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The Impact of Business Improvement Districts on Property Values: Evidence from New York City

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Since World War II, most cities in the United States have lost a substantial share of their businesses to the suburbs, and their tax bases have suffered as a result (Glaeser and Kahn 2001; Houstoun 2003). City governments have adopted a number of strategies to try to counter this long-term trend, including, most recently, the formation of Business Improvement Districts (BIDs). Enabled through state legislation, BIDs are local organizations into which merchants and firms pay mandatory fees in order to supplement the package of public services in their local area. In some measure, BIDs are private local governments.

Described by the Economist magazine as potentially "the best hope of getting parts of America's cash-strapped cities working again," BIDs are generating a great deal of excitement among city governments and urban policymakers around the world. The first BID was established in Toronto in 1970, and BIDs reached the United States a few years later, with the formation of the Downtown Development District in New Orleans in 1975 (Briffault, 1999; Houstoun, 2003). Since then, BIDs have spread throughout the U.S., as well as to New Zealand, South Africa, the United Kingdom, Jamaica, Serbia, and Albania (Hoyt 2005a). By 1999, there were an estimated 800 BIDs worldwide, over half of them in the United States (Hoyt 2005b).
A BID is formed when the property owners in a particular neighborhood agree, by majority vote, to levy an additional tax on themselves to finance the provision of neighborhood-specific services, such as security, maintenance, and various forms of marketing. Once established, the city government levies and collects the additional tax, remitting the proceeds to the BID. To be clear, the tax is levied on all properties within the BID boundaries and all owners are legally responsible for paying it, regardless of their initial support for the formation of the BID. Operating as a nonprofit organization, the BID then uses the revenues to provide additional services to the BID area.

Despite the proliferation of BIDs, very little work has been done to measure their effectiveness. A few papers have studied the impact of BIDs on crime rates (see Hoyt 2005a, Calanog 2006, Brooks 2006), but to our knowledge, no previous research has examined the impact of BIDs on property values within and surrounding the BID boundary. Yet using property values to assess the impact of BIDs is quite appealing, since under reasonable conditions, property values provide a comprehensive indicator of neighborhood quality since they will capture the impact of any improvements effected by BIDs. As such, changes in property values represent an excellent gauge of a BID's overall performance. Moreover, no quantitative study to date has compared the effectiveness of different types of BIDs.

Our paper aims to fill this gap by examining the impact of BIDs on commercial property values in New York City. With the largest pool of BIDs in the country, New York is an ideal study site. Its 55 BIDs encompass a broad range of budget sizes, services and locations. This large and diverse set of BIDs, together with the city's tremendous size and diversity of neighborhoods, allows us to examine the impact of BIDs in very different types of areas, including both very high-density office districts and more suburban-style, retail strips. Thus, we can gain some insight into the underlying mechanisms through which BIDs influence property values and the circumstances under which BIDs may be a useful tool for local economic development. Further, the diversity of BID and neighborhood types offers the opportunity to examine the robustness of our findings, and gauge the extent to which the lessons learned can be generalized and applied to other cities and circumstances.

The rest of the paper is organized as follows. The next section provides a conceptual discussion about the impact of BIDs on property values. Section II then reviews past literature,

while Section III describes the BIDs in New York City. The remainder of the paper focuses on our empirical analysis, presenting methods, data, and results.

I. The Impact of BIDs: Conceptual Issues

Rationale – The Market Failure

Why should BIDs increase property values? Fundamentally, the answer lies in their success in improving the level and quality of local public goods provided – either by direct provision or by drawing more of the city's resources. Their impact thus depends upon the existence of some kind of market (or government) failure in the provision of public services. Specifically, local public goods, such as security or street-cleaning, may be under-provided in a given neighborhood because the neighborhood demand for these services is higher than the demand of the city's 'median voter' or median neighborhood. Although it is possible (and common) for the city to provide services unevenly across neighborhoods, the ability to do so is limited. In some cases, but not always, individual businesses or private voluntary organizations (e.g., neighborhood watch groups) supplement the local bundle of public services. BIDs are most likely to have a positive impact on property values in circumstances (or areas) in which such collective action has not succeeded, perhaps because of the large number of interested parties, the spatial organization of the businesses, or the difficulty of purchasing or providing the needed services.

BIDs may make a neighborhood more attractive by directly providing supplemental services that are valued more highly than the corresponding increase in property tax bills. It's also possible that BIDs make neighborhoods more attractive by improving the quality and quantity of services provided by the public sector through lobbying or other organized political

activity (block voting, campaigning, etc.). These potential changes in public services within the BID may come at the expense of others, as services are re-directed from other areas leaving those areas with diminished services, in which case, the estimated impact would reflect the combined effect of the improvement inside the BID and the decrement outside. But potential improvements in public services may not come at the expense of other areas; in some cases, improvements may come from simply redeploying existing public dollars.[1]

Of course, BID impacts may be negative – if, for example, BIDs fail to deliver the desired services, or the benefits turn out to be less valuable than the costs – that is, the additional fees charged (Schwartz et al, 2007). Or, more mundanely, the impact may be negative if there are reductions in the services provided by the city or by others voluntarily. As an example, if BIDs provide more trash pick up but the city reduces their collections, the overall level might decline, worsening the conditions overall.

Heterogeneity of Impacts

Impacts are likely to vary across individual BIDs. First, since the impact captures the value of the benefit net of the cost of providing the services, its size will depend upon the cost of providing services, reflecting any location-specific cost differentials and any economies of scale in service provision as well as the level and quality of services provided. Because most services are aimed at improving sidewalks and streetscapes, the height of the buildings may be critical in determining required contributions. Specifically, in BIDs comprised largely of high-rise office

[1] Of course, this does imply, at least to some extent, that the public sector was un-responsive to needs within the BID prior to formation. While an organized group of voters is undoubtedly more influential than single voters, these political effects are likely to be particularly large when the business owners are not, in fact, residents of NYC and therefore not local voters. The implication is that the preferences expressed through "BID votes" may be different than those expressed at the ballot box.

buildings, the cost of street-level improvements may be spread across more businesses, and thus per capita contributions may be lower (Schwartz et al, 2007).

Second, the impact will depend upon the extent to which the publicly and voluntarily provided bundle was inefficiently low in the absence of the BID. For example, impacts might be expected to be larger in areas with a large number of businesses, each of whom experiences a small benefit from the provision of the public good, than in areas with a relatively small set of business owners, each of whom would enjoy relatively large benefits. Thus, BIDS with large numbers of office tenants in multi-story buildings (with little "walk in" business) are more likely to have had difficulty solving the collective action problem with voluntary organizations than an otherwise similar area with several large retail tenants enjoying the benefits of street traffic. As an example, it seems unlikely that a large retail tenant – say a large department store like Gimbel's – would hesitate to sweep streets or provide security if it was in their business interest . Even more important, it seems likely that Gimbel's would be able to cooperate with its neighbor Macy's in providing such public services.

In other words, both the number of businesses and the size and distribution of the likely benefits determine the impact. Other things equal, the larger the number of businesses in a given geographic area, the greater the likelihood that voluntary provision was insufficient and the larger the expected impact. At the same time, holding constant the number of businesses, the impact may well reflect the distribution of the benefits – BIDs comprised of large numbers of businesses each reaping a small benefits may well experience a different overall impact than BIDs including a relatively small number of large beneficiaries, with or without other small beneficiaries. If there are just a few dominant players in a neighborhood, it is more likely that their individual benefits would have been sufficient to make investments even before the

formation of the BID.

To the extent that BID impacts reflect success in attracting public resources, then the characteristics of BID members, and specifically, their level of political influence, should shape the magnitude of impacts. In particular, BIDs controlled by large, corporate interests might have more success in influencing the distribution of municipal resources than those dominated by small retail establishments.

The Formation of BIDs and the Timing of Impacts

An important consideration in understanding the impact of BIDs both theoretically and empirically is that the formation of a BID is not in any way a random event. Instead, the factors that explain the impact of the BIDS also determine whether or not a BID forms at all. BIDs are more likely to form when and where the impacts are expected to be large. Unfortunately, these may also be the circumstances under which other voluntary organizations may be expected to form, complicating the impact estimation. A successful voluntary organization may prevent BID adoption as it solves at least part of the collective action problem. Or, it may serve to incubate the expertise, experience and civic engagement that lead to a BID.

In a different vein, business owners may be moved to create a BID in response to declining public services and/or worsening environmental conditions. Note that these scenarios carry very different implications for the trajectory of property values before the formation of the BID. The first suggests rising property values prior to adoption; the latter suggests falling property values.

The implication is that estimating the impact of BIDS must account for the trajectory of the local area prior to the formation of the BID and, equally important, the results must be

interpreted carefully in order to disentangle the impact of the BID *compared to what would have happened in the absence of the BID.* If, for example, the anticipation effect is significant, then the full impact might be best viewed as the increase in property values relative to the period *prior to the anticipatory increase*.[2]

Spatial Concerns

Although there are sharp boundaries distinguishing properties in the BID from surrounding properties, and the BIDs provide services only to properties within their borders, it is quite possible that impacts will be felt beyond the boundaries. Reducing crime inside the BID can push crime to the neighboring streets, for example, or it can have quite the opposite effect, reducing crime in a wider geographic area. Alternatively, businesses in adjacent blocks may emulate the BIDS in some fashion, or increased foot traffic due to the BID may spill over into adjacent areas. This carries important implications for empirically estimating the impact of the BID, because it complicates the identification of an appropriate comparison or control group.

Equally important in this regard is that the boundaries of the BID are endogenously determined. As described in Meltzer (2006), the boundaries of the BIDs are determined, in no small way, by an effort to include a group of like-minded property owners. Thus, the boundary may well be determined by the opposition of the adjacent property owner. Again, the implication is that identifying an appropriate comparison group for estimating impacts is not straightforward.

[2] Of course, rational expectations on the part of buyers and sellers may mean that property values may rise (or fall) in anticipation of the BID formation. (In the absence of perfect foresight, there may be significant "corrections" once the BID is actually formed.) Thus, some of the observed changes in property values prior to BID formation may be considered part of the total impact. But to be conservative, we consider price trends before the BID is formed as a reflection of pre-BID conditions.

Residential Impacts

Finally, while our focus is on businesses and, implicitly, commercial properties, BIDs can and often do include significant numbers of residential owners and properties within their boundaries. The theoretical predictions are less clear for impacts on residential property, since BIDs are typically controlled by commercial property owners, who decide on the package of services and corresponding BID fees. If, on the one hand, the additional services happen to be valued by residents – e.g., reductions in crime or cleaner streets – then residential property values may rise. Or, increasing demand for commercial property may cause some conversion of residential properties to commercial uses, reducing the supply of residential property and increasing prices. If, on the other hand, the new services are considered a nuisance by residents, due perhaps to increased noise and commercial foot traffic, then prices may drop. Again, this is an empirical matter.[3]

II. Past Literature

To date, legal academics have paid more attention to BIDs than social scientists. A series of interesting legal papers examine the voting rules of BIDs (whether they violate the one-person, one-vote principle, by favoring property owners over residents), the accountability of BIDs, and the potential inequities in local service delivery they generate (Briffault 1999; Davies, 1997; Garodnick 2000). These studies typically assume that BIDs deliver enhanced services and improvements in their prescribed areas and implicitly assume that property values will rise as a

[3] Differences in the elasticity of supply would also lead to differing impacts on commercial and residential property values. For example, if the elasticity of supply of residential property exceeds that of commercial property, then in the case of residential property, increases in demand would be more likely to translate into increases in quantity rather than increases in price.

result. But few studies have actually examined these impacts.

A few qualitative studies offer suggestive evidence. In their case study of BIDs in Los Angeles and the United Kingdom, Lloyd et. al. (2003) maintain that property owners believe that BIDs will increase real estate values – indeed, they report that a key reason that property owners opt into BIDs is the anticipated increase in land values. Yet, in one survey of New York City BIDs, fewer than half of the property owners and managers surveyed stated that their BID assessment was a good investment (New York City Council, 1995).[4]

Three studies attempt to quantify the impacts of BIDs, focusing on crime rates (Brooks 2006; Hoyt 2005a; Calanog 2006). Hoyt (2005a) examines the impact of BIDs on crime in Philadelphia, comparing crime rates in 212 commercial blocks inside BIDs to the crime rates of 212 commercial blocks that are not inside of BIDs. She finds that property crimes, thefts, and auto thefts are all lower on BID blocks. But relying on cross-sectional data, the study is unable to discern whether the establishment of the BID actually caused these differences. As noted, communities that adopt BIDs are likely to differ systematically from those that do not, and these differences pose a significant challenge to identifying impacts.

Calanog (2006) also studies the impact of BIDs on crime in Philadelphia, using a longitudinal data set on reported crimes at the census tract, for each month between 1997 and 2002. He estimates a census tract fixed effects model, which identifies the impact of BIDs by changes in BID budgets across years, since most BIDs in Philadelphia were established prior to the start of his study period, 1997.[5] He finds no link between BID presence and violent crimes, such as murder, rape, and aggravated assault. He reports some evidence of crime deterrence for property crimes, as well as evidence that such crimes may be displaced outside of BID

[4] That said, no BID to date has attempted to disband (see below), so dissatisfaction is unlikely to be very high.
[5] Calanog (2006) also replicates analysis for the subset of BIDs formed after 1997 and finds similar results.

boundaries.

Finally, Brooks (2006) studies the impacts of BIDs on crime in Los Angeles. Utilizing a 13-year panel of neighborhood-level crime data, she is able to observe whether crime in BIDs changes after BID adoption. Neighborhoods are proxied by LAPD reporting districts, each of which is a census tract or a part of a census tract.[6] She estimates a neighborhood fixed effects specification and compares crime changes in BIDs to changes in comparison neighborhoods. She employs three different approaches to identify appropriate comparison neighborhoods. First, she turns to reporting districts where BIDs were seriously considered but not adopted. Second, she uses propensity score matching based on pre-BID conditions to try to identify control neighborhoods that closely resemble BIDs. Third, she uses reporting districts that border those with BIDs. All three of these methods suggest significant declines in crime in BIDs – on the order of five to nine percent. Further, her examination of BID expenditures suggests that these crime reductions are quite inexpensive compared to typical estimates of the costs of averting crime through police activity.

In contrast to these papers, our focus is analyzing impacts on property values, for several reasons. First, BIDs typically engage in a variety of activities and do not aim simply at reducing crime.[7] Thus, a BID might do little to reduce crime but still generate other improvements that attract new customers to the area. Property values provide a more comprehensive measure of neighborhood impact that can capture the benefits of a diverse set of improvements. Second, property values offer measurement advantages as well. Using transactions data, we can measure property values at the level of the individual parcel; we know precisely which property sales lie

[6] There are roughly 1,000 reporting districts in the city of Los Angeles. The author matches these districts by hand with BID boundaries since they do not perfectly coincide. On average, BIDs intersect with four reporting districts.
[7] The average BID in New York City spent 25% of its budget on security (Authors' calculations based on data provided by NYC Dept. of Small Business Services).

inside and outside of BIDs. The previous studies have generally not been able to identify crime rates specifically within BIDs, but rather within police precincts and reporting areas that contain or overlap with BIDs.

It is worth noting that a few papers do attempt to estimate the property value impacts of private, *residential* associations. LaCour-Little and Malpezzi (2001) examine the effect of homeowners' associations and gated streets in Saint Louis. Using a hedonic regression model, they find that homes within the gated communities are priced significantly higher than comparable homes outside the gated communities. Their estimates suggest that about two thirds of this premium is due to being part of a homeowners' association, while one third is due to being located in a gated community, which presumably enhances security. Examining prices in six suburban, gated communities in a medium-sized metropolitan area, Bible and Hsieh (2001) find that location in a gated community increases sales prices by roughly 6 percent. Neither of these studies has the advantage of observing price differentials before the establishment of the homeowner association or gated community, however. Thus, the measured premiums may capture unobserved differences in homes or neighborhood amenities between the residential associations and areas outside of them.

Another difference between our study and previous work is that we aim to compare and contrast the impacts of different types of BIDs. Earlier work has typically examined average effects across BIDs and has not explored the heterogeneity in the impacts across BIDS or the possible explanations for that heterogeneity . The diversity of BIDs in New York allow us to explore whether BID impacts vary with BID sizes and property types.

III. BIDS in New York City

New York City boasts more Business Improvement Districts than any other city in the United States, all of which have been formed within the past two decades. The City's first BID, the Union Square Partnership, was established in 1984 (just a few years after New York City and State passed the required, enabling legislation).[8] Between 1984 and 2002, 43 additional BIDs were established in New York City. Since then, 11 additional BIDs have been formed, but our focus is on the 44 that existed in 2002.9

BID formation process

The process of forming a BID in New York City typically takes about two years. It starts when a local group informs the New York City Department of Small Business Services (SBS) that it would like to establish a BID. If SBS determines that the area is suited for BID formation,[10] the local group is required to establish a BID steering committee, made up of representatives from local businesses, residents, local organizations and elected officials in the proposed BID area. This steering committee must then create a detailed district plan, which defines the proposed boundaries of the BID, the planned services, the approximate budget, the proposed management structure, and the assessment formula defining how much each property in the BID must pay every year (taking into account square footage, frontage, property type

[8] There were four special assessment districts that existed prior to first official BID. They operated in much the same way as BIDs and delivered similar services and officially became BIDs when the state and city enabling laws were passed in 1981 and 1982 (information provided by NYC Dept. of Small Business Services). We consider their formation date to be the date of formation of the original special assessment district since they were already providing services and collecting assessment fees.

[9] Authors' calculations based on data provided by NYC Dept. of Small Business Services.

[10] Implementing a BID is considered feasible if the area has a substantial base of commercial property, is economically stable, has low vacancy rates and little undeveloped property and local elected officials are supportive of BID policy.

and/or assessed valuation).[11]

The steering committee is also responsible for engaging in extensive local outreach aimed at informing all property owners, commercial tenants, and local officials about the proposed BID. After a series of public meetings, the steering committee must obtain support from more than half of property owners in the proposed area.[12] SBS also typically demands evidence that a majority of commercial tenants in the area support the BID as well. The final step in the formation process is approval from both the City Council and the Mayor.

After formation, BIDs are governed by an elected board of directors. A majority of board members must be property owners in the district, and boards must also include some representation from commercial tenants, residential tenants, and municipal officials.[13] The enabling legislation stipulates that a BID can be dissolved at any time if a majority of property owners chooses to do so. However, according to SBS staff, no BID in New York has voted to disband.

BID Characteristics

Figure 1 displays the geographic distribution of our 44 sample BIDs. While BIDs are dispersed throughout four of the city's five boroughs, they are also fairly concentrated in Manhattan.[14] The first column of Table 1 indicates that almost half of these BIDs were located in Manhattan, and roughly one third were located in Brooklyn. Table 1 also shows the average

[11] Owners of residential property within a BID typically pay reduced assessments.

[12] Although state law officially requires support from a simple majority of potential assessment payers, the City's Department of Small Business Services generally will not consider an application unless the BID can show that a substantial majority supports formation (Briffault 1999).

[13] Some BIDs adopt property-weighted voting in the election of board members, so that their votes count in proportion to the assessments levied against their properties (Briffault 1999).

[14] All but one of the 11 new BIDs formed since 2002 is located outside of Manhattan, lessening the concentration in that borough in recent years (authors' calculations based on data provided by NYC Dept. of Small Business Services).

size of these BIDs, both in New York City overall, and within each of the four boroughs with BIDs. Across the city as a whole, the mean number of occupied properties per BID is 175, while the mean amount collected through assessment charges was $1.4 million in 2005. Note that this mean is inflated substantially by a few very large BIDs. The median amount collected through assessments was only $275,000.15

These 44 BIDs range widely in size. In 2005, annual amounts collected through assessments ranged from a low of $53,000 for the 180th Street BID in Queens to a high of $11.25 million for the Downtown Alliance in Manhattan.[16] On average, the Manhattan BIDs are significantly larger than those in the other three boroughs, with mean assessment revenues roughly ten times the size of the mean assessment revenues in the other boroughs. The mean number of properties in each BID is also substantially larger in the Manhattan BIDs, and perhaps surprisingly, the average land area is also larger in Manhattan, despite its greater density of commercial development. By all these size measures, BIDs in Brooklyn are the second largest, while those in the Bronx are the smallest.

Other characteristics distinguish the Manhattan BIDs as well. As Table 2 shows, they have less residential space and significantly more office space. Specifically, 13.9 percent of floor space in Manhattan BIDs is residential, as compared to 18.7 percent of floor space in other BIDs. As for office space, 70.9 percent of the floor space in Manhattan BIDs is designated as office space, as compared to just 32.1 percent of the floor space in the BIDs in outer boroughs. BIDs in the outer boroughs tend to be dominated by retail uses. There is very little industrial

[15] Authors' calculations, based on data provided by NYC Dept. of Small Business Services.
[16] BID budgets are primarily determined by the total amount collected through assessments from all of the property owners. Some of the larger BIDs, however, also supplement this revenue with outside fundraising. Average budgets are thus somewhat higher than average assessment revenues. In 2005, the average budget was $1.74 million, while the maximum BID budget (again for the Downtown Alliance) was $13.1 million. (assessment and budget amounts provided by NYC Dept. of Small Business Services).

space in any of the BIDs, though Queens BIDs have the highest percentage.

Gross (2005) examines 41 New York City BIDs and divides them into three main categories: Corporate; Main Street, and Community. Meltzer (2006) extends this typology, and we adapt her version. Specifically, we define large/corporate BIDs as those that fall above the 80th percentile of average annual assessment revenues (specifically, annual assessment revenues greater than $1.2 million). As shown in Table 3, there are eight BIDs in the large/corporate category. These large BIDs are distinguished not only by their size. All but one of them located in Manhattan, and all of them are dominated by office space. Although not shown in the table, it is also true that the board members of these BIDs are quite different from those governing other BIDs. These large, corporate BIDs tend to have large and professional boards, dominated by lawyers, property developers and financial experts (Meltzer 2006).

There are 14 mid-size BIDs, which have annual assessment revenues between the 50th and 80th percentile (between $263,000 and $1,200,000). In about half of these BIDs, the commercial space is predominantly retail, while in the other half, the commercial space is predominantly used for offices. The boards of these BIDs are comprised of a mix of local retailers and representatives of larger corporations.

Finally, half (or 22) of our sample BIDs are small, community BIDs. These BIDs collect less than $263,000 in assessments each year and are dominated by retail uses. The Boards are almost exclusively made up of local business owners.

Like BIDs elsewhere, the BIDs in New York City concentrate on delivering fairly basic services, which fall into four main categories: security; maintenance; marketing; and capital improvements. Security typically includes the hiring of private security guards; sanitation and maintenance covers sidewalk and street cleaning and graffiti removal; marketing includes special

events, promotion and tourism, and holiday decorations; and capital improvements typically involve relatively minor investments, such as new street lights, trash receptacles, flower boxes, and signage.

Table 3 shows the breakdown of total BID spending in New York City in 2005 (based on the 44 BIDs that existed in 2002). As shown, nearly half of BID budgets were spent on security and street cleaning/maintenance. Another quarter was spent on marketing activities and capital improvements, while the final quarter was spent on administration and other activities. The table also shows that the percentages, these breakdowns varied considerably across BIDs. The small, community BIDs stand out. These small BIDs spend a much larger share of their budget on administration and other services, which can include community service programs, fundraising and business development programs.[17] They also spend less on security and capital improvements and more on marketing. Spending breakdowns for large and mid-sized BIDs look more similar, though large/corporate BIDs spend a greater share of their budgets on capital improvements and a somewhat lesser share on sanitation and marketing, perhaps due to their office orientation. Significantly, the large BIDs also spend a smaller share of their budget on administration, perhaps due to economies of scale.

IV. Methods

Our main empirical goal is to estimate the impact of BID formation on commercial property values. We measure both the direct effect of BIDs on property values within the BID boundaries and the spillover effects of BIDs on property values in the immediate vicinity of the BID. Although our focus is on commercial properties (which, as hypothesized above, are likely

[17] However, for small BIDs, this part of the budget is primarily dedicated to administration.

to be most affected by the BID establishment), we also estimate the impact of BIDs on residential property values.

Identifying neighborhood impacts is challenging. As described above, since BID adoption is a neighborhood choice rather than an assignment, formation may be associated with the existence of long-standing neighborhood problems (e.g., high crime levels, poor infrastructure), and it may be shaped by local organizational capacity. Moreover, it's quite possible that there are also time-varying factors underlying BID formation, such as changes in neighborhood conditions or shifts in neighborhood organization (e.g., the establishment of a Local Development Corporation, which is often a catalyst for BID formation). In short, BIDs may be formed in areas that are systematically different from other neighborhoods around the city

Our empirical analysis centers on hedonic regression models that explain the sales price of a property as a function of its structural characteristics and its neighborhood location. In brief, our model compares the price of properties in BIDs to the prices of comparable properties located outside of BIDs but in neighborhoods as similar as possible to the BID neighborhoods (the comparison areas). Then we examine whether the magnitude of this price difference has changed over time, and if so, if the change is associated with the BID designation. This difference-in-difference approach helps to weed out differences between the neighborhoods where BIDs formed and other similar locations around the city.

Our primary comparison area is the larger neighborhood surrounding the BID but excluding the immediate vicinity of the BID, which may be prone to spillover effects from BID services. We use zip codes to define the larger surrounding area, and use properties in census tracts that contain BIDs but that are outside BIDs themselves to define the immediate BID

neighborhood (BID spillover area).[18] Specifically, we compare prices of properties inside BIDs to prices of properties that are outside the BID and its immediate vicinity but are still in the same zip code. In order to capture potential spillover effects, we also compare prices of properties in the area immediately surrounding the BID to prices of properties that are outside the BID and its immediate vicinity but are still in the same zip code. To test the sensitivity of our results to different comparison areas, we identify an alternative comparison group, which consists of areas that became BIDs later on. (We can only use this alternative for a subset of BIDs.)

As noted above, impacts may vary by type of BID – specifically, by the size of the BID and its mix of commercial properties. Thus, we also test for differences in impacts by budget size and by the mix of commercial properties within a BID (essentially, retail versus office uses). Finally, at the end of the paper, we consider impacts on residential properties inside the BID, using the same comparison areas, since, as noted already, most BIDs contain residential as well as commercial properties.

Baseline Model

Specifically, we estimate the following hedonic model of sales prices, separately for commercial and residential properties:[19]

$$\ln P_{izt} = \alpha + \beta X_{it} + \gamma B_{it} + \gamma^S B_{it}^S + \delta_{zt} W_{zt} + \varepsilon_{it}, \quad (1)$$

where $\ln P_{izt}$ is, for commercial properties, the log of the sales price of property *i* (for residential properties, it represents the log of the per unit sales price of property *i*) in zip code z,, and in

[18] In New York City, zip codes are larger than census tracts.

[19] These are hedonic models which we have developed in prior research, as a tool for estimating impact of subsidized housing investments, community gardens, local reductions in crime, and improvements in school quality on property values. They explain much of the variation in sales prices of residential and commercial property values, as suggested by the relatively high R^2's (see, for example, , Schwartz, Ellen, Voicu and Schill 2006, and Voicu and Been 2006).

year/quarter t; X_{it} is a vector of property-related characteristics (e.g., age, building class, square footage); B_{it} is a vector of BID variables (described in more detail below) indicating whether the property is in a BID area and whether the sale takes place before or after BID designation; B_{it}^{S} is a set of variables similar to B, except that B^{S} would indicate whether the property is in a BID spillover area (rather than in a BID itself); W_{zt} is a vector of dummy variables indicating the quarter and zip code of the sale, which enable us to control for zipcode-specific levels and trends in prices. The coefficients to be estimated are α, β, γ, γ^{S}, δ and ρ, and ε is an error term.

The coefficients on the continuous variables can be interpreted as the percentage change in price resulting from a one-unit increase in that attribute. Because we measure sales prices as logarithms, the coefficients can be interpreted as the percentage change in price resulting from a one-unit increase in the independent variable. For the dummy variables, the coefficients can be interpreted approximately as the percentage difference in price between properties with the attribute – say a garage or a corner location – and those without.[20]

Our key variables of interest are the BID variables, included in vector B, which capture the impact of BIDs on property values. First, "Ever in a BID" is a dummy variable that takes a value of one if the property sold is inside a BID boundary, before or after the BID adoption. Thus, the coefficient on "Ever in a BID" captures baseline differences in sales prices between properties located in a BID area and those outside the BID, but still in the same neighborhood. To account for the possibility that there are also time-varying factors that contribute to BID formation, we also include a spline function of a BID-specific time trend. This time-trend is defined for all properties sold in BIDs, before and after BID adoption, and indicates the time of sale relative to the adoption date. For example, if a property is sold exactly one year before

[20] Specifically, the coefficient on a dummy variable indicates the difference in log price between properties that have the attribute in question and those that do not. The difference in log price closely approximates the percentage difference in price when the difference is small enough (see Halvorsen and Palmquist, 1980).

(after) BID designation, the trend takes the value of –1 (+1). Following the logic that the price trend just prior to BID designation is most relevant, we divide the BID-specific time-trend into two linear segments (splines), with one knot-point at 5 years prior to BID set up. Put differently, the second segment (Spline, less than 5 years prior and after) starts at 5 years prior to BID adoption and extends through the entire after period. Thus, in this specification, the counterfactual is that the price gap between properties within the BID boundaries and properties in the larger neighborhood would have continued to shrink (or grow) at the pre-BID adoption rate (over the 5 year-period immediately preceding adoption), had no BID been set up.

Ideally, we would have liked to divide the BID-specific time-trend into three splines, with knot-points at 5 and 2 years prior to BID designation since price changes in the two years immediately preceding BID designation may capture the effects of the start of the BID formation process. Once the BID formation process is initiated, people are likely to hear about the potential BID, and this knowledge and anticipation might lead to initial price changes. In our current specification, any anticipation effects are assumed to be part of the pre-BID market conditions. Thus, to the extent that these anticipation effects exist and are positive, our estimates could be biased downwards. Unfortunately, our commercial sales sample is too small to ensure reasonably precise estimates of this more flexible spline specification.[21] However, we use this specification for the larger residential sales sample.

The "Post BID" dummy variable takes a value of one if the sale is within a BID area after BID adoption. The coefficient on "Post BID" provides the simplest impact estimate. Finally, to

[21] .Due to the small number of observations and the small size of the window 0-2 years pre-adoption, the spline segment from 2 years prior on is highly correlated with TPost, thus inducing multicolinearity problems.

allow the impact to vary over time, we include a post-completion, linear trend variable, Tpost.[22] Specifically, TPost is defined only for properties sold in BIDs after BID adoption, and equals the number of years between the date of sale and the BID adoption date.[23] With Tpost included in the equation, the coefficient on the second segment of the spline trend described above shows the average growth in prices for the five years prior to BID adoption. Thus, the coefficient on TPost can be interpreted as the difference between the relative price appreciation that occurred in the BID area after BID adoption and the rate of relative appreciation that would have occurred if prices in the BID had continued to appreciate at the same rate relative to the surrounding neighborhood *after* BID adoption as they did during the five years prior to adoption.

To test whether there are any spillover effects from BIDs in adjacent neighborhoods, we include a set of variables, B^S, which is similar to B, except that the B^S variables indicate whether the property is in a BID spillover area (rather than in a BID).

Alternative Comparison Area: Emerging BIDs as Comparison Areas for Older BIDs

Because there is no ideal comparison area to use in measuring BID impacts, we experiment with an alternative approach.[24] Specifically, we use emerging BIDs as comparison areas for older BIDs. That is, we compare price changes that occurred after BID formation in older BIDs to price changes that occurred at the same time in neighborhoods that would soon form BIDs but had not yet done so.[25] By definition, these are neighborhoods that have exhibited

[22] In preliminary research, we tried more flexible TPost specifications (spline with knot-point at 5 years post-adoption, as well as second and third degree polynomials) but we couldn't reject the hypothesis that the trend is linear.

[23] To be clear, Tpost equals 1/365 if a sale is located within the BID area and occurs the day after the BID designation; it equals one if the sale occurs one year after the designation; and so on.

[24] In fact, we experimented with several alternatives, all of which yield qualitatively similar results. We believe the two methods discussed in the paper, though not perfect, rely on the most persuasive counterfactuals.

[25] We also include in our comparison area five pipeline BIDs that are currently in the process of forming BIDs but have not yet completed the process.

a demand for a BID and the capacity to form one. As such, they are arguably comparable to the neighborhoods that had already formed BIDs.

For this purpose, we define the treatment group to include BIDs formed before 1986, and those formed between 1991 and 1995. We use these two time intervals to ensure that these "older" treatment BIDs represent a reasonable cross-section of the city's BIDs. (If we simply used the BIDs formed in the earlier period, our treatment BIDs would be predominantly small, retail-oriented BIDs.) For the BIDs in the earlier interval, the comparison areas consist of footprints of BIDs that would form during the 1988-1990 period, and for the BIDs in the later interval, the comparison areas are footprints of BIDs that would form during the 1998-2005 period (including several BIDs which are currently forming).[26] We then essentially compare the sales price of properties in old BIDs to comparable properties in areas that would eventually become BIDs (though not too far in the future), before and after (old) BID designation. Given that there are very few census tracts, zip codes, and community districts that encompass both old and emerging BIDs control areas, it is not feasible to include in this specification fixed effects which are defined at these levels of geography. Thus, we use borough-quarter fixed effects instead. Because of the smaller sample size, we also rely on a more parsimonious specification, omitting Tever and Tpost variables.

Heterogeneity of BID impacts

In the previous section, we identified three types of BIDs (Large, Mid-Sized, and Small). These groups are defined by size but they also capture differences in board composition,

[26] In addition, for the BIDs formed in the 1976-1985 and 1988-1990 intervals we only keep sales that occurred before 1988 because sales that occurred in 1988 or later in the comparison areas (footprints of BIDs formed during the 1988-1990) may capture the impact of new BID formations. Similarly, for the BIDs formed in the 1991-1995 and 1998-2005 intervals we only keep sales that occurred between 1988 and 1997.

property mix and services. Thus, we test whether impacts differ across these three types of BIDs by interacting all of our BID variables with two dummy variables indicating whether the BID is large or small (with mid-sized category omitted). .[27]

Given the high correlation between BID size and mix of commercial property types, we attempt to disentangle the impacts resulting from size differences from those resulting from differences in property mix by interacting the BID variables with continuous and time-varying measures of size (annual revenues from assessments and annual revenues from assessment squared) and continuous measures of property mix (share of office space and share of industrial space with share of retail space as the reference category) in the same regression model.[28]

V. Summary of Data

To undertake the analysis outlined above, we obtained data from SBS describing all the existing BIDs in New York. For each BID, this data set indicates its precise location (street boundaries), the date of establishment, breakdown of services provided, size of the annual total assessment for the lifetime of the BID, size of the budget for FY2005, and allocation of the budget among various services. Our main estimation sample of BIDs includes 44 BIDs, established between 1976 and January 2002.[29] SBS also provided information about the location

[27] Due to the relatively small number of sales within a given BID category (whether defined by budget size or property mix), it is not feasible to estimate separate prior time trends (Tever) for each category. Thus, we do not interact the Tever spline variables with the category indicators. Note that we also test for impact heterogeneity by separately testing whether impacts vary by the mix of commercial property in the BID. For this purpose, we replace the above dummies for Large and Small BIDs with indicators for Predominantly Office and Predominantly Industrial BIDs (with Predominantly Retail BIDs being the reference category). These results are not shown but are consistent with regressions that estimate separate impacts by BID size.

[28] There is a substantial correlation between the discrete categories of size and property mix, making it difficult to disentangle separate effects of size and property mix using size dummies and the property mix dummies in the same regression model.

[29] The SBS raw data included all existing 55 BIDs in New York City. Out of these, we focused on the 44 BIDs established between 1976 and January 2002. The reason for this selection criterion is that our sales data only covers the period 1974-2003, and it is generally desirable to match a minimum of two to three years of property sales data both before the earliest BID establishment date and after the latest establishment date. This approach ensures that the

of the BIDs that are currently in the process of formation (used as part of the control area in our old BID versus emerging BID specification).

We linked these data on BIDs to geocoded data from two other sources. First, through an arrangement with the New York City Department of Finance, we obtained a confidential database that contains sales transaction prices for all industrial, retail and office buildings over the period 1974-2003, as well as for all apartment buildings, condominium apartments and single-family homes.[30] Our commercial sales sample includes 19,090 property sales, spread across 124 zip codes.[31] The residential sales sample consists of 290,485 sales, spread across 137 zip codes.[32]

Second, data on building characteristics were obtained from an administrative data set gathered for the purpose of assessing property taxes (the Real Property Assessment Data file, or RPAD).[33] These building characteristics explain variations in prices well, suggesting the data are rich enough for estimating hedonic price equations.[34] We used Geographic Information System

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estimates of both pre- and post-establishment levels and trends in prices in the BID areas will be representative of all BIDs included in the sample. Nonetheless, we also included in the analysis the BIDs which were established from 2002 on – but only as alternative control areas in our difference in difference estimation method.

[30] Note that sales of cooperative apartments are not considered to be sales of real property and are not included in the DOF data set. Also, most of the apartment buildings in our sample are rent stabilized. Given that legally allowable rents were typically *above* market rents outside of affluent neighborhoods in Manhattan and Brooklyn during the period of our study, we do not believe that their inclusion biases our results (see Pollakowski [22]).

[31] We limited the commercial analysis to properties that are located within the 34 community districts (of the total 59) with BIDs and those properties with real prices at or above $5,000 per property; the sample keeps one sale of repeat sales from the same date and for transactions involving linked sales, the sales price is set equal to the aggregate sales price of the linked transactions.

[32] We limited the residential analysis to properties that are located within the 34 community districts (of the total 59) with BIDs and those properties with real prices at or above $5,000 per unit.

[33] Most of the RPAD data we use were collected in 1999, and it is conceivable that some building characteristics may have changed between the time of sale and 1999. However, most of the characteristics that we use in the regressions are fairly immutable (e.g., corner location, square feet, presence of garage), and when we merged RPAD data from 1990 and 1999, we found that characteristics changed very rarely. Even among these apparent changes, we suspect that a majority are corrections, rather than true changes.

[34] Using all transactions of commercial properties in 1998, a regression of the log price on building age and its square, log building square feet, number of buildings on a lot, and dummies for the presence of a garage, abandonment, major alterations, location on a block corner, a set of building classifications and census tract dummy variables yields an R^2 of 0.905. A similar model estimated for all transactions of residential properties in 1998 yields an R^2 of 0.843.

(GIS) techniques to identify the properties in each BID and in its immediate neighborhood (the spillover area).

Table 4 shows summary statistics for our commercial sales sample. (Statistics on residential sales are available from authors.) The first column shows the characteristics of properties sold within the BID areas, before or after BID establishment, and the second column shows the characteristics of transacting properties that were located outside BID areas. Roughly 12 percent of the commercial sales were located in areas that were or would become BIDs. Commercial property sales in BIDs were heavily concentrated in Manhattan and Brooklyn, with half of the sales in Manhattan, and 30 percent in Brooklyn. Retail properties account for about two thirds of all commercial sales in BIDs, and most of the remaining sales are of office buildings.

The second column reveals some systematic differences between the commercial properties sold in BIDs and those sold outside BIDs. The BID properties were more likely to be in Manhattan. They were also more likely to be office buildings and less likely to be industrial buildings; and, they were somewhat older, less likely to have garages and more likely to have had a major alteration prior to sale.

As for the sample of residential sales, less than two percent were located in BIDs. The vast majority of the residential sales within BIDs were in Manhattan. These properties were also much more likely to be apartments, especially condo apartments, and, consistent with this much less likely to have garages. Finally, they were newer, perhaps because condos tend to be newer than other housing types.

VI. Analysis/Results

Before presenting results for the difference-in-difference hedonic models described above, it is useful to see how the average price of commercial properties in BID areas changes after BID designation. This simple analysis is consistent with the way BID boards and the SBS assess BID performance. We find that the real price per square foot of commercial properties sold within the 5-year period immediately following BID designation was, on average, 30.2 percent higher than the price of properties sold within the 5-year window immediately preceding designation. This substantial price increase is certainly consistent with the upbeat performance reviews issued by the BIDs and SBS. By contrast, we find no statistically significant change in the real per unit price of residential properties sold in BIDs around the BID formation date.[35]

Baseline Model

Table 5 reports the estimated regression coefficients for BID and BID spillover variables and their standard errors for the baseline model for the commercial sales sample. (Full results, which include coefficients on structural variables, are available upon request from authors.) Overall, the model performs well - structural variables have, in general, the expected signs and the regressions explain about 85 percent of the variation in log prices.

The first result worth pointing out is the large, positive, and statistically significant coefficient on the "Ever in a BID" variable. In particular, right before the BID adoption, commercial properties in BID areas sold for 30.7 percent more than comparable properties located outside the BID boundaries but still in the same general neighborhood. This finding is consistent with the fact that neighborhoods need to be judged economically stable by SBS before they are allowed to initiate the BID formation process. The statistically insignificant pre-BID

[35] The magnitude of the change is 7 percent but the estimate is not statistically significant at the 10 percent level.

time trend coefficients indicate that, prior to the BID adoption, commercial sales prices in the BID changed at the same rate as those in the rest of the neighborhood.

Turning to impact estimates, the positive coefficient on Post BID suggests that, on average, BID formation generated positive benefits. After formation, the price differential between the properties in the BID and those outside increased by an average of 15.7 percentage points. While the standard error of this estimate is relatively large, the coefficient is statistically significant at the 10 percent level. And, impacts remain steady over time, as indicated by the statistically insignificant coefficient on TPost.

Figure 2 illustrates the BID impacts estimated from the baseline model. Specifically, this figure shows the percentage difference between commercial prices in the BID area and commercial prices outside the BID area and its immediate neighborhood (but still located in the same zip code), by the year relative to BID adoption date. The vertical axis marks the adoption date. The dashed line labeled "extended pre-BID trend" indicates the change in the prices in the BID that would have occurred if pre-BID trends had continued. The continuous line to the right of the vertical axis plots the average change in prices after BID adoption, based on the estimated coefficients from the Post BID and Tpost variables. The difference between this line and the "extended pre-BID line" gives the impact of BID adoption, under the assumption that the price gap between properties in the BID and properties in the larger neighborhood would have continued to grow at the pre-adoption rate, if the BID hadn't been adopted. We see an increase in the gap following the adoption, which is preserved over time.

Turning to the coefficient estimates for the BID spillover variables in Table 5, note first that property values in the BID spillover area (that is, the area just outside the BID) were initially about the same as those farther away from the BID (but still in the same zip code), as indicated

by the statistically insignificant coefficient on the "Ever in a BID spillover area" dummy. The coefficients for "Post BID spillover area" (coded 1 if the property was in a BID spillover area and its sale occurred after BID adoption) and the "TPost BID spillover area", are also statistically insignificant, indicating that BID designation had little effect on commercial properties just beyond the BID boundaries.

Alternative Comparison Area: Emerging BIDs as Comparison Areas for Older BIDs

Table 6 presents estimation results for our alternative model of commercial property value impacts, using emerging BIDs (or areas that would later adopt BIDs) as comparison areas for older BIDs. Interestingly, the negative and significant "Ever in a BID" coefficient indicates that initial commercial property values in neighborhoods where older BIDs were formed were significantly lower than in areas that would later adopt BIDs. The "Post old BID" coefficient estimate, on the other hand, is positive, very large (31.2 percentage points), and statistically significant, again suggesting positive impacts of BIDs on commercial property values.

Heterogeneity of BID Impacts

Table 7 presents estimates of the regression models that test for the heterogeneity of BID impacts across different BID types. Notice first that property values were initially higher in BID areas relative to the surrounding neighborhoods for all BID types, although relative pre-adoption prices were lower in the large and small BIDs than in the mid-sized BID footprints. As for impacts, these analyses suggest that the large impacts estimated in the baseline model above significantly reflect the impacts of the large BIDs . The coefficient on the Post BID*Large BID interaction term indicates that a large BID has an immediate positive impact of 43.1 percentage

points. And, impacts remain steady over time, as indicated by the statistically insignificant coefficient on TPost*Large BID. Mid-sized and small BIDs, in contrast, have statistically insignificant impacts. This relationship between the size of the BID budget and the impact is consistent with the presence of economies of scale in producing BID services, or some kind of threshold effect in the consumption value of BID services (do improvements in the streetscape only "matter" if they are large enough?). Alternatively, the difference in impacts may reflect other differences between the large and the small BIDs, such as differences in building height or political influence, or perhaps most importantly, the dominance of office space rather than retail uses.

While disentangling the influence of size and mix of commercial property type in a fully satisfying way is precluded by the small number of BIDs and other limitations in the data, we aim to shed some light on this relationship. We estimate a specification that allows impacts to vary with both size and property mix, where size and property mix are expressed as continuous variables as described in the Methods section. As shown in Table 8, we find that, controlling for property mix, impacts increase with size, although there are diminishing marginal returns. At the same time, controlling for size, relationship between impacts and property mix weakens. Taken together, the results suggest that size is more important than property mix in determining impacts, although further work on disentangling these effects is warranted.

Impact of BIDs on Residential Property Values

The impact of BIDs on residential properties is estimated using the model specification in equation (1).[36] The larger sample of residential sales enables us to divide the pre-BID period into three periods – the two years immediately preceding adoption (when anticipation effects are

[36] Coefficient estimates are available upon request from the authors. .

likely to take hold), two to five years before adoption, and more than five years before adoption.

The estimated impacts on residential properties suggest a more complicated relationship between BIDs and property values for residential, than commercial, properties. The estimates suggest that during the five to ten year period prior to formation, prices in the BID rose about 0.8 percentage points per year. Five years before BID formation, residential prices in the BID were 20.5 percent higher than prices in the surrounding neighborhood. During the next three years (i.e. the period spanning from two to five years pre-formation) the relative prices in the BID declined 2.7 percentage points per year. The result was that two years before BID formation, price levels in the BID area were only 12.4 higher than those outside.

Interestingly, the results reveal a sharp price increase in the value of properties inside the BID (relative to those just outside) just prior to BID formation (29.6 percentage points per year) . The coincident timing of this sharp increase and the initiation of the BID formation process suggests that the jump in property values may reflect residents' anticipation of BID formation and expected benefits to come. Prices fall back significantly after the BID is formed, though they remained 28.3 percent higher than prices in the surrounding neighborhood. They continue to depreciate, albeit slowly, in the post-adoption period. Taken together, then, our results find some evidence that BIDS improve residential property values but those effects may well be short-lived and that early optimism of residents about the changes that BIDs will bring (driving anticipatory price increase) may lead to disappointment and a corresponding reduction in prices. That said, other explanations for this price path are possible. As an example, the demand for residential property may be buoyed by a demand for properties that can be converted to commercial uses, which diminishes over time. Understanding the impact of BIDs – and other business-directed interventions of this kind – on residents and residential property values seems

particularly warranted in light of this curious result..

VII. Conclusion

This paper offers new evidence on the impact of Business Improvement Districts on commercial property values in New York City, taking an important first step toward understanding the impact of these growing sub-city governments. On average, we find that BIDs generate positive impacts on commercial property values, a finding that is robust to alternative comparison areas. There is, however, considerable variation in the impact across BIDs of different types . Specifically, large BIDs and BIDs that are made up predominantly of office space have large and positive impacts on commercial property values. At the same time, smaller BIDs and those that mostly include retail or industrial space appear to have little impact. Differences in budgets appear to be largely driving these differences (BIDs made up of office buildings tend to have significantly larger budgets than BIDs dominated by retail uses.) We fail to find much evidence of spillovers from BID activity on the commercial properties located just outside of BIDs.

Finally, our analysis of BID impacts on residential properties yields interesting results, raising more questions, perhaps, than providing answers. Property values clearly increase during the process of BID formation, which may be the result of the residents' optimistic anticipation of the BID activity, but fall once the BIDs are actually formed. Nonetheless, we should stress the empirical difficulties in specifying and identifying an appropriate comparison area, and, as always, the need for additional research.

Whatever the evidence on the impact of BIDs on neighborhood property values, it seems likely that the enthusiasm for BIDs will mean more BIDs will be formed, both in New York City

and elsewhere in urban America. Thus, the opportunity to learn more about BIDS -- the factors that determine their adoption, their impact on economic activity within their boundaries and outside, the institutional features that matter, and, equally important, the aggregate effect on the economic growth of their host cities – will improve and the need to understand them will become more urgent.

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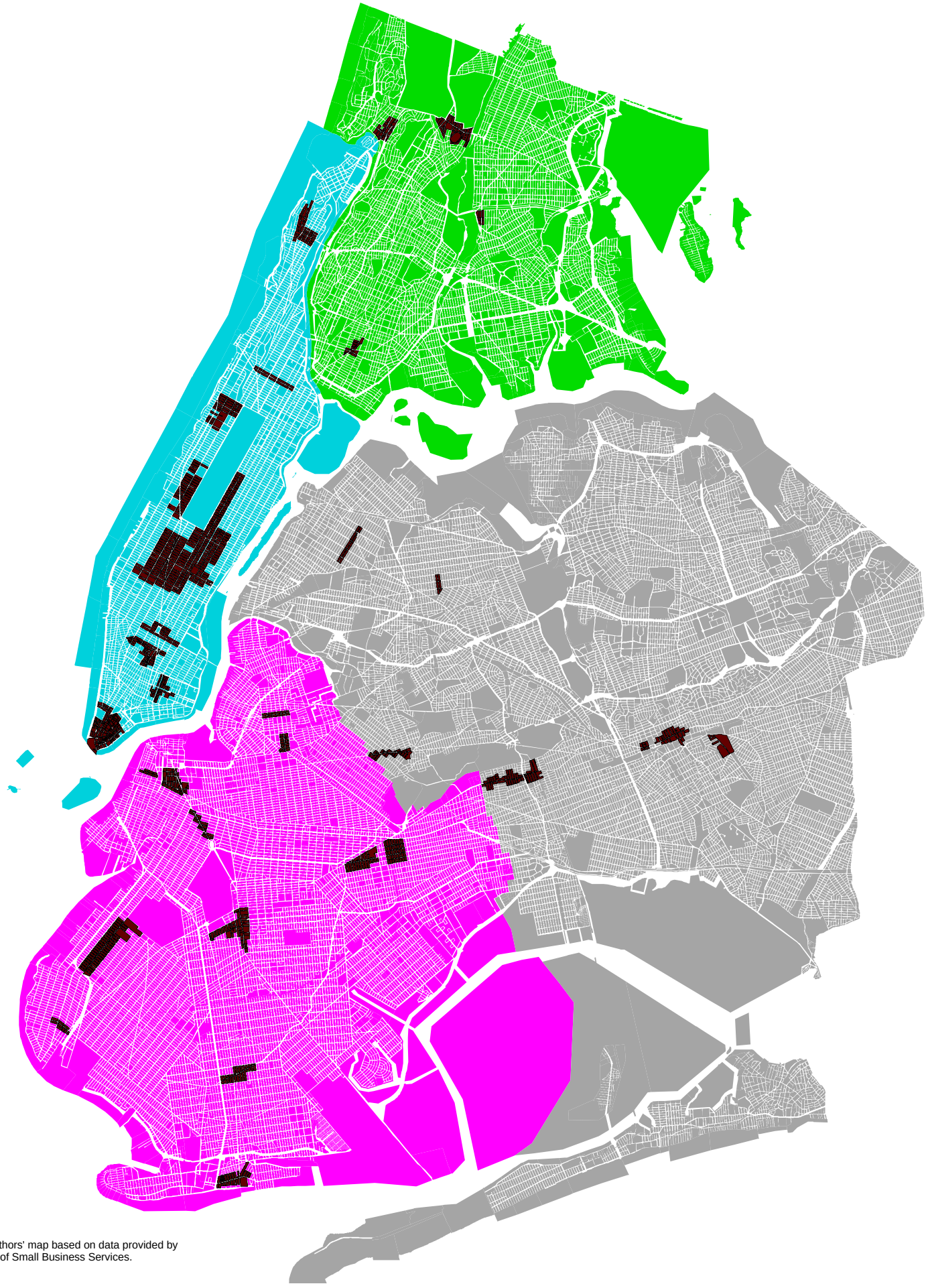
Figure 1
Map of New York City BIDs (44 in sample)



Source: Authors' map based on data provided by
NYC Dept. of Small Business Services.

Table 1
Number and Size of BIDs in New York City

Borough	Number of BIDs	Avg. number of properties per BID	Avg. BID Land Area[1] (sq. mi.)	Avg. Total Assessment (2005)
NYC	*44*	*175*	*0.044*	*$1,419,507*
Manhattan	19	215	0.063	$2,852,135
Bronx	4	52	0.026	$210,982
Brooklyn	14	172	0.032	$397,038
Queens	7	146	0.026	$266,473

Note: The statistics in this table include all BIDs formed prior to 2003.

1) Land area does not include street area.

Source : Authors' calculations based on data provided by NYC Dept. of Finance and NYC Dept. of Small Business Services.

Table 2
Characteristics of BID Properties

Borough	Total floor space (000's sq. ft.)	Residential	Commercial		
			Retail	Office	Industrial
NYC	*417,577*	*14.4%*	*18.0%*	*67.0%*	*0.6%*
Manhattan	375,181	13.9%	15.1%	70.9%	0.1%
Bronx	6,081	36.1%	38.7%	25.2%	0.0%
Brooklyn	28,247	16.1%	40.3%	38.2%	5.4%
Queens	8,068	14.5%	59.6%	15.8%	10.2%

Note: The statistics in this table include all BIDs formed prior to 2003.

Table 3
Types of BIDs

A. Distribution by borough and property mix

		BID Type			
		Large-Corporate	**Mid Size**	**Small-Community**	**All BIDs**
Borough Distribution	Manhattan	7	8	4	19
	Bronx	0	1	3	4
	Brooklyn	1	3	10	14
	Queens	0	2	5	7
	Staten Island	0	0	0	0
	New York City	*8*	*14*	*22*	*44*
Property Mix	Predominantly[1] Office	8	6	2	16
	Predominantly[1] Retail	0	7	19	26
	Predominantly[1] Industrial	0	1	1	2

B. Assessment and services

		BID Type			
		Large-Corporate	**Mid Size**	**Small-Community**	**All BIDs**
Services as % of Total Assessment	Avg Total Assessment 2005[2]	$6,164,499	$666,286	$173,378	$1,419,507
	Security	26.3%	24.5%	2.7%	24.6%
	Sanitation[3]	22.8%	25.9%	27.7%	23.6%
	Marketing[4]	12.3%	14.6%	20.9%	13.1%
	Capital Improvement	13.2%	6.4%	3.4%	11.6%
	Other[5]	25.4%	28.6%	45.3%	27.1%

Notes:

The statistics in this table include all BIDs formed prior to 2003.

[1]"Predominantly" is defined as greater than 50% of commercial space.

[2] Assessments are levied on each property in the BID and are used to provide supplemental services within the BID boundaries. Total Assessment is calculated as the sum of individual property assesments for each BID.

[3]Sanitation includes street cleaning, graffiti removal and maintenance.

[4]Marketing includes holiday decorations, promotion and tourism programs.

[5]Other includes administrative and other services.

Source: Authors' calculations based on data provided by NYC Dept. of Finance and NYC Dept. of Small Business Services.

TABLE 4
Characteristics of Commercial Properties Sold

	Percentage of all property sales in BIDs	Percentage of all property sales outside BIDs
Borough		
Manhattan	45.3	20.4
Bronx	4.3	7.7
Brooklyn	32.3	44.2
Queens	18.1	27.7
	100.0	100.0
Building Class		
Industry	2.6	28.4
Retail	65.5	63.0
Office	31.9	8.6
Other Structural Characteristics		
Built pre-World War II	85.5	77.5
Vandalized	0.0	0.1
Other abandoned	0.1	0.4
Garage	0.7	4.0
Corner location	26.1	26.2
Major alteration prior to sale	14.5	7.4
N	2,241	16,849

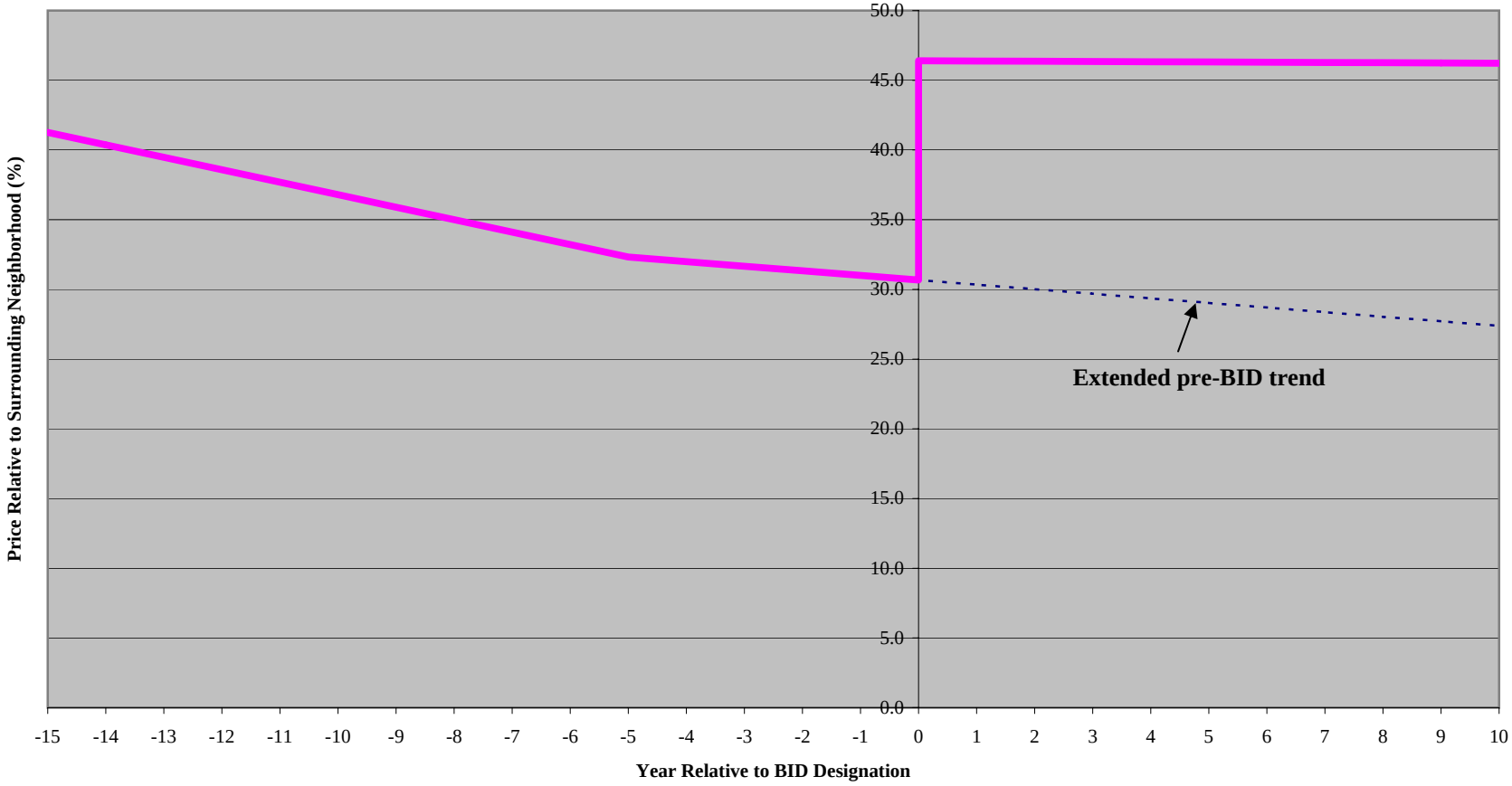
Note: Universe = all sales in community districts with BIDs between 1974-2003.
Source : Authors' calculations based on data provided by NYC Dept. of Finance.

Table 5
Baseline Model (Commercial Sales)

BID variables	
Spline, 5 or more years prior	-0.0089
	(0.0059)
Spline, less than 5 years prior and after	-0.0033
	(0.0188)
Ever in a BID	0.3067 ***
	(0.0739)
Post BID	0.1572 *
	(0.0933)
Tpost	0.0031
	(0.0200)
BID spillover area variables	
Spline, 5 or more years prior	-0.0179 ***
	(0.0055)
Spline, less than 5 years prior and after	0.0222
	(0.0184)
Ever in a BID	0.0435
	(0.0731)
Post BID	0.0727
	(0.0865)
Tpost	-0.0143
	(0.0191)
N	19,090
R^2	0.8420

Notes:
This table shows only the BID variables. The regressions include the full set of building controls as in the appendix, and zip code-quarter fixed effects.
We define the spillover area around BIDs as properties that are outside of BIDs but are located in a census tract that includes a BID.
Standard errors in parentheses. *** denotes 1% significance level; ** denotes 5% significance level; * denotes 10% significance level.

Figure 2
Price Trends in BIDs,
Relative to the Surrounding Neighborhood
(Commercial Sales)



Source: Authors' calculations based on data provided by NYC Dept. of Finance.

Table 6

Alternative Comparison Area: Emerging BIDs as Comparison Areas for Older BIDs (Commercial Sales)

BID variables	
Ever in an Old BID	-0.5729 ***
	(0.06484)
Post Old BID	0.3122 ***
	(0.0958)
N	926
R^2	0.9983

Notes:

This table shows only the BID variables. The regressions include the full set of building controls (available from the authors upon request) and borough-quarter fixed effects.

Standard errors in parentheses. *** denotes 1% significance level; ** denotes 5% significance level; * denotes 10% significance level.

Table 7
Heterogeneity of BID Impacts (Commercial Sales)

A. By BID Size

BID variables	
Spline, 5 or more years prior	-0.0099 *
	(0.0059)
Spline, less than 5 years prior and after	-0.0022
	(0.0188)
Ever in a BID * Large BID	0.3039 ***
	(0.0873)
Post BID * Large BID	0.4306 ***
	(0.1479)
Tpost * Large BID	-0.0232
	(0.0236)
Ever in a BID * Medium BID	0.4175 ***
	(0.0900)
Post BID * Medium BID	0.0774
	(0.1327)
Tpost * Medium BID	0.0038
	(0.0215)
Ever in a BID * Small BID	0.2820 ***
	(0.0753)
Post BID * Small BID	0.0448
	(0.1151)
Tpost * Small BID	0.0086
	(0.0231)
BID spillover area variables	
Spline, 5 or more years prior	-0.0179 ***
	(0.0055)
Spline, less than 5 years prior and after	0.0217
	(0.0184)
Ever in a BID	0.0424
	(0.0731)
Post BID	0.0797
	(0.0865)
Tpost	-0.0143
	(0.0191)
N	19,090
R^2	0.8420

Notes:

This table shows only the BID variables. The regressions include the full set of building controls (available from the authors upon request) and zip code-quarter fixed effects. We define the spillover area around BIDs as properties that are outside of BIDs but are located in a census tract that includes a BID.
Standard errors in parentheses. *** denotes 1% significance level;
** denotes 5% significance level; * denotes 10% significance level.

Table 8
Heterogeneity of BID Impacts (Commercial Sales)
(alternative specification with continuous size and property mix)

BID variables	
Spline, 5 or more years prior	-0.0105 *
	(0.0060)
Spline, less than 5 years prior and after	-0.0082
	(0.0189)
Ever in a BID	0.2965 ***
	(0.0775)
Ever in a BID * Assessment	-0.1495 ***
	(0.0454)
Ever in a BID * Assessment^2	0.0163 ***
	(0.0046)
Ever in a BID * Share Office Space	0.2057 *
	(0.1125)
Ever in a BID * Share Industrial Space	-0.4765 **
	(0.2351)
Post BID	0.0992
	(0.1239)
Post BID * Assessment	0.2424 **
	(0.1043)
Post BID * Assessment^2	-0.0291 ***
	(0.0103)
Post BID * Share Office Space	-0.0400
	(0.2757)
Post BID * Share Industrial Space	-0.1207
	(0.3585)
Tpost	0.0215
	(0.0228)
TPost BID * Assessment	0.0046
	(0.0119)
TPost BID * Assessment^2	-0.0001
	(0.0010)
TPost BID * Share Office Space	-0.0383
	(0.0305)
TPost BID * Share Industrial Space	-0.0362
	(0.0308)
BID spillover area variables	
Spline, 5 or more years prior	-0.0187 ***
	(0.0055)
Spline, less than 5 years prior and after	0.0215
	(0.0183)
Ever in a BID	0.0348
	(0.0730)
Post BID	0.0839
	(0.0865)
Tpost	-0.0140
	(0.0191)
N	19,090
R^2	0.8420

Notes:
This table shows only the BID variables. The regressions include the full set of building controls (available from the authors upon request), and zip code-quarter fixed effects. We define the spillover area around BIDs as properties that are outside of BIDs but are located in a census tract that includes a BID. Assessment is measured in millions of dollars. Standard errors in parentheses. *** denotes 1% significance level; ** denotes 5% significance level; * denotes 10% significance level.

APPENDIX

Complete Regression Results for Baseline Models (Commercial Sales)

BID variables	
Spline, 5 or more years prior	-0.0089
	(0.0059)
Spline, less than 5 years prior and after	-0.0033
	(0.0188)
Ever in a BID	0.3067 ***
	(0.0739)
Post BID	0.1572 *
	(0.0933)
Tpost	0.0031
	(0.0200)
BID spillover area variables	
Spline, 5 or more years prior	-0.0179 ***
	(0.0055)
Spline, less than 5 years prior and after	0.0222
	(0.0184)
Ever in a BID	0.0435
	(0.0731)
Post BID	0.0727
	(0.0865)
Tpost	-0.0143
	(0.0191)
Characteristics of properties sold	
Vandalized	-0.3904
	(0.1891)
Other abandoned	-0.2355 **
	(0.1047)
Odd shape	0.0940 ***
	(0.0123)
Garage	-0.0480 *
	(0.0300)
Extension	0.0051 **
	(0.0146)
Corner	0.1235 ***
	(0.0127)
Major alteration prior to sale	0.1282 ***
	(0.0228)
Age of unit	-0.0082 ***
	(0.0009)
(Age of unit)2	3.0E-05 ***
	(7.8E-06)

Complete Regression Results for Baseline Models (continued)

Age of unit missing	-0.5440 ***
	(0.0413)
Number of buildings on same lot	0.0146 ***
	(0.0048)
Log square feet	0.5265 ***
	(0.0115)
Square feet missing	3.8156 ***
	(0.1066)
Log number of stories	-0.0307
	(0.0152)
Log frontage	0.2437 ***
	(0.0159)
Commercial ratio on the block	0.0026 ***
	(0.0002)
Retail	0.1625 ***
	(0.0157)
Office	0.4935 ***
	(0.0256)
N	19,090
R^2	0.8579

Notes:

This table shows only the BID variables. The regressions include zip code-quarter fixed effects. We define the spillover area around BIDs as properties that are outside of BIDs but are located in a census tract that includes a BID.

Standard errors in parentheses. *** denotes 1% significance level; ** denotes 5% significance level; * denotes 10% significance level.