollywood BID which purchased street surveillance cameras. Due to civil liberties concerns, the BID could not watch the videos obtained, but the Los Angeles Police Department (LAPD) could. On the other hand, due to financial constraints, the LAPD could not afford the cameras, but the BID could. Thus, BID resources complemented the police department's legal powers. Essentially, municipal dollars were more effective — had a higher marginal value — when they are matched with non-municipal funds. And this "match" can be defined broadly, so as to include, for example, neighbors sharing information with the police, or calling to report crime.

It may also be the case that the local government exhibits no response to BID presence in its service allocation decisions. First, the substitution and complementary responses may offset one another such that the net effect is negligible. Second, a lack of interaction between BIDs and the City could also be a product of unabated costs in institutional coordination across public and private entities (to prevent redundancy in services, for example). Finally, BIDs may provide services that are truly supplementary to those offered and considered by the public sector. That is, the underlying demand for public services by BID members (and therefore the public sector's response) does not change in the presence of a BID. For example, BID sanitation may take care of street sweeping and garbage can maintenance, which was never the obligation of City government; trash pick-up, on the other hand, has and will continue to be the responsibility of the local government.

⁸ The two responses on the part of the local government may not be mutually exclusive. For example, the local government may respond with increased spending or input allocation in some BID neighborhoods, and a withdrawal of spending or input allocation in other BID neighborhoods. This variation in specific neighborhoods could manifest itself in different average effects across all BID neighborhoods, depending on which direction and magnitude of allocation is dominant.

B. What Factors Shape Local Government's Response?

The degree of service enhancement or withdrawal on the part of the City is determined by the extent and type of BID presence. First, the extent of BID presence, determined either by physical or fiscal size, will influence how much BID services affect local government provision. Specifically, if more land area is covered by BIDs, or if BIDs in the aggregate levy larger total assessments, then they are more likely to provide a substantial level of services and subsequently affect the level of public sector service provision. Second, the composition of the BID services, determined by the preferences of the BID members, will determine the degree to which the City responds in its service provision. For example, if the BIDs in a neighborhood are comprised primarily of retail establishments that are concerned about theft and disorderly conduct as foot traffic increases, then they are more likely to dedicate a larger portion of their budgets to security-related services, such as patrolmen. The local government, therefore, will adjust its deployment of patrolmen in BID-populated areas to a greater degree than in areas with few retail BID properties. In addition, the composition of BID members can, through political avenues, influence the response on the part of the city. Specifically, if a BID is comprised of more corporate entities, it may have more political clout to attract public investment than a BID that is comprised of smaller, less influential members.⁹

In addition, other non-BID neighborhood conditions will change over time and affect the level of public good provision, apart from the BIDs' influence. Specifically, as the BID commercial districts become more popular, foot traffic will increase, changing the demand for publicly-provided and BID services. In addition, crime levels may change differentially in BID neighborhoods as the opportunities for theft multiply or as the number of eyes on the street increases with growing foot traffic. These changes in crime will trigger a response on the part of the City, apart from any BID influence. Finally, changes in the size and socioeconomic composition of the local population will correspond with growing BID presence, yet also result in independent service allocation adjustments on the part of the City. The City will adjust service provision due to shifting demand across neighborhoods, as well as differential changes in political influences (for example, neighborhoods with more affluent homeowners may be more successful at lobbying for increased services).

IV. DATA AND METHODOLOGY

A. Data

This paper relies on data on BIDs and public services in New York City, which currently hosts the largest number of BIDs in any one locality in the world (60 as of fall

⁹ Residential and mixed use properties are allowed to join BIDs, but the residential component is "taxed" at a lower, nominal rate and the residential members have considerably less representation on the BID board (usually only one individual). Therefore, the current analysis assumes that any variation in BID services is primarily driven by the extent and type of commercial properties. The commercial component of mixed-use properties is counted towards commercial (specifically, retail) square footage.

2008). In addition, the pool of BIDs in New York City is very diverse, in terms of size, commercial composition, property owner composition, establishment date, and neighborhood location. The BIDs are located in downtown business centers, mixed-use areas, and smaller neighborhood communities. I proxy for neighborhoods with Sub-Borough Areas (SBAs), of which there are 55 in New York City.¹⁰ The SBA is the level at which spending and services are appropriated across New York City. The analysis takes place over 10 to 15 years, depending on the outcome variable of interest.

The data on BIDs are obtained from the New York City Department of Small Business Services (SBS). This unique dataset includes information on the location, establishment date, services, and assessments for all BIDs in operation as of 2008. I also rely on four other important data sources. First, I obtain information on service expenditures and personnel and vehicle inputs for the Department of Sanitation and the Police Department from the District Resource Statements, prepared annually by the New York City Office of Management and Budget, and supplied by the Independent Budget Office of New York City. I focus on sanitation and police services, because these represent the largest portion of BID budgets (Table 2) dedicated towards direct service provision (i.e., other than administration costs). This information is available at the SBA level from 1992–2007.¹¹ Second, I use the Real Property Asset Database (RPAD) with information on the structural characteristics for all properties in New York City accessed from the Department of Finance.¹² Third, I obtain economic and demographic characteristics for the 55 SBAs in New York City from the U.S. Census.¹³ Lastly, I use statistics on total reported crimes provided by the New York City Police Department and convert them to per capita rates.

B. Identification

The dependent variable of interest is local government service provision, which is operationalized in three ways: (1) annual service expenditures; (2) annual number of vehicles assigned; and (3) annual number of personnel deployed. This variable is measured at the SBA level and is estimated for sanitation and police services. Service

¹⁰ SBAs are geographic units created by the Census Bureau. They are constructed from aggregates of census tracts and are designed to approximate New York City's Community Districts, which are political units that review applications for zoning changes and other land use proposals and make recommendations for budget priorities. There are 55 SBAs in New York City and their boundaries have not changed since their initial formation.

¹¹ The data are actually reported at the Community District (CD) level; in most cases CDs are identical to SBAs, and otherwise they can be aggregated to obtain SBA totals.

¹² These data are used to obtain square footage and property classifications in the BIDs and SBAs overall.

¹³ Values for inter-census years from 1980–2000 are interpolated and post-2000 values are obtained from the American Community Survey. Otherwise identical models were run on decade-only values to check for consistency in estimates for the population characteristics, and the coefficients are consistent with the interpolated models. Results are available from the author upon request.

expenditures serve as a crude measure of overall investment in policing and sanitation services and the vehicle and personnel measures will help to identify more specific mechanisms for how resources are allocated in BID and non-BID neighborhoods.

The independent variable of interest is BID presence, which will be operationalized in several ways as well.¹⁴ First, I include a dummy, “BID Post,” which takes on the value of 1 if more than 1.5 percent of the total square footage in an SBA is included in a BID at time t ; it takes on the value of zero otherwise.¹⁵ This variable measures the “impact” of having at least some BID coverage in the SBA, regardless of the extent or type of BID presence.¹⁶ Second, I include total BID square footage in an SBA at time t to allow the BID impact to vary with the extent of BID coverage in the neighborhood.¹⁷ Third, I include the proportion of BID square footage that is classified as office in an SBA at time t to allow the BID impact to vary by “type” of BID. This variable is intended to pick up differences across BID neighborhoods that are due to BID-specific political influence or service demand. I use property classification, specifically office versus retail, to proxy for the differential political connections of the board members and executive directors and the distinct service needs across office-oriented and retail-oriented BIDs.¹⁸ Ideally, I would like to use the amount spent on BID services or the composition of BID tenants and board members, but this information is not available going back in time.

Other covariates control for factors that may also contribute to changes in public sector and BID service provision. These variables are typical in models of local spending (Weicher, 1971; Antunes and Plumlee, 1977; Lineberry, 1977; Bergstrom, Rubinfeld, and Shapiro, 1982; Behrman and Craig, 1987; Schokkaert, 1987), and include population, population growth rate, average household income, proportion black, proportion

¹⁴ I also ran models with an additional “BID” variable measuring the length of time since the first BID in the SBA, which was included to capture differences in service impacts that may arise due to changes in BID organizational capacity or City-BID relations over time. This variable was omitted from the final specification, because it was not significant and did not alter the results of the remaining variables. Results are available from the author upon request.

¹⁵ Since BIDs can overlap multiple SBAs, I use a square-footage-based cutoff for BID presence. Coverage of 1.5 percent represents about the 40th percentile of coverage in the sample. Sensitivity analyses were conducted for other coverage cutoffs, and this threshold was determined to be large enough to pick up “actual” BID impacts, but not too large to miss relatively smaller BID coverage areas.

¹⁶ For ease of interpretation, *BID Post* can also be thought of as the impact of the first BID in the neighborhood.

¹⁷ Variations of the model were run with total BID assessment in the SBA, proportion of square footage included in the SBA, and a discrete measure of BID square footage; the results remain largely unchanged with all of these specifications. Results are available from the author upon request.

¹⁸ Conversations with BID representatives suggest that BID impacts may also vary idiosyncratically depending on the connections and leadership style of the executive director at any point in time; while I cannot measure this systematically for the regression analysis, anecdotes suggest that it is reasonable to assume that this variation is in general randomly distributed, controlling for broader “retail” and “office” characteristics.

Hispanic, proportion older than age 65, proportion of households with children, and homeownership rate.¹⁹ In addition, since changes in local services and BID presence will both be correlated with changes in overall commercial presence, I include the total commercial square footage in an SBA at time t .²⁰ Finally, for police service models I also include the total crime rate for the SBA at time t to control for changes in crime that are correlated with changes in BID presence and police service expenditures and inputs. Summary statistics for all of the variables are shown in Table 3.

C. Estimation

Using the data described above, I construct a panel of SBAs for the years 1992–2007.²¹ I estimate a modified difference-in-differences regression to control for unobserved differences across BID and non-BID neighborhoods that do not change in concert with BID adoption. Since there are neighborhoods with BIDs already in place at the start of the study period, this estimation approach is preferable as it identifies off of *changes* in BID presence between t and $t + 1$, controlling for BID presence at time t .²² The regression is specified as

$$(1) \quad \text{LnPub}_{s,b,t} = \beta \mathbf{BID}_{s,t} + \delta \mathbf{X}_{s,t} + \mathbf{s}_s + \mathbf{y}_{b,t} + \varepsilon_{s,t}.$$

In this regression, the dependent variable is operationalized in three ways, for each type of service (sanitation and police): (1) the natural logarithm of expenditures; (2) the natural logarithm of the number of vehicles; and (3) the natural logarithm of the number of personnel. As for the right-hand-side variables, $\mathbf{BID}_{s,t}$ is a vector of three indicators, *BID Post*, *BID sqft*, and *Share BID Office sqft*, capturing the extent and type of BID presence in SBA s at time t . *BID Post*, which takes on the value of “1” if a neighborhood has a BID and “0” otherwise, is a crude measure of BID impact. Since there are neighborhoods without any BIDs during the study period, this variable also controls for unobserved baseline differences between BID and non-BID neighborhoods; *BID sqft* is the total square feet included in the BID at time t , which allows the impact to vary by the extent, or size, of BID presence; *Share BID Office sqft* is the share of total BID square footage designated for office use at time t , which allows the impact to vary by the

¹⁹ Variables for the poverty rate and the proportion of the population with a college degree or higher were not included because they are highly correlated with other covariates, in particular household income and homeownership rates.

²⁰ Identical models were run with proportion commercial square footage and the results are robust to those using the total amount of commercial square footage. Results are available from the author upon request.

²¹ The length of the panel varies depending on the type of service, i.e., police versus sanitation, and the type of service measure, i.e., expenditures, vehicles, or personnel. On average, however, the sanitation panel spans 15 years and the police panel, 10 years.

²² Specifically, there are 16 SBAs that always have a BID, 27 that never have a BID and 12 that gain a BID sometime during the study period. There is not one BID that disbands during the study period (or ever in New York City for that matter).

type of BID presence. The vector $X_{s,t}$ includes time-variant population and commercial characteristics that are correlated with public sector service provision and BID presence for SBA s at time t , s_s are SBA dummies, and $y_{b,t}$ are borough-year fixed effects.

What the above specification does not address is the potential endogeneity of BID presence. Specifically, while BIDs have the potential to influence public spending and service decisions, the reverse may also be true, as the decision to form a BID may be influenced by the level of public spending and service provision in that neighborhood. Helsley and Strange (1998, 2000a, 2000b) model the formation of private governments as, in part, a response to dissatisfaction with the current levels of public good provision, and their strategic interaction framework suggests that local governments might intentionally reduce their provision of certain services in order to encourage the formation of private service providers like BIDs and RCAs. If this is the case, the coefficient on *BID sqft*, for example, will be biased downward and inconsistent. In order to handle this potential endogeneity, I also run two-stage least squares, instrumenting for BID presence. An appropriate instrument for BID presence would be: (1) correlated with BID presence; and (2) have no independent effect on public spending and service provision. I instrument for *BID Sqft* with two variables, *BID Sqft* lagged five years and *BID Sqft* lagged 10 years. The intuition behind these instruments follows. First, assuming that past BID proliferation determines current BID presence, the lagged *BID Sqft* should explain *BID Sqft* in the current year, but should not directly affect current year expenditure and service levels, controlling for other neighborhood characteristics. In both cases, the goal is to achieve a lag that extends beyond any persistence in public expenditures and services. In this case, the mayoral administration (and any affiliated budgeting activities) turned over three times during the 10 to 15-year duration of the study, and therefore a five-year and a 10-year lag are defensible.²³

While the variation in BID presence is identified in two ways, I only instrument for *BID Sqft*, since this variable arguably poses the biggest threat to exogeneity. The variable *Share BID Office sqft* measures any variation in BID office space, but is largely determined by the local building stock and zoning capacity rather than decisions on the part of the BID founders. The building and zoning classifications change very slowly, if at all, over time, and are, for all intents and purposes, exogenous to any change in local spending or service levels. Still, the coefficient on this variable, as well as on *BID Post*, should be interpreted as reflecting non-directional associations rather than causal relationships.²⁴

²³ Direct correlations of public expenditure and service variables over time show evidence of persistence within the five-year window (with considerably less persistence within the 10-year window). However, this does not control for any persistence in neighborhood demographics, which also drive spending and service levels. I do not have enough observations to extend the lags farther back in time, and therefore, the interpretation of the 2SLS results with the current instruments should be tempered with this limitation in mind.

²⁴ I do run 2SLS specifications instrumenting for both *BID Sqft* and *Share BID Office sqft*, with corresponding lagged variables, and the results are substantively the same.

Table 3
Summary of Variables

Variable	Source	All SBAs		BID SBAs ¹		Non-BID SBAs	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Public Services variables							
Sanitation expenditures per capita (\$)	(a)	38.84	10.27	38.97	10.37	38.76	10.21
Sanitation personnel per capita	(a)	0.0008	0.0002	0.0008	0.0002	0.0008	0.0002
Sanitation vehicles per capita ²	(a)	0.0003	0.0001	0.0003	0.0001	0.0003	0.0001
Police expenditures per capita (\$)	(a)	100.90	41.17	111.47	57.34	94.94	26.55
Police personnel per capita	(a)	0.0021	0.0008	0.0024	0.0012	0.0020	0.0005
Police vehicles per capita ²	(a)	0.0002	0.0001	0.0002	0.0001	0.0002	0.0001
BID variables							
Total sq. ft. in BID (thousands)	(b), (c)			20,513	48,686		
Total retail sq. ft. in BID (thousands)	(b), (c)			2,591	5,488		
Total office sq. ft. in BID (thousands)	(b), (c)			11,538	30,936		
Proportion BID office sq. ft.	(b), (c)			0.22	0.25		

Control variables												
Total population	(d)	142,105	32,190	148,451	34,697	138,573	30,161					
Average household income (\$)	(d)	61,709	27,134	67,895	37,479	58,266	18,238					
% Asian	(d)	0.09	0.09	0.10	0.09	0.09	0.10					
% Black	(d)	0.26	0.26	0.23	0.25	0.27	0.27					
% Hispanic	(d)	0.27	0.20	0.28	0.21	0.26	0.19					
% homeowners	(d)	0.30	0.18	0.24	0.13	0.34	0.20					
% households with children	(d)	0.32	0.10	0.29	0.12	0.34	0.07					
% 65 years or older	(d)	0.12	0.04	0.12	0.04	0.12	0.04					
5-year population growth	(d)	0.03	0.04	0.02	0.04	0.04	0.04					
Total commercial sq. ft. (thousands)	(c)	11,704	31,156	21,763	49,521	6,106	7,795					
Total crime per capita	(e)	0.043	0.030	0.046	0.036	0.041	0.022					
N (sample size)		55	27	28								

Notes: The sample is 55 SBAs over 10–15 years (depending on the public services variable); all dollar values are adjusted to 2006\$.
 (1) "BID SBAs" are defined as SBAs with at least 1.5 percent of total square footage in a BID; as of 2007, there were 27 "BID SBAs."
 (2) Sanitation vehicles include trucks and salt spreaders; police vehicles include radio cars, scooters, and other cars.
 Sources: (a) = NYC District Resource Statement; (b) = NYC Department of Small Business Services; (c) = NYC Department of Finance; (d) = U.S. Census; (e) = NYC Police Department

V. RESULTS

A. Baseline Differences in Services across BID and non-BID Neighborhoods

There are no significant baseline differences between BID and non-BID SBAs in sanitation expenditures and personnel; however SBAs with BIDs have, on average, a significantly lower number of sanitation vehicles.²⁵ This difference is consistent with the prediction that BIDs will form as a response to under-provided services. SBAs with BIDs, on the other hand, have significantly higher police expenditures and a greater number of vehicles, and this difference persists over time. This baseline difference could be interpreted in two ways. First, the police department may allocate more services to areas that more effectively lobby for them, in other words, wealthier and more influential areas. Second, the police department may provide more services in areas with more commercial activity, i.e., where BIDs tend to emerge. I also observe public expenditures and service inputs relative to the time of BID adoption.²⁶ On average, the difference in expenditures and inputs before and after BID adoption is not significantly different from zero. This suggests that the local government is not strategically sub-allocating services across neighborhoods (to encourage BID formation, for example). Together, these trends paint an ambiguous picture of the public-private interaction. Of course, they do not control for differences in population, commercial concentration, and crime across BID and non-BID neighborhoods (Table 3) that may influence differences in both the level of sanitation and police services (net of any BID impact) and the likelihood of BID presence (apart from existing service levels).

B. Impact of BIDs on Sanitation Services

Regressions of sanitation spending on BID presence and local population characteristics suggest that overall there is no difference in the change in expenditures after BID formation between BID and non-BID neighborhoods (see Table 4 for sanitation regression results). This is robust to specifications that allow the impact of the BID to vary by size and type. However, when the impact is allowed to vary by size, the coefficient on this variable is marginally significant and negative, albeit small in magnitude: for every 1 percent increase in BID square footage, sanitation spending decreases by 0.003 percent on average. In addition, when the impact is allowed to vary by BID type (i.e., share of BID office square feet), the coefficient on this variable is highly significant and positive. This means that neighborhoods with more office-oriented BIDs spend more on sanitation services, holding BID size constant. The direction of the effect is consistent with the prediction that more politically connected BIDs (as proxied for by the share of office space) will be able to lobby for more public resources in their

²⁵ Figures illustrating baseline differences for police and sanitation services are provided in an appendix that is available upon request from the author.

²⁶ Figures illustrating services relative to time of BID adoption are available in the appendix.

district. Alternatively, the kind of sanitation services provided by office-oriented BIDs may better complement those provided publicly. These types of BIDs often have the budget and sophistication to purchase equipment, such as garbage blowers or sidewalk power washers, that enhance the basic clean-up performed by the city. Similar to the expenditure results, there is no difference in sanitation personnel across BID and non-BID neighborhoods. Changes in personnel, however, do not vary by BID size or type.

As for vehicles, when the BID impact is not allowed to vary by size or type, the effect is null. However, when BID size and type are added to the model, the effect is a bit more nuanced. BID neighborhoods actually receive fewer vehicles (specifically 4.5 percent, or 0.00002 per capita, fewer vehicles per year) than neighborhoods with no BID presence. The BID impact does not, however, vary with the amount or type of BID presence.

The 2SLS results are displayed in the third column of each panel in Table 4, and show that once I instrument for *BID Sqft*, any significant effect of BID presence disappears. The coefficient on *BID Sqft* increases in magnitude for expenditures, personnel and vehicles, but in no case is it statistically significant and different from zero.²⁷ The other BID variables, *BID Post* and *Share BID Office sqft* also increase in magnitude, but are no longer significant predictors of spending and vehicle allocation. In all cases the F-statistic for the first stage regression is greater than 16 and significant at the 1 percent level. In addition, based on the Sargan-Hansen test, we fail to reject the null hypothesis of instrument validity (exogeneity) (first stage regression results are displayed in the appendix).²⁸

C. Impact of BIDs on Police Services

The results for police services are also modest, but slightly different in terms of the nature of the interaction (Table 5). The results in the first column of Table 5 do not include variables for BID size or type, and the impact of BIDs on police spending is null. This does not change when the BID impact is allowed to vary by size and type. The coefficient on BID square footage is small in magnitude, but statistically significant, suggesting that for every 1 percent increase in BID square footage, police spending decreases by 0.003 percent on average (evaluated at the mean, \$616 per year, or \$0.002 per capita per year).

²⁷ Although the 2SLS results lack statistical significance, the coefficient on the BID variable of interest is larger than in the OLS regression (as are the standard errors). With this in mind, and the fact that the use of fixed effects limits the power of the dataset, I cannot rule out economic significance. The 2SLS results, therefore, do not necessarily provide hard evidence of a null effect, but rather introduce some doubt into the OLS results. I thank the editor for bringing this distinction to my attention.

²⁸ This test provides some confidence in the instruments, but I acknowledge that it is not conclusive since both instruments are excluded for essentially the same economic reason (since they are five- and 10-year lags of the same variable). This instrument approach, however, has been employed in earlier studies (see Villas-Boas and Winer (1999), Aronsson, Lundberg, and Wikstrom (2000), and Cheung (2008) for examples of lagged instrument variable approaches with panel data).

Table 4
Sanitation Services Regression Results

Dependent variable	Ln (Expenditures)		Ln (Number of Personnel)		Ln (Number of Vehicles)	
	OLS	SLS	OLS	SLS	OLS	SLS
BID Post	-0.040 (0.036)	-0.031 (0.035)	0.018 (0.022)	0.015 (0.024)	-0.025 (0.021)	-0.045* (0.024)
Log (BID sqft)		-0.003* (0.002)		0.000 (0.002)		0.003 (0.002)
Log (Share BID Office sqft)		0.201*** (0.066)		0.028 (0.078)		-0.044 (0.078)
Log (Commercial sqft)	0.006 (0.004)	0.006* (0.004)	-0.001 (0.003)	-0.001 (0.003)	0.000 (0.003)	0.000 (0.003)
Log (Population)	0.460*** (0.169)	0.422*** (0.169)	0.398*** (0.148)	0.397*** (0.147)	0.652*** (0.210)	0.734*** (0.210)
Log (Average HH Inc)	-0.076 (0.098)	-0.069 (0.097)	-0.283*** (0.085)	-0.281*** (0.085)	0.025 (0.115)	0.025 (0.112)
% Asian	-0.396 (0.252)	-0.291 (0.252)	-0.337 (0.222)	-0.344 (0.232)	-0.605* (0.364)	-0.920* (0.488)
% Black	-0.398** (0.196)	-0.376* (0.195)	-0.633*** (0.171)	-0.631*** (0.171)	-0.314* (0.177)	-0.353** (0.173)

% Hispanic	-0.106 (0.234)	-0.031 (0.238)	0.123 (0.352)	0.146 (0.215)	0.138 (0.220)	0.087 (0.315)	-0.072 (0.254)	-0.158 (0.259)	-0.314 (0.365)
% Homeowners	0.071 (0.260)	0.153 (0.265)	0.158 (0.253)	0.195 (0.256)	0.223 (0.256)	0.221 (0.248)	-0.638* (0.328)	-0.594* (0.328)	-0.599* (0.310)
% HHs with Kids	0.273 (0.286)	0.280 (0.285)	0.289 (0.277)	-0.110 (0.205)	-0.110 (0.205)	-0.113 (0.195)	-0.045 (0.242)	-0.050 (0.239)	-0.059 (0.227)
% 65 Years +	0.018 (0.526)	0.020 (0.529)	-0.001 (0.514)	-0.647 (0.470)	-0.642 (0.472)	-0.635 (0.451)	0.109 (0.572)	0.127 (0.570)	0.147 (0.546)
5-Year Population Growth	-0.488*** (0.156)	-0.475*** (0.156)	-0.458*** (0.150)	-0.336*** (0.128)	-0.335*** (0.128)	-0.340*** (0.125)	-0.574*** (0.217)	-0.579*** (0.215)	-0.596*** (0.202)
N (sample size)	834	834	834	834	834	834	833	833	833
R-squared	0.93	0.93	0.92	0.95	0.95	0.93	0.93	0.93	0.91

Notes: All regressions include SBA dummies and Borough*Year fixed effects; Robust standard errors are in parentheses. Asterisks denote significance at the 1% (***), 5% (**), and 10% (*) levels.

Table 5
Police Services Regression Results

Dependent variable	Ln (Expenditures)				Ln (Number of Personnel)				Ln (Number of Vehicles)			
	OLS	OLS	2SLS	OLS	OLS	OLS	2SLS	OLS	OLS	OLS	OLS	2SLS
	(0.016)	(0.018)	(0.125)	(0.019)	(0.033)	(0.089)	(0.051)	(0.042)	(0.063)	(0.053)	(0.163)	
BID Post	0.003 (0.016)	0.028 (0.018)	-0.167 (0.125)	0.030 (0.019)	0.051 (0.033)	-0.083 (0.089)	-0.001 (0.042)	0.063 (0.053)	-0.005 (0.163)			
Log (BID sqft)		-0.003** (0.001)	0.031 (0.022)		-0.001 (0.003)	0.024 (0.017)		-0.009** (0.004)	0.003 (0.027)			
Log (Share BID Office sqft)		0.033 (0.075)	-1.081 (0.742)		-0.142 (0.178)	-1.359 (0.836)		0.102 (0.219)	-0.283 (0.855)			
Log (Commercial sqft)	0.004 (0.005)	0.004 (0.005)	0.005 (0.006)	0.002 (0.003)	0.003 (0.003)	0.001 (0.003)	-0.014** (0.006)	-0.014** (0.006)	-0.014** (0.006)			
Total Crime Rate	0.316* (0.184)	0.264 (0.189)	0.806 (0.499)	-0.145 (1.016)	-0.360 (1.074)	-0.792 (1.020)	-0.433 (0.499)	-0.568 (0.500)	-0.380 (0.596)			
Log (Population)	0.316* (0.184)	0.264 (0.189)	0.806 (0.499)	-0.145 (1.016)	-0.360 (1.074)	-0.792 (1.020)	-0.433 (0.499)	-0.568 (0.500)	-0.380 (0.596)			
Log (Average HH Inc)	-0.149 (0.194)	-0.166 (0.192)	-0.227 (0.240)	1.568*** (0.453)	1.499*** (0.459)	1.125* (0.577)	-0.296 (0.483)	-0.335 (0.482)	-0.356 (0.453)			
% Asian	-0.512** (0.209)	-0.357 (0.227)	-1.883* (1.058)	-3.011*** (1.017)	-2.941*** (1.089)	-5.064*** (1.750)	-0.941 (0.599)	-0.543 (0.591)	-1.071 (1.333)			

% Black	0.102 (0.157)	0.115 (0.153)	-0.155 (0.349)	0.704 (0.844)	0.408 (0.848)	-1.091 (1.437)	0.517 (0.450)	0.554 (0.450)	0.461 (0.454)
% Hispanic	0.639* (0.341)	0.761** (0.334)	-0.392 (0.721)	1.424 (0.995)	1.479 (1.025)	0.715 (1.133)	0.117 (0.733)	0.430 (0.709)	0.0311 (1.045)
% Homeowners	0.048 (0.288)	-0.087 (0.297)	0.507 (0.652)	-1.494 (2.643)	-2.046 (2.909)	3.917 (5.204)	-1.920** (0.798)	-2.254** (0.877)	-2.048** (0.959)
% HHs with Kids	0.011 (0.312)	0.096 (0.305)	-0.704 (0.713)	1.728 (2.405)	1.977 (2.532)	-2.766 (3.973)	1.506 (0.927)	1.723* (0.934)	1.446 (1.128)
% 65 Years +	1.228* (0.701)	1.231* (0.694)	0.485 (0.944)	2.745 (3.694)	2.721 (3.848)	-5.885 (6.926)	1.709 (1.559)	1.731 (1.590)	1.473 (1.512)
5-Year Population Growth	-0.057 (0.189)	-0.020 (0.192)	-0.232 (0.299)	-0.815 (0.849)	-0.562 (0.925)	-0.579 (0.922)	0.569 (0.625)	0.661 (0.645)	0.588 (0.630)
N (sample size)	450	450	450	230	230	230	450	450	450
R-squared	0.93	0.93	0.89	0.97	0.97	0.96	0.83	0.83	0.84

Notes: All regressions include SBA dummies and Borough*Year fixed effects.; Robust standard errors are in parentheses. Asterisks denote significance at the 1% (***), 5% (**), and 10% (*) levels.

Consistent with the results for expenditures, the change in the number of personnel is no different in BID neighborhoods relative to non-BID neighborhoods (see the first column of the second panel in Table 5). Similarly, the BID impact on personnel does not vary by size or type.

The third panel in Table 5 displays the vehicle regression results. The change in the allocation of vehicles is no different across BID and non-BID neighborhoods, and this is robust across the first two specifications. The BID impact, however, does vary by the amount of BID presence. Specifically, for a 1 percent increase in BID square footage, the number of police vehicles decreases by about 0.01 percent (evaluated at the mean, approximately 0.003 vehicles per year). Again, this is a small effect; in order to observe a reduction of one vehicle, the effect would have to be at least 500 times larger than observed. The type of BID presence does not affect changes in police spending, personnel or vehicles.

The 2SLS results for the police regressions are displayed in the third column of each panel in Table 5 and echo the results from the sanitation analysis. Once I instrument for *BID Sqft*, any significant effect of BID presence disappears. The coefficient on *BID Sqft* increases in magnitude for expenditures, personnel, and vehicles, but in no case is it statistically significant and different from zero.²⁹ In all cases the F-statistic for the first stage regression is greater than 16 and significant at the 1 percent level. In addition, based on the Sargan-Hansen test, we fail to reject the null hypothesis of instrument validity (exogeneity) (first stage regression results are available in the appendix).³⁰

D. Spillovers and Interpreting Lower-Bound Effects

The analysis thus far assumes that the effect of BIDs on public spending and services is confined within the SBA boundaries. If public expenditures and services in one SBA are dependent on spending and services in neighboring SBAs, the coefficient on the BID presence variables could be biased. I repeat the regressions for sanitation and police, but include for each SBA-year observation a measure of the average expenditure or service input for the neighboring SBAs. Since most SBAs are bordered by multiple SBAs, I weight this mean by the proportion of the boundary that is shared across each abutting SBA pair. These results generally show that the spending and service provision of any one SBA are positively affected by the neighboring SBAs' spending and service provision (with the exception of police vehicles, which have a negative impact on the neighboring allocation amounts).³¹ The regression results for the BID variables, however, remain substantively unchanged. Therefore, the results from the above analysis do not appear to be skewed by service spillovers across SBA borders.

²⁹ The same caveat applies here as above: this result does not rule out economic significance and the 2SLS results should not be taken as strong evidence of a null effect.

³⁰ Again, this test should be taken as encouraging, but not conclusive, of instrument validity.

³¹ Results from this analysis are available in the appendix.

The current analysis also relies on the assumption of a relatively formal sub-municipal political structure that provides additional information on local service demands. I recognize that such a formal system may not be in place in other municipalities. In those cases where demand for services is solely determined by the typical resident across the entire municipality, we would expect the effect of BIDs on localized service provision to be larger due to the fact that the service baselines are more likely farther from the actual level of demand in those sub-municipal neighborhoods. Therefore, the results from the current analysis should be considered lower bound estimates when compared to other municipalities with less formalized mechanisms for obtaining sub-municipal demand for services.³²

Finally, any muted effect at the SBA level may be a result of countervailing effects at smaller neighborhoods. For example, let us assume an SBA has two micro-neighborhoods. If the BID micro-neighborhood receives more spending on sanitation, but the neighboring non-BID micro-neighborhood receives less spending, on net the effect would be null for the larger SBA. The City does not explicitly allocate services across neighborhoods within the SBA, but the withdrawal or infusion of services may be done informally by local district or precinct managers. Again, the difference between an actual null effect and a net-zero effect cannot be distinguished in the current analysis. In order to precisely distinguish between the two scenarios, I would need access to spending and input data at the sub-SBA level, which are unavailable.

VI. CONCLUSION

Over the past two decades BIDs have become an increasingly popular mechanism for supplementing local public services. Local governments and property owners embrace these “private governments,” because they allow for a service package that is tailored to local needs. Critics, however, worry that this privatization in service provision will result in public service responses that either disproportionately funnel additional investment into BID neighborhoods or divert public resources away from neighborhoods supported by private BID funds. The current analysis empirically tests the relationship between BID presence and local public service provision and finds little or no effect. Specifically, when relying on OLS estimation, BIDs are associated with a statistically significant, but substantively small, change in the allocation of police expenditures, police vehicles and sanitation vehicles. This interaction most consistently varies with the extent of BID presence, as the local government substitutes away in its provision of sanitation and police services in neighborhoods with more BID square footage. There is slightly weaker evidence on the relationship between the type of BID presence and

³² In municipalities where similar sub-municipal districts exist, whether they are wards or community districts, the analysis would follow largely the same approach. In those cities that are not organized in the same manner, the demand for services can still be revealed at a sub-municipal level, but in a less formal way. In municipalities where formal sub-municipal districts do not exist (or do not play as active a role in the budget process), there still exist community groups and ad hoc collections of residents that can lobby and influence public decisions about resource allocation and influence any baseline service levels.

public spending. However, when I account for potential endogeneity between BID presence and public spending and service provision, any effect of the BIDs disappears. Overall, BIDs have, at best, a small impact on public spending and service allocation across the municipality.

The results from the current analysis shed light on the allocation of sanitation and police resources across the city, but similar observations cannot be made at smaller neighborhoods. In addition, since New York City is a large municipality with a diverse pool of BIDs and neighborhoods, the nature and magnitude of the interaction may look different in smaller or less diverse municipalities. Indeed, Cheung (2008) finds evidence to support different public-private interactions in cities of different sizes: larger cities, like New York, are more likely to engage in strategic substitution and less likely to engage in strategic complementarity.

So, should we be concerned about the modest effect of BIDs on local sanitation and police service provision? It is true that the size of BID budgets for services, especially sanitation and police, are miniscule compared to the public expenditures on similarly categorized services (specifically, on average 3 percent of total city spending over the time period of the analysis). This small spending, however, is a large local investment. For example, on average New York BIDs spend \$318,000 on sanitation and maintenance. If this local spending were scaled citywide, it would amount to about \$147 million dollars, or 45 percent of municipal spending on similar services. This suggests that while large shifts in public spending or resource allocation citywide might be unrealistic, much of the response might take place at a more localized, neighborhood level.³³ In addition, the results suggest that responses on the part of the local government are influenced by the extent of BID presence; in essence, the BIDs would need to be considerably larger (or greater in numbers) to generate substantial shifts in service provision.

On the other hand, perhaps there are benefits of coordination that are not being optimized. An argument could be made for greater adjustments on the part of the local government, since there are likely services that are better executed by the BID, like sidewalk cleaning and maintenance, and economies to be gained from the complementarities between the BID-specific services and public services. Anecdotes from New York City BID officials indicate a lack of systematic coordination between BIDs and public service providers, and suggest that any interaction is commonly at the discretion and determination of the specific BID director or local public service manager. Some of the results from the current analysis suggest that larger or more office-oriented BIDs generate a greater response on the part of the local government. This may be due to more capacity for coordination among larger or more corporate BIDs. One response may be a more active role on the part of the local BID-administering agency in coordinating service interactions and in assisting those BIDs with less administrative capacity.

³³ Brooks and Meltzer (2010) simulate the effect of BIDs on local spending and revenues and show consistently small changes at the city level.

ACKNOWLEDGEMENTS

I gratefully acknowledge the Furman Center for Real Estate and Urban Policy, the Lincoln Institute of Land Policy, and the U.S. Department of Housing and Urban Development for their financial support, the New York City Department of Small Business Services for their data, and Aaron Love, Jennifer Perrone, Ben Winter, and Gabriela Gutierrez for their GIS assistance. Many thanks to participants in the Furman Center fellows seminar, Ingrid Gould Ellen, Amy Ellen Schwartz, Vicki Been, Jenny Schuetz, and Shanna Rose for valuable comments and insights.

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