

Mitigating the displacement impact of special districts in Latin American cities: How to promote urban inclusion via land policy instruments

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Abstract

Latin American cities are increasingly using urban redevelopment plans (URP) and special districts (SD) in order to attract firms and middle-income residents in less developed areas of their cities. Broadly speaking, SD policies refer to government efforts to enhance the economic performance of underperforming areas, such as deteriorating downtown industrial districts, by transforming them into vibrant work and living environments. As place-based approaches intended to generate employment and local economic development, these policy interventions have led to new interest in understanding neighborhood change, gentrification, displacement and segregation, especially since instruments to promote inclusion have proven elusive. This paper analyzes the impacts of SDs in both Buenos Aires and Bogotá. First, we analyze and provide evidence on SD policies effects in Buenos Aires, analyzing in depth the case of the Technology District in the southern area of the city, including its effects on land use changes and real estate prices. In a context of displacement and vulnerability, we find high increases in land value and apartment prices, consistent with an anticipation of district policies and related interventions by the market. Secondly, we explore how land policy instruments can lay a foundation for more inclusive urban development, throughout a simulation of the potential impacts of approaches such as inclusionary zoning, and/or land base and fiscal instruments, in promoting or mitigating displacement. Our simulation shows the effects of land policies in land values and displacement, relative to a business-as-usual scenario. In contrast, in the case of Bogotá, we find that the implementation of the Triangulo de Fenicia plan has actually stabilized land values relative to the surrounding area. Qualitative analysis reveals the role of community organizing in the co-creation of more inclusive land policy. We conclude with a call for revisiting special district policies in Latin American cities in order to ensure they are equitable and inclusive.

Keywords: Gentrification, Displacement, Land and Real Estate Markets, Land Use Planning, Land Regulation, Special Districts, Urban Revitalization, Latin America & The Caribbean, Spatial Segregation.

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Mitigating the displacement impact of special districts in Latin American cities: How to promote urban inclusion via land policy instruments

I. Introduction

Special districts (SDs) are emerging in many cities, across developed and developing countries alike. SDs are policy initiatives aimed at improving local economic growth in small, targeted geographic areas. By incentivizing firms to locate in the area, SDs are to promote economic opportunity and real estate development through the proximity of new firms and residents. Thus, SDs typically target areas that are distressed or underperforming, where underutilized spaces (particularly older industrial areas) are being re-imagined and remade. Still others are emerging to transform traditional exurban areas, which are scrambling to meet demand for more urbanized, vibrant work and living environments.

SDs are not new; rather, they have evolved from two traditional planning tools: redevelopment and enterprise zones, updated to reflect new notions of innovation and proximity (Hall 2002; Katz & Bradley 2013). Governments deploy SDs out of motivations quite similar to these predecessors. First, in revitalizing urban areas in their city centers, SDs aim to enhance the functionality of the areas from the perspectives of public space and mobility, as well as to attract businesses and residents capable of rejuvenating the local economy. These areas have typically experienced a decline in income relative to the metropolitan area over a span of several decades in which construction (durable assets) deteriorate while land prices represent a greater share of property price. Second, unlike customary urban revitalization efforts that have emphasized the commercial aspects of development (e.g., housing, retail, sports stadiums), the new SDs deliberately intend to foster innovation. As innovation districts, they represent a radical departure from traditional economic development, intended to reduce dependency and help cities move up the value chain of global competitiveness by growing firms, networks, and traded sectors that drive the knowledge economy.

Revitalization interventions are not only costly, but have opportunity costs, and thus policy makers need to know whether they are effective at achieving these intended goals. Furthermore, as the history of urban redevelopment has shown, such interventions often have unintended consequences, displacing existing viable businesses and long-term residents. Unfortunately, most SD and revitalization initiatives are rarely subjected to a credible evaluation strategy, and thus it is hard to assess the extent of the benefits and costs that they may generate. Specifically, evaluations tend to compare outcomes in the targeted area before and after the intervention, neglecting the possibility that any estimated effects could have also occurred in the absence of the intervention. Neighborhoods have long-term trajectories of change that the intervention may simply reinforce, rather than actively shaping. Furthermore, evaluations tend to focus on the positive impacts in socioeconomic and urban livability terms but ignore any potential drawbacks that may come with the intervention, such as exacerbating long-term patterns of displacement. Thus, at the time when culture and innovation are taking an increasingly important role as a strategic tool for city promotion, supporting urban development and regeneration for socioeconomic prosperity (UN Habitat, 2019), the rigorous and contextually sensitive evaluation of these interventions deserves a very important place.

This paper analyzes the impacts of SDs in Buenos Aires (Argentina) and Bogotá (Colombia). We begin with a brief review of the literature about neighborhood change, focusing on approaches to understanding gentrification and displacement. We then examine the economic effects of place-based policies, such as special districts, including studies that assess the impact of urban revitalization interventions on several economic and social dimensions, including real estate and household mobility. The main objective of this review is to emphasize the apparent disconnection between all these different dimensions related to special districts designation effects, the economic, the social and the housing/real estate market, and to identify the land and urban policy challenges derived from them. We focus here on whether programs are effective in increasing local economic growth and also examine who benefits from SDs.

The next section presents the case of Buenos Aires. It begins with an overall assessment of long-term dynamics of neighborhood change in Buenos Aires 1990- 2010 using census and land value data. Here we develop a typology of gentrification, displacement, and exclusion that provides the context for the evaluation to follow. We then present two separate methodologies; one that estimates the causal impact of the SD intervention on several land and housing outcomes and one that proxies the amount of business relocations after such intervention. Both methodologies are focused on overcoming ‘naive’ comparison methods that are common in planning studies, such as pre- and post-intervention comparisons that tend to be plagued by omitted factor biases or sample selection concerns. This case also presents results that shed more light on exactly who gains any benefits from such SD place-based policies, and at what cost. There is evidence that suggests that the benefits of this type of public policies and the provision (in quantity and quality) of public goods are capitalized in the value of urban properties.¹ Between 2008 and 2018, the value of m² in dollars grew almost 175%. This is higher than the average of all CABA (129%). This greater relative growth can be attributed to the development of the Technology District and its infrastructure investments. Our simulation provides evidence that revenue collection, as stated in the new Value Capture Law, will be insignificant compared to the economic incentives provided to firms and new residents and the capitalization of city investments and district designation in real estate prices within the TD area.

Section IV presents the case of Bogotá. After a brief literature review of the relation between urban renewal plans and displacement in Bogotá, we present an overview of neighborhood change in Bogotá to understand how gentrification, displacement, and exclusion are manifesting in neighborhoods around the city. Third, we model change in land values in the Fenicia case and an adjacent control case. Finally, we present the results of a qualitative case study that analyzes in depth the reasons why people are being displaced as well as how land policy instruments are mitigating this displacement. This is based on 13 interviews and 4 focus groups with the different stakeholders affected by special district designation in Bogotá undertaken during March 22-30, 2019 in Bogotá. This allowed us to gather perceptions around what policy instruments are more effective in mitigating urban displacement in neighborhoods that have been designated as special districts.

The conclusion section reflects on the findings and suggests directions for how to design more inclusive Special District Policies in different Latin American urban contexts.

¹ In the economic literature, Oates (1969) theorizes that in a spatial equilibrium with mobile land users, rents for real estate, and the derived rents of land, vary by location within a city so as to exactly offset the value that property users place on the advantages of different locations

II. Neighborhood change and special district policies in global cities

A. Gentrification and displacement: An overview

Gentrification is a particular kind of revitalization, targeting small areas or neighborhoods, and characterized by both an influx of new investment and an inflow of new people, typically of higher educational and income levels than the original residents (Freeman 2006; Lees, Slater, and Wyly 2008; Rasse et al. 2019). Fundamentally, the gentrifying type of neighborhood change always entails upgrading of the built environment and a transformation of the population, whether subsequent or prior to the physical improvement. In the gentrification process, capital seeks out disinvested neighborhoods, where there is the greatest “rent gap,” namely the difference between potential and actual ground rent (Smith 1979b). Population shifts into the neighborhood occur as well, whether because of demographic factors that increase demand for urban residences, economic restructuring that creates white-collar jobs in the city center, and/or the mainstreaming of an urban aesthetic pioneered first by artists and alternative households (Zukin 1982; Ley 1996; Hamnett 2003).

Displacement occurs when external forces make residents move from their residence (Grier and Grier 1978). These forces may stem from either disinvestment or investment; thus, displacement is not necessarily directly induced by gentrification. Along the lines of Marcuse (1986), we see displacement as both direct and indirect; it may be either physical (occurring as landlords evict tenants or neglect properties so that they become uninhabitable), economic (caused by increasing rents), or exclusionary, taking place when a household is not able to move into a neighborhood based on conditions that are beyond its control. Displacement is much harder to measure than gentrification is.

The legacy of the Anglo-American perspective is a particular approach toward understanding neighborhoods and neighborhood change. Planners in the United States and United Kingdom typically adopt neighborhood definitions to track change, while accounts from Latin America tend to use other units of analysis, for instance analyzing the impact of a single new development or transportation corridor, or evaluating change in an entire district rather than just within a neighborhood. Likewise, the approach to understanding neighborhood change stems from a unique “moment” in time, the early twentieth century, when US cities were changing rapidly because of rapid industrialization, immigrant influx, and the Great Migration of African Americans from the rural south. Theorists of the “Chicago School” posited an ecological model of the city’s neighborhoods, in which newcomers would invade an area and succeed the original residents, in a process of neighborhood decline (Burgess 1925; Park 1925, 1936; Wirth 1938).

This model thus naturalized the idea of decline or neighborhood “descent,” framing neighborhood “ascent” or upgrading as an aberration (Zuk et al. 2015). This view is too narrow to describe change in much of the Latin America, where slum upgrading is commonplace and “downward raiding” occurs: opportunistic middle-class residents seek out slum areas, particularly those being formalized, purchasing subsidized housing from poor households and thus creating new market pressures (Lemanski 2014; Choi 2016). The Anglo-American approach to understanding gentrification is also connected to historical patterns of residential segregation, which did not emerge in the same way in Latin American cities (Powell and Spencer 2002).

Finally, the Anglo-American literature has emphasized the role of private capital in driving gentrification, while in Latin America the state is often seen as leading the process (Smith 1979b; Logan and Molotch 1987). As Lees, Shin, and López-Morales (2016) argue, building on the work of Brenner and Theodore (2002, 349), global gentrifications manifest in many different ways, reflecting “actually existing neoliberalism,” or the developmental politics of government retrenchment and privatization in different contexts. In Latin America, one of the ways globalization introduced neoliberal economic policies in the 1990s was through the focus on cultural tourism as a way to attract foreign direct investment that would boost economic growth through real estate development and new employment opportunities (Wong, 2017).

B. Urban Renewal, gentrification and displacement in Latin America

In the context of the increasing "return to urban centers" (Carrión, 2002) of the middle classes in Latin American cities and the various urban renewal projects that have been carried out to facilitate this movement, several studies have shown the tensions that take place when people with higher incomes settle in areas traditionally populated by people with lower incomes. Some Latin American authors have used the English concept of *gentrification* (López-Morales, 2013) to refer to this phenomenon, while others prefer to talk about displacement or urban transformations (Contreras, Lulle and Figueroa, 2016). What most of these Latin American authors agree is that the State has not been passive but rather a central actor of many processes of gentrification and displacement associated with urban renewal plans that took place in Latin American cities (Lees et al. 2016). On the other hand, the State also has important planning and policy tools that can mitigate the displacement caused by gentrification and urban transformation processes. In fact, Latin America has been in recent decades a laboratory of urban interventions and public policies on urban renewal issues, as we will show below, specifically with the case of Fenicia in Bogotá (Pinilla 2017).

The rapid urbanization of many Latin American cities during the twentieth century and the lack of adequate housing increased the presence of low-income communities not only in the informal periphery, but also in the city centers. During the 1970s and 1980s, the centers of most Latin American cities became places where popular commercial activity proliferated. Many of the housing units were transformed into retail stores which made neighborhoods lose some of their social cohesion and citizen organizational capacity. At the same time, illegal activities such as drug trade or sex work flourished. These dynamics caused land prices to decrease progressively which, in fact, opened the way for real estate developers and mayors to set their sights on these areas in later decades due to their potential value given their location. This "rent gap", or the difference between the value of the land at a given time and its potential value, is what Smith (2005) considers a key ingredient for future gentrification.

C. Measuring gentrification and displacement in the Latin American context

Most gentrification research in the United States and United Kingdom follows a standard approach (see, for instance, Laska, Seaman, and McSeveney 1982; Galster and Peacock 1986; Melchert and Naroff 1987; Atkinson 2000; Vigdor 2002; Freeman 2005; McKinnish, Walsh, and White 2010; Ellen and O'Regan 2011; Maciag 2015; Landis 2016), and recent work in Latin America by Rasse et al. (2019) adopts a comparable method. Neighborhoods—nearly always defined by census units—are determined to be “eligible” for gentrification based on the

socioeconomic status of their residents (typically indicated by their low income). In our cases, we lack data on income, so we substitute vulnerability, as measured by several different indicators. Traditionally, whether a tract is gentrified is determined by increases in the median income and educational attainment of neighborhood residents; lacking income data, we rely exclusively on educational attainment. Some of the analyses add proxies for investment, such as property sales, to their criteria for gentrification; we typically use land values as proxies for property investment.

We define residential displacement as a situation in which incumbent residents have fewer options within, are forced out of, or cannot move into neighborhoods. To measure displacement, we look at the loss of low-income residents (Chapple and Zuk 2016); adopting this proxy to contexts without income data, we analyze instead the loss of *low-educated* residents. Displacement may also be nonphysical, such as a sense of loss of place and belonging, erosion of cultural cohesion, loss of community support, and/or diminution of political power; however, we are not able to quantify these dimensions.

D. Understanding special district policies

The idea of a spurring local economic development via a district designation has deep roots in planning. For almost a century, urban renewal programs around the world have targeted declining areas for eminent domain, often using tax increment mechanisms within the district to finance infrastructure. Since the 1970s, enterprise zones have designated distressed neighborhoods as districts with special incentives to attract new firms and jobs (Hall 2002). Emerging at the same time were planned cultural districts intended to foster both cultural production and economic development (Galligan 2008).

The innovation district, an instrument that has gained popularity in recent years, connects these approaches to physical revitalization, economic development, and cultural production to the idea of the innovative milieu or cluster (Porter 1995). As Katz and Bradley (2013:114) explain, “Innovation Districts cluster and connect leading edge anchor institutions and cutting-edge innovative firms with supporting and spin off companies, business incubators, mixed-use housing, office and retail and 21st century amenities and transport.” For instance, the 22@Barcelona mixed-use innovation district is redeveloping a 200-acre industrial area as a cluster of media, medical technologies, information technology, energy, and design businesses, along with housing, retail, and parks.

To date, the literature on innovation districts has primarily been prescriptive. The first challenge is defining this instrument, as it has been used differently in different contexts. The emerging consensus seems to be that a district should be physically demarcated, amenity-rich, attractive to innovators, and driven by leadership, either public sector or anchor institution (Drucker & Kass 2015, Morisson 2020). The Brookings Institutions developed a typology of innovation districts, including “anchor-plus,” “re-imagined urban areas,” and “urbanized science park,” arguing that necessary ingredients include collaborative leadership, vision, talent, inclusion, and access to capital (Katz & Wagner 2014). In a subsequent reflection, the Brookings team cautions that cities are currently applying the innovation district label to areas lacking sufficient innovative assets to create innovation, arguing also that the presence of anchor institutions seems to be key (Katz, Vey, & Wagner 2015).

Though there has been very little systematic evaluation of the innovation district as a government-led policy mechanism, there are numerous studies that point to the success of more informal innovation districts. There is some evidence that innovative firms tend to locate in walkable and livable neighborhoods; however, proximity to innovative firms matters more than compactness (Hamidi & Zandiatashbar 2017, 2019). To the extent that clusters of firms yield innovation, they must be located in proximity to universities and research institutes, and knowledge spillovers typically occur within microgeographies of less than 250 meters (Rammer, Kinne, & Blind 2019). Examples of the Cambridge (Massachusetts) and Tech Square (Atlanta) innovation districts suggest that environments that foster “triple helix” (industry, academia, and government) interactions can result in economic development (Giuffrida, Clark, & Cross 2015).

In Latin America, special districts originated in part in the idea of heritage districts. Since the mid-1990s, the Inter-American Development Bank has offered funds to renew heritage buildings in urban centers in Latin America through public-private partnerships (Rojas, 1999). The idea of culture, in particular, the preservation of architectural heritage to promote tourism, became institutionalized as an economic development strategy for cities. More recently, during the last two decades, the idea of the “creative city” of Richard Florida (2002) and the discourse of cultural industries has become more common as a rationale for urban renewal in Latin American cities. Thus, various special districts and urban renewal plans based on “creative districts” have been implemented in cities across Latin America such as Guadalajara, Buenos Aires or Bogotá (Goicoechea, 2018; Center of Thought and Action for Transition [CPAT], 2017; Thomasz, 2016). However, in many cases these plans and districts have sought more to attract global capital, tourists and middle and upper-middle class individuals to urban centers than to integrate vulnerable populations that reside there already. It is in that sense that these special districts have often created gentrification and displacement.

At the same time, beginning in the 1990s, new legal frameworks in countries such as Brazil or Colombia have made urban planning and policy more inclusive and have facilitated the creation of tools and instruments for participation and community land management (Salazar Ferro, 2010). For example, thanks to the collective action of community leaders from informal neighborhoods of the periphery and interclass alliances with architects, lawyers and urban planners, Brazil managed to introduce one of the region's iconic laws of progressive urban planning: the so-called City Statute (Caldeira and Holston, 2005), which establishes the social function of property in urban development. Colombia also introduced precepts similar to the Statute of the City in the Political Constitution of 1991 and in Law 388/1997, which regulates urban planning, and therefore urban renewal, in the country. In addition to the principles of the social and ecological function of property, the public function of urban planning, and compulsory participation processes in urban planning, this law introduced a series of land management instruments to achieve a more equitable distribution of the burdens and benefits of urban development actions (Salazar Ferro, 2010; Fernandes and Maldonado, 2010).

E. Time, Public policy and market outcomes

Location choices – be they by firms or by households – are typically major decisions, with large sunk costs and, if structures are being built, creating long-lived assets. *Expectations* of future returns are usually critical, and agglomeration economies mean that the returns to investing in a place depend on who else is (or is expected to be) there. This in turn creates a first-mover problem: no one wants to move to a new place while uncertain about its future development. There is inertia and *path dependency* as firms are unwilling to move out of existing clusters, and it is therefore hard

to start new ones. Coordinated movement by a group of firms might solve the problem, but generally there is *coordination failure*. Thus, planners at the city level can construct a model of a perfectly functioning new cluster initiative but there has to be a path of public and private sector decision taking that leads from the initial situation to the completed development. These arguments are particularly acute in a developing country, where the need for coordination – and the cost of coordination failure – become much greater, at least in relative terms.

Special district designation may lead to development in a particular place, potentially acting as a coordination mechanism. As an example, the transport infrastructure investment project in Buenos Aires District may be a credible commitment to a particular place for development, and construction of transport lines creates a focal point for development. The law enacted shapes expectations and acts as a catalyst to trigger private sector investment. Some of these place-based policies are intended to achieve broad effects, but such policies are inevitably more speculative than those responding to existing levels of activity.

To establish the form and size of effects requires understanding two things. One is what drives private sector location and investment decisions, principally those of firms but also the decisions of workers. The other is displacement, i.e. the general equilibrium response of the economy; this determines what other sectors or areas might contract in response to growth in a particular place, but also how the area of intervention might be affected by displacement of its original population and firms. As we discussed above, displacement is a major issue that can take many different forms, depending on the exact policy at hand.

Displacement and general equilibrium effects are the quantifiable changes that occur – possibly in quite different places – in response to changes brought about by the policy. It is not always either necessary or possible to identify these with precision but, many times, capital and labour is simply being reshuffled between locations and uses, and then both sides of these numeric changes have to be accounted for. Therefore, displacement effects can occur through several distinct routes. This is illustrated by our two case examples, highlighting different approaches in public policies to address these concerns.

III. The case of Buenos Aires

A. Gentrification and displacement in Buenos Aires

While gentrification began in Buenos Aires in the 1990s like many other major Latin American cities, the process expanded in geographic scale and intensity after the city's 2000-2002 political and financial crisis (Herzer et al., 2015). In Buenos Aires, the city government was the primary driving force of gentrification with direct and indirect policies focused on redevelopment and cultural tourism initiatives to attract foreign direct investment. The government pursued these policies and programs in an effort to increase the city's global competitiveness by positioning Buenos Aires as the "cultural capital of Latin America" (Betancur, 2014). Direct policies included the creation of public-private partnerships and the relaxation of development regulations, which is discussed in more detail below. Indirect policies included public space investments, such as adding street lighting and constructing more parks, and "cleaning up" public areas by banning informal street vendors and homeless people (Herzer et al., 2015).

The majority of redevelopment efforts have been focused on the southern part of the city, such as in the La Boca, San Telmo, and Barracas neighborhoods. These three neighborhoods were identified in a 1989 urban renewal plan around Río de La Plata and Riachuelo, which are two bodies of water in and around Buenos Aires. The plan redeveloped the Puerto Madero waterfront, declared the San Telmo quarter as a historic neighborhood, and designated La Boca and Barracas as target areas for investment (Herzer et al., 2015). These efforts were supported by funding from the Inter-American Development Bank, which is a multinational funding source for development in Latin America and the Caribbean (IADB, n.d.). Other projects and policies implemented around the same time in support of the urban renewal plan spurred a building boom and foreign direct investment. New roads to facilitate more efficient travel to and from the central districts were constructed; zoning laws and building codes were relaxed; municipal services – such as water, electricity, and telephone services – were privatized; state-owned land and buildings were incorporated into the real estate market; interest rates were reduced; and housing loans were developed (Herzer et al., 2015). These efforts attracted investment from large multinational corporations, such as Ernst & Young and Cushman & Wakefield, that saw government support to build hotels, shopping centers, and luxury residential units (Herzer et al., 2015).

In some Buenos Aires contexts, there has been displacement without gentrification. For example, real estate speculation has increased rents even in neighborhoods without much new investment. In addition, efforts to remove street vendors and recyclers (on the grounds that they were causing street congestion) and bring street fairs and live music in their place displaced existing low-income populations by either physically removing them or implementing a culture that was not "for them" (Betancur, 2014). Just as there were direct and indirect governmental policies to spur investment, there are also direct and indirect forms of displacement. Direct displacement looks like "unwanted" people (e.g. informal vendors and homeless populations) and uses being physically removed, such as by the Unidad de Control del Espacio Público (Public Space Control Unit), which was established by the Buenos Aires government in 2008 (Betancur, 2014). Indirect displacement looks like existing low-income residents leaving their neighborhoods because they cannot pay increasing property taxes and or their social, economic, and religious institutions move elsewhere (Herzer et al., 2015).

Much of the discussion on gentrification and displacement in Buenos Aires is descriptive but several studies have identified indicators to track actual and potential displacement. Rodríguez used educational attainment for heads of households as a proxy for socioeconomic status (Rodríguez, 2017). Census data, such as the number of dwelling units, and privately collected real estate data, such as apartment prices per square meter and the number of square meters authorized for construction, can indicate investment over time (Herzer et al., 2015). While more difficult to track, the development of cultural symbols, such as tourists taking photos with a particular mural or streetscape, could indicate gentrification (Herzer et al., 2015). Lastly, tracking governmental actions to encourage private market investment, such as the creation of tax exemptions, reductions in required permits, changes in land use, and implementation of public works projects, could indicate a neighborhood's vulnerability to gentrification (Arreortua, 2013).

B. Special district policies in Buenos Aires

The government of Buenos Aires has designated several economic districts, including Technology, Design, Audiovisual, Arts, and Sports. The idea is to promote “key sectors in low-income areas, making them more competitive and inclusive of local communities” [cite BsAs website]. The first district designation occurred in 2008 with the Technology District in the neighborhood of Parque Patricios. The Ministry of Economic Development, in an interview, explained the idea behind the districts as follows:

Therefore, the idea of the districts is to clarify private investment, develop an ecosystem, assign clusters and position Buenos Aires as a city of talent in Latin America. With this objective we created the five districts to which we reimburse all the taxes; any company or business that moves to the Technology District doesn't pay any tax in the City of Buenos Aires.

Thus, one of the key features of the district is a tax incentive to locate there. For example, in the case of the Technology District, a software company explains the benefits as follows:

It is basically a benefit on the tax of “gross income.” From 5% it went to 0%, on those services happening at the headquarters of the technological district. Our company pays 5% just for 10% of billing. This benefit is until the end of January 2021, it will be a reduction of 75% (of the 5% tax) the next five years, and a reduction of 50% (of the 5% tax), the following five years.

According to the City of Buenos Aires website, there are other key elements to the districts. They include the following:

- Tax Incentives: Economic incentives and tools to promote and drive competitiveness in the districts.
- Infrastructure: Major public works programs to redress inequalities in infrastructure and transport connectivity.
- Public Spaces: The recovery of public areas as community spaces for recreation and socialization.

- Social Capital: Strong involvement in and consensus for the project amongst local businesses, civil society, educational institutions and other community stakeholders.
- Urban Complexity: Extending value to urban areas where there is considerable diversity in industrial activity.

We discuss the incentives provided in more detail below (see section on Fiscal Impact).

C. Understanding neighborhood change in Buenos Aires, 1990-2010

As a starting point we aim to describe the neighborhood dynamics in the city, by analyzing socioeconomic data available in the last three censuses (for the years 1990, 2001 and 2010), evaluated in conjunction with cadastral (land value) data. The main advantage of these census data is that the main variables of interest are available at the census-tract level, which is a fine-scale geographic unit (covering on average 300 dwellings). By aggregating census tracts, we can then obtain close geographic representation of the areas covered by the government's SD policy.

Our objective here is to recognize the pre-existing dynamics within these areas in order to provide a context for understanding change in the areas targeted by the SD policy. Since this policy is relatively new -the first of the five districts in the city was created in 2008- the last available census data (from year 2010) does not allow studying district policies *effects*, but it certainly provides valuable information on socio-demographic issues that can contextualize the SD policy within the city. Since CABA has used different criteria for the creation of special districts in different areas, we expect that the recognition of previous trends is critical in developing a complete understanding of each district case.

Following the lead of UC Berkeley's Urban Displacement Project (Chapple & Zuk 2016), we develop four different indicators of neighborhood change: vulnerability (considered as "eligibility" for gentrification and displacement), gentrification (measured as influx of real estate investment and highly-educated residents), displacement (defined as loss of low-educated residents), and exclusion (defined by concentration of highly-educated residents with little change).

Vulnerability

We used seven indicators to estimate the vulnerability of neighborhoods across Buenos Aires in the 2000s and found there are different types and levels of vulnerability across space and time (Figure III-1). Overall, the northern half of Buenos Aires became less vulnerable and several pockets in the southern half of Buenos Aires became more vulnerable during our study period. In Parque Patricios, the southern half of the neighborhood generally became more vulnerable, and in La Boca, the majority of the neighborhood became more vulnerable in our study period. In addition to analyzing vulnerability in Buenos Aires with a vulnerability index, we applied a cluster analysis to gain a more detailed understanding of the different characteristics that make different populations across Buenos Aires vulnerable. We identified eight profiles through our cluster analysis, such as "*Moderate Education/High Infrastructure/Low Renters*", "which were mostly located in the southern and western portion of Buenos Aires, and "*High Education/High Infrastructure/Moderate Renters*" which were mostly located in the northern and eastern portions of the city (Figure III-2). The clusters were generally scattered throughout CABA,

which illustrated the varying nature of vulnerability and the importance of context throughout the city.

Figure III-1 Vulnerability Index for CABA (2001 and 2010)

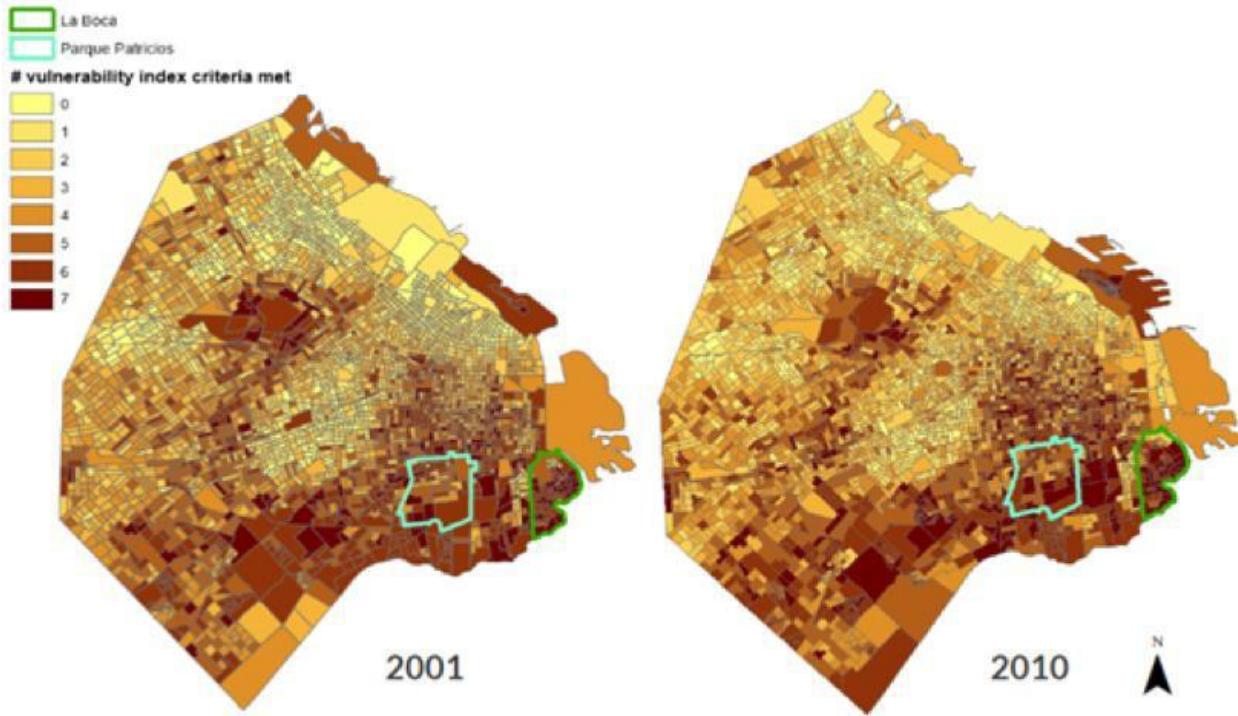
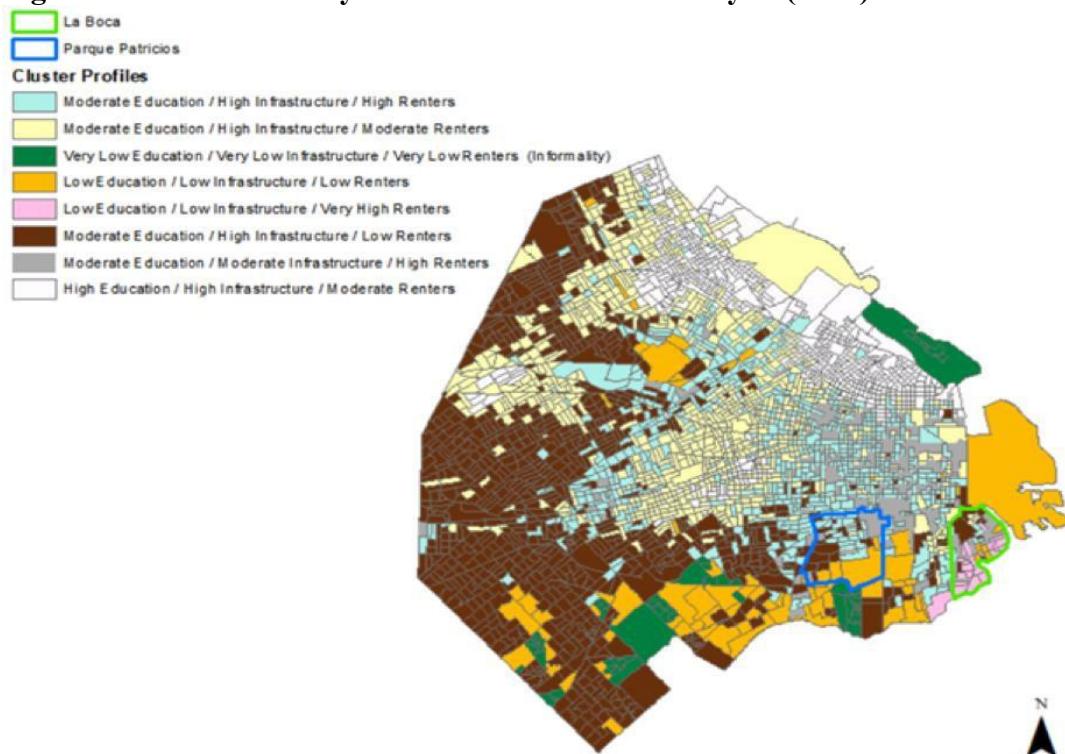


Figure III-2 Vulnerability Profiles from Cluster Analysis (2001)



A typology of neighborhood change in Buenos Aires

Using census and cadastral data, we are able to characterize the different forms of neighborhood change in Buenos Aires, including not just vulnerability, gentrification, and displacement but also exclusion and mixed income. Figure III-3 maps neighborhood change, building on combinations of the following basic categories:

- *Vulnerability*: Meets four or more of the following criteria for vulnerability in 2010: low housing value, low college education, high renter population, high unemployment, high overcrowding, low infrastructure quality, low housing quality.
- *Displacement*: Loss of share of low-educated (did not complete high school) households, 2001-2010, greater than the average loss in Buenos Aires as a whole (-41.9%).
- *Gentrification*: Gain in share of college-educated households, 2001-2010, greater than the average gain in Buenos Aires as a whole (-14.4%), AND gain in average land value, 2001-2010, greater than the average gain in Buenos Aires as a whole (84.7%).
- *Exclusion*: Only for tracts not characterized as gentrification or displacement: Share of college-educated households in 2010 is greater than the average share in Buenos Aires as a whole (25.8%).
- *Mixed income*: Either share of college-educated households in 2010 is greater than the average share in Buenos Aires, or gain in share of college-educated households is greater than the gain in Buenos Aires as a whole, while still meeting four or more of the criteria for vulnerability (low housing value, low college education, high renter population, high unemployment, high overcrowding, low infrastructure quality, low housing quality).

Figure III-3 Neighborhood Change in Buenos Aires

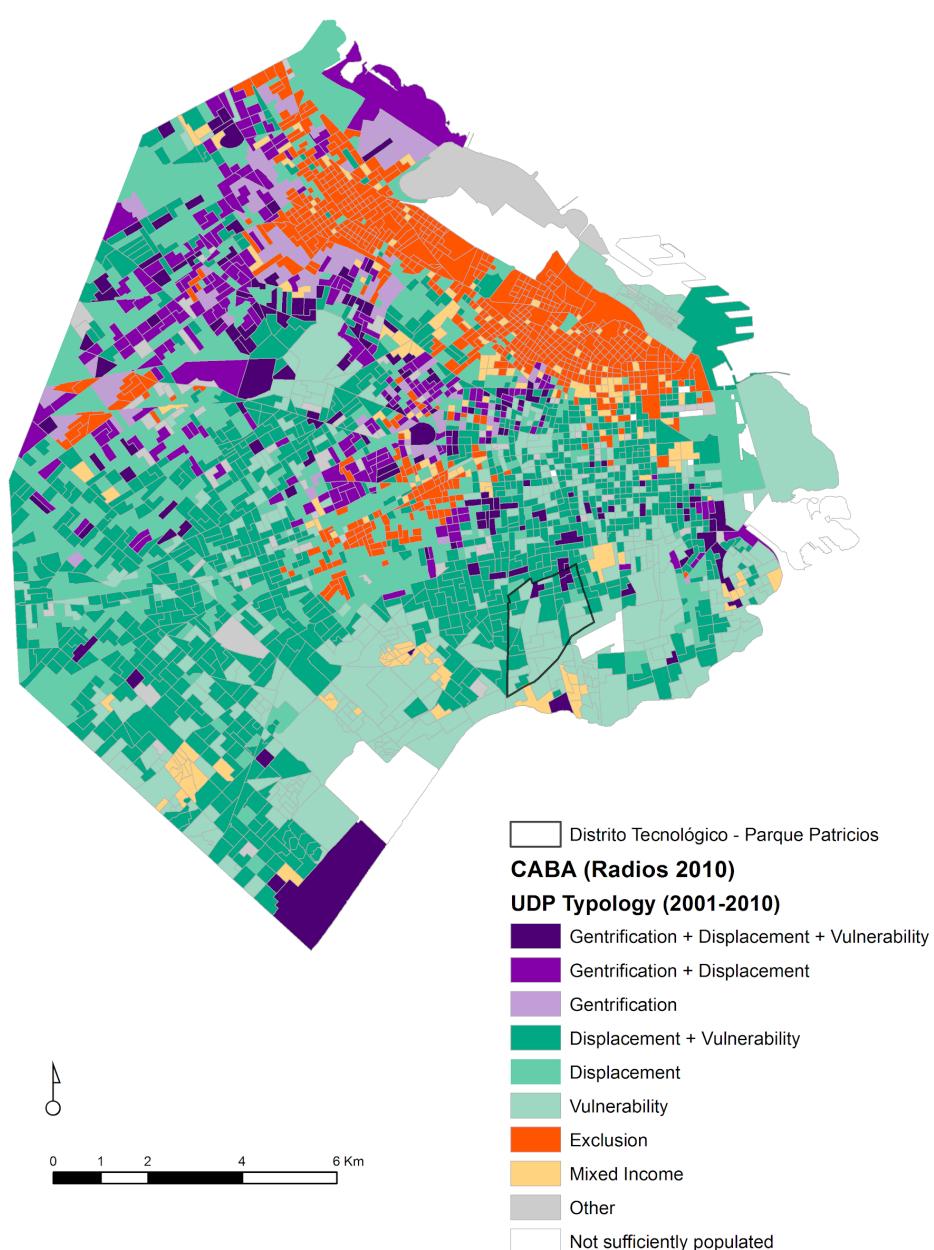


Table III-1 Typology distribution by tracts.

Type	Number of Census Tracts	%
Gentrification + Displacement + Vulnerability	160	4.5%
Gentrification + Displacement	243	6.8%
Gentrification	112	3.2%
Displacement + Vulnerability	982	27.6%
Displacement	624	17.6%
Vulnerability	432	12.2%
Exclusion	738	20.8%
Mixed Income	175	4.9%
Other	74	2.1%
Not sufficiently populated	14	0.4%

Thus, overall, about 14.5% of radios are gentrified, but most of these are experiencing ongoing population churn and continued vulnerability. Only 3% can be considered to be in an advanced state of gentrification, with little vulnerability or displacement occurring. Almost five percent are mixed income, i.e., housing concentrations of both high- and low-educated residents. About 57% of tracts are either experiencing displacement or vulnerability, or both; thus, this is the dominant characteristic of Buenos Aires neighborhoods. Still, almost 24% of tracts are exclusive.

As shown in the map, most of the northeast of the city, from Recoleta to Palermo to Belgrano, is already exclusive (in orange). Some of these neighborhoods have historically housed Buenos Aires' most affluent residents, while others have gentrified recently and are increasingly excluding low-educated residents from moving in. Gentrification (in purple) is occurring largely in neighborhoods adjacent to the exclusive enclaves, but also a few more distant neighborhoods like La Boca; mixed-income neighborhoods often act as a buffer zone between gentrifying and exclusive neighborhoods. Neighborhoods in the darkest shade of purple (e.g., San Telmo) are experiencing gentrification along with displacement (loss of low-educated households), and continue to have vulnerable residents. Finally, a set of neighborhoods in green are experiencing either displacement or vulnerability or both, but without increases in land value. Notably, most of Parque Patricios falls into this last category, with the exception of a couple neighborhoods in the northeast that are experiencing recent gentrification in addition to long-term displacement and vulnerability.

D. Assessing the general trends in land and housing prices at the Buenos Aires Special District areas (2002-2018)

We next analyze land price trends in areas that were affected by district policies, and we investigate with some preliminary modelling the hypothesis of whether they have had an impact on land values in the affected areas. As previously discussed, district policies in Buenos Aires did not follow a common pattern, responding to different objectives and specific situations in each area. For this reason, we do not necessarily expect to find an effect in all cases.

We take advantage of this data consisting of asking prices for land plots since 2001, which includes all the plots for sale in those years. The dataset integrates all of the available real estate data sources from the city of Buenos Aires, and thus constitutes a comprehensive database used by public and private actors for real estate analysis within the city.

Figure III-4 displays information for the different districts, revealing that districts, as well as the city as a whole, experienced a trend of increasing prices in the period of interest. However, a significant heterogeneity in trends can also be observed among districts. The area affected by the audiovisual district, for example, experienced the highest growth in the period, exceeding the average growth of the city. The rest of the affected areas show growth in the value of the land, but lower growth with respect to the general city level. Meanwhile, the area with the lowest value is the area corresponding to the Sports District, within the least affluent areas of the city.

To test the hypothesis that districts imposed differential growth in the affected areas, we estimate here a basic econometric specification that explores all property price data in the city in the period of interest. The model itself is a specification of the differences-in-differences type, which seeks to differentiate the effect of the district from the general trends that affected prices in the city as a whole. More specifically, the equation we estimate is the following:

$$\log(p)_{i,t} = \alpha + \sum_{k=1}^5 \beta_k distrito_k + \sum_{k=1}^5 \gamma_k distrito_k * Post_k + \theta_t + \epsilon_{i,t}$$

Where $\log(p)_{i,t}$ denotes the logarithm of the price per square meter, denominated in US dollars, $distrito_k$ signals the respective district areas, $Post_k$ signals the post-announcement (and put into effect) period and θ_t denotes year specific fixed effects. The implicit assumption in this case is that of parallel trends in the absence of the intervention.

Figure III-4 Mean land value in USD per square meter (district creation years denoted by dotted vertical lines).

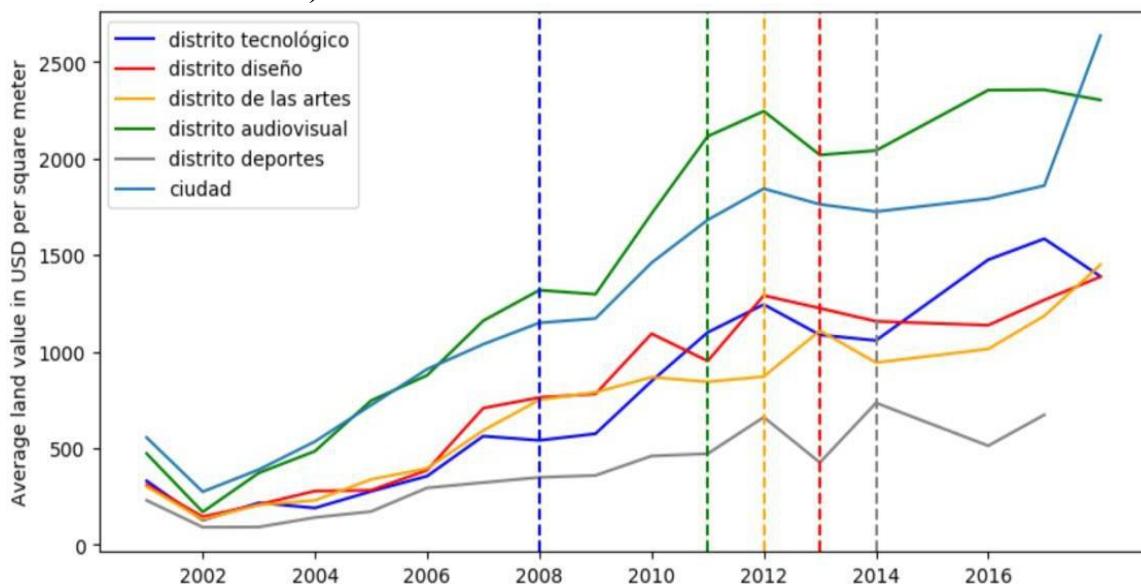
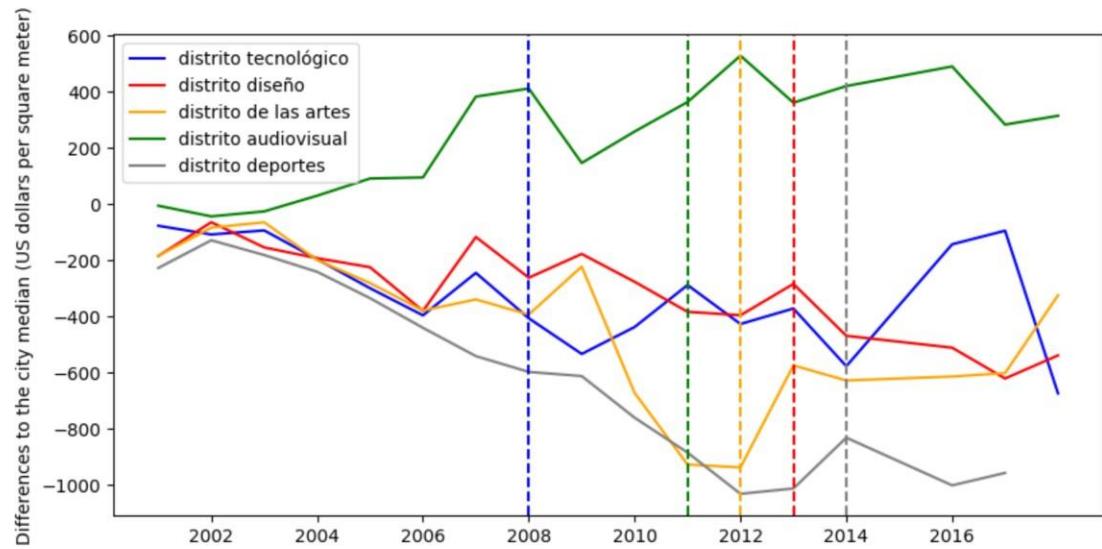


Figure III-5 Land value in USD per square meter relative to the city median value.



Results are displayed in Table III.2. Regarding the results of column, I, and in relation to the proposed hypothesis on the effects of district policies on land value, we find that district interventions, in general, have been associated with positive changes in price trajectories, with the most important increase in the case of the Technology District. In this case, the estimated increase for the Technology District is 37% for the post-intervention period. For the rest of the districts there are lesser, albeit substantial, increases of between 5 and 13%.

In columns II and III we present estimates of models assuming markets anticipate the establishments of the respective districts. In other words, we assume that markets know about the policies to be established with one- and two-years anticipation respectively. Results do not change substantially but do show that the magnitudes of the respective effects increase in nearly all cases. In particular the Technology District effect increases from 37 to above 40 percent. The Design District effect increases from 13 to 15% in the one-year anticipation lag and 18% in the two-year lag. Finally, the Audiovisual District increases from 5% to 7% in the one-year lag and to 10% in the two-year lag. Meanwhile neither the Arts nor the Sports District show positive effects when lags are considered.

Therefore, we corroborate that the Technology District is the case showing some of the largest increases in associated prices. In other cases, particularly the Audiovisual and Design districts, we also find positive effects, particularly when considering the anticipation hypothesis.

Table III.2 Econometric estimations. Land prices and District Designations in Buenos Aires

Dependent: Land value, asked price per square meter (USD in logs)	(1)	(2)	(3)
	Year effects	One-year anticipation effect	Two years anticipation effect
Technology District	-0.748*** (0.0688)	-0.845*** (0.0873)	-0.824*** (0.1150)
Design District	-0.552*** (0.0609)	-0.572*** (0.0664)	-0.609*** (0.0763)
Arts District	-0.705*** (0.0313)	-0.657*** (0.0334)	-0.652*** (0.0360)
Audiovisual District	0.146*** (0.0223)	0.132*** (0.0241)	0.112*** (0.0258)
Sports District	-1.139*** (0.0500)	-1.126*** (0.0515)	-1.137*** (0.0533)
Technology District * Post[L]	0.376*** (0.0770)	0.454*** (0.0934)	0.405*** (0.1190)
Design District * Post[L]	0.136 (0.0840)	0.153* (0.0857)	0.184** (0.0914)
Arts District * Post[L]	0.0507 (0.0479)	-0.053 (0.0474)	-0.055 (0.0478)
Audiovisual District * Post[L]	0.0587* (0.0340)	0.0757** (0.0337)	0.103*** (0.0340)
Sports District * Post[L]	0.0827 (0.1160)	0.0146 (0.1070)	0.0522 (0.1000)
Technology District * Post *t			
Design District * Post *t			
Arts District * Post *t			
Audiovisual District * Post *t			
Sports District * Post *t			
Constant	5.773*** (0.0248)	5.772*** (0.0248)	5.773*** (0.0249)
Year Dummies	Yes	Yes	Yes
Post is lagged	No	1 year lag	2 years lag
District specific trend	No	No	No
Observations	21,645	21,645	21,645
R-squared	0.387	0.387	0.387

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

E. Measuring the effects of the renovation policies in the Parque Patricios: The technology district and the moving of government headquarters (2008-2019)

This section is focused on the renewal policies taking place in Parque Patricios, namely the creation of the Technological District project, together with a number of related actions, such as the relocation of the government headquarters taking place in 2012 and a number of related infrastructure interventions (See more below).

Our analysis of the policy effects comprises a few dimensions for which we have very disaggregated data available, namely prices in the real-estate market, including land, apartments asking prices for sale and rental prices; and urban renewal related indicators, including housing construction permits, and land use changes, such as new commercial or residential. In the

respective subsections we will discuss the sources of data, and the analytical strategies, including an assessment of the effects of the strategy, as well as its strengths and limitations.

We start by providing a general description of the Special District policy and some evidence on the location (or relocation) of technology companies to the district. We then move to the analysis of physical transformations as measured by construction permits and changes in land use. Finally, we present econometric estimations aimed to identify the causal effect of the Technology District on real estate prices.

The intervention under analysis: Technology district and renovation policies in Parque Patricios

As already mentioned in the beginning of this study, the creation of the technological district has been an economic policy pursued by the City of Buenos Aires government since 2008 in order to stimulate a cluster of technology and information (TICs) related firms in Parque Patricios. While the immediate objective of the district program was driven by specific economic development goals, the district was also understood and promoted as a policy towards the renewal of a stagnating and increasingly deteriorated area of the city. As part of this last objective, in the year 2012, the government moved its main headquarters to Parque Patricios, which was a major event for the area. This decision also provided a signal to the business community with interests in the district, by demonstrating the commitment of the government to the continuation of the project.

While the district policy consisted of a series of fiscal incentives aimed at the location of companies within the district (Law 2972, GCABA, 2008), a series of urban interventions also took place during the period of interest. These interventions responded to the needs of the district (such as improving accessibility to the area for the district employees), but were also aligned to the effort of improving the quality of life in the neighborhood. Among the most important infrastructure interventions that occurred close to the district creation were i) extension of the subway line (Estación de subte Parque Patricios Línea H), ii) changes in the planning code, and iii) extension of bikeways (bici-senda). The district also aimed to foster the arrival of employees to live in the area, with an expected increase in density.

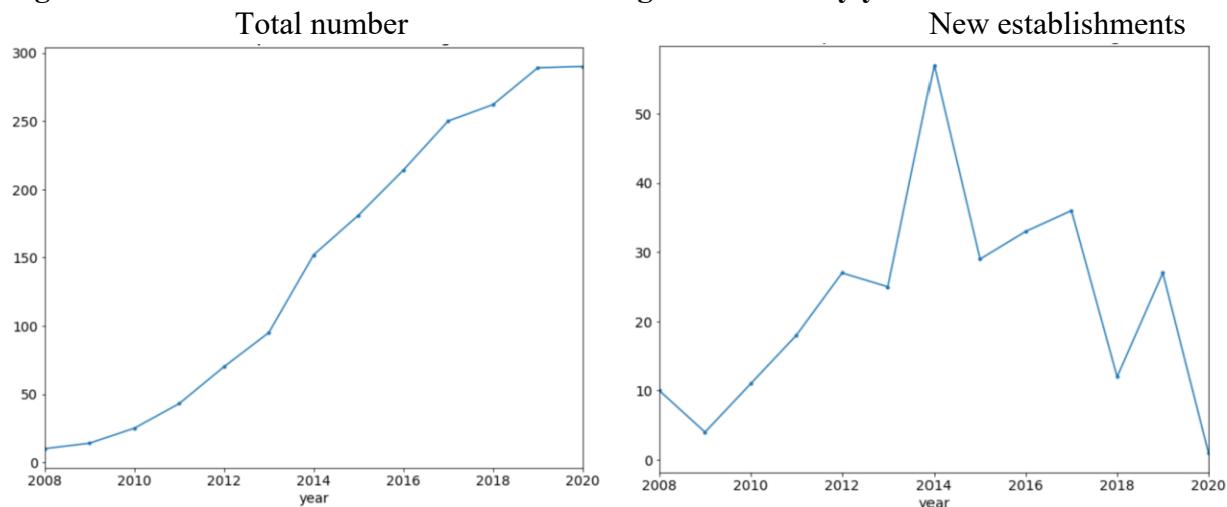
Our empirical objective is to analyze the impact of these associated policies, and to take advantage of the timing of different events to pinpoint some specific effects.

Relocation of firms and new technological firm creation within the district

In order to further clarify how the process of arrival of new businesses into the District is unfolding, we take advantage of government registries information, which provides evidence regarding timing and spatial distribution of these firms, specifically, date of arrival and address.

Figure III-6 provide evidence on the timing of new arrivals. While on average the district received about 27 companies per year in the 11-year period since its inauguration, the number of new companies accelerated and peaked in 2014. If we consider that the construction of a new office lasts on average between one and two years, this would be consistent with a process of acceleration in the attraction of companies that peaked at the time of the relocation of the government's headquarters.

Figure III-6 Firms established in the Technological District by year



Note: Own Elaboration. Source: Dirección de Distritos Económicos. Gobierno de la Ciudad. 2019 and 2020 include companies currently building their offices.

Figure III-7 presents evidence on the spatial distribution of companies newly settled. These figures suggest that the northwest sector of the District has been the most attractive for companies from the outset. After 2014, a greater concentration in the Northeast sector -- the area that has experienced the most gentrification per Figure III-3, above -- and an expansion to other areas also emerged. During the 2014-2019 period the spatial extent of the companies did not increase much; rather, it seems that the density of companies in the areas already selected has increased. Meanwhile, the southeast sector of the district has been the sector least popular among companies and in 2019 there is even a lower concentration in this area.

Figure III-7 Spatial distribution of firms settling in the District



New real estate construction permits (2012-2018)

In terms of transformations taking place in the District, the first dimension we analyze is the renewal of buildings and structures that has been carried out. For this, we explore data on construction projects registered with the General Directorate of Registration of Works and Cadastre.

Data on construction permits is available at the individual permit level, and includes public and private construction, as well as new and remodeling projects. For example, it can consist of the registry of a total or partial demolition, a building modification, or a completely new structure on vacant land. Data includes the affected parcel and the total surface area affected, but does not include the completion (we analyze evidence in this regard in the next section).

Unfortunately, data is not available prior to 2012, so it is not possible to capture all the changes that have occurred since the District announcement. Even so, this data allows us to see the dimensions of the changes that have occurred.

Since our main interest is the spatial concentration of the construction projects, and since this data is available at the individual level, we proceed to aggregate it at the population census radius level. Using the census radius allows a normalization that maintains approximately constant the total population in the spatial unit.

Figure III-8 maps the results for the total number of registered projects, considering the District Area and two comparison areas. The comparison areas are distance-based rings around the district. These rings are established with censal radiiuses located at distances between 0-500 meters and 500 to 1000 meters. With the exception of a single radius in the border neighborhood of Barracas -which comprises a number of projects the government undertook in the Villa 21-24 informal settlement- the map shows that most density in registered projects has taken place in the District, particularly in the central and north west area.

The statistics in Table III-4 corroborate this image. The table shows statistics on the number of projects by census radius. It discriminates between projects in general, and projects categorized as “new”. The table shows that the district presents on average a greater number of projects per radio (5.1), above the average in ring 1 (4.1) and in ring 2 (2.9). The district area also presents a higher median value of projects per radius (4 to 3 in the comparison areas). In terms of projects categorized as new, the District displays a similar average to the radius 1 (3.1 and 3.2 respectively).

Figure IIII-8 Count of registered projects by census radius area. Technology District and comparison areas (2012-2018)

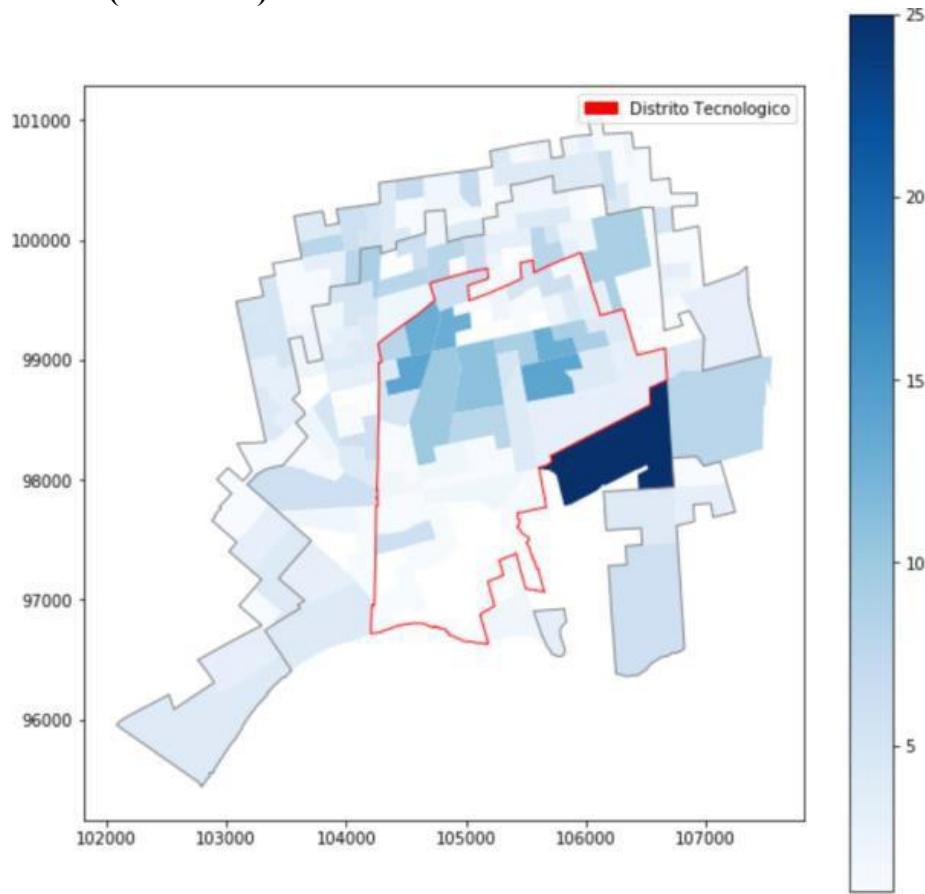


Table IIII-3 Count of registered new construction projects by census radius area

	All projects			Only projects categorized as new		
	Technology District	Ring 1	Ring 2	Technology District	Ring 1	Ring 2
Count	40	48	70	38	42	54
Mean	5.1	4.1	2.9	3.1	3.2	2.3
Std. dev	4.2	3.9	1.9	2.4	3.3	1.5
Min	1	1	1	1	1	1
25%	1	2	1	1	2	1
50%	4	3	3	2	2	2
75%	8	5	4	4	3.75	3
Max	14	25	8	8	20	7

Urban Renewal: land use changes at the parcel level (2010-2017)

As a second approach in analyzing transformations carried out in the District, we examine urban renewal, as measured by land use changes between 2010 and 2017. For this, we use data on two land use censuses carried out by the City Government in the mentioned years. These censuses collected information on the use of land at the parcel level in the entire city, allowing a fine-scale examination of the District and the comparison areas. The limitation here is that because the date of the first census (2010) occurred two years after the District was established, we might be leaving out some significant changes. Nevertheless, the length of the window post-intervention for which we have data is appropriate enough.

Following Pérsico (2019), we will identify urban renewal as changes in the use of parcels between the surveyed years. The parcel use categorization provided by the government comprises many different uses which we group, following Pérsico (2019), into five main categories: Single family residential, multi-family residential, economical, and commercial. A renewal may consist of a change between any of these categories, or of a particular type within the original category. Once parcels with changes have been identified, we then group the parcels into their corresponding census-level radius. This allows us to obtain a spatial measure of the concentration of renewal-related transformations.

First, Figure III-9 below maps the results of an aggregate count of parcel use changes, including all possible use transformations. The map shows there is a considerable density of changes within the District, but there are other areas with a high number of changes as well outside of it, particularly in the north, and in the south-east border. Within the district, the areas with most changes are also coincident with the areas we observed most registered projects in the previous subsection.

Next, we focus only on land use changes that resulted in economic or commercial use. This type of renovation comprises changes into industrial use, equipment, offices or related services. Figure III-9 (right panel) displays the results. This map is more powerful in highlighting changes occurring within the District. With the exception of the area in the south-east corner of the figure, most transformation has occurred within the central area of the District.

We present two more maps where we focus on changes involving residential uses, since this use might be indicative of the displacement of original neighbors. First, Figure III-10 (left panel) shows changes involving parcels that in 2010 had a residential use and then transformed to a commercial or economic use in 2017. The evidence here does not show a clear tendency towards this type of transformation in the District. There is a concentration of this type of renewal outside of the district in the south-east area, as we have already pointed out.

Finally, in Figure III-10 (right panel) we examine renewal that resulted in residential use in 2017. This figure suggests that there is a spatial concentration of this type of residential renewal, but this has occurred in the north of the district, especially outside of the district, falling in the two outer rings (0-500 mts, and 500-1000 mts) we have previously delimited. While this residential transformation could have occurred due to the District designation (for example, because of the new demand of residents that want to live near the District), we consider that the evidence here is not sufficient to properly identify such an effect. Other renewal tendencies occurring in the area

might have contributed as well. In addition, we do not see similar effects in other areas of the surrounding rings.

Table III.4 and Table III-5 present further details on the composition of land use changes occurring in the District, in the comparison areas, and in the entire city, as an additional benchmark. Table III.4 presents statistics on the total converted area, as measured by comparing the constructed total surface at the parcel level in each year. Table III-5 presents similar statistics on the total number of converted parcels.

Both tables improve our understanding of the type of renovation that was relatively predominant in the Technology District. The table shows that renewal consisting of changing economic use (for an alternative economic use as destination) explains most of the transformation (43% of the renewed area). As explained above, this type of renovation comprises changes into industrial use, equipment, offices or related services. This percentage is especially high considering that in the comparison areas the values of this type of renovation were less than 4%. Table III-5 shows a similar pattern in terms of the number of converted parcels, where this type of renovation climbs to 12%, while in the rest of the groups the figures are below 4%. In general, other renovations to transform into economic use were also higher in the District, as also shown in Figure III-9.

Renewal towards multifamily residential use has also been important in the District area (accounting for nearly 18% of total renewed surface). In relative terms, however, the change has been lower than in the comparison areas (with percentages of 29 and 22% in the comparison rings, and 30% in the city as a whole). As mentioned above, this fact is also illustrated in Figure III-10. It is worth noting that this type of change was the most important in the city as a whole.

In absolute terms, Table III-7 shows that the magnitude of changes towards economic use exceeded changes towards residential use, both in terms of total number of parcels affected (60 to 50 parcels respectively) and, most notably, in terms of total surface (73,487 meters squares towards economic use nearly doubling the total of 37,272 for residential use).

Overall, the evidence here seems to suggest that the technology district designation has triggered many land use changes, but specifically, most are related to the renovation of uses into higher economic uses (for instance, the transformation of industrial uses into offices).

Figure III.9 Renewal concentration. Count of parcel-level land use change

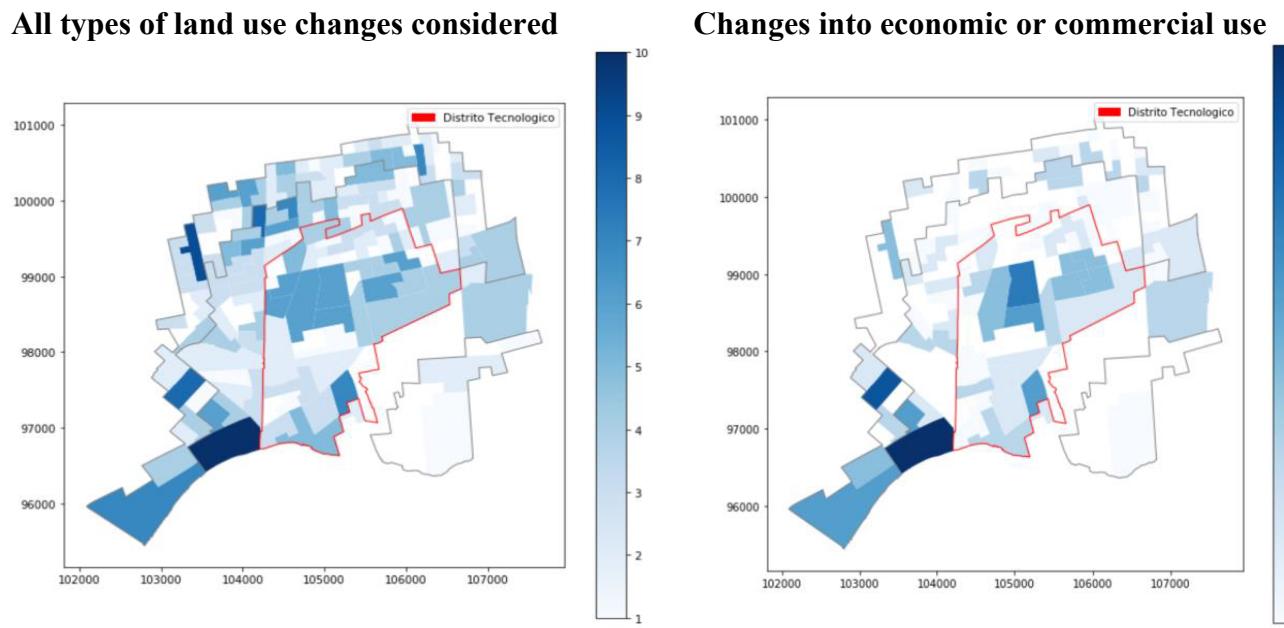


Figure III.10 Renewal concentration. Count of parcel-level land use change.

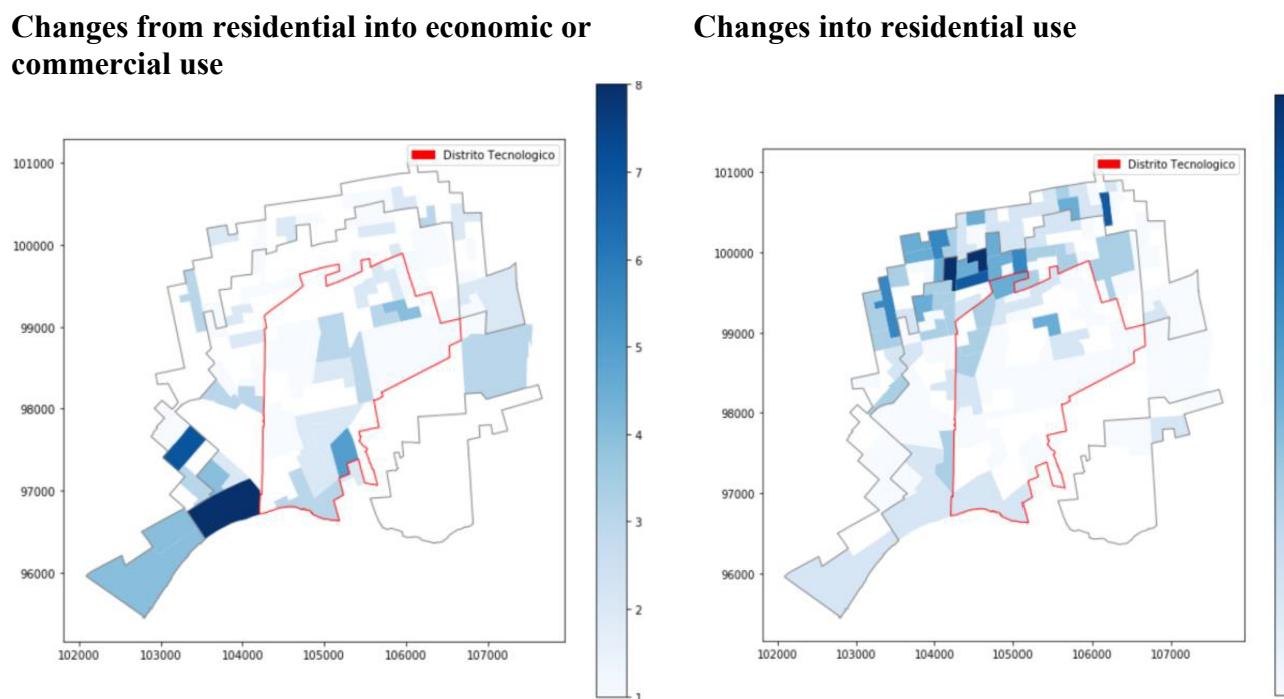


Table III-4 Converted parcel area in the Technology District area, comparison areas and City of Buenos Aires (2010-2017)

Type of land use change	Converted parcel area (in m ²)				As percentage of total converted parcel area			
	Technological District	Ring 1	Ring 2	City of Buenos Aires	Technological District	Ring 1	Ring 2	City of Buenos Aires
Commercial	3,715			70,611	3.05	0.00	0.00	0.63
From Commercial to Business	2,798	2,035	817	91,876	2.30	1.98	0.54	0.82
From Commercial to Residential Multifamily	1,756	14,693	30,429	777,016	1.44	14.28	20.15	6.93
From Commercial to Residential Single family	267	103	317	5,729	0.22	0.10	0.21	0.05
From Economic to Residential	333	84	30	107,061	0.27	0.08	0.02	0.96
From Business to Business	52,489	3,085	5,403	351,085	43.15	3.00	3.58	3.13
From Economic to Residential	1,450	13,699	5,889	824,355	1.19	13.31	3.90	7.36
From Economic to Residential S	552		246	9,770	0.45	0.00	0.16	0.09
From Residential M to Commercial	415	707	1,640	94,404	0.34	0.69	1.09	0.84
From Residential M to Business	6,496	5,127	7,546	172,676	5.34	4.98	5.00	1.54
From Residential M to Residential M	6,189	6,511	20,783	1,614,186	5.09	6.33	13.76	14.40
From Residential M to Residential S	305	305	565	23,376	0.25	0.30	0.37	0.21
From Residential S to Commercial	5,286	1,123	323	163,407	4.35	1.09	0.21	1.46
From Residential S to Economic	11,704	9,295	8,852	241,454	9.62	9.03	5.86	2.15
From Residential S to Residential M	21,848	30,253	33,563	3,414,588	17.96	29.40	22.22	30.47
From Not Categorized No Data to Residential M	6,029	15,875	32,922	2,786,036	4.96	15.43	21.80	24.86
Total	121,632	102,895	151,044	11,205,968	100.00	100.00	100.00	100.00

Note: Land use categories (i.e., Commercial, Economic, Residential) consist of aggregate categorizations defined in Pérsico (2019), which comprise specific uses recollected in the land use censuses. In all cases the primary use of the parcel is considered in defining the category, existing cases with a second or third use. *Economic* uses comprise parcels with industrial, services, offices, garages, and equipment as primary use. *Commercial* use comprises both general commercial and industrial commercial types of establishments. *Residential M* stands for multifamily housing as primary use. *Residential S* stands for single family housing. A final category “not categorized” corresponds to parcels with no available land use classification in the census 2010.

Table III-5 Count of converted parcels in the Technology District area, comparison areas and City of Buenos Aires (2010-2017)

Type of land use change	Technology District	Number of converted parcels			As percentage of total converted parcels			
		Ring 1	Ring 2	City of Buenos Aires	Technology District	Ring 1	Ring 2	City of Buenos Aires
From Commercial to Commercial		2		32		1.47	0.00	0.00
From Commercial to Economic		5	5	140		3.68	3.07	2.75
From Commercial to Residential M		2	6	17		1.47	3.68	9.34
From Commercial to Residential S		2	1	2		1.47	0.61	1.10
From Economic to		5	2	1		3.68	1.23	0.55
				206				2.01
Type of land use change	Technology District	Number of converted parcels			As percentage of total converted parcels			
		Ring 1	Ring 2	City of Buenos Aires	Technology District	Ring 1	Ring 2	City of Buenos Aires
Residential								
From Economic to Economic		17	4	6		12.50	2.45	3.30
From Economic to Residential M		5	13	7		3.68	7.98	3.85
From Economic to Residential S		3		1		2.21	0.00	0.55
From Residential M to Commercial		2	3	3		1.47	1.84	1.65
From Residential M to Economic		9	11	12		6.62	6.75	6.59
From Residential M to Residential M		5	6	15		3.68	3.68	8.24
From Residential M to Residential S		4	4	8		2.94	2.45	4.40
From Residential S to Commercial		8	5	3		5.88	3.07	1.65
From Residential S to Economic		29	26	29		21.32	15.95	15.93
From Residential S to Residential M		35	71	60		25.74	43.56	32.97
From Not Categorized No Data to Residential M		3	6	12		2.21	3.68	6.59
Total		136	163	182	10246	100.00	100.00	100.00
								100.00

Note: Land use categories (i.e., Commercial, Economic, Residential) consist of aggregate categorizations defined in Pérsico (2019), which comprise specific uses recollected in the land use censuses. In all cases the primary use of the parcel is considered in defining the category, existing cases with a second or third use. *Economic* uses comprise parcels with industrial, services, offices, garages, and equipment as primary use. *Commercial* use comprise both general commercial and industrial commercial types of establishments. *Residential M* stands for multifamily housing as primary use. *Residential S* stands for single family housing. A final category “not categorized” corresponds to parcels with no available land use classification in the census 2010.

**Table III-6 Summary of land use conversion in the Technology District Area (2010-2017).
By final use.**

Type of change according to final use	Number of converted parcels	New area (in m ²)	Average new area per parcel
Commercial	17	9,749	573.5
Economic	60	73,487	1224.8
Residential M	50	37,272	745.4
Residential SU	9	1,124	124.9

Note: Land use categories (i.e., Commercial, Economic, Residential) consist of aggregate categorizations defined in Pérsico (2019), which comprise specific uses recollected in the land use censuses. In all cases the primary use of the parcel is considered in defining the category, existing cases with a second or third use. *Economic* uses comprise parcels with industrial, services, offices, garages, and equipment as primary use. *Commercial* use comprises both general commercial and industrial commercial types of establishments. *Residential M* stands for multifamily housing as primary use. *Residential S* stands for single family housing. A final category “not categorized” corresponds to parcels with no available land use classification in the census 2010.

Econometric results

Land value 2001-2018

We now move to an analysis of the district policy’s effects on real estate prices. We will then extend the analysis to apartment prices (residential apartments). Land value data is available at a disaggregated level, in the form of asking prices since 2001. The source of this data is the City of Buenos Aires government (Buenos Aires Data), which collects the data from online real estate platforms listing all available units in the market. The fine-grained nature of this data allows us to propose estimators with an explicit causal interpretation. In other words, our estimators are aimed at both identifying the effect of government policies taking place in the District and distinguishing this effect from other effects taking place simultaneously.

Identification strategy and econometric approach

We propose to employ a (spatial) difference-in-difference specification as the basic empirical approach for the impact evaluation exercise. The difference-in-difference methodology essentially compares the changes experienced in the intervened area with respect to a comparison area. Variants might include more than a comparison area, as in this case. The underlying assumption of the difference-in-difference methodology is that prices can be disentangled into specific area effects, time effects, and the intervention effect per se.

The intervened area in this case is the District area (Figure III.11), where, as we mentioned above, fiscal, regulation and infrastructure related interventions took place. This is where we expect most of the effects taking place within the period under analysis.

In terms of comparison groups, we propose two approaches: First, we follow a now standard approach in the empirical literature (see, for instance, Hyun and Milcheva, 2019) and construct two comparison areas on the basis of measuring the euclidean distance to the intervened area, resulting in two distance-based rings around the district. See Figure III-11 below for a map of the resulting rings. The key assumption in building comparison groups in this way is that the treated and comparison areas, in the absence of the intervention, should follow similar urban

transformation trends, which is precisely the identification assumption required by the difference-in-difference methodology². Studies from Buenos Aires have characterized several of these trends in different parts of the city (Pérsico, 2019). The further a selected comparison area is from the district, the higher the likelihood that it would be affected by such a pre-existing trend, and the likelihood of introducing a bias to the difference-in-difference estimation. In selecting concentric areas close to the District we aim to minimize such biases.

These rings are drawn at distances between 0-500 meters and 500 to 1000 meters from the perimeter of the District respectively. While we cannot rule out completely the possibility of spillover effects from the District outside its borders, using more than one comparison area serves for robustness purposes, since spillovers are expected to diminish further away from the district, as in the second ring area.

As a second, alternative identification strategy we select a specific area of comparison: the Barracas neighborhood. This area is selected on the basis of anecdotal evidence. According to government city planners, this neighborhood was the alternative area where the technology district could be located, and was regarded as presenting many similarities (particularly its land use) with Parque Patricios at the time of its selection. Goytia and Pasquini (2012) present abundant evidence on the similarity of the District and Barracas area on the basis of observable characteristics.

As an example of a specification of a differences-in-differences estimation implemented as part of a regression model, consider the following equation:

$$\log(p)_{i,t} = \alpha + \beta_1 TDPost2008 + \beta_2 TDPost2012 + \sum_{k=1}^4 \beta_k area_k + \sum_{k=1}^4 \delta_k area_k t$$

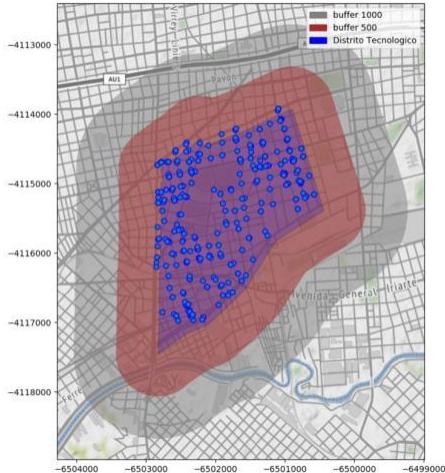
Where i indexes individual offerings, and $\log(p)_{i,t}$ denotes the logarithm of the land price per square meter of an offering i at time t . Importantly, the price is denominated in US dollars, which is the currency of reference for this type of operation in Buenos Aires. $TDPost2008$ is a dummy signaling observations located in the Technology District after its announcement an establishment in 2008, $TDPost2012$ is the analogous variable for the period after 2012, which is meant to capture the period after the relocation of the city government's headquarters. $area_k$ is used to represent dummies for the four areas delineated above: the technology district (the Parque Patricios neighborhood), the two 0.5 kms rings around the district, and the Barracas neighborhood. The final term, which interacts areas with the time dimension t , is used in allowing for area specific price tendencies.

Note that β_1 and β_2 are the main coefficients of interest, which are expected to capture the specific effects of the intervention. In a subsequent specification we include some additional location-specific amenity controls (such as distance to avenues, or transportation). These controls are included in order to reduce statistical noise due to a small frequency of observations in the area.

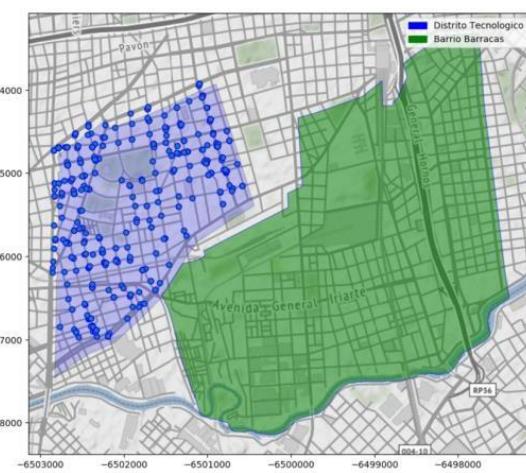
² Also notice that while the district and comparison (ring) areas are comparable in a number of observable characteristics as suggested by the analysis presented above, we do not require strict similarity in observable characteristics since they are not required by the method (i.e., they are cancelled out by the time-difference).

Figure III.11 Technology District and Comparison Groups

Left: Buffered rings as control areas.



Right: Barracas as comparison area



We now present the results. Our hypothesis is that there have been two positive effects associated with the District, the first occurring around 2008, and the second around 2012. Table III-7 shows the results of the estimations. Our proposed baseline model (Column I) shows area specific trends. We present an alternative specification using a single trend for all areas (Column II), and a third specification incorporating additional control variables (Column III).

Results in Table III-8 confirm both positive changes in tendencies occurring around 2008 and 2012 (as measured by *TD_Post_2008* and *TD_Post_2012* coefficients). In 2012, however, the estimated increase is of a lower magnitude, and the estimated coefficient fails to reject the statistical non-significance test. It is important to note that these coefficients present minor changes across the three proposed specifications.

Econometric results are additionally illustrated in [Figure III-12](#) below, where we show the predictions of the baseline model. The figure shows that there is a jump in prices that occurs around 2008, and this jump can be distinguished irrespectively of the control group we compare to. We also notice that the slope of trends is very similar across groups. An additional observation that is derived from Table III-8 is that on average the Technology District area on average had a lower value than the comparison groups, although the relative ordering changed during the period. The evidence seems to suggest that Parque Patricios reached the mean value of the first ring control and the Barracas area at the end of the period.

In terms of control variables effects, coefficients in Column III exhibit negative values for distances to: metrobus, bikeways, police and avenues, stadiums and hospitals (these last two not rejecting the non-significance test). These coefficients suggest properties incorporate proximity to these infrastructures as part of their value. Among them, proximity to avenues reports the highest coefficient. Distance to green areas, and the subway display positive coefficients, though these are small and do not pass the significance test.

Overall, these results confirm the proposed hypothesis, and suggest that the intervention generated a causally positive and economically significant effect on land values, more

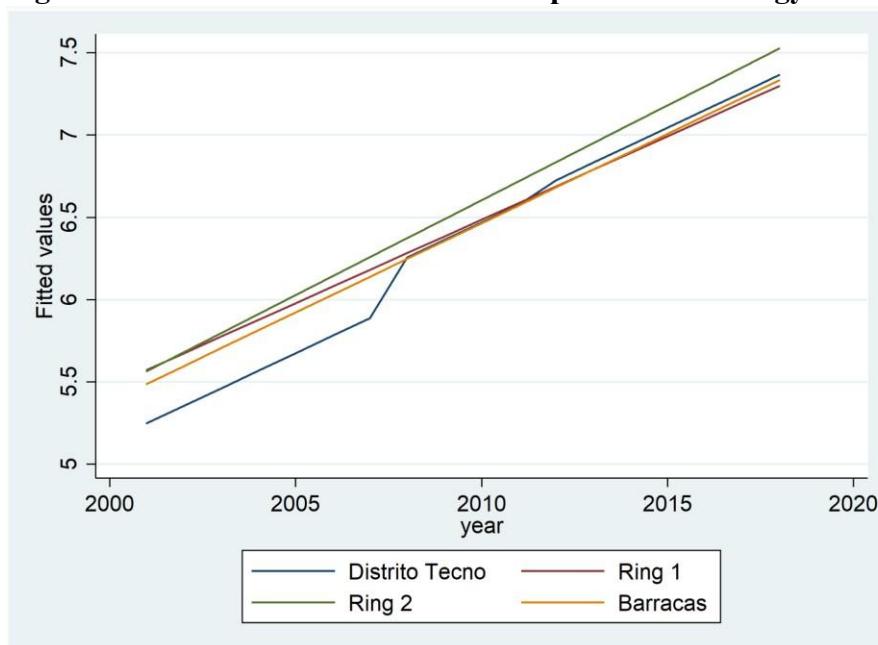
importantly in economic terms in the year 2008, but also again in 2012. This evidence seems to suggest that part of the effect was anticipated by the market, at least in terms of land value.

Table III-7 Econometric Results: Land value in the Technological District

Dependent: Land value, asked price per square meter (USD in logs)	(1) Area specific trends	(2) Common trend	(3) Area specific trends plus controls
Ring 1: 0.5 km	0.324*** (0.1060)	0.255*** (0.0660)	0.175* (0.0976)
Ring 2: 0.5-1km	0.318*** (0.0981)	0.387*** (0.0644)	0.202** (0.0924)
Barracas	0.240** (0.1030)	0.245*** (0.0657)	0.457*** (0.1010)
TD*t	0.107*** (0.0153)		0.110*** (0.0137)
Ring1*t	0.102*** (0.0058)		0.100*** (0.0052)
Ring2*t	0.115*** (0.0049)		0.109*** (0.0045)
Barracas*t	0.109*** (0.0058)		0.112*** (0.0053)
TD_Post_2008	0.264** (0.1110)	0.252*** (0.0871)	0.288*** (0.0996)
TD_Post_2012	0.0431 (0.1120)	0.0283 (0.0759)	-0.0587 (0.1010)
Distance Hospitals			-7.29E-05 (0.0001)
Distance subway			7.53E-06 (0.0000)
Distance train			0.000217*** (0.0000)
Distance metrobus			-0.000208*** (0.0000)
Distance bikeway			-0.000255*** (0.0001)
Distance stadiums			-3.15E-05 (0.0000)
Distance green areas			3.64E-05 (0.0001)
Distance police			-0.000273*** (0.0000)
Distance avenues			-0.00195*** (0.0001)
T		0.109*** (0.0031)	
Constant	5.247*** (0.0827)	5.237*** (0.0583)	5.654*** (0.0957)
Observations	1,921	1,921	1,921
R-squared	0.471	0.470	0.582

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Figure III-12 Estimated trends in land prices. Technology District and Controls. Baseline Model



Real Estate Prices: Apartments for sale, 2011-2018

We now extend the econometric analysis to the case of apartment prices. As mentioned above, apartment offering prices are also available at a disaggregated level since 2001. Prices are also denominated in USD. We estimate the same set of specifications as in the previous section. As in the case of land prices, we also hypothesize that the District related policies had a positive effect on apartment prices.

Results in Table III.8 are generally in line with positive changes in trends occurring around 2008 and 2012. Although there are important differences across our three proposed specifications, results are consistent in denoting a positive effect in prices in 2008. Coefficients for 2008 (as measured by *TD_Post_2008*) climb up to 65%, being lower in the common trends specification (30%) and *TD_Post_2012* coefficients). In the case of 2012, coefficients range from 10% to -16% in the common trends' specification. Similarly, to what was documented for land prices, the magnitude of the increase in 2008 is clearly larger than the increase in 2012, suggesting that the market anticipated increases in prices quite early in the period. The 2008 increase in prices is even larger in the case of apartments, although there are also signs that the prices within the district experienced quite a significant degree of variability during the period. Figure III-13 below also illustrates these findings. Barracas shows the higher average price consistently across specifications (between 28 and 33% higher than Parque Patricios), followed by the ring area controls (being similar in exhibiting approximately 17% higher value than Parque Patricios). All areas present a rate of growth between 6 and 9% annually. In terms of the District effect, Figure III-13 shows a slow increase in prices in the district area with a high, sudden jump in 2008, followed by a lower jump in 2012.

In terms of control variables effects, as reported in Column III, we consistently find negative values for distances to: hospitals, stadiums and police stations (all rejecting the respective non-significance tests), suggesting a positive value from their proximity. Distance to green areas

report a coefficient closer to zero (non-significant coefficient), and distance to schools present a positive coefficient, opposite to what would be expected.

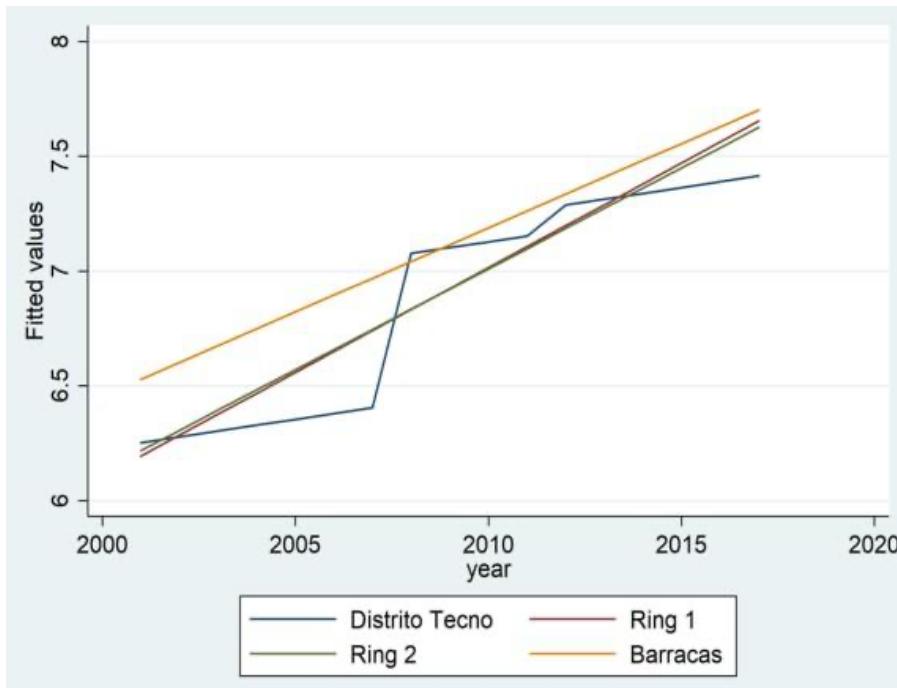
Overall our reading of these modelling coefficients, is that they also denote a causally positive and economically significant effect on apartment prices for sale, attributable to the district policy, and also in line with an anticipation by the market.

Table III-8 Econometric Results: Apartment prices in the Technological District

Dependent: Land value, asked price per square meter (USD in logs)	(1) Area specific trends	(2) Common trend	(3) Area specific trends plus controls
Ring 1: 0.5 km	-0.0588 (0.0455)	0.177*** (0.0344)	-0.00715 (0.0452)
Ring 2: 0.5-1km	-0.0342 (0.0422)	0.168*** (0.0337)	0.0149 (0.0427)
Barracas	0.276*** (0.0428)	0.326*** (0.0336)	0.258*** (0.0427)
TD*t	0.0253*** (0.0082)		0.0253*** (0.0081)
Ring1*t	0.0912*** (0.0023)		0.0917*** (0.0022)
Ring2*t	0.0879*** (0.0016)		0.0890*** (0.0016)
Barracas*t	0.0733*** (0.0018)		0.0741*** (0.0017)
TD_Post_2008	0.646*** (0.0651)	0.295*** (0.0418)	0.651*** (0.0641)
TD_Post_2012	0.110** (0.0512)	-0.169*** (0.0325)	0.107** (0.0504)
Distance Hospitals			-0.000165*** (0.0000)
Distance stadiums			-2.96e-05** (0.0000)
Distance schools			0.000161*** (0.0000)
Distance green areas			4.75E-06 (0.0000)
Distance police stations			-0.000164*** (0.0000)
T		0.0825*** (0.0011)	
Constant	6.253*** (0.0380)	6.106*** (0.0319)	6.453*** (0.0451)
Observations	9,418	9,418	9,418
R-squared	0.448	0.441	0.465

Price per square meter. Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Figure III-13 Econometric Results: Apartment prices in the Technological District (price per square meter)

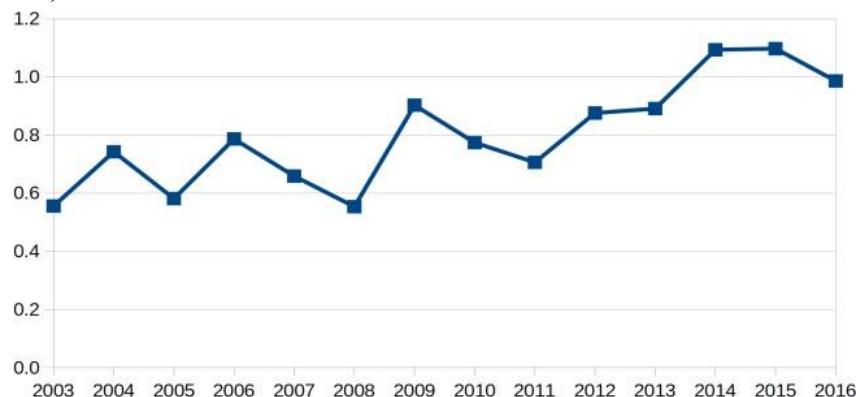


Rental markets

We complete the analysis of the real estate market by analyzing prices in the rental market. The analysis in this case is based on rental data compiled by the city government. Unfortunately, this data is not available at such a disaggregated level that would allow an econometric approach similar to that presented in the previous sections. This data is available at the neighborhood level. In analyzing this data, we compare the square meter rental price in Parque Patricios with the average of adjacent neighborhoods, as a comparison group. The relative price allows subtracting the inflationary trend, since all prices are denominated in pesos.

Figure III-14 clearly suggests that there has been a significant increase in rental prices. Notably the first increase in relative prices takes place in 2009, which is coincident with the general effect of the District on property prices we documented above. Here we also find that there is a second increase in relative prices in 2012, followed by further increase in the following years, which is related to the time in which the number of new firms in the area more than tripled (from 24 in 2010, up to 90 firms in 2012). This level continues rising for several subsequent years. Overall, the evidence seems consistent with the hypothesis that the technology district had a significant impact on the real-estate market.

Figure III-14 Square meter rental prices in Parque Patricios (relative to adjacent neighborhoods average price*)



*Adjacent neighborhoods: Barracas, Boedo, Constitución and Nueva Pompeya

Note: Own Elaboration. Source: Dirección General de Estadísticas y Censos. Gobierno de la Ciudad.

Summary of the analysis of transformations and the impact on real estate prices

Summing up, the analysis of transformations taking place in the district shows a high level of land use conversion projects taking place in the District, particularly in the central and north west area. The magnitude of renovation taking place is above the observed in the area, and it involves, in a greater amount, the transformation of existing units. As we would expect with an economic district of the characteristic of the Technology District, the transformation triggered land use changes, mainly those related to the renovation of land uses into higher economic uses (for instance, the transformation of industrial uses into offices). Renovation of land uses into (multi-housing type of) residential use, which has been important in the City as a whole, has also been present in the District, in a relatively lower magnitude. While in the case of the transformations of economic use the effect of the district is more evident, the data related to the transformations that are available is insufficient to examine to what extent maintaining a trend of residential renovation similar to the city has also been an effect of District policies.

In terms of the impacts on real estate prices associated with the district, the evidence consistently shows a higher increase in land and apartment prices after 2008, followed by a relatively lower, positive increase in 2012. The estimated impact on 2008 is of a magnitude of approximately 30% (possibly higher in apartment prices). These increases can be attributed to the effects of district policies and related interventions, and are also consistent with an anticipation of these measures by the market. An increase in the demand for parcels to be used in the form of offices and similar commercial installations would consistently explain such an increase.

While our data is more limited in terms of analyzing the rental market, evidence here also seems to be consistent with an increase in rental values, higher than neighboring areas.

F. Special Districts, Land and Fiscal Policies

What land policy instruments are most effective at promoting inclusion and avoiding displacement in urban redevelopment and special district designations? After assessing the land value and other economic changes that occur in the neighborhood when the city designates a special urban district that “brands” the area as distinctive in terms of technology and innovation, we want to simulate the potential impacts of different land policy approaches in mitigating change, examining, among others, inclusionary zoning, community land trusts, construction of social housing on vacant/underutilized land, and allowing developer upzoning in exchange for fees, in contrast to a business-as-usual scenario.

There are 3 different objectives of this section. First, as a starting point, we approximate the direct fiscal impact of several instruments and fiscal incentives that are commonly used to attract firms and residents to new denominated special districts. The analysis is motivated by the former section, showing the increase in the number of firms located in the area, as well as the rise in real estate prices. It’s possible to argue that all these will directly be reflected in local revenue sources. Taxes, and the property tax in particular, are considered one of the main revenue sources for funding the municipal budget. However, as will be explained, there are several factors limiting the potential for the use of own-source revenues at the local level when SD provide a set of fiscal incentives and abatements to new firms and residents. In line with this objective, the following section provides a general overview of revenues and expenditures, as well as the TD fiscal impact.

Secondly, after delving into the general economic functioning of the SD regime and observing impacts on taxation, we analyze land policies, value capture and social inclusion tools. among them, the new Value Capture Law of Buenos Aires City, which is explained and related to the expected effects on the SD. Finally, we discuss other tools for social inclusion.

G. Fiscal Incentives for new firms and residents by ICT District Law

As in many other cities, SD policies are tied to significant tax exemptions and incentives. In the case of the ICT District the fiscal benefits that are promoted by the TD include:

- Exemption or deferral in the payment of the gross revenue tax.
- Exemption from the stamp tax.³
- Exemption from payment of property tax; remuneration fees for lighting, sweeping and cleaning; territorial contribution for pavement and sidewalks (ABL).
- Exemption from payment of property tax; remuneration fees for lighting, sweeping and cleaning for properties within the DT that are owned or rented by employees in relation to companies registered in DT and that are used as housing only for family of those employees.
- Exemption from payment of several municipal construction rates: Rights delineation and construction, rate verification of work, and generation of urban solid waste.
- Preferential credit lines from the Bank of the City of Buenos Aires for financing of purchase of property and buildings, and for the purchase of homes.⁴

³ Articles 8 and 12 of Annex I of Decree No. 543/09.

⁴ Article 16 of Annex I of Decree No. 543/09

- The institutions (educational, academic and training) to be established in the District Technology enjoy the same benefits.
- Program " Scholarships of Innovation " for students who attend the educational institutions found in the DT.
- Educational and research programs with universities in the DT applied to ICT activities.

The benefits, initially enacted for 10 years, until 2018, were extended to the year 2029 for capital-abroad firms or 2034 for national SMEs and business. From this list, it's interesting to note that all of the incentives are strictly focused on the relocation of firms and new residents involved in ICT activities, as a tool for attracting them to the new redeveloped area. See more detail on Tables X and XX in the Annex, including the main aspects of Law 2972.

H. Direct fiscal impact of the implementation of the Technology District Law

Fiscal description of CABA: Revenue Sources

Simulations are assessments that use data available to project the expected effects of programs or policies on the outcomes of interest. They are usually used as the basis for the economic analysis of projects, especially before a reform is introduced or a project is implemented. Unlike impact assessments, these are used to simulate future potential effects. This type of analysis can be extremely useful to establish targets for probable effects of the program and to institute realistic objectives. They can be very useful for measuring the expected effectiveness relative to a range of alternative program design options. However, these are commonly used methods that depend on the availability of data that can be used to apply appropriate simulation models to the issues in question. Here, it is applied to the fiscal impact, which is a very important issue in evaluating the policy. Then, the new value capture law provides a good basis for the scenarios.

Buenos Aires City's tax revenues come mainly from two sources: tax collection (taxes, fees and contributions), and matching funds from the national government. Among the former, the Autonomous City of Buenos Aires has revenues from the Gross Income Tax, Stamp Tax, ABL (Lighting, sweeping and cleaning), Right of Delineation and Construction, Patents on vehicles in general, among others (some of which are relevant to the incentive mechanism proposed by the Law for the Promotion of Information Technology and Communications Companies enacted for the Special District Designation). More recently, the New Planning Law from 2018 establishes value capture instruments which are targeted to a fund for financing infrastructure investments as well as inclusionary housing programs and slum upgrading. Since it has not been enacted yet, it is unclear how it will be affecting the benefits already established by the ICT District Law. Several estimates related to the TD will be discussed below.

The most important tax in terms of collection is the Gross Income Tax: in the years considered - since the enactment of the ICT District in 2008-its share of total revenue collection is greater than 70%. Adding the contributions for lighting, sweeping and cleaning from real estate, both represent around 80% of the total collection of CABA in the same period. There is also one relevant source of funding for infrastructure investments, which is based on betterment contributions. Added to property taxes, these contributions were used as a way to finance the subway extension.

National Law 23,514 / 87 established the permanent fund for the expansion of the underground network. In 2012, the City of Buenos Aires, by Law 4472, ordered the creation of a "Subway Fund" intended to contribute to the financing of the provision and improvement of the services of transport of Subways and Premetro transferred to the City. The fund is formed with the following resources:

- a) betterment contribution by the owners of the properties included in the area of influence of each line or section of line that is enabled. It affects all properties located within a radius of 400 meters to the access point for each line that is established. The contribution is calculated by apportioning the total cost of the section or line that is enabled between all properties located in the area of influence depending on its distance to the nearest access point. The contribution may not exceed 15 percent of the tax value of the property. This contribution

- will be paid for five years, or until the total cost is covered, if this occurs within a shorter period. It may not annually exceed 20 percent of the territorial contribution established for each fiscal year.
- b) Property tax and fees for services: increase of 5 percent of the amount of fees for services on territorial contribution (ABL) that is collected by the municipality of the City of Buenos Aires;
 - c) Vehicles: 10 percent increase in the number of licenses on vehicles that is generally collected by the municipality of the City of Buenos Aires.

Fiscal Impact of TD (incentives and exemptions)

The fiscal impact includes negative and positive flows. On the expense side, there are expenditures attributed to the program implementation that correspond to the provision of local public goods to improve the public space (urbanization, lighting, connectivity, etc.). These count as expenditures made since the program's inception to the present that will continue over time. On the tax side, there is an opportunity cost to the tax expense resulting from tax exemptions and the tax deferral granted and projected. The positive impact of the program as a result of greater match from national tax resources can also be added, since the increased level of activity of the industries translates into an incremental collection of national taxes, a small fraction of which are then contributed to the city. Similarly, a positive impact due to incremental collection of local taxes (spillover effect on the rest of the economy around the district) can be contemplated. Also, part of the fiscal impact are the costs for credit and financial benefits granted to companies, which includes the interest rate differential on the loans granted as well as on those that will be given during the life of the program.

ICT firms can have high turnover without expanding significantly in terms of employed personnel, square meters used, etc. More precisely, there is no robust evidence that the estimated investment, occupied square meters, and employed labor force have any degree of association with the level of activity of each company and therefore of the IIBB tax (Garriga, 2014).

Strictly speaking, the Technology District began in 2008, but the fiscal impact in terms of tax benefits to the companies started as of 2010; 30 companies entered in 2013 and 2014. However, by 2014 onwards, the number of incoming firms was lower, even when the tax benefits of the following years were not reduced at the end of the tax promotion period in 2018, but rather extended until 2034 for national firms and 2029 to non-national ones. In this way, the ICT District reached the number of 200 registered companies ([Figure III-6](#)).

The cost of the exemption for the IIBB tax revenues is increasing as new companies accumulate each year to receive the benefits of the regime, adding to preferential credit, which is the bonus rate for those companies located in the district and that take a credit line from the City Bank. Based on the assumptions adopted and the methodological considerations raised, results were obtained that are presented in Table III-9. It should be noted that given the information restrictions and assumptions adopted, the results of the estimate are indicative and should be used with caution.

The current value of the estimated fiscal cost in dollars is US \$140 million. To understand the importance of this quantification, relationships or comparisons can be made. The current value of the fiscal cost for these almost equals the investment planned by this group of companies.

Moreover, the costs of public investments in infrastructure and urban upgrading are not included in this amount, so it is an underestimate.

This has an interpretation in terms of economic policy. State support for private initiatives -in terms of tax exemptions- represents approximately 1 dollar for every dollar invested by the private sector. Moreover, the results show an increasing cost over time, even when an inflation scenario is not contemplated. This rising cost is explained in the entry of new companies to the regime in each year and the growth of the activity. It is important to note that the main component is Gross Revenue Tax, explaining almost the entire fiscal cost. Similarly, given the limitations of information, a future increase in revenue attributable to the higher level of general activity in the district in other activities not promoted can be contemplated. This would naturally impact negatively on gross revenue collection.

Table III-9 Fiscal Impact of Technological District (in million U\$S)

Items	2010	2011	2012	2013	2014	2015	2016	2017	2018
Urban investment and security	4.9	5.0	7.6	7.6	7.6	7.6	7.6	7.6	7.6
Taxes	3.4	23.3	52.3	70.7	90.5	104.6	116.8	130.0	132.7
Gross Revenue Tax (firms)	2.4	20.7	48.5	66.6	85.7	100.0	112.1	124.8	128.6
Transference fees	0.6	1.7	2.3	2.0	2.0	1.4	1.1	1.1	0.0
Property Tax and Services Fees	0.5	0.9	1.6	2.1	2.8	3.2	3.6	4.0	4.1
Benefits from credits at preferential rates	0.2	0.30	0.34	0.29	0.29	0.19	0.15	0.15	0.00
Total fiscal cost	8.5	28.6	60.2	78.6	98.4	112.4	124.5	137.7	140.3

I. Land policy related instruments and property taxation

This assessment would be incomplete without adding other matters related to land and real estate. Related to real estate, properties located within the District are exempted from the payment of municipal fees for services. These benefits, initially enacted for 10 years, and then extended to years 2029 and 2034, are mainly targeted to the development of ICT activities, and on improvements or new projects constructed, as well as those rented or owned by employees working for the new registered companies. This is a key point related to new residents and firms that might increase inequalities within the area.

Second, a broader analysis needs to consider the previous estimations of the impacts on the real estate market. There is evidence that suggests that the benefits of this type of public policies and the provision (in quantity and quality) of public goods are capitalized in the value of urban properties.⁵ Following this, a simple inspection of the market value of the local properties could give a first approximation to how these policies capitalized the improvements made in the area.

⁵ In the economic literature, Oates (1969) theorizes that in a spatial equilibrium with mobile land users, rents for real estate, and the derived rents of land, vary by location within a city so as to exactly offset the value that property users place on the advantages of different locations

As a starting point, taking information in the district, between 2008 and 2018, the value of m² in dollars grew almost 175%. This is higher than the average of all CABA (129%). The median values are 145% and 111%, respectively. This greater relative growth may be attributed to the development of the Technology District and its infrastructure investments. It is expected that an increase in real estate prices would also result in higher collection of taxes. While this impact is not estimated, a greater collection of real estate tax in the district can be foreseen in the future. Another alternative to explore is land value capture, which involves capturing the increments in land prices generated by the TD intervention in order to finance needed infrastructure and services. Not only is the value generated by improvements in access to infrastructure (such as the extension of the subway line) and urban services capitalized into real estate prices,⁶ but this revenue can also contribute to other public objectives, such as economic efficiency, social equity, and sustainable urban development.

Land value capture is a broad concept. Usually, the instruments for capturing the value generated by public sector interventions and investments that affect land value are: (i) taxes, (ii) fees, and (iii) regulations (Smolka and Amborski, 2000). The ultimate goal is capturing the value generated by municipal investments to provide positive feedback by generating additional resources for new investments to help reduce the deficits in service and infrastructure provision at a local level. But in addition to the benefits in terms of public finance it can also help to improve the economic efficiency of public investments, while also contributing to social equity. At present, many LAC subnational governments are using such instruments to capture value; and in some countries, their application is even regulated by national laws. Nevertheless, value capture is not currently used to its full potential, due to either the lack of adequate legal frameworks or the failure to consistently apply regulations when they do exist (Smolka, 2013). Among the types of value capture instruments commonly used are betterment levies, selling of development rights and exactions, and land readjustment. Each instrument has advantages and disadvantages, and their efficiency and feasibility depend on multiple variables internal and external to the project. Several factors are considered of central importance in selecting the most appropriate land policy tools: the type of project (redevelopment of deteriorated areas or greenfield development), its origin (public or private sector's interest), scope of the value capture (recovery of just project cost or the full land value increment), time of collection (ex-ante or ex-post), and the degree of refinement of the tool that is required, among others.

⁶ Many empirical studies provide evidence of this fact, in Latin America and the rest of the world. Gatzlaff, D.H., Smith, M., 1993. The impact of the Miami Metrorail on the value of residences near station locations. *Land Econ.* 69 (1), 54–66

J. Land Policies in Buenos Aires: The New Value Capture Law

The new law is aimed at capturing part of the value generated from land use regulatory changes in the Planning Code that gives private sector developments greater construction capacity. The *Urban Development Law for Sustainable Habitat* indicates that the previous Planning Code (CPU) will provide the reference point for the FAR additions granted by the New Urban Code.⁷ Based on this regulatory change, the City will expand its construction capacity by 32%.

Therefore, from 2019, those who request an increase in construction capacity up to the limit set by the new Code, in addition to that of the previous Planning Code (CPU), will be required to pay for that. There is a rate applied for each of the 4 different code zones defined by the law. As a result, the tax base is multiplied by a percentage -not greater than 35% - depending on the area where the parcel in question is located. The distribution of rates by zone ranges from 10% in marginal areas up to those that reach the top of 35%; Figure III-15 shows the distribution of rates and Figure III-16 shows the resultant construction capacity. Parque Patricios and Barracas have a rate of 18%.

In this case, only those who request a construction permit that includes a differential (stipulated by the Total Occupation Factor or FAR) will be required to pay an 80% adjustment coefficient, applied to the additional building rights to affect only the salable surface of the remainder, discounting the spaces of common uses. The final incidence on land price is taken from the residual inductive technique where the rate of 18 % is calculated. The total proceeds -from all over the city- will be collected in the “*Sustainable Habitat*” Fund that is destined to finance many urban issues, including: 6% for the preservation of patrimonial buildings, 15.6% for transport and infrastructure, 15.6% for social equipment, 15.6% for public space, 15.6% allocated to social housing, 15.6% to redevelopment of villas (slums) and 15.6% to all other works contemplated in sector plans.

The areas to prioritize said destination of funds is the reverse of the catchment areas. Parque Patricio’s district and Barracas are at the midpoint of the scale of regulatory changes due to the feasible amount of funding to be collected by building rights changes, but are a second level area (out of four levels) in terms of destination of the funding that is collected within the whole city. Figure III-17 shows in the darkest colors, the neighborhoods that are prioritized as initial targets for the use of the fund.

⁷ The tax authority of the GCBA allows the creation of these fee, forcing payment, presented as an addendum to the Fiscal Code, Chapter V “Law for Urban Development and Sustainable Habitat” to Title IV “Rights of Delineation and Construction. Rights for Transferable Construction Capacity (CCT). Applicable Construction Capacity (CCA) and Fee for Construction Verification Service”.

Figure III-15 Rates according to the New Law zones (CU) in %

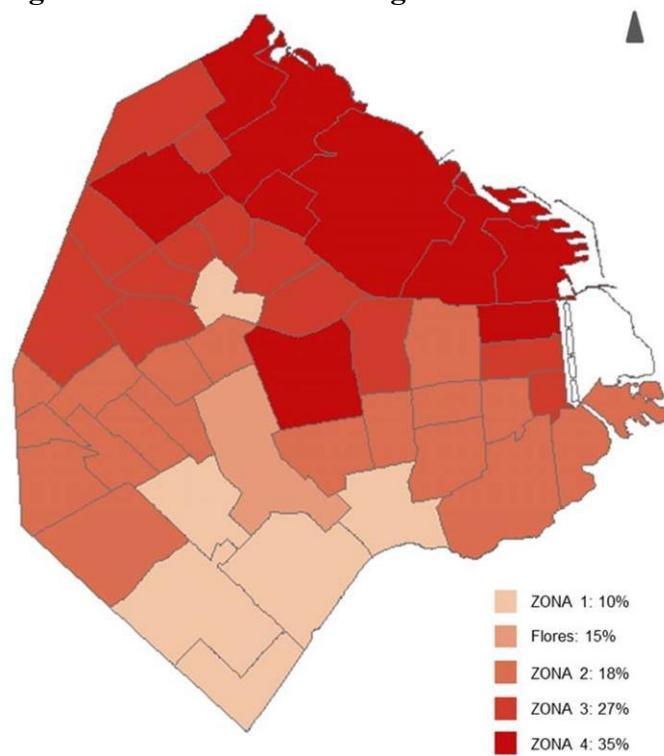


Figure III-16 Increase in construction capacity per neighborhood (in sqm)

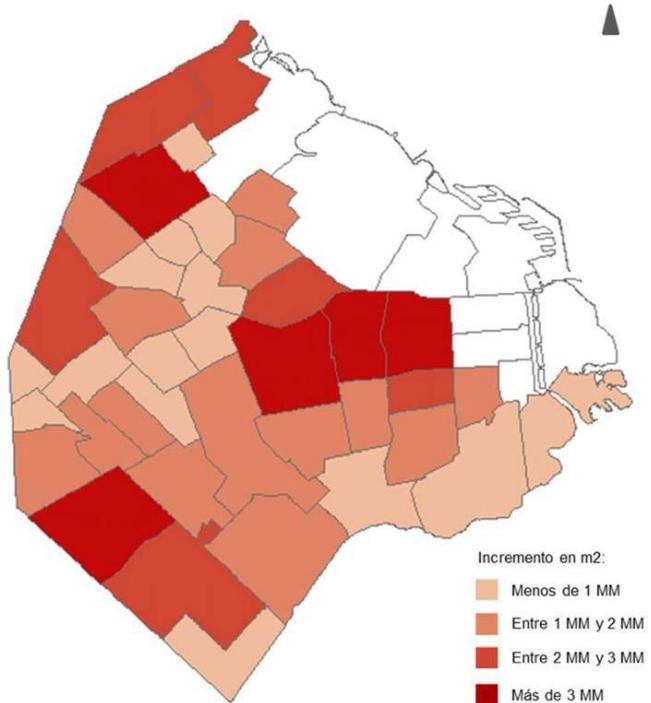


Figure III.17 Use of New Funds by Zone



The estimation of the tax base shows us that the additional building rights available are greater in zones 2 and 3 of the City (TD belongs to zone 2), but in terms of effective collection, zones 3 and 4 are where the city can obtain the greatest benefit to be allocated to different investments.

We next evaluate three different scenarios, based on different land and real estate market trends. To begin with, in all cases it must be taken into account that not everything that is built is likely to be developed using the new law. To determine what is subject to collection, the tables display the new constructive capacity that is allowed by CU, what is taxed (the differential between norms), and what is actually constructed (differential between the potential of the new code and what has already been built) in three different periods of time, representing differential trends in Buenos Aires real estate markets. This differentiation yields a percentage that when applied to the entire neighborhood produces the area to which the code likely applies.

Table IIII-10 Changes in constructive capacity due to the New Planning Code in TD

Constructed area (m ²)	Constructive capacity CPU (m ²)	New Constructive Capacity CU (m ²)	Differential CU - CPU (m ²)	Differential CU and Area built (m ²)
2.948.740	5.070.530	6.797.709	1.727.179	3.848.970

Table III-11 Value Capture Law implementation in TD, per year

Scenarios	Area applicable to VC (m2)	Area constructed per year (m2)	New buildable area (m2) (80%)	Value /m2 (U\$D/m2)	Rate (%)	Total Value to be Captured (USS)
Technological District 2007	10.591	23.601	8.473	378	18	577.138
Technological District 2011	20.987	46.769	16.790	378	18	1.143.688
Technological District 2017	8.411	18.743	6.729	378	18	458.341
Total for Bs As City						16.331.271

Note: The values are obtained from City Statistics and the Aliquot and USS/sqm values of incidence for land in the City published quarterly by the General Directorate of Data and Statistics of the SSPLANE, of the MUD&T, CBAG

What is evident is that revenue collection, as stated in the law, will be insignificant compared to the economic incentives provided to firms and new residents, and the capitalization of city investments and district designation in real estate prices within the TD area. Revenue sources with potential for financing urban projects and social inclusion might be enhanced by the additional constructive capacity, as stated by the new law. Changes in land use, should be another relevant source of revenues. However, since the law generates a fund that redistributes all the revenues collected all over the different city zones, the TD is part of the second group of neighbors more favored. It's important to highlight that the allocation of the fund resources either to finance social housing or better infrastructure and public space, can have very dissimilar impacts, one promoting inclusion while the other supporting exclusionary aims when capitalized in land and housing prices catered to new residents.

K. How to build social inclusion: Real estate markets, fiscal incentives and displacement

At the beginning of Section 1 we highlighted one of the risks of special districts as urban renovation policies: upgrading and neighborhood change may result in gentrification and displacement. In part, this is derived from losing naturally occurring affordable housing, when existing real estate and renovation begins catering to more affluent residents. The artificial upward pressure that Special Districts designation places on real estate prices—primarily by functioning as a demand shift--may lead to a mismatch between the types of housing that new residents want, what existing residents can afford, and what is available to buy or rent.

We then provided evidence of real estate prices in the TD increasing on average more than the rest of the city. In fact, this increase started before the TD Law was enacted, due to expectations of benefits that the new special district designation would produce. We also revealed at the parcel level how renovation has worked over the years, replacing existing structures and changing land uses that affected “higher and best uses,” such as parcels with single-family homes converting to commercial or multifamily buildings. Supporting agglomeration economies of TIC firms and new residents, this district is experiencing higher increases in house prices relative to other similar neighborhoods. Productivity growth in TIC firms would be expected to

lead to higher wages, while higher wages, as well as fiscal incentives to new residents, might all then have capitalized in house prices (Rosen, 1979; Roback, 1982).

Adding to that, the upward market trend might have also been reinforced by TD fiscal incentives to new residents. Subsidies, such as low interest mortgage rates and tax exemptions are exclusively targeted to new residents localized in the TD. They are also capitalized in upward real estate prices while creating greater affordability constraints for existing low-income residents, which might contribute to higher population displacement risk, especially for households in rental markets. Property owners - from all levels of income- are always allowed to reap the benefits of higher land prices, and higher rents, by selling their property. As a result, this provides even more incentive to new construction targeted to new residents working in technology firms, who can enjoy the benefits of living closer to their work, minimizing housing and transportation costs. Exactions to new firms are charged in some cities over the world in order to provide affordable housing to households working for them. Instead, in these SD zones, those are funded by the public sector.

Our data and initial analysis in Section 1 suggests that gentrification in the district had as of 2011 been limited to the northeastern area, but was already accompanied by displacement, and may impact the vulnerable residents that remain; patterns have likely accelerated in more recent years.

Considering that the tax promotion has been extended between ten and fifteen years, there is likely to be even more redistribution of benefits from existing residents to newcomers in the near future. Yet, while commercial firms located in the area are affected by higher rental prices, they can also benefit from greater markets for their products and services.

This analysis points to a key question of how to preserve affordable housing in high-opportunity SD neighborhoods. Therefore, providing housing alternatives that support inclusion and retention of existing residents can be an appropriate policy task to further explore. We base our suggestion when taking into consideration the level of increase in land and real estate prices in special districts, and the amount of resources involved in fiscal incentives to firms and new residents vis a vis existing residents.

Expanding affordable housing—giving families the ability to live in this type of economically thriving communities —remains an ongoing concern and should be a focus for the Administration. All over the city, there is an insufficient stock of affordable housing for renters with extremely low incomes and the neighborhoods targeted by the Special Districts designation, are some of those that have a larger share of lower educated population (a valid proxy for lower income households) living in rental housing.

From a fiscal and land policy perspective, the fund established by the new Land Value Capture Law has the explicit objective of contributing to social inclusion and affordable housing within the city. The city has been investing in slum upgrading, so part of the resources will certainly be allocated to such tasks in the nearby settlements. At present, the revenues should also be applied to projects identified in the new Affordable Housing Law Plan, which enables housing supply for middle income households who reside or work within the scope of the Autonomous City of Buenos Aires. Existing residents are eligible should they also be willing to become homeowners instead of renters. The Law has no specific consideration for district residents; however, the

program parameters mean that this area will be one of the places of second order to be targeted. This program has two main characteristics: i) the recipients will be family groups that receive a total income between two (2) and eight (8) times the minimum wage, and who can allocate up to 30% to pay for a mortgage receiving a subsidy and a credit at subsidized rates for acquiring a new housing.

Residents at risk in special districts might be explicitly targeted by amending the law. It would provide a counterbalancing instrument for reverting the strong bias on housing access created by all the special districts instruments that benefit new residents only, instead of existing ones. Inclusionary Zoning can provide a relevant tool for including more affordable housing within new construction, while affordable Rental Housing Programs can be run by the city government. At the same time, policies at the city levels need to shift so that major players in the housing industry (finance and development, both market rate and affordable) invent new products and practices that cause capital to flow into rental and ownership opportunities in proportions and manners that respond to changes in peak demand.

We should also note equity issues related to whether revenues collected from Value Capture, at the whole city level, should be cross-subsidizing inclusionary housing in special districts, where the collection rate is lower than in other areas of the city, and the investment rate is much higher than in others.

IV. The Case of Bogotá

In recent years, there has been a rise in the number of studies of gentrification in Latin America (Janoschka and Sequera 2016). The Latin American literature on gentrification has often relied on case studies and qualitative methodologies. This literature has produced a rich account of how gentrification takes place shaped by the State, and how different social movements have tried to resist and change displacement dynamics. Recent studies have tried to go beyond the case study approach and use quantitative data in order to analyze gentrification processes, even if there remain important differences in data availability to compare cases across countries (Rasse et al., 2019).

Less is known about how and why land policy instruments have been effective (or not) in mitigating displacement associated with gentrification in Latin American cities. Most of the studies have concentrated on how the state has created gentrification and displacement through policy, particularly urban renewal plans, economic districts and the creation of heritage historic centers.⁸ Bogotá's Fenicia urban renewal plan offers an example of an innovative way of implementing an urban renewal plan in which different urban planning and land policy instruments have been used in a novel way to minimize displacement of the original populations (Franco and Pinilla 2018). By analyzing this experience with both quantitative and qualitative methods, this document seeks to contribute to the debate on how land policy instruments can contribute to promote inclusion and mitigate displacement in Latin American cities.

This case is structured as follows. First, we present a brief literature review of the relation between urban renewal plans and displacement in Bogotá and, specifically, two cases: Bronx and Fenicia. The case of the Bronx shows an example of a traditional “bulldozer” urban renewal intervention, where vulnerable populations are displaced to make space for public space and housing development for people with higher income. Fenicia is an interesting and contrasting case where innovative urban planning and land policy mechanisms have been tested to try to avoid displacement, by accommodating the original neighborhood residents in the future development.

Second, we present an overview of some key indicators and maps of Bogotá to understand how neighborhood change, gentrification, exclusion, and displacement are occurring both at the city level as well as in our two chosen cases. Third, we model change in land values in the Fenicia case and an adjacent control case. Finally, we present the results of a qualitative analysis undertaken in our two Bogotá cases. Given the difficulty of analyzing the relationship between land policy instruments and displacement through quantitative methods, qualitative data collected in Bogotá allowed us to understand the reasons why people are being displaced as well as how policy instruments are mitigating or accelerating this displacement.

⁸ See for instance: Ciudad de México (Delgadillo, 2016), Quito (Martí-Costa, M., Duran, G., & Marulanda, A., 2016; Mérida, J. 2016), Santiago de Chile (Contreras, 2017; López-Morales, 2015, 2016; Sabatini, Rasse, Cáceres, Robles, & Trebilcock, 2017) and Río de Janeiro (Gaffney, 2016), Bogotá (Jaramillo 2006, 2015), Franco (2010), Alfonso, Jaramillo, De Urbina & Lulle (2013), De Urbina & Lulle (2015).

A. A Brief Literature Review of Urban Renewal and Displacement in Bogotá

In Colombia, beginning with the issuance of Law 9/1989 various planning instruments were created to promote the participation and protection of residents in urban renewal projects. However, both the real estate sector (interested in land rents) and the public sector (with its public space or local development discourse) have deliberately ignored this type of regulation in urban renewal projects. Thus, the purchase of land by private parties and expropriation by administrative means continued to be used as the main mechanisms for the acquisition of the necessary land in different projects, thereby displacing the inhabitants. In other words, urban renewal was practiced "as a sanitation intervention or bulldozer operation" with little citizen participation (Rendón Avellaneda, 2004, p. 89). Only recently there has been a concern in Bogotá with trying to conduct urban renewal in a more inclusive way.

The Colombian legal and urban planning framework offers a complex set of tools that seek to implement the "social and ecological function of property" defined in the Constitution (1991). In this context, the Law of Land Development (Law 388 of 1997) has a set of planning, financial and land management instruments that each city in Colombia should include in their plans. These instruments can be classified into three groups: planning, land management and financial tools. They can be used in different forms, combinations and levels to develop urban projects. However, a key challenge is how to implement them to achieve the principles of public function, general interest, equity and inclusion of territorial planning set forth in the national legal framework. Another important challenge, also set by the national legal framework, is the participation or collaboration of all agents involved (citizens, constructors, urbanists, public workers and managers) in the city's construction, management and development. Although this change introduced by the Development Law in 1997 sought to create a new sense of collectivity and democracy in urban planning decisions, in fact its implementation has fallen short. The chart below shows some of these instruments developed for urban removal projects both at the national level and in Bogota.

Table IV-1 Key urban renewal policies and planning instruments in Colombia and Bogotá

Level	Law	Common name	Urban actions, mechanisms and instruments
National	Law 9 ^a /1989	Urban Reform Act	<p>Renewal plans are aimed to introduce substantial modifications to stop physical and environmental deterioration of urban centers, in order to improve quality of living, intensive use of the established infrastructure service with a rational densification of areas for housing and services, that may bring less traffic and appropriate rehabilitation of historic and cultural assets with more efficient use of land and with greater benefit for the community. (Art. 39)</p> <p>The former owners have an inalienable preferential right to acquire properties in the renewed area. Land and buildings values will be set according to national regulations that seek for market prices (Art 34)</p>
	1991	National Constitution	The state will intervene in land use, distribution and consumption of goods and public services, in order to rationalize the economy to improve, equitable distribution of the opportunities and benefits of development and the quality of life of the inhabitants. In particular, it will ensure progressively that all people, particularly those with lower incomes, have effective access to all basic goods and services (Art. 334)
	Law 388 / 1997	Territorial Development Law	<p>In cases of voluntary disposal or expropriation of properties in urban renewal plans, the acquisition or compensation price must be paid to the former owner as a participating partner in the renewal area preferentially by an exchange with building units or rights in the new project.</p> <p>The owner or holder who chooses to receive money for compensation price may have a right of preference in the project in proportion to its value.</p> <p>In the case of owners or holders of social interest homes that do not accept the payment method or the right of preference, the manager of the renovation project will guarantee access to a housing solution of the same type, for which will grant housing subsidies (Art. 119)</p>
	Decree 190 / 2004	Land Use Master Plan (POT)	<p>One of the objectives of territorial planning is equilibrium and territorial equity for social benefit, which seeks to “(...) reduce the causes that generate exclusion, socio-spatial segregation and inequality of the population, (...) foster a socio- structural space of the city that favors social and spatial cohesion ”and“ (...) promote the inclusion of social variables in planning instruments and processes to promote identity, appropriation, belonging, participation and solidarity of the population in a common territory” (Art. 1 No.8)</p>
Local (Bogotá)	Decree 448 / 2014	Incentives for the owners for their participation in urban renewal processes**	<p>Its general purpose was organizing a government structure for decision-making in the project, with the participation of all the parties and interests. The object was to create a set of incentives to protect original owners and residents and link their interests with the new project. Also, meet the objectives of territorial planning like control urban expansion processes and reduce the causes that generate socio-spatial exclusion and segregation through efficient land use, particularly in the center of the city. Some of these incentives were:</p> <ol style="list-style-type: none"> 1. Application of the inalienable preferential right for original owners to acquire new or replacement real estate resulting from the project; 2. Compensations, charged to the equitable distribution of charges and benefits of the project, such as: a. Temporary lease for the period between the delivery of the original dwelling and the delivery of the replacement dwelling, for a value equivalent to the fee paid in the same area. b. Recognition of moving expenses on two occasions; 3. Freezing the socioeconomic stratification (for strata 1 to 3) of replacement housing for 10 years, as a measure for neutralizing possible increases in the costs of living for families that remain in the urban renewal zones. This right is loosed if the building is sold or for uses different than residence. 4. Households that live in rental housing, if they meet the requirements, will be able to receive subsidies for buying housing units within the same project (up to 20% of the housing units generated in the project have to be social or prior housing units to be allocated to tenants)

Source: Own elaboration. Note**: Even these regulations apply to the whole city, they were a complementary response to the demands of the community during the final process of consultation of Fenicia PP project (Pinilla & Rodriguez Vitta, 2018).

In the next two sections, we briefly describe two recent urban renewal projects in Bogotá: El Bronx and Fenicia. The case of El Bronx shows an example of a traditional “bulldozer” urban renewal intervention, where vulnerable populations are displaced to make space for public space and housing development intended for people with higher income. The second case analyzes a recent urban renewal project in downtown Bogotá, Plan Parcial Triangulo de Fenicia, in which innovative urban planning and land policy mechanisms have been tested to try to mitigate the potential displacement of residents by including them in the planning process and providing them with the possibility of becoming residents in the new habitational units to be developed, along with other provisions.

El Bronx

On May 28, 2016, 2,000 national military soldiers forcibly evicted 3,000 people from El Bronx and bulldozed 62 estates (Sharkey 2016; The World Weekly, 2017). People who lived in El Bronx faced social precariousness and were often low-income. In part because of the lack of formal economic opportunities in the area, locals were often involved in sex work and selling illicit substances.

Within a few months of the raid, the City began hanging banners overhead announcing the future El Bronx Distrito Creativo, slated to open in 2021. El Bronx Distrito Creativo is a placemaking effort directed by the city of Bogotá to localize creative economy activities (“la Economía Naranja”) within El Bronx. The Bronx Distrito Creativo is intended to focus on cultivating art, technology, research and development sectors. Yet, several nongovernmental organizations (NGOs) have denounced human rights violations in the police raids that took place in 2016 and also the lack of involvement of original residents of the Bronx in the plans of the future “creative district” (CPAT 2017).

Although urban renewal interventions left their mark on Bogota’s urban social and spatial fabric throughout the 20th century (e.g., Paseo Bolívar in the 20s and 30s, 10th avenue in the 50s, San Facon 60s, Torres del Parque in the 70s, Santa Barbara and Parque Central Bavaria in the 1980s), the use of urban renewal has taken on new momentum in Bogota since the late 1990s. The first major new urban renewal projects in Bogotá took place in the second half of the 1990s and were characterized by the use of public space discourse as a tool for displacing vulnerable populations. A paradigmatic case was that of the Santa Inés neighborhood (also known as El Cartucho) in downtown Bogotá, slated for the Third Millennium Park. As the image of El Cartucho became stigmatized, characterized as a hotbed of illicit activity, justification for public intervention grew. In 1999, El Cartucho was razed through violent military intervention; a total of 28 buildings were destroyed and 300 residents were displaced. This project violently expelled the vulnerable population that resided there without offering alternatives (Jaramillo, 2006). El Cartucho is an important precedent for the police and military intervention that took place in “the Bronx” neighborhood in 2016 to create a “creative district” (CPAT, 2017). Paradoxically, these urban renewal “bulldozing” interventions contrast with the progressive Colombian Law 388/1997 which established a series of new land policy instruments to fulfill the social and ecological function of property and the public function of urban planning (Fernandes and Maldonado, 2010).

Fenicia Triangle Urban Renewal Plan

In Bogotá, one of the few cases of urban renewal in which efforts have been made to minimize the displacement of the original inhabitants is Fenicia Triangle Urban Renewal Plan (Plan Parcial Triangulo de Fenicia in Spanish). The Fenicia Plan is located in Las Aguas, a neighborhood that houses low- and middle-income residents and the Universidad de los Andes. Universidad de Los Andes is a private university mostly serving students from the Colombian high-income class. The university, which is also a promoter of the Fenicia project, initially presented a plan in 2006 that sought to buy the land without considering the potential impact this project might have had on its current residents, including displacement. After rejection by the Mayor's Office, the university had to rethink its strategy and redesign the approach so the plan was more inclusive and participatory, as demanded by some professors. In addition, due to the implementation of another urban renewal plan in Las Aguas, locally referred to as Manzana 5, that led to the eviction and displacement of residents, some neighbors organized and created several committees that demanded their inclusion in the Fenicia plan. From both efforts, a commitment arose to change the way of doing urban renewal and experiment with urban planning and land policy mechanisms to provide a permanent residence for the original inhabitants of the neighborhood.

In this context, several innovative inclusion measures took place for the first time in Colombia such as a land readjustment scheme, the institutionalization of a “meter by meter” exchange (that is, the owners were offered a square meter in the new real estate developments for every square meter of their existing properties) and “Stratum freezing” for up to ten years, which means that long-term residents who choose to stay in the new buildings pay less for municipal services in the new homes (Franco and Pinilla, 2018). As we will show in our qualitative section, Fenicia's legal innovations would not have occurred without the combination of the community organization that demanded their rights, the developer's change of focus, and the experimentation with land use policy instruments.

The case of Fenicia shows that in order to promote inclusion in urban renewal processes, the existence of inclusive land planning and management policies is not enough. Community organization and neighbors' alliances with lawyers and planners are fundamental for the actual application of Colombia's law around the public function of urban planning and the social function of property. In the current context in which urban renewal projects are increasingly carried out through public-private partnerships, it is important to go beyond the "participation" of the community, understood as a mere bureaucratic process.

B. Understanding Neighborhood Change in Bogotá (1993-2017)

As a starting point we aim to describe the neighborhood dynamics in the city, by analyzing socioeconomic data available in the last two censuses (for the years 1993 and 2005), evaluated in conjunction with cadastral (land value) data (for the years 2011 and 2017). The main advantage of these census data is that the main variables of interest are available at the census-tract level, which is a fine-scale geographic unit. All analysis conducted for Bogota is at the sección urbana level (2720 units). By aggregating census tracts, we can then obtain a close geographic representation of the areas covered by the government's special district (SD) policy.

Our objective here is to recognize the pre-existing dynamics within these areas in order to provide a context for understanding change in the areas targeted by the SD policy. Following UC Berkeley's Urban Displacement Project methodology (Chapple & Zuk 2016), we develop four different indicators of neighborhood status and change: vulnerability (considered as "eligibility" for gentrification and displacement), gentrification (measured as influx of real estate investment and high-educated residents), displacement (defined as loss of low-educated residents), mixed income (a mix of high- and low-educated residents in a context of investment) and exclusion (defined by concentration of high-educated residents with little change).

Vulnerability

We used three indicators to estimate the vulnerability of *secciones urbanas* within Bogota. Using the 2005 Census we found different types of vulnerability. A *sección urbana* is considered vulnerable if it meets at least two of the three following criteria:

- a. Poor infrastructure (no telephone service and no aqueduct service): % of residents reporting poor infrastructure over the city mean (3.7%).
- b. High unemployment: % of residents reporting unemployment over city mean (4.1%)
- c. Low education: % of residents reporting up to a high school education over the city mean (43.3%).

Figure IV-1 provides a visualization of the areas where this vulnerability typology is concentrated. Most of these areas have been regularized or have their origins in informal settlements as presented in Figure IV-2.

Since the vulnerability typology is an index, we also conducted a cluster analysis on the *secciones urbanas* to understand the decomposed indicators that create vulnerability in these areas as shown in Figure IV-3. We found seven different clusters within Bogota based on our vulnerability indicators. An important cluster to note is the High Unemployment / Up to a High School Education group, which is found throughout the southern part of the city. The concentrated vulnerability in the south shown in Figure IV-3 is thus not a result of low infrastructure.

Figure IV-1 Vulnerability in Bogota 2005

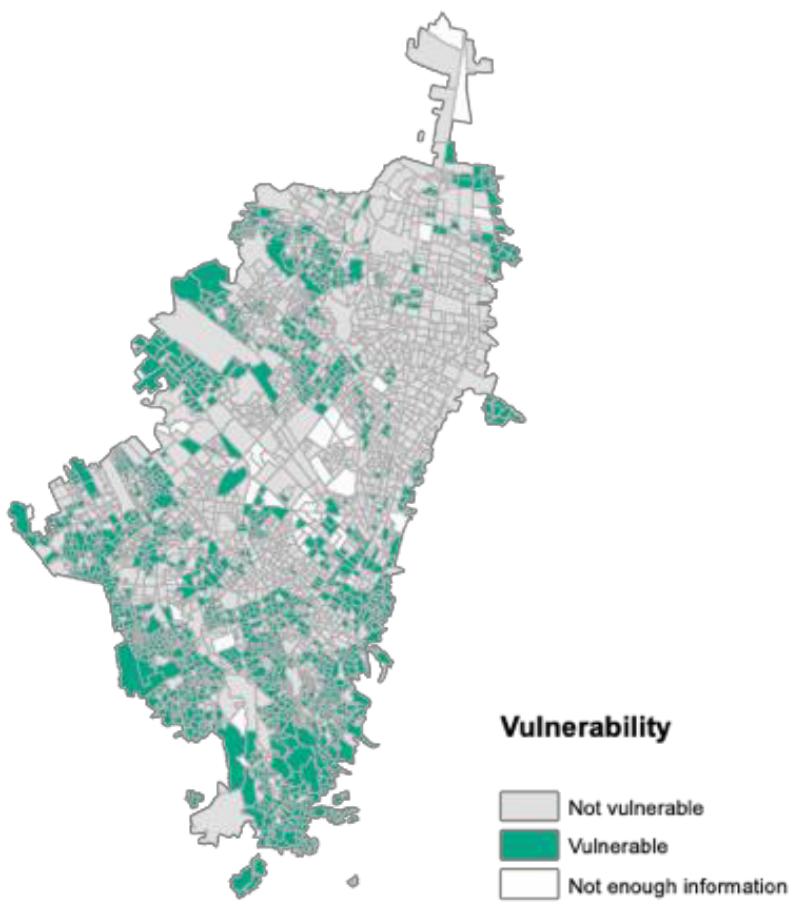


Figure IV-2. Bogotá Informal Settlements

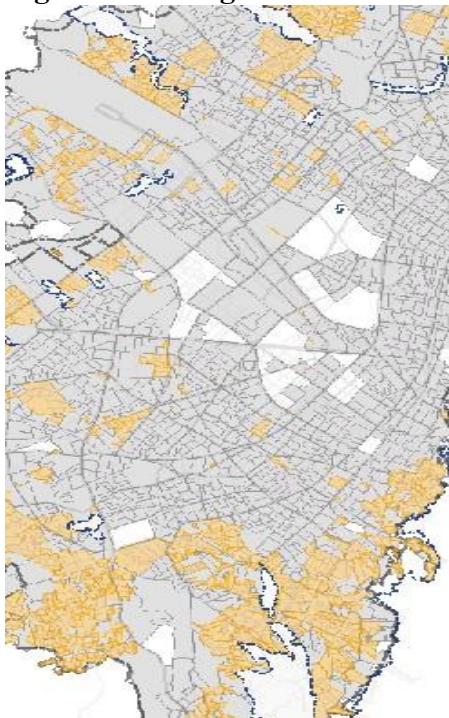
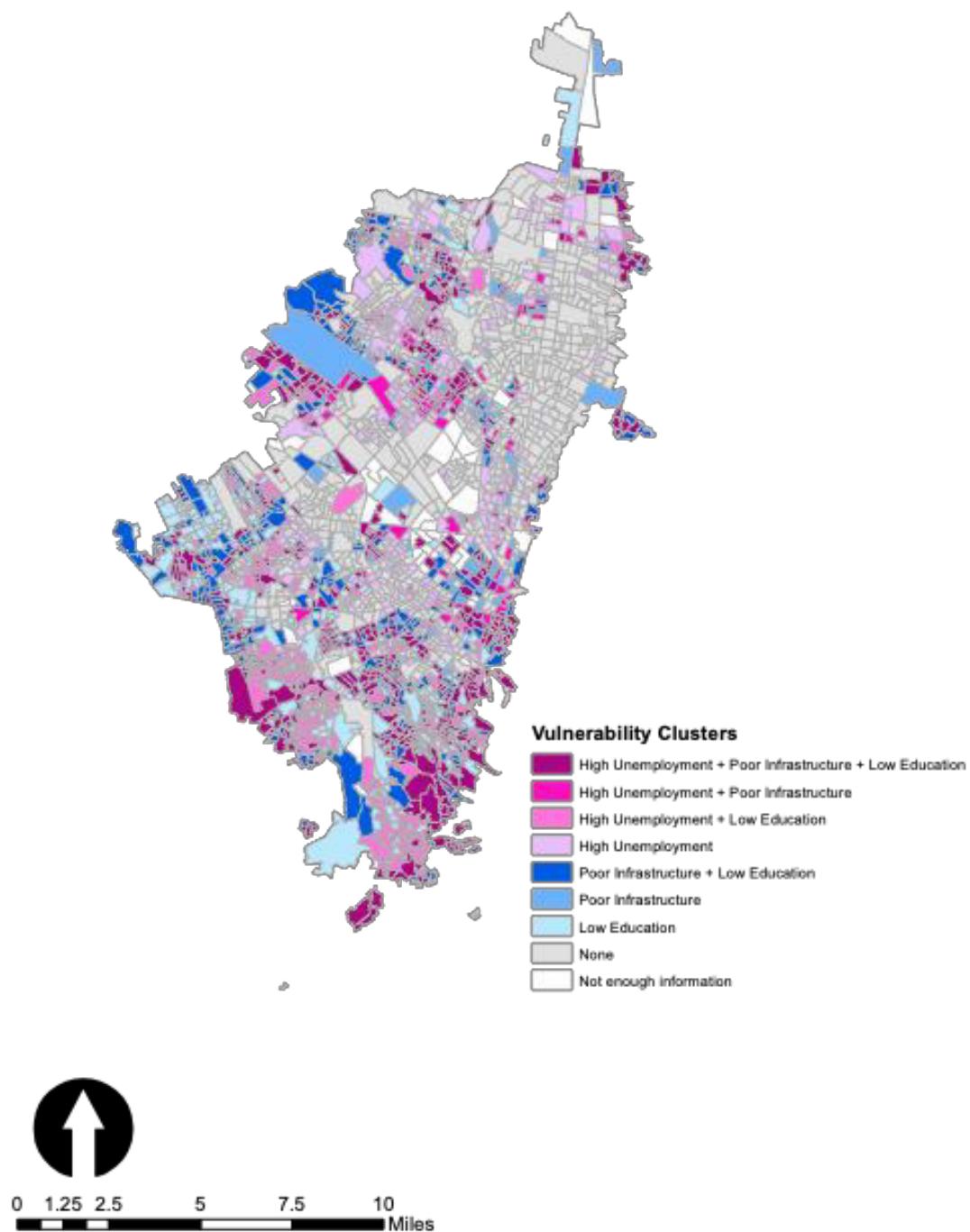


Figure IV-3. Vulnerability Cluster Analysis in Bogota 2005



Counting the number of *secciones urbanas* in each cluster, 20% of them (543), localized mainly in the peripheries, have high unemployment, poor infrastructure and low education. Only 27% of *secciones* were found not vulnerable and they are located mostly in the area known as the expanded north city center. The next table (Table IV-2) shows the distribution of vulnerability clusters in the city.

Table IV-2 Distribution of vulnerability clusters

Vulnerability	No.	Percentage
High unemployment + Poor Infrastructure + Low Education	543	20.03
High unemployment + Poor Infrastructure	78	2.88
High unemployment + Low Education	351	12.95
High unemployment	337	12.43
Poor Infrastructure + Low Education	297	10.96
Poor Infrastructure	82	3.02
Low Education	285	10.51
None	738	27.22

Source: Own elaboration

Looking at the specific cases under study, both Fenicia and Bronx are vulnerable areas in both types of analysis, as shown in the scaled maps below.

Figure IV-4. Vulnerability in city center 2005

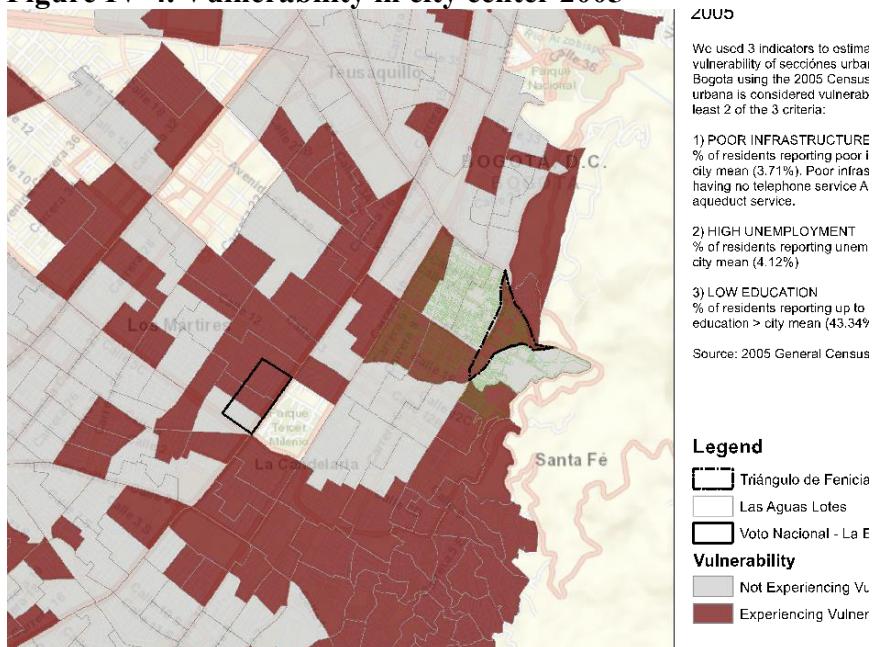
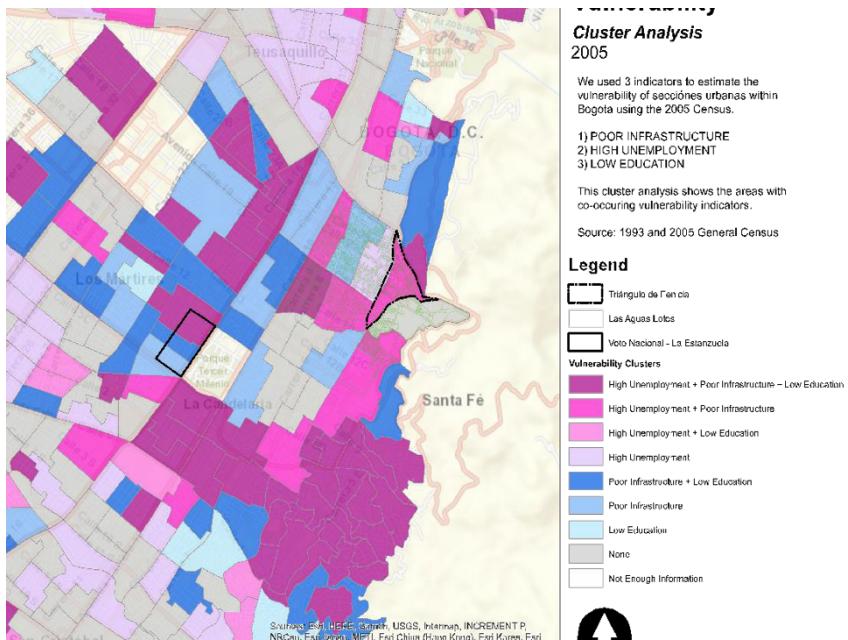


Figure IV-5. Vulnerability cluster in the area of interest, 2005



C. A typology of neighborhood change

Using census and cadastral data, we were able to characterize the different forms of neighborhood change, including not just vulnerability, gentrification, and displacement but also income mixing and exclusion. The analysis of neighborhood change builds on combinations of the following basic categories:

Displacement

We used loss of people with up to a primary education to estimate displacement in *secciones urbanas* within Bogotá, comparing the 1993 and 2005 censuses. Primary education is defined as up to elementary school education. A *sección urbana* is considered experiencing displacement if its loss of people with up to a primary education from 1993 to 2005 is higher than the city mean (14.7%).

Figure IV-6 shows the geography of displacement throughout Bogota. Much of the western and southern parts of the city have reported a decrease in the percentage of people with up to a primary school education (less than high school) higher than the city average. Note that we can interpret this indicator in different ways: it may mean that schooling is improving among residents of these areas, or that they simply had a greater share of low-educated residents in the beginning year (2003).

Figure IV-6. Displacement

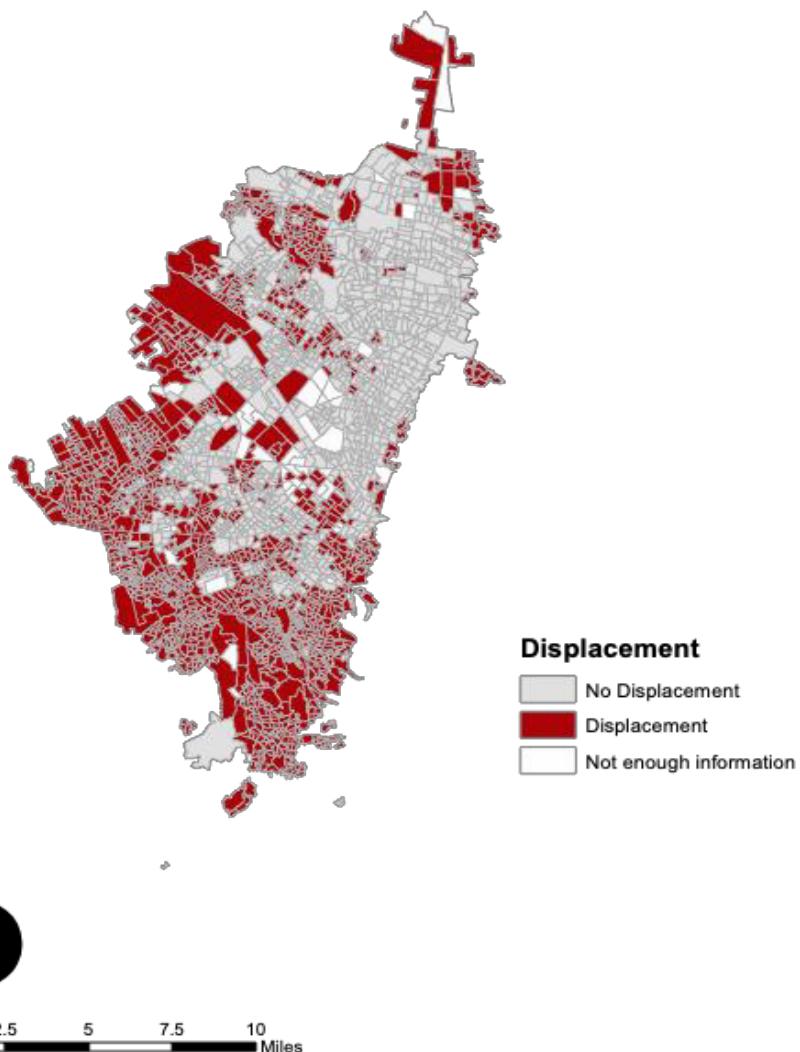
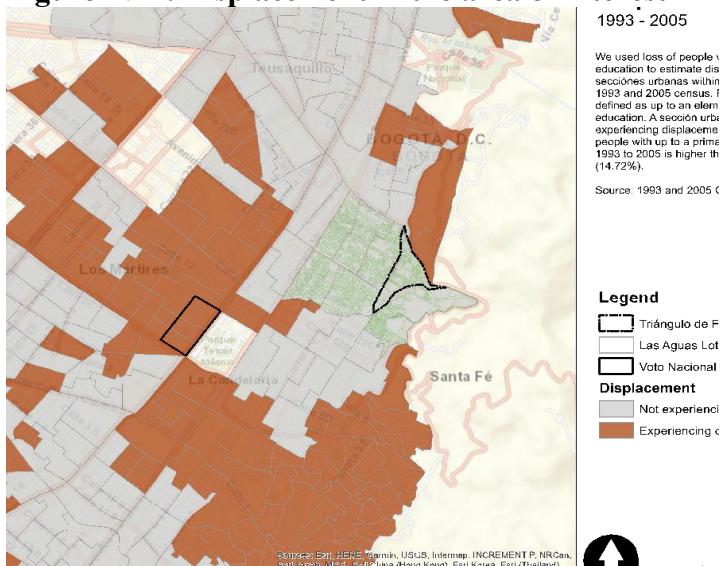


Figure IV-7. Displacement in the area of interest



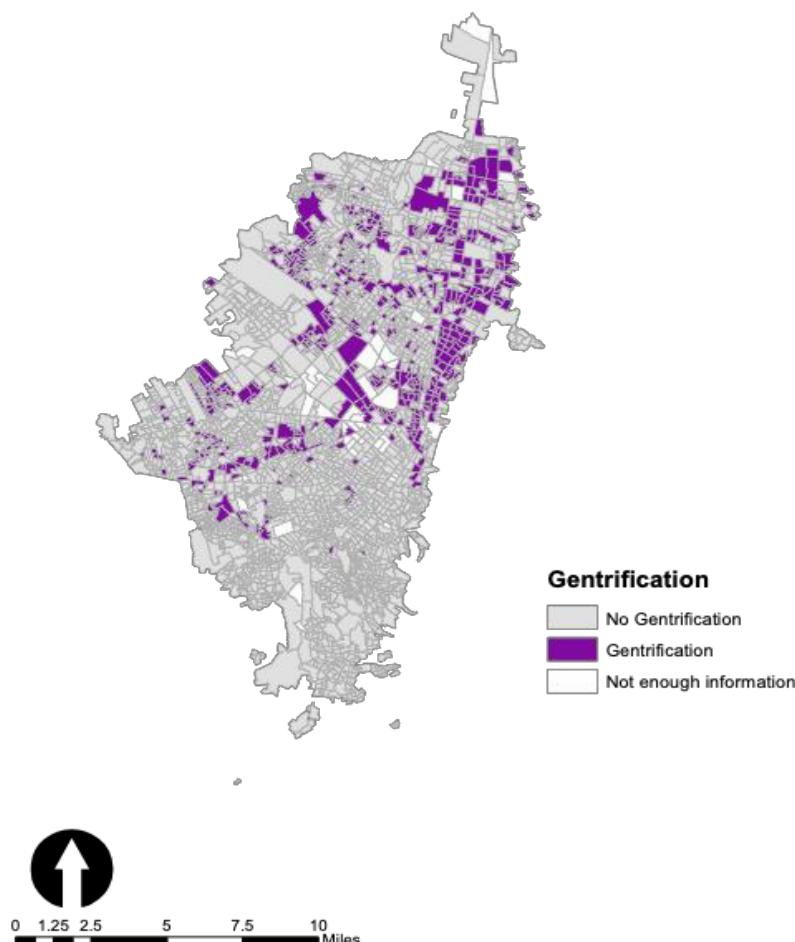
Gentrification

We used two criteria to estimate gentrification in *secciones urbanas* within Bogota using the 1993 and 2005 Census, 2006 Cadastral, and 2011 and 2017 Valores de Referencia. A *sección urbana* is considered gentrifying (Figure IV-8) if it meets both criteria:

- d. High education. Growth in % of residents reporting having a post-secondary education from 1993 to 2005 > city mean growth (1.6%). Post-secondary education is defined as any college, technical, or graduate education.
- e. Rent gap. % of residential parcels that have a high gain in land value > city mean (44%), normalized by *estrato* designations. The denominator is total residential parcels.

The rent gap is based on the theory by Neil Smith (1979) and is operationalized in this context to characterize parcels that experience a gain in land value from 2011 to 2017 that is higher than the city's average land value gain, normalized by the *estrato* of the parcel or block. Parcels that do have a rent gap may be paying less in *estrato* taxes than their land value would suggest. *Secciones* that have a high percentage of parcels that are experiencing rent gaps may be providing a price signal of desirability in this area.

Figure IV-8. Gentrification in Bogotá 1993 – 2005



Since the gentrification measure consists of two indicators, we also decompose the measure to show the geographic distribution of each variable. Figure IV-9 shows the areas that have a higher than city mean gain in people with a post-secondary education. Table IV-3 summarizes land values by estrato, and Figure IV-10 shows the areas that have a higher than city mean in residential parcels that are experiencing a rent gap.

Figure IV-9. Gentrification measure - post secondary education

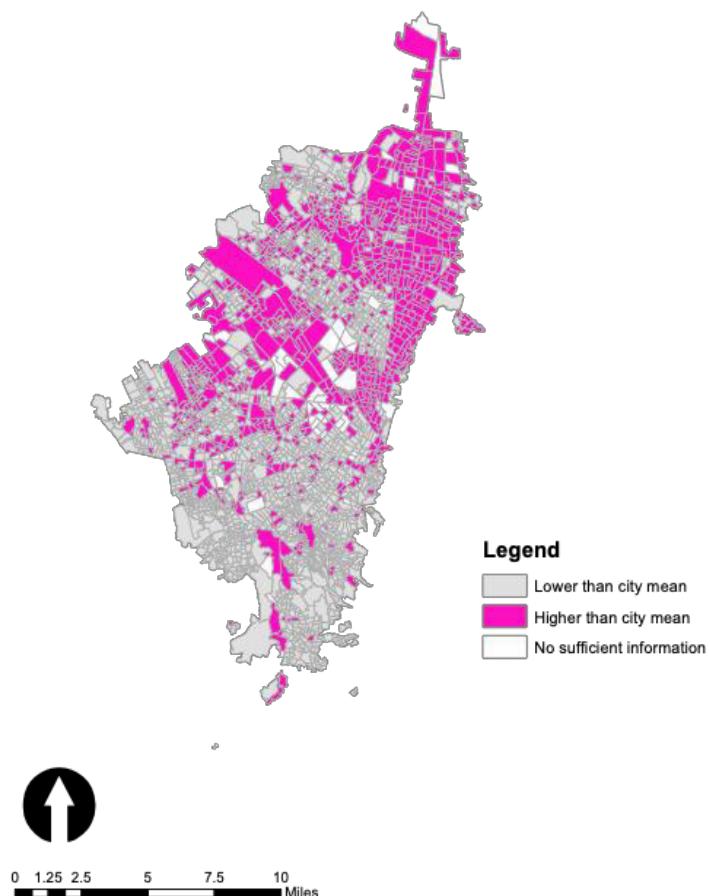


Table IV-3. Average increases in residential land value by estrato designation between 2011 to 2017

Strata	\$ COP per square meter
1	291.639
2	589.291
3	901.819
4	912.899
5	916.699
6	1.406.092

Figure IV-10. Gentrification - Rent Gap in Bogotá 2011 – 2017

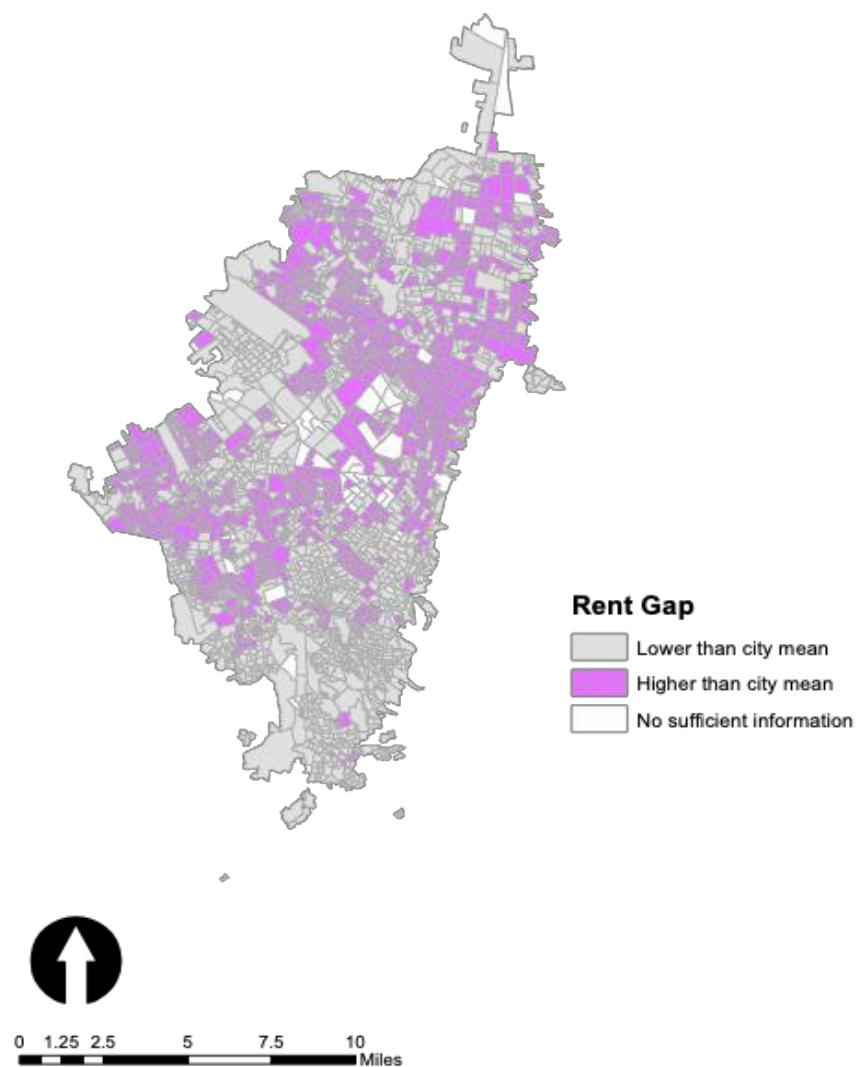


Figure IV-11 shows the distribution of strata in the city revealing the socio-spatial segregation that characterizes the city. In border areas, particularly those to the south of the city center, displacement pressures may result. Figure IV-12 zooms in on gentrification in the Fenicia case study area, showing that gentrification has occurred to the north and west, but not in the treatment area itself.

Figure IV-11. Stratification in Bogotá 2017

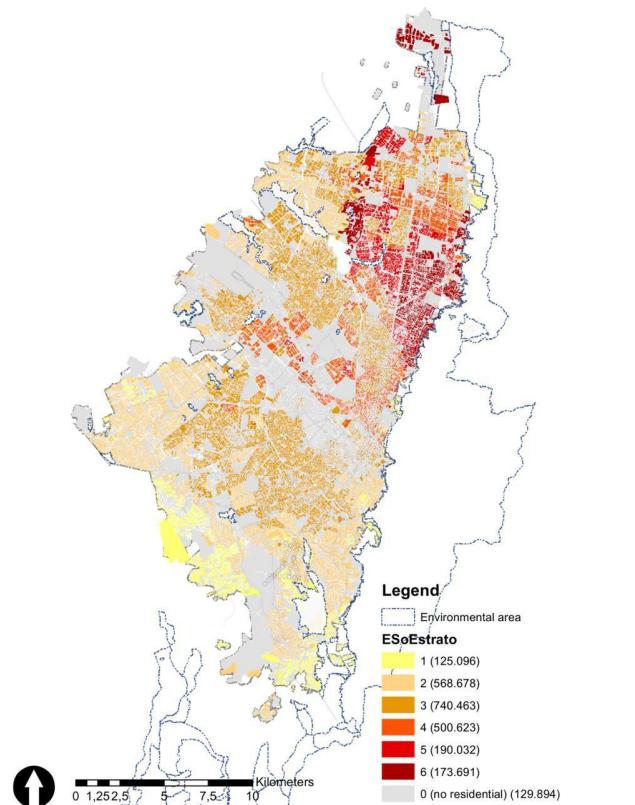
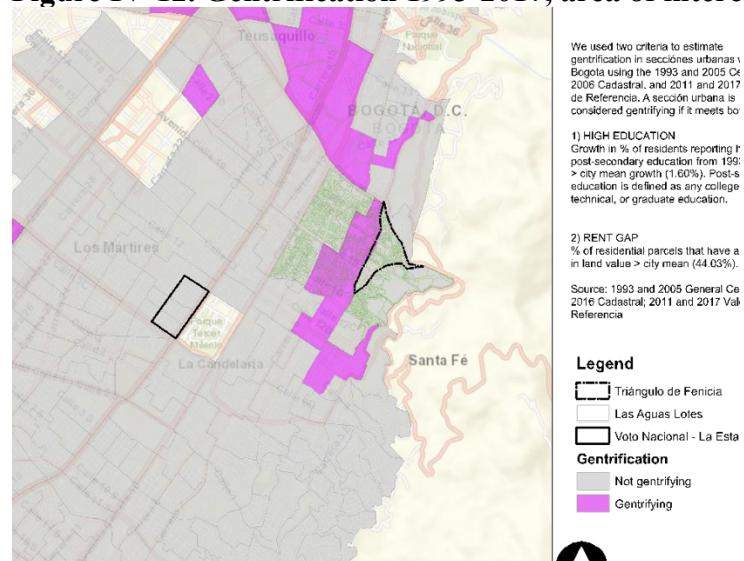


Figure IV-12. Gentrification 1993-2017, area of interest



Exclusion

Exclusion is a classification that is only reserved for *secciones urbanas* that are not classified as experiencing gentrification or displacement. The exclusion typology is given to residential parcels in the *sección* that were in the highest quintile in land value in both 2011 (adjusted for inflation) and 2017, and higher than city mean share in the highest quintile (20.56%).

Figure IV-13 shows all *secciones* that satisfy these criteria, and are not filtered based on areas that are classified as gentrification or displacement. Based on the single criteria, much of the areas that have parcels that stayed in the top quintile of land values from 2011 to 2017 are in the north eastern part of the city. Figure IV-14 presents exclusion with a focus on the Fenicia case study area.

Figure IV-13. Exclusion in Bogota (not filtered for gentrification or displacement)

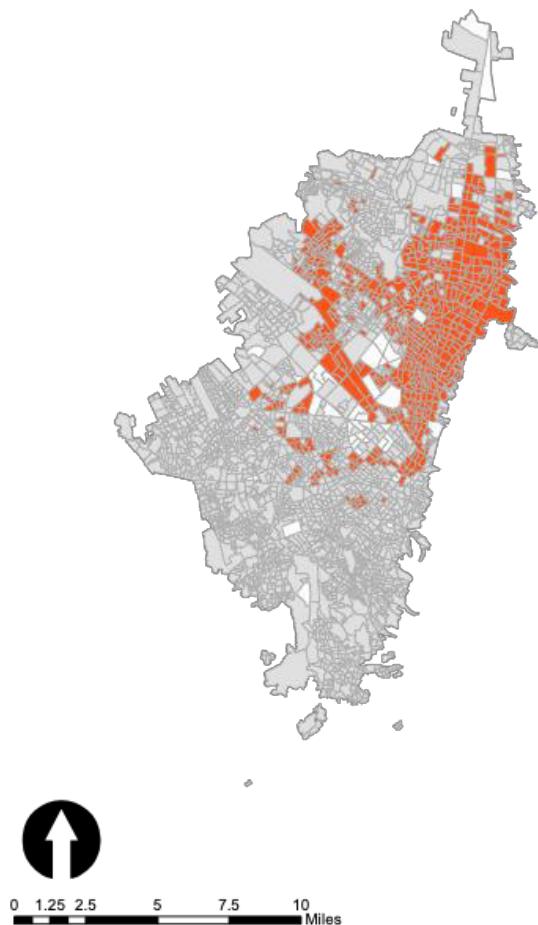
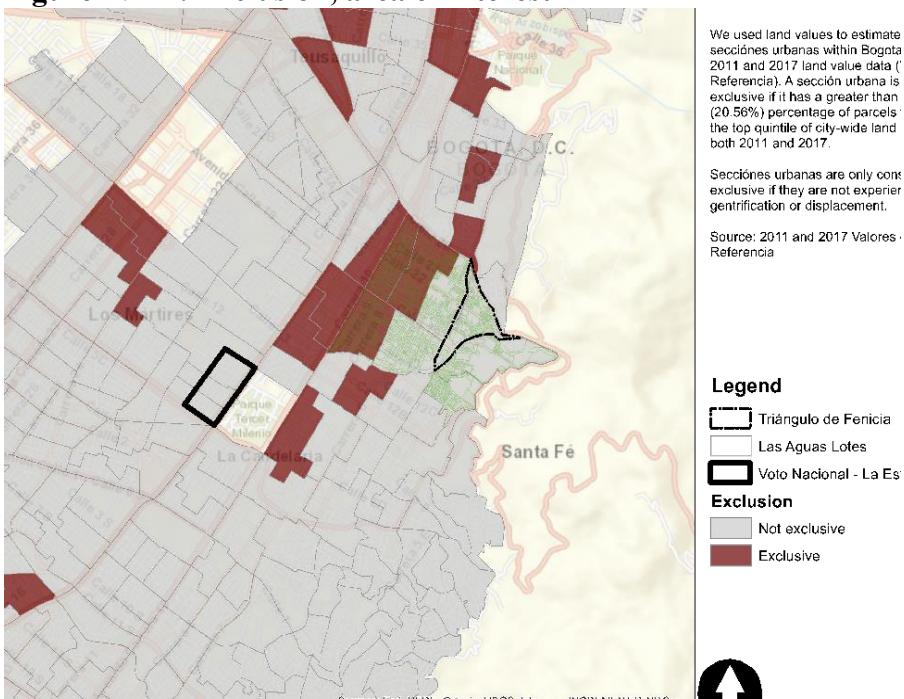


Figure IV-14. Exclusion, area of interest



Income mixing

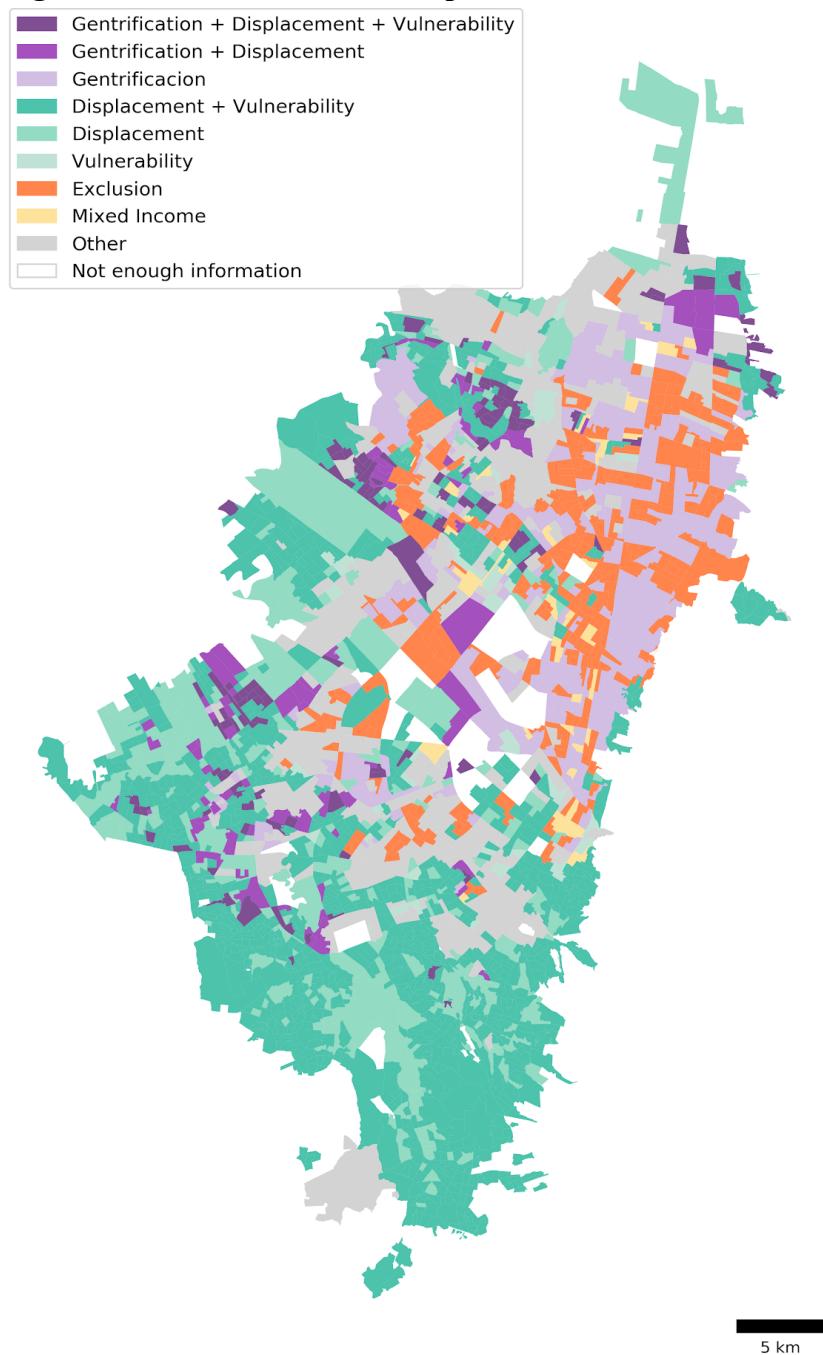
The last category encompasses areas that have both concentrations of high-educated and vulnerable residents, in areas that are either experiencing a rent gap or already inclusive.

Gentrification and displacement typology (full) in Bogota

The full typology of displacement and gentrification in Bogota is shown in Figure IV-15. This figure puts together all of the aforementioned variables into one map to characterize the types and patterns of change in the different secciones of Bogota.

Table IV-4 shows the distribution of the different typologies in the city. 38.8% of secciones in the city were classified as “displacement + vulnerability.” In contrast, only 4.65% were considered as “gentrification + displacement + and vulnerability.” In other words, disinvested-induced displacement is much more common than investment-induced displacement (gentrification), as we have seen in the Buenos Aires case, as well as other Latin American cities (Rasse et al. 2019).

Figure IV-15. Gentrification, displacement, and exclusion in Bogota 1993 - 2017



Like Buenos Aires, the majority (53%) of neighborhood change is simply vulnerability and displacement (Table IV-4). However, the incidence of gentrification across neighborhoods is slightly higher than Buenos Aires (18%), with 11% of neighborhoods (mostly in the north) in what might be considered an advanced state of gentrification, with relatively little churn or vulnerability remaining. (Note that this figure should be used with caution, given how out of date the census data is.) A much lower share of neighborhoods is exclusive (12%) or mixed-income (1.7%) than in Buenos Aires.

Table IV-4. Distribution of neighborhood change typologies in Bogota

Typology	Number of secciones	Percentage
Gentrification + Displacement + Vulnerability	126	4.65
Gentrification + Displacement	77	2.84
Gentrification	287	10.59
Displacement + Vulnerability	1051	38.77
Displacement	330	12.17
Vulnerability	46	1.70
Exclusion	292	10.77
Mixed Income	45	1.66
Other	457	16.86

The Fenicia area (Figure IV-16 and IV-17) is generally experiencing churn and vulnerability but has resisted increases in value compared to the rapidly gentrifying neighborhoods around it. In the next section we will explore some of the details that explain change in Fenicia as well as how the implementation of inclusive land policy instruments might prevent displacement as it has happened with other “bulldozer” urban renewal projects in Bogotá such as nearby Manzana 5.

Figure IV-16. Neighborhood change, full typology, area of interest

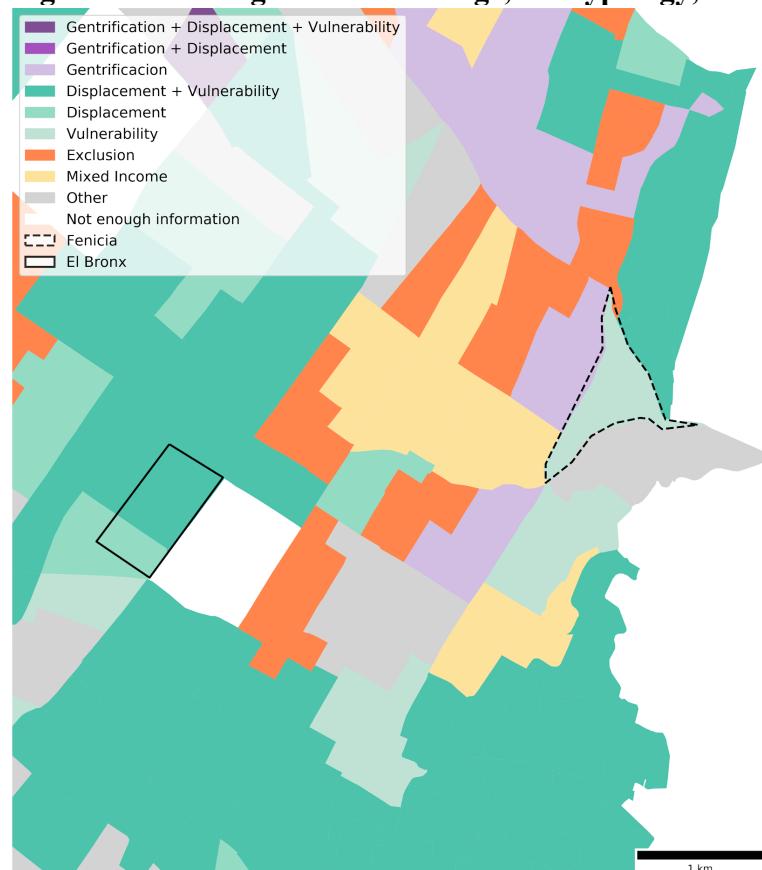
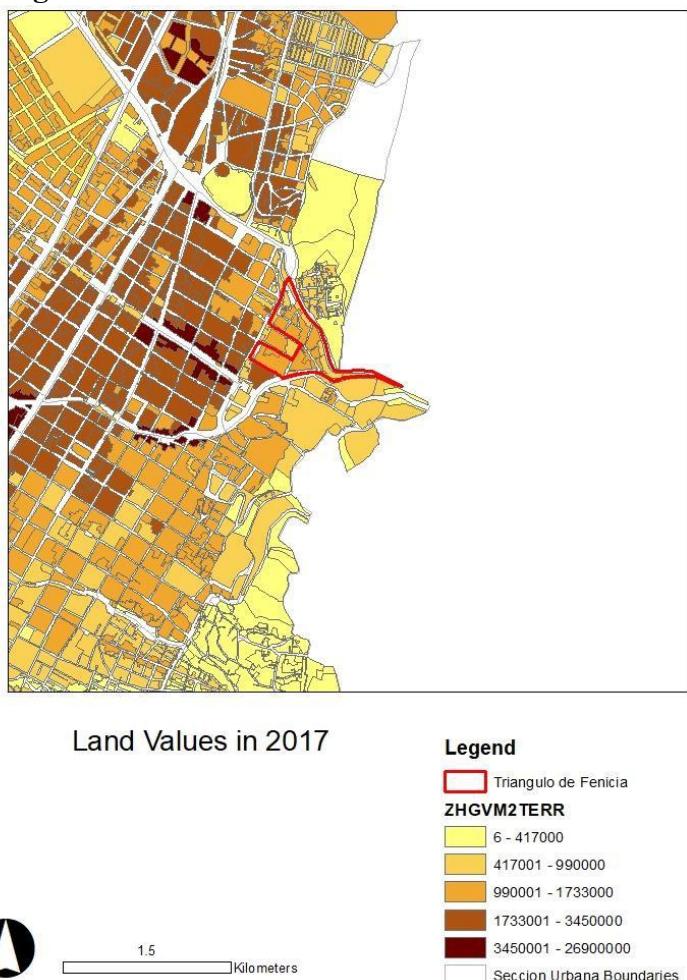


Figure IV-17. Land Values 2017



D. Triangulo de Fenicia Urban Renewal Plan: Examining its attenuating effects on land values

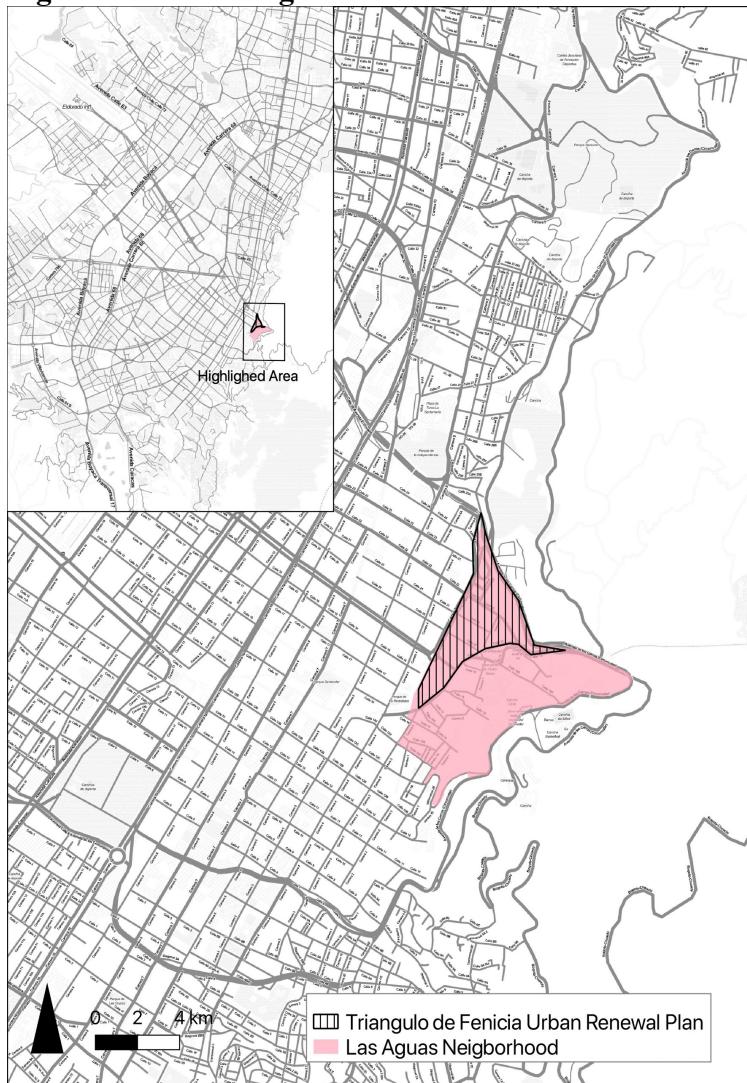
In this section, we estimate the impact of the Fenicia Renewal Plan – and the bundle of inclusionary policies that make this project stand out from business-as-usual master planning efforts in Bogota - on residential land values. Conceptually, a higher increment in land value is interpreted as an increase in the risk of the current population of being displaced. This plan is of particular interest because current low- and middle-income residents were included in the project’s planning process, who will be offered by the developers the opportunity to live in one of the new high-rises to be built. Our findings suggest that, on average, parcels in Las Aguas, where Fenica is located, experienced a lower change in land values vis-a-vis parcels in the control area, where urban renewal has followed a business-as-usual process. The mechanisms behind the Fenicia’s Plan attenuating effect is still to be determined.

The Triangulo de Fenicia plan is promoted by Universidad de Los Andes, also located in Las Aguas. As part of the renewal plan, old buildings are proposed to be demolished to build several large institutional and residential high-rise buildings. Institutional buildings are to be used by Universidad de Los Andes to expand their capacity. The first version of the Triangulo de Fenicia plan was presented by Universidad de Los Andes to city officials in 2008. This version of the plan neither included input from residents nor considered them as potential residents of the

proposed development. The plan was rejected by the local administration the same year because it did not use participatory planning mechanisms and also presented the potential risk of displacing low-income residents.

The following years local residents organized and worked with the university to change how the plan will be implemented. In the year 2010, the program Fenicia Progress (Progres Fenicia) was born. This program seeks to involve other project stakeholders, including current residents, and professors and students from Universidad de Los Andes. The first of multiple workshops with local residents and the plan promoters was conducted in March of 2012. After a two-year period of what the plan promoters referred to as the Urban Renewal Participatory Planning Process, the Triangulo de Fenicia Master Plan was approved by the local administration. New provisions in the Fenicia Urban Renewal Plan provide that current residents of the intervention area will become apartment owners in the apartment towers to be built -a mechanism called dwelling replacement (viviendas de reemplazo in Spanish) - and maintain some of the subsidies they obtain to pay for utilities.

Figure IV-18. Triangulo de Fenicia Master Plan Location

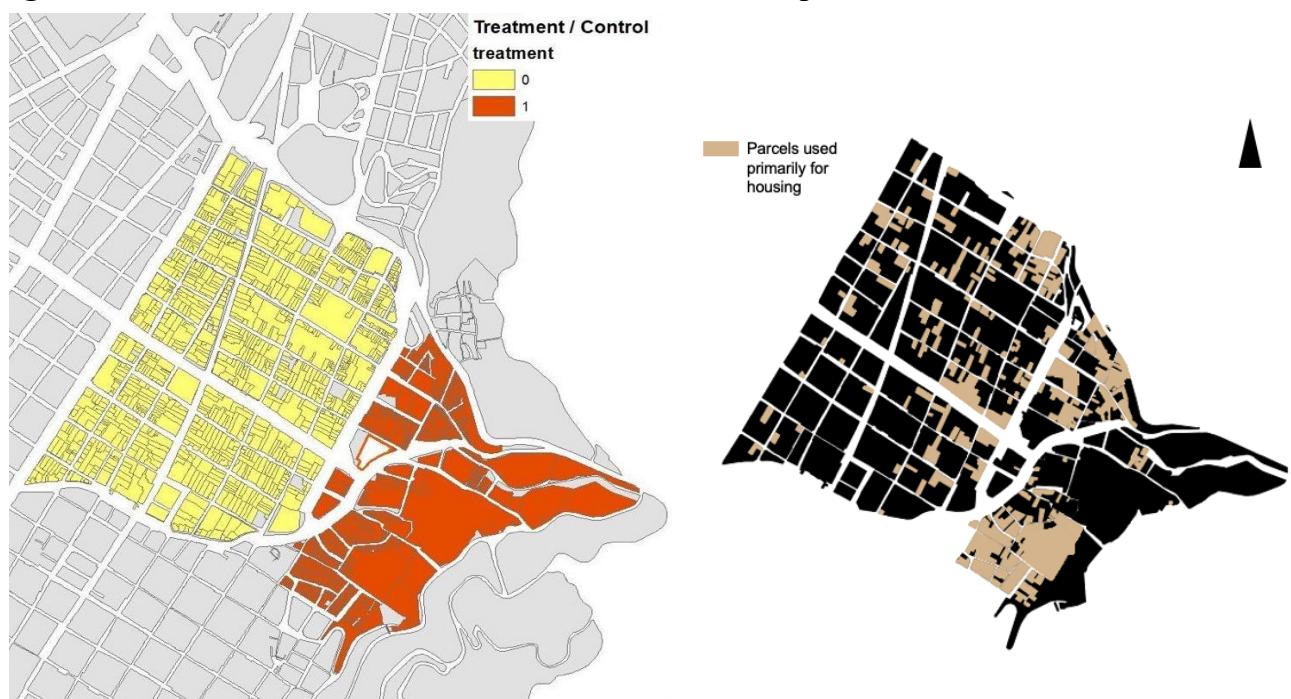


Data and Methods: Urban Renewal and (Potential for) Displacement in Bogotá

Our objective is to identify whether there is a mitigating effect for residential parcels in Las Aguas vis-à-vis those located in the control area, and to quantify such effects. Below we describe more in detail the treatment and control area (see also Figure IV-19). Our geographical unit of analysis is parcels used for housing in the base year. Land use data is available at the parcel-level for 2011 and 2018. However, land values are estimated by the city for an aggregation of parcels denominated by physical and geo-economic homogeneous areas (ZHFG in Spanish) and available for 2011 and 2017. Land value assessments are conducted by the city's cadastral office each year using a combination of real estate selling and rental prices and transactions, and are estimated for every ZHFG in Bogota. We assume parcels located within each ZHFG have the same value and land uses remain similar between the 2011/12 and 2017/18 periods.

We estimate the mitigating effects of the Fenicia Master Plan on land values using the 2011 to 2017 land value assessments. Using this six-year window is adequate for estimating the effect of the Fenicia project on land values for at least two reasons. First, 2011 was the year in which residents were included into the Fenicia project planning process; second, although the Fenicia project has not been executed, other studies suggest that increases in land values can occur way before land is actually intervened (e.g. Capozza and Helseley, 1989; Bae et al. 2003; Mohamad et. al, 2013). Finally, we believe six years may be enough for us to identify any anticipated land capitalization induced by the announcement of the Fenicia Plan along with its mitigating effects by comparing the neighboring control area - under a business-as-usual urban renewal process.

Figure IV-19. Treatment and control areas and residential parcels 2011/12



Las Aguas Neighborhood: The Treatment Area: We selected the neighborhood Las Aguas as our treatment area. We decided to expand the treatment area from the area that encompasses the Fenicia project to the entire neighborhood of Las Aguas because we are also interested in the spillover effects of the urban renewal plan. We hypothesize that parcels located in Las Aguas experienced a smaller change in land values vis-a-vis parcels in Las Nieves, our control area.

According to cadastral data, of the 1489 parcels that made Las Aguas in 2012, the vast majority were used primarily for housing (51 percent). Housing units are classified as strata 2 (27 percent) and 3 (73 percent), or low- and middle-class respectively. The median land value for parcels used for housing in 2011 was 637,500 Colombian pesos; the mean value was about 540,000, and standard deviation approximately 175,000. Other important land uses include commercial, which represent 16 percent of all parcels. Privately owned parcels for institutional uses (e.g., universities) represented nearly nine percent. Based on our observations, some of these dwellings also had retail spaces. This characteristic is not captured in the land-use data available for this research, which only details the primary use of each parcel.

The Universidad de Los Andes had played an important role in changing the character of Las Aguas. Since its foundation in 1948, the university has extended its presence in the neighborhood by buying and converting land from primarily industrial to institutional uses. Since then, the size of the university changed from approximately 25,000 square meters and a few buildings to approximately 150,000 square meters and 80 buildings in 2010. The latest version of the Fenicia urban renewal plan, presented in 2011, constitutes another phase of Universidad de Los Andes growing its campus, now also providing other urban amenities such as parks and residential units.

Las Nieves and Veracruz: The Control Area: We selected our control group residential parcels from the neighborhoods Las Nieves and Veracruz. Las Nieves and Veracruz are two continuous neighborhoods located also in the center of the city, right next to Las Aguas, but divided by the road artery Carrera 13 that also hosts a BRT trunk corridor and the Las Aguas station. The Las Nieves-Veracruz area has changed during the past two decades in part due to the expansion plan of Universidad Jorge Tadeo Lozano and Universidad Central, both located in the area.

These two contiguous neighborhoods can be considered as an adequate control area for at least four reasons. The Las Nieves-Veracruz area is an adequate control because, first, residential units are classified as in Las Aguas, low-middle class in the base year 2011/12. According to the city cadastral office, approximately 14 percent of the parcels that made our control area were primarily used for housing in 2012. That is 525 parcels (versus 763 in the treatment area). Residential units in the Las Nieves-Veracruz area are all classified as strata 3. Another indicator of class is the median land value of residential parcels. Using land value assessment data provided by the city, we estimate that the median land value in the control area was approximately 680,000 Colombian Pesos in 2011, compared to a median value in Las Aguas of about 638,000 Colombian Pesos.

The Las Nieves and Veracruz area is also a good control because it has been subject to the physical expansion of two major universities located in the area: Universidad Central and Universidad Jorge Tadeo Lozano. This expansion process has also transformed the character of these two neighborhoods - similar to the process experienced by Las Aguas with Universidad de Los Andes. The Universidad Jorge Tadeo Lozano, like Universidad de Los Andes, has significantly expanded its footprint in the control area. Just during the past two decades the university opened to the public multiple buildings as

part of its strategic plan. These include renewed modernist architectural pieces such as the Edificio Guillermo Rueda Montaña, Biblioteca Auditorio, and the Edificio de Arte y Diseño (Universidad Jorge Tadeo Lozano, [2020](#)). Similarly, the Universidad Central plan to expand its physical presence by redeveloping three blocks in Las Nieves as part of their revitalization of the city center. The project includes building two 12-story towers that were inaugurated in 2019 (Universidad Central, [2019](#)).

Identification method

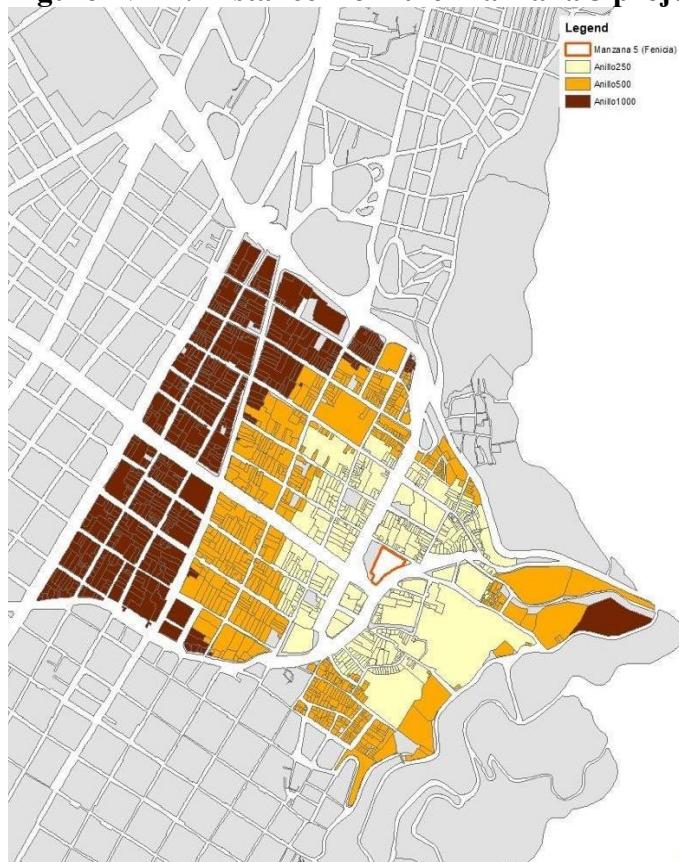
We used a spatial difference-in-differences (DID) as the primary quantitative approach to identify the effects of the Triangulo de Fenicia urban renewal plan on the increase in residential land values. Because we are concerned about the risk of residential displacement, as well as the inclusion of residents in the planning process, our analysis focuses only on parcels for which the main use was residential in the base year 2011 (Figure IV-19). Our model controls for confounding factors such as socio-economic stratification, and distance to the nearest BRT station and park for each parcel (Figure IV-20).

Figure IV-20. Parks and Transmilenio stations.



It is important to note that our model also controls for proximity to the Manzana 5 project, but excludes the parcels containing the project from the econometric analysis. Manzana 5 is also located in the treatment area (see project location in Figure IV-21), but did not consider inclusion in its plan; thus, we expect that its impacts are confounded with those of Fenicia on parcels located in Las Aguas (the treatment area).

Figure IV-21. Distance from the Manzana 5 project.



Describing overall change with cadastral data

The area of study, including Las Aguas and the Las Nieves-Veracruz area, is composed of about 5,200 parcels, which in the base year (2011/12) were used mainly for commercial activities (43%) and housing (25%) (Table IV-5 and Figure IV-22). In 2016, although most land was still used for commercial activities and housing, the number of parcels used for the former increased by approximately two percentage points and parcels used primarily for residential purposes decreased by about five percentage points. While the number of parcels dedicated to open (public and private) space increased (from 15 percent in 2011 to 21 in 2016), land used for parking also increased (from 3 percent in 2011 to 7 percent in 2016).

Table IV-5 Land Uses in the Study Area

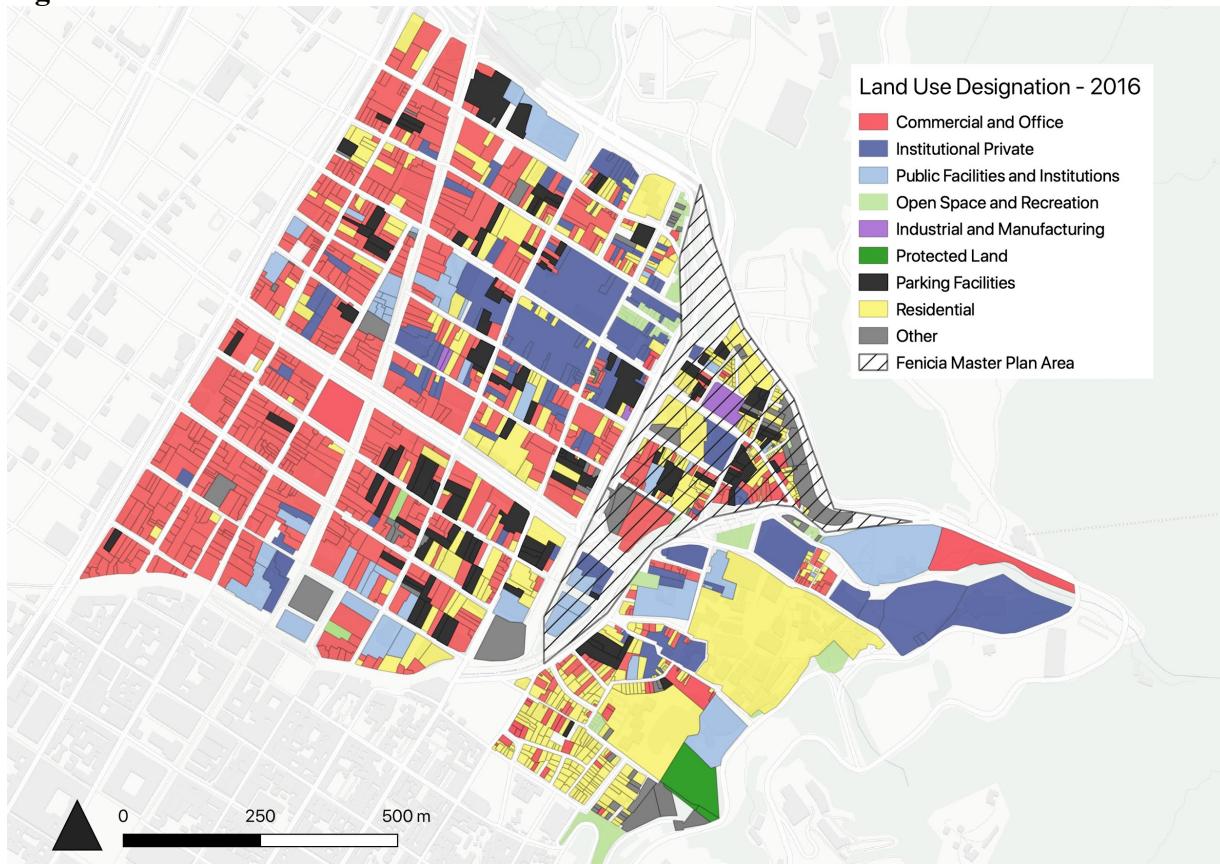
LAND USE	2012	2016
COMMERCIAL	2234	42.7%
RESIDENTIAL	1288	24.6%
OTHER	508	9.7%
PRIVATELY-OWNED PUBLIC OPEN SPACE	432	8.3%
PUBLIC OPEN SPACE	347	6.6%
PUBLIC AND GOVERNMENT LANDS	249	4.8%
OFF-STREET PARKING	173	3.3%
INDUSTRIAL	4	0.1%
PROTECTED LAND	0	0.0%
TOTAL	5235	5252

Examining only parcels on which the main land use was residential in 2011 provides a better understanding of the changes area residents experienced during the period of analysis. As shown in Table IV-6, only about 70 percent of these parcels were still used primarily for housing. Approximately 21 percent of the land was converted from residential to commercial.

Table IV-6. Land uses in 2016 for parcels that were residential in 2011

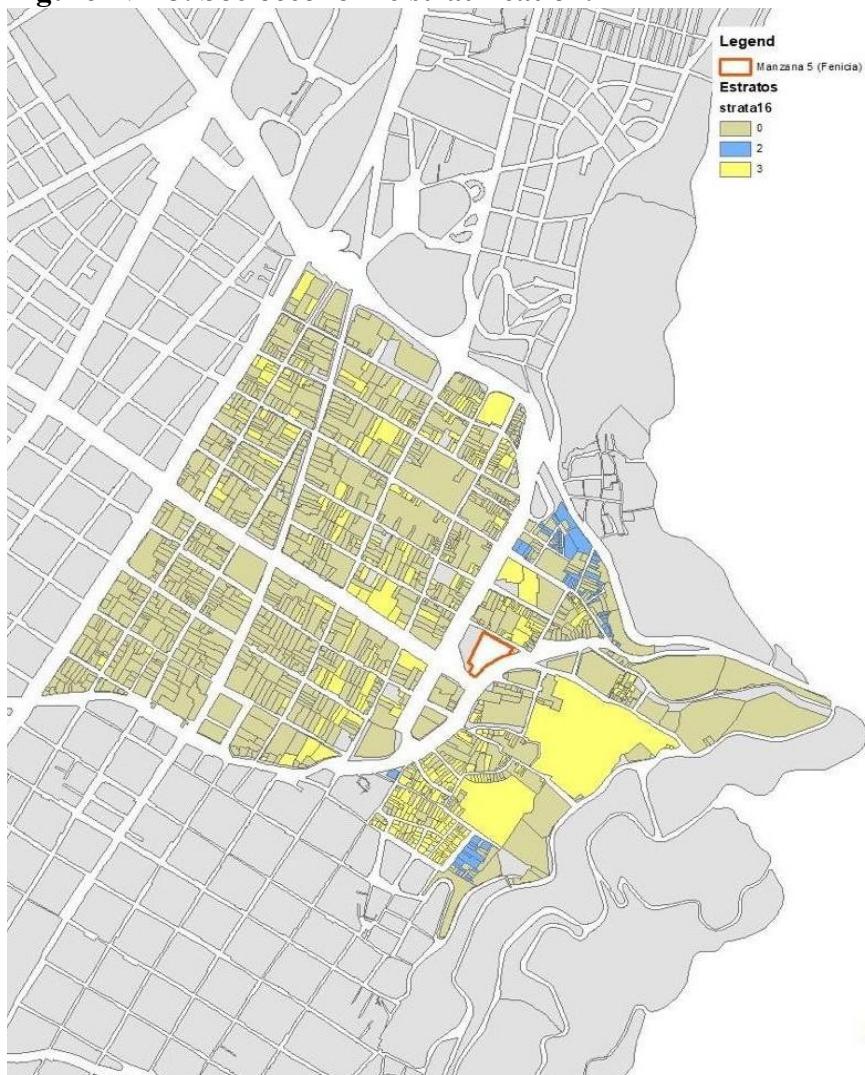
LAND USE	2016	
COMMERCIAL	260	(20.5%)
OFF-STREET PARKING	27	(2.1%)
OTHER	34	(2.7%)
PRIVATELY-OWNED PUBLIC OPEN SPACE	40	(3.2%)
PUBLIC AND GOVERNMENT LANDS	11	(0.9%)
PUBLIC OPEN SPACE	5	(0.4%)
RESIDENTIAL	890	(70.2%)
TOTAL	1267	

Figure IV-22. Land uses in 2016.



Most of the households living in the area of study were low and middle class in 2011 and 2016 (Figure IV-23). For parcels in which the main use in 2011 was residential (1288), 79 percent (842) were classified as socioeconomic estrato 3 and the remaining 21 percent as estrato 2. In 2016, although the number of parcels with residential as the main land use decreased, their distribution by strata remained almost the same (80 percent were classified as strata 3 and 20 percent as 2).

Figure IV-23. Socioeconomic stratification.

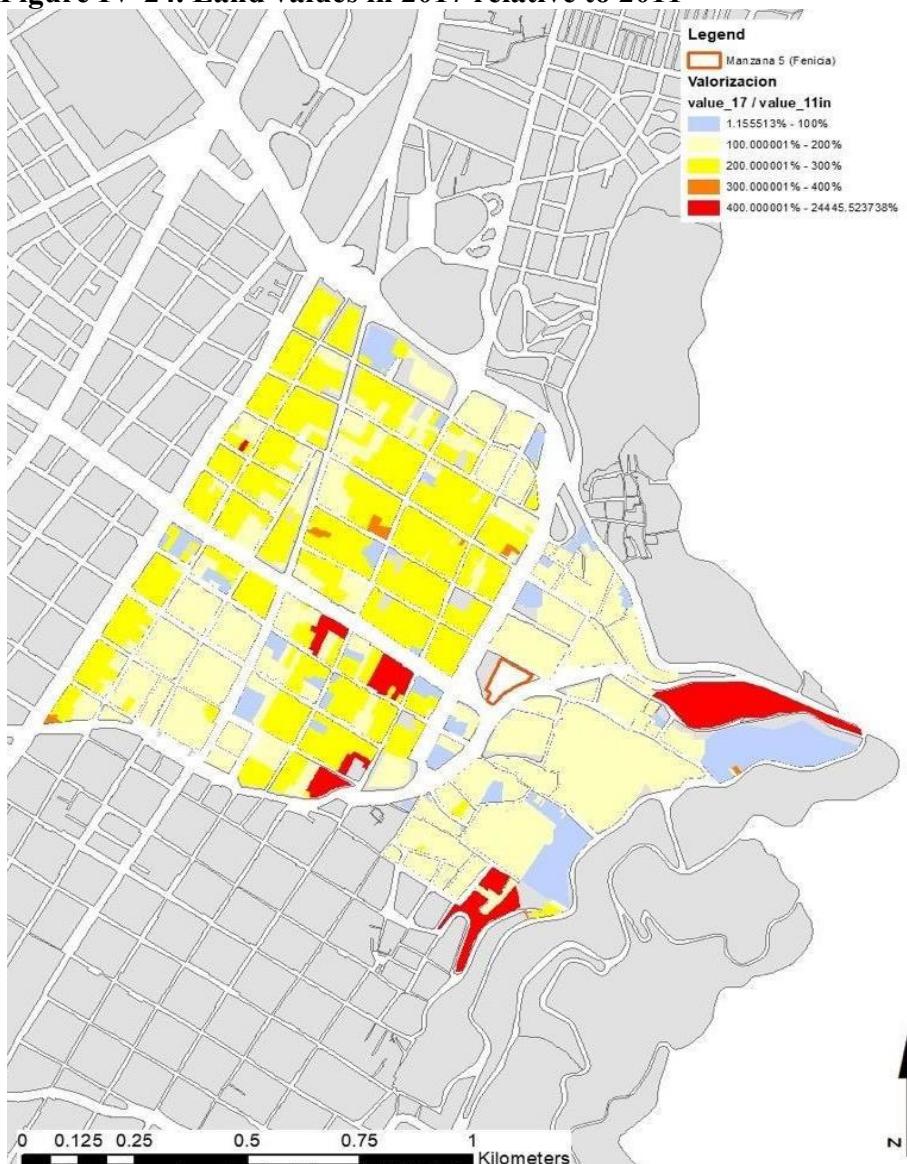


Although the housing socioeconomic stratification stayed stable during the period of analysis, land values increased considerably (Figure IV-24). The assessed median land value (per square meter) in 2011 was 680,000 COP⁹ (or 865,416 adjusted for inflation in 2017, equivalent to USD 290¹⁰); a value that almost doubled in 2017 reaching a median value of 1,800,000 Colombian Pesos (equivalent to USD 603). In addition to the overall increase in land values, the data also depicts that the distribution of land values by parcel considerably changed – the standard deviation increased from approximately 329,654 in 2011 to 964,000 in 2017.

⁹ Colombian Pesos

¹⁰ The official exchange rate as of December 31, 2017 was COP 2,984 per USD

Figure IV-24. Land values in 2017 relative to 2011



Describing change in the treatment and control areas

The first change we identify from the city's cadastral data corresponds to changes in land uses. Of all parcels used primarily for housing in 2011, only 76 and 59 percent in the treatment and control areas remained used for the same main purpose (Table IV-7). In both, the treatment and control area, a large proportion of land used for housing in 2011 were primarily used for commercial activities in 2017. However, these changes were more prevalent in the control than in the treatment area - approximately 27 and 16 percent respectively. Another important trend to note is the change of approximately 5 percent of residential land repurposed as 'other' use and three percent as off-street parking in the treatment area. These figures were near four percent and one percent in the control area respectively.

Table IV-7 Land uses in 2016 for parcels that were residential in 2011 - Treatment vs. Control Areas

Land Use	Treatment	Control
Residential	581	76.1%
Commercial	119	15.6%
Other	36	4.7%
Off-Street Parking	24	3.1%
Privately-Owned Public Open Space	3	0.4%
Public and Government Lands	0	0.0%
Public Open Space	0	0.0%
TOTAL	763	525

Table IV-8 shows how residential parcels were classified according to Bogota's socioeconomic stratification scale. The data shows that while the proportion of properties classified as strata 2 were reduced by about 2 percentage points, the proportion of properties classified as strata 3 increased by the same amount between 2011 and 2016 in the treatment area. This change suggests an improvement in the quality of the housing stock in Las Aguas, as properties were reclassified from strata 2 to 3. This finding is important because only properties classified as 1 and 2 receive public utilities subsidies.

Table IV-8. Change in Socioeconomic Stratification - Treatment vs. Control Areas

Strata	Treatment			Control		
	2011	2016	2011	2016	2011	2016
2	257	35.7%	197	33.9%	0	0
3	462	64.3%	384	66.1%	512	309
Total	719		581		512	309

Both the treatment and control areas also exhibit significant, yet dissimilar, increase in land values (Table IV-9). For example, while in Las Aguas, the median land value of residential parcels increased by approximately a factor of 1.7, in the control area that figure was 2.1. Similarly, while the standard deviation in the treatment area increased by a factor of 1.5, the increment in the control area was of about 2.5.

Table IV-9. Change in Assessed Land Values - Treatment vs. Control Area

Descriptive Statistic	Treatment		Control	
	2011	2017	2011	2017
Median	811,328	1,400,000	865,416	1,800,000
Standard Deviation	223,169	329,730	368,229	925,958

Note: 2011 values in 2017 Colombian Pesos

Modeling Land Value Change in the Treatment and Control Areas

Our first model (Table IV-10) includes only parcels that were residential in the base year (2011), but that did not necessarily remain residential in 2017. The only-residential parcels model suggests that the effect of being located in the treatment area is associated with a change in land value that is, on average, 362,853 Colombian Pesos lower than parcels located in the control area. In other words, residential properties located in the control area increased on average by COP 362,853 more than those located in Las Aguas. This result can be explained in part by the land policy instruments that were put into place to protect existing residents (described in the next section), the slow pace of redevelopment on the site, and/or the relatively fast pace of gentrification in surrounding areas (described below).

The coefficients of the control variables in Model 1 resulted as expected, with the exception of distance to Manzana 5. As distance from BRT stations or parks increases, land values decrease. We were expecting that, on average, proximity to Manzana 5 would be associated with an increase in land values; yet the sign of the coefficient suggests an opposite trend. One possible explanation for that result is that only a few properties nearby Manzana 5 were renovated, while land repurposing or redevelopment was happening in distant areas and influenced by other urban renewal projects or gentrification processes adjacent to the area under study (e.g. Torre Bacata or La Candelaria). In addition, it is possible that the redevelopment activity in Manzana 5 and Fenicia created a local disamenity effect.

Table IV-10. Model 1 - Only parcels designated as residential in 2011

Variable	Coef	Std. Err.	t	P> t	95% Conf.	Interval
Treatment Year (2011)	-348392.1 139358.4	30874.43 28695.1	(11.28) 4.86	0.000 0.000	-408933.4 83090.49	-287850.8 195626.3
Treatment x Year11	-362853.1	35588.9	(10.20)	0.000	-432638.9	-293067.2
Dist_Manzana5	108976.9	15511.06	7.03	0.000	78561.47	139392.4
Stratum	25770.15	8310.048	3.10	0.002	9475.081	42065.23
Dist_BRT	-944.4675	94.31387	(10.01)	0.000	-1129.406	-759.5285
Dist_Park	-1565.576	131.4178	(11.91)	0.000	-1823.271	-1307.88
Cons	1303185	53803.91	24.22	0.000	1197682	1408689

Adjusted r-square = .299. Number of observations = 2,576

Model 2 (Table IV-11) follows the same model specification and includes the same controls as Model 1, with the exception that it includes all parcels, regardless of its designated land use. Including all the parcels in the analysis results in a smaller effect, yet economically and statistically significant, of being in the treatment – the coefficient changed from about -363,000 in Model 1 to -290,000 in Model 2. This result indicates that there is also an effect of Fenicia on non-residential parcels. Apparently, the mitigating effect of Fenicia on land values of non-residential parcels is smaller than for residential parcels, perhaps because the land policy instruments primarily target residential users.

Table IV-11. Model 2 – Land value change, all parcels included

Variable	Coef.	Std. Err.	T	P> t	[95% Conf.	Interval]
Treatment	-355648.1	19802.73	-17.96	0.000	-394465.1	-316831
Year (2011)	78660.41	12355.77	6.37	0.000	54440.79	102880
Treatment x Year11	-288155.6	23012.92	-12.52	0.000	-333265.3	-243046
Dist_Manzana5	146705.1	8062.092	18.2	0.000	130901.9	162508.3
Stratum	13995.81	4770.756	2.93	0.003	4644.237	23347.39
Dist_BRT	-689.4011	49.21848	-14.01	0.000	-785.8785	-592.9236
Dist_Park	-878.0727	62.09682	-14.14	0.000	-999.7941	-756.3512
Cons	1089454	26775.81	40.69	0.000	1036968	1141940

Adjusted r-square = .2520. Number of observations = 10,622

Finally, Model 3 (Table IV-12) adds controls for land uses. These controls change the coefficient to -304,000; there are positive effects on land values for commercial, industrial, educational, vacant, and parking uses relative to residential. This again suggests that the Fenicia designation succeeded at stabilizing residential land values.

Table IV-12. Model 3 – Land value change, all parcels included, controlling for land use.

Variable	Coef.	Std. Err.	t	P> t	[95% Conf.	Interval]
Treatment	-299742.9	20571.77	-14.57	0.000	-340067.5	-259418.3
Year	78329.86	12312.68	6.36	0.000	54194.65	102465.1
TreatmentxYear11	-303607.2	22984.16	-13.21	0.000	-348660.5	-258553.8
LAND USE						
Residential	omitted category					
Industrial	232570.5	129680.8	1.79	0.073	-21628.58	486769.6
Public education	54901.71	32523.15	1.69	0.091	-8849.857	118653.3
Private education	79250.52	30199	2.62	0.009	20054.72	138446.3
Private recreation	-57417.82	371492.3	-0.15	0.877	-785613.6	670778
Commercial corridor	349005.5	27003.14	12.92	0.000	296074.2	401936.8
Commercial center	411678.9	38378.36	10.73	0.000	336450	486907.8
Dispersed commercial	188466.9	42318.53	4.45	0.000	105514.5	271419.3
Parking	234620.8	33719.2	6.96	0.000	168524.8	300716.9
Vacant	107971.4	32139.41	3.36	0.001	44972.02	170970.8
Non-urbanized	171068.4	115470.7	1.48	0.139	-55276.17	397412.9
Protected land	24566.2	106892.1	0.23	0.818	-184962.8	234095.2
Streets	-338812.1	154047.3	-2.20	0.028	-640774.3	-36849.94
Public space	-175630.4	46864.37	-3.75	0.000	-267493.5	-83767.28
Lot with foreign improvement	127815.4	82623.84	1.55	0.122	-34143.13	289773.8
Stratum	78585.59	9348.614	8.41	0.000	60260.53	96910.66
Dist_Mz5	101506.6	8459.997	12.00	0.000	84923.44	118089.8
Dist_BRT	-444.4126	50.7581	-8.76	0.000	-543.9082	-344.9171
Dist_Park	-793.8474	65.52008	-12.12	0.000	-922.2793	-665.4156
Cons	875818.5	36975.48	23.69	0.000	803339.5	948297.5

Adjusted r-square = .2988. Number of observations = 2,576.

E. Analyzing the Inclusive Potential of Land Policy Instruments via qualitative methods

The preceding analysis established the impact of land policy instruments on land values, but was not able to analyze displacement per se. However, collecting qualitative data in Bogotá allowed us to understand the reasons why people are being displaced as well as how policy instruments are mitigating or accelerating this displacement. Our qualitative methodology in Bogotá followed four steps:

Step 1: Preparation

The first step was to devise an appropriate set of qualitative methods and cases that would allow us to answer the two key research questions of this project. This research project seeks to analyze the displacement impact of the special districts that are increasingly proliferating in the urban centers of Latin American cities as well as suggest how particular land policy instruments might be able to mitigate displacement and promote urban inclusion. Thus, we examine neighborhood/district change in Bogotá to evaluate how land policy can best support inclusive urban development. There are two key questions we seek to answer:

1. How do special district designations impact land values, economic activity (including land value capture), gentrification, displacement, and segregation?
2. What land policy instruments are most effective at promoting inclusion and avoiding displacement in urban redevelopment and special district designations?

To gather qualitative data to answer both questions, we collected information through interviews and focus groups with the different kinds of stakeholders that are affected by special district designation in Bogotá. This allowed us to gather perceptions around what policy instruments are more effective in mitigating urban displacement in neighborhoods that have been designated as special districts.

We studied two cases in Bogotá that have gone through recent special district designations as urban renewal plans (*PP planes parciales*) in Bogotá's city center: Fenicia and El Bronx.

Our qualitative methodology focused on interviewing four different target groups that could tell us about how special district designation is leading to displacement as well as how land policy instruments can avoid or mitigate displacement:

1. Neighborhood residents and small or local business entrepreneurs
2. Community leaders, activists, local politicians
3. Policymakers (urban planners, local policymakers, policy advisors or consultants)
4. Scholars and researchers on planning and housing policy (lawyers, housing, land management, participatory urbanism, heritage experts)

Step 2: Fieldwork

Based on these 4 categories of key actors we conducted 13 interviews and 4 focus groups during March 22-30, 2019 in Bogotá by graduate students of Universidad de los Andes in collaboration with a group of graduate students from the University of California, Berkeley.

Table IV-12. Interviews conducted in Bogotá (March 22-30, 2019)

Actor	Type	Method
1. Voto Nacional		Focus Group
2. Fenicia	Neighbourhood residents	
3. Bronx		
4. Ángel Todo Copas	Neighbourhood resident, Rapper group “Todo Copas”	
5. Sandra Díaz	Neighbourhood leader, Bronx	
6. Clemencia Escallón	Housing expert and university professor (Ex. Local policy maker)	
7. Jorge Arango	Centre hospitals leader	
8. María Eugenia Martínez	Urbanist and university professor (Ex.)	
9. María Valencia	Urbanist, activist (Ex. Local policy maker)	Interview
10. David Delgado	Urbanist, Local policy maker (Director del Plan Especial de Manejo y Protección del Centro Histórico de Bogotá-PEMP)	
11. Clemencia Ibañez	Local consultant (participatory specialist)	
12. Sandra Zabala	Urban consultant (National renewal policies – urban centres - DNP)	
13. Omar Suárez	Lawyer, trust – fiduciary expert	
14. Juan Carlos Prieto	Local policy maker (Planeación Distrital, Diversidad Sexual)	

After collecting all this data, we transcribed the interviews and started to analyze results to see key emerging themes. UC Berkeley students prepared a report in English on the key findings organized around the case studies in Bogotá: Bronx and Fenicia.

The Universidad de los Andes team also did an analysis of the qualitative data. We organized our findings around seven key topics that emerged from the interviews:

1. How and why do special districts create inclusion or displacement?
2. What role does the State play in promoting displacement in special districts?
3. What are the benefits and/or costs of special district designation for affected residents? What are the costs of displacement for residents?
4. What are the factors that can avoid or mitigate displacement after special district designation?
5. Why do residents choose to stay in the neighborhood after special district designation?
6. What urban planning or land policy instruments are effective to avoid or mitigate displacement?
7. How does the experience of other special district designations in the city affect current processes?

Step 4: Key Findings

Finally, a synthesis of the analysis of both teams was done and the findings were organized in order to answer the two guiding research questions of the project:

1. How do special district designations impact land values, economic activity (including land value capture), gentrification, displacement, and segregation?
2. What land policy instruments are most effective at promoting inclusion and avoiding displacement in urban redevelopment and special district designations?

Citations from the interviews were carefully chosen to illustrate the key findings for each question.

Research Question #1: How do special district designations impact land values, economic activity (including land value capture), gentrification, displacement, and segregation?

1.1. Uncertainty and lack of information among residents about what will happen in a neighborhood designated as a special district facilitates the appearance of real estate interests (“the man with the briefcase”) who buys out property and displaces original populations.

Many of our interviewees argued that special districts tend to create displacement of the original residents because of the lack of information and clarity about what these designations mean.

They mentioned a particular practice that one of our interviewees called “el señor del maletín” (“the man with the briefcase”), referring to a person that tends to come to neighborhoods that are about to be named as special districts to buy people’s properties. This figure benefits from the lack of clarity of neighbors about what is going to happen and many often sell their property given the persuasiveness of this “man with the briefcase” and the lack of clarity around future plans.

Increasing market pressures trigger existing social networks to build capacity among communities in order to navigate opaque legal and finance systems. Many of the development and real estate deals within Bogota happen behind closed doors. The opaque legal process of having “el señor de maletín” buy up individual homes as part of a larger development effort has consistently led to neighborhood confusion. The need for technical knowledge to understand the function of *fidencias* (trust funds that are often designated to deal with land acquisition) and act within the given systems that govern real estate transactions puts residents at a disadvantage, especially in areas that are currently facing mounting market pressure to develop.

On several occasions, our interviewees talked about **real estate agents that tried to purchase land**, without residents having specific knowledge about the project. In these processes a common factor is **misinformation of the public**, which stimulates speculation and also often impacts the neighborhood social cohesion. In this regard, C. Escallón reports that decisions about urban renewal are often made without consulting residents and property owners:

*“...The way in which decisions are made leaves many gaps and creates distrust. [...] ... there is no transparency, there is no legitimate open exercise, of course ... “
[...] “¿No one was told about that, and do you know what they did? They sent a person house by house to buy the property. (...) So, people did not understand what was happening ”.*

[...] “When all the decisions are made, almost with the decree in hand, then [The District Secretariat off] Planning appears to tell the neighbors (...) They already bought, and the other made the project. Then [the owner says] "I don't agree with this". Because we do not involve the neighbors, we impose and take distance, and that has happened in almost all [urban renewal] plans.” (C. Escallón, interview, March 26, 2019).

Likewise, F. Polanía, de Las Aguas, C. Ibañez, consultant in the participation of partial plans and F. Pinilla, consultant and professor at the University of Los Andes, pointed out that traditional urban renewal projects are formulated without communicating with the community. They often begin with the purchase of land from neighbors, most of which do not have sufficient clarity about the project:

“Well, how much surprise that the community does not know anything about what is happening, (...) they were buying land, buying this block here, another block and so, we said, well here there is a problem, because the university is becoming the owner and that famous 51% scared us...” (F. Polanía, Member of the Committee No Se Tomen Las Aguas, Grupo Focal Fenicia, March 28, 2019)

“And they started buying land in a brutal way and, of course, the residents started to go, I don't know where. (...) If they refused to sell then it was simply expropriated. The land was bought or expropriated, [Bogotá's Urban Renewal Company] already entered and what the social part did was to follow up, from afar, to the people who had already moved.” (C. Ibáñez, interview, March 18, 2019)

“...[urban renewal has often been done] In conventional real estate logic, a construction firm makes the proposal... a construction firm, which has no link to this area, [...] “It implements a very typical mechanism of the conventional way that real estate works in Colombian using the term "the man of the briefcase", (...) is a man who makes the job for someone. The job is to buy the land with a single condition and that condition is very important: not disclose to who he works. Then the "man of the briefcase" has to try to convince people to sell him by telling them that the State will come to buy their land and that they will be paid at the official property valuation and that then it is better to be sold before the City arrives, or well, any other story. (...). Thus, it is an acquisition via the market taking advantage of conditions of partial information or privilege of information, etc.” (J. Pinilla, Presentation about Fenicia, March 29, 2019)

An example of this traditional way of doing urban renewal was Manzana 5, which is located next to Fenicia. Because of Manzana 5, Fenicia's neighbors perceived the work of the ERU (Bogotá's Urban Renewal Company) as negative; the Edil Farid Polanía, points out that “there was never participation”, ignoring the mandatory participatory methods and the “social function of property” that Law 9 of 1989 and Law 388 of 1997 establishes. In this project of 50 lots, 13 were expropriated administratively and the 50 lots were paid a value lower than the property valuation

(Villate; Polania, Grupo Focal, 2019). The writer Jairo Anibal Niño and the Painter Arango, owners who were in the process of expropriation joined with the Edil Farid Polanía to hold some meetings with ERU to "suspend the expropriations", and there were "two or three tables" of work, but finally, the ERU "made the expropriation and people were paid as they pleased"(Grupo Focal, 2019).

1.2. The State is perceived as an active promoter of displacement through the abandonment of certain areas of the city and the creation of a discourse of “deterioro” (urban decay/blight) that often precedes special district designation.

Many of our interviews perceive urban renewal plans as the final stage in a long process to actively divest a neighborhood of its ability to resist displacement. Urban renewal is regularly presented as the route to the restoration of economic and social activity in the center city. While neighborhoods and their residents have found ways to adapt to state disinvestment, urban renewal shifts their state of precariousness to immediate vulnerability because the residents are not able to resist displacement in the face of urban renewal.

"... it is as if it were a government's purpose to keep these spaces as insecure spaces, such as ugly, dirty spaces, where there is high drug use, to be afraid to come here."

[...] " ... The desire that this place remains in poverty to devalue the cost of land, to be able to buy and make a super building. [...] But, what is the reason to be recovering those areas? What is the reason for the fund? Because it is not crime. It is gentrification for foreigners." (Focus Group in El Bronx, March 26, 2019)

Recent *planes parciales* in Bogotá still invoke traditional urban renewal strategies, calling for the complete demolition of existing structures, such as in El Bronx. For instance, the stigmatization created around El Bronx as a site of widespread criminal activity and drug use was fundamental to the justification for the raids undertaken in 2016. The discourse of criminality is continually used to justify urban renewal and “revitalization” plans while simultaneously scattering displaced populations and causing waves of displacement over the city rather than solving the neighborhood’s social problem.

Many of our interviewees highlight the role of the State in promoting urban displacement through urban renewal plans and the discourse of urban decay and crime. This is the case of El Bronx. In fact, the State is not seen as a guarantor of rights despite the fact that the political constitution and Laws 9 of 1989 and 388 of 1997 include express actions for the protection of the inhabitants (See Table Annex XX). Our interviews also show that these protective legal frameworks are often not known by residents. Only in the case of Fenicia was there reference to them, which is due to the active process of neighborhood organization that took place in this case. In this regard, an official of the Planning Secretariat said: “as in the law there is no clarity about what participation means then the minimum is often done” (J. Niebles, contractor District Planning Secretary, Grupo Focal Fenicia, March 28 2019).

1.3. There is a perception that urban renewal plans create displacement because the housing supply planned in the new developments is often either insufficient or not designed for the income levels of the original population.

Another aspect that reinforces the view that the state promotes urban displacement is **the limited supply of affordable housing in urban renewal plans**. Both Bogotá’s Partial Plans and the

Heritage Master Plan (Plan de Manejo y Protección (PEMP)) concentrate on institutional, commercial or office uses, leaving housing aside, or to the market. In this regard, M. Martínez (interview, March 28, 2019) indicated that he has written a critique of the Historic Center PEMP, indicating the absence of housing in the Plan. Likewise, C. Ibáñez indicated, referring to the Cartucho project, that:

[after] “one year of temporary accommodation, people either located somewhere or entered regular District programs. Some acquired a house through the Popular Housing Fund. It was an offer to 130 families that were hooded and that we managed to get rid of.” (C. Ibáñez, interview, March 18, 2019)

In addition to the offer of public housing in the periphery, as a replacement for housing in the center, Ibáñez and Escallón (interviews, March, 2019) point out the responsibility given by the lack of policy actions, or the free market approach, as well:

“People have moved, there has been special mobility and brutal social mobility. What does the resident of La Candelaria mean, today he lives on 20 de Julio, because the logic of the market has moved him. While all this political and de-governability thing happens, the market does understand that Bogotá is a very rich territory, and everyone wants to be here.” (C. Ibáñez, interview, March 18, 2019)

“One area had tenants (shared housing), with very weak tenants, women who rented quarters with their families. The strength of the project has caused the owners of these properties to take people out of the tenants to turn them into shops. Much more profitable.” (C. Escallón, interview, March 26, 2019).

However, the vision of policy makers incorporates the issue of housing supply into the speech, but with emphasis on new residents and without concrete instruments to make the permanence of the original inhabitants viable. David Delgado, director of the PMEP at the District Institute of Cultural Heritage, said:

“It is very important for the Plan to keep the residents, if there is no housing, the heritage does not exist because at night the city dies. Housing is essential, it is one of the main actions.” (D. Delgado, PEMP, interview, March 27, 2019)

1.4. Special district designation risks not only displacing vulnerable populations but also their economic activities and cultural practices in the neighborhood.

Regarding the local development and the economic and cultural practices of the population of the center, several interviewees indicated that, with urban displacement, traditional trades and cultural manifestations disappear. Several say that the new urban renewal projects are also displacing the traditional activities of the center. In this regard, one of the artists of the Center, as well as a former member of the Heritage Institute, said the following:

“These [urban renewal plans] are modernization exercises, which is fine, things have to be updated.... But, don’t be surprised when they finish them, and a Tostao or a Starbucks [or other franchise shop] appears, because that is very attractive for the foreigner.... Even now small coffee shops... have already become modern. ... Plan Centro is resulting in

taking out local businesses, neighborhood stores, and to start putting Oxxos, to start putting other things that are more... yes of the modern era." [...] "... That is, it is a matter of segregation and exclusion of taking them out as any cost". (Angel, Todo Copas, interview March 26, 2019)

"It's important to look at local practices and how gentrification and displacement affect popular tradition crafts and practices related to the original place and about the economic and social linkages of the families around these practices. For example, Nuevos Ministerios Project expelled the traditional merchants of the center. But they created a movement, "El Centro No se Vende" ("The Center is Not for Sale") to fight for their rights". (M. Martínez, interview, March 28, 2019)

1.5. Increases in density associated with special districts are negatively perceived by older residents. Traditional residents value not only remaining in the neighborhood but also living in a house much more than in an apartment ("I do not change soil for air").

Another important aspect that affects displacement is the increase in density, and with it, the change in housing typologies. To achieve greater land use, real estate companies and planners resort to high-rise housing. This condition implies two fundamental changes for traditional families: (1) to move from living in a house with a garden or individual terrace, almost always shared with several nearby families, to living in an apartment of smaller area, surrounded by unknown families; and (2) to assume costs of common areas and services that were not previously paid. These conditions are relevant for the affected communities, particularly for older neighbors. In several of our interviews, older adults often argued that they did not want to "change soil for air."

The Fenicia case offers an interesting alternative as the project is considering reserving certain common areas for productive business (e.g. parking lots) that then will pay for some of the high-rise building maintenance utilities that residents that choose to stay will have to pay.

1.6. Community organization and the presence of community leaders with legal knowledge help mitigate displacement.

As for the factors that affect the mitigation of displacement, the role of citizens is a key aspect in generating resistance and changing urban renewal plans towards more inclusive policies. Our interviews show consistently that the social cohesion or fragmentation of the community are decisive factors in the effectiveness of these actions. They also show how market pressures often result in a weakening of community bonds.

When there is trust among neighbors this has allowed the formation of innovations or policy changes with more inclusive practices. But also, when these organized neighbors have had access to legal expertise, this has had positive results in terms of inclusion. The legal framework in Colombia since the 1990s has provided progressive tools. What changes, with each administration, is the rhetoric that supports the project and the way in which the management and resistance of the residents affects the plans which are finally approved or not by the State. This situation reveals participation and making claims to laws as one of the factors that affects the implementation of inclusive actions, as C. Escallón points out, as follows:

"... It is not a problem of norm, but a matter of strategy, that is to say that all the projects in which the city is already built, and more those that have residents or interested inhabitants, economic activities and others, must count for everyone, and if not, that project is not from the city. That project belongs to a company, even if it is public. "(C. Escallón, interview, March 26, 2019).

In this sense, some interviewees pointed out the positive impact of citizen participation and mobilization in the processes, pointing out the achievements made with the pressures and struggles for their rights. In this regard, the interviewees stated:

"... is that one cannot fracture the processes due to differences with the administrations." [...] "Those are really important gains that are not visible or tangible in a quantitative term, ..." (Angel, Todo Copas, March 26, 2019)

"Because then, those who had not sold still said: "they are cheating us, they are taking advantage of us. " Well, and they organized, they created an organization called "Renew With Dignity."

Particularly, the case of Fenicia allows us to understand the power of the mobilization of citizens in innovations towards more inclusive policies. In this regard, in the talk with the focus group, F. Polanía expressed the following:

"In the first instance we were going to talk about the community thing, a thing that was called the association of owners, merchants and owners was designed, that was the first citizen initiative ... the committee "No se tomen las Aguas" ("Do not take the Waters") came later, and was a little more structured, a little more thought out. The success was that it was horizontal, there was no president, but it was a more consensual proposal for participation." (F. Polanía, focus group, March 28, 2019)

"Fortunately, other actors at the University understood that this could not continue to be the case and the "Progresia Fenicia Program" was set up. The Fenicia partial plan is one thing, the Program, Progresia Fenicia, is the support of the partial plan, because it has the social issue, the economic issue, the issue of resident recognition. "(F. Polanía, focus group, 28 March 2019)

Research question #2: What land policy instruments are most effective at promoting inclusion and avoiding displacement in urban redevelopment and special district designations?

2.1. Fiducias (trust funds) have been increasingly used in Bogotá for managing special districts, particularly urban renewal plans. They have facilitated negotiating with property owners as a collective rather than individually.

Fiducias are third-party trust funds responsible for the “good faith” holding of individual or community assets, typically those invested in property. As a product of the financial industry, *fiducias* may be administered by either a public or private financial institution. *Fiducias* are financial mechanisms that allow property owners or investors to transfer their assets to the fund, which then turns the funds over to the developer upon reaching a certain degree of project

completion. This is intended to securitize the assets of investors, but it has also facilitated negotiating with property owners as a collective rather than individually. Furthermore, the financial institutions that provide and administer fiduciary products may also be investing in speculative real estate initiatives.

The fiducia is an interesting mechanism that needs to be better explored in terms of its potential for inclusive urban redevelopment. In the case of Fenicia, for instance, the existence of the fiducia has allowed property owners of the neighborhood to put their properties in different fiduciaries, which in turn allowed a collective negotiation rather than the individual expropriation system that have often prevailed in tabula rasa urban renewal programs. Yet the Bronx urban renewal operation was also done through a fiducia. This shows that it is not the fiducia mechanism itself that allows or prevents inclusion in urban renewal programs but rather the ways in which these financial instruments are used.

"Then finally the mechanisms in which one can solve the problem of fragmentation are via the market – "the man with the briefcase - or via the State/ expropriation or an intermediate route that resolves the fragmentation via an association of owners, investment promoters [Fiducia]. That is the path by which they chose to do the project and for that to be possible we spent several months in that process of "agreement / concentration" agreeing what the exchange criteria were... and that was a tremendously interesting thing, a thing that was very, very important in that process was that there was a great distrust of the information that we put on the table ... just as here there "may be cat locked up" (hidden information), suddenly those are not the costs, those costs are oversized, [or] the benefits may be underestimated. Let's say there was a distrust process and that the organized community made the decision and I think it was a very wise decision at that time given that discussion process" (Juan Felipe Pinilla, March 29, 2019)

The way the land was managed in Colombia by public entities changed substantially in the 1990s with the generalization of trust funds (fiducias). While these were not new, the products offered to the Colombian market became more sophisticated. In fact, at the time, the real estate and administration trust funds appeared, which allowed the management of the land to be carried out by the public administration, the landowners, the builders, and the real estate developers, among others. The use of the fiduciary business as a legal mechanism to manage the land has been of great importance for the real estate market. It allows the separation of the domain of the collective good without taking away the economic rights that the original owners have with the property, because with the contribution of the trust they acquire a personal right to claim from the trust the value that derives from the development or process of urbanization where the lot is located.

Law 388 of 1997 has established several ways in which the fiduciary business can operate in land management and urban renewal. For example, compensation funds that seek to ensure the equitable distribution of charges and benefits are managed through autonomous equity vehicles. Likewise, the law establishes that public entities can participate in urbanization projects and social interest housing programs through fiduciary contracts. In the case of Bogotá, in Colombia, a mercantile trust has been used as the mechanism that intermediates between the parties that act in an urban renewal process. The owners hand over the properties to the trust and the trust must provide, in the future, the compensation agreed to by the owners, either monetary or in the form of real estate. In the case of urban renewal of some areas near

the historic center of Bogotá, such as Voto Nacional, San Bernardo (public initiative) and Fenicia (private initiative), a commercial trust agreement was established.

The diversity of the legal vehicle that represents the trust has allowed the creation of operational schemes that have become a mechanism against rising prices. There are cases in which the trust simply fulfills the role of real estate administrator. But there are others in which the trust becomes a mechanism that can avoid the displacement processes associated with urban renewal, as in the case of Fenicia in Bogotá. "El Fideicomiso Comunitario" or Community Land Trust is a vehicle that seeks to maintain affordable housing prices by separating the price of the home from the value of the land on which the construction is based. The objective of trust funds is that the land is owned by the community and that the houses have individual owners. This is achieved by creating collective ownership of the land in the name of the Trust, usually for a period of approximately 99 years. The community trust was formally born in the 80s in the United States and during these more than thirty years, the country has consolidated around 260 community trusts in 46 states, Puerto Rico and the District of Columbia (Sungu-Eryilmaz & Greenstein 2007). This figure is beginning to be applied in Latin America and the case of Fenicia in Bogotá is one of the most interesting cases even if it is still an experiment in progress.

2.1. Fenicia's urban renewal plan has included a set of innovative land policy instruments that have facilitated a collective (rather than individual) negotiation of land and therefore mitigated the potential displacement impact of urban renewal. Among the most cited instruments with inclusionary potential are “reparto equitativo de cargas y beneficios” and “reajuste de tierras” (land readjustment).

2.2.1 Equitable Sharing of Charges and Benefits

The "Equitable Distribution of Charges and Benefits" is a land management scheme recognized by Colombian legislation that seeks to ensure the balanced distribution of costs and benefits of urban planning among those affected by an urban project. This is done through the allocation of urban obligations arising from the delivery of benefits, the financing of natural and artificial public systems that are considered strategic, and the determination of basic management instruments and procedures. It is a financial exercise carried out by partial plans in Colombia to establish urban development and the distribution of capital gains from land rents granted by the urban norm.

The distribution of charges and benefits responds to the principle of fairness granted by Law 388 of 1997 in Colombia, must comply with the following principles (Document GUIDE TO THE DISTRIBUTION OF CHARGES AND BENEFITS IN PARTIAL URBAN RENEWAL PLANS):

- **Equity:** All contributors have the right to participate in the benefits in proportion to their contributions and charges in proportion to the benefits.
- **Equality:** All the conditions of development must be the same for all, unless there are external restrictions or other concepts that do not allow it (for example, construction index, occupancy rate, heights, etc.).
- **Causality:** The right to benefits is only acquired with the granting of urban development charges or obligations.

“Based on the urban-real estate modeling that the plan had, it was obviously looking at what was the possible return of volume in these blocks that were razed by the project, in what way the “charges” could be paid, since this is a project that internalizes very important costs of public space, pedestrian walks and the equipment storage areas for parks, now I can show you the complete rendering ... Then the calculations told us that internalizing these costs and distributing the benefits taking into account these criteria was possible” (Juan Felipe Pinilla, March 29, 2019)

“In Fenicia, the partial Plan assumed as charges (at the cost of the project, which in the fund is reinvestment of capital gains) the replacement of homes with replacement of 1 meter area with 1 meter in the project, as well as the inclusion of other types of users and holders (merchants such as Doña Blanca) to whom the norm does not oblige to link to the project” (Decree 420 / 2014 through which the Partial Urban Renewal Plan "Triangle of Fenicia" is adopted and its annexes).

2.2.2 Land Readjustment

Land readjustment is one of the planning tools in Colombian legislation in place since 1989. It is used to develop urban projects collectively, especially in renewal areas where land partitions are smaller. It can be defined as *“a mechanism used to develop Urban Action Units, which allows a new lot configuration and the better conformation of a new urban area, and therefore guarantees an equitable distribution of benefits and burdens derived from its development.”* (Pinilla & Rodriguez, 2018; P.85). According to this, a land readjustment is one of the mechanisms used to develop the Urban Action Units of a renewal partial plan, in order to achieve, at least, the following objectives: a) the determination of the conditions of participation and benefits of the stakeholders and compulsory associated management among owners, as long as there is consensus among representatives of at least 51% of the area of the unit; (b) the possibility of using expropriation against reluctant owners; (c) the guarantee of equitable distribution of benefits and burdens; and (d) the optimal reconfiguration of property within the area to avoid parcel-by-parcel development and improve public spaces.

Fenicia is an example where the “land readjustment” mechanism has been applied in an inclusive way in Colombia.

“Fenicia”, an initiative of private agents, complies with both laws as it recognizes the acquired rights of the owners and residents (Polanía, F. Focal Group Fenicia, March 2019).

This was achieved by using the land readjustment, an instrument in which the owners voluntarily participate in the entitling of their land. With this methodology it is possible to reduce the cost of the transfer of the properties and to share the increase in land value as a result of urban renewal processes. The Universidad de los Andes proposed a model based not on the value of the land but the exchange of square meters when the owners handed over their real estate and received apartments from the new project. Land readjustment is a democratic land management tool; however, the community that lived in the Las Aguas neighborhood rejected its application. This rejection was linked to the history of the Urban Renewal Company (ERU) in the management of urban renewal projects in the center, although the "Triángulo de Fenicia" project is a private initiative with the participation and support of the district administration. The ERU emerged in 1998 during the urban renovation of the Barrio Santa Inés, in which of the 1352 families

registered in 1999, only 127 families were relocated (Rojas, 2008). Then it engaged in the urban renewal project of Manzana 5, which had displacement, paid low prices for the space, and was executed without the participation of landowners (Polanía, Focal Group Fenicia, March 2019).

Figure IV-25. Land Readjustment criteria in Fenicia

Current property type	Exchange criteria	Exchange ratio	New unit type (use)
Apartments	Built area (m ²)	1 square meter of new constructed area for 1 square meter of current constructed area.	Apartments (residential)
	Built area (m ²)	1 square meter of new constructed area for 1 square meter of current constructed area.	Apartments (residential or business in commercial zone)
Houses	Unbuilt area (m ²)	0.5 to 0.7 square meter of the newly built area for 1 square meter of current area (depending on size and location).	Business units in commercial zone
Plots	Surface area (m ²)	0.5 to 0.7 square meter of the newly built area for 1 square meter of current area (depending on size and location).	Business units in commercial zone

Source: *Pinilla & Rodriguez, 2018; p. 117*

2.3. During the implementation of an urban renewal project, several instances of legal innovation had to occur in order to produce an inclusionary policy. The collaboration between legal experts and community leaders was key in realizing this potential.

“Between 2010 and 2014, Los Andes University, as promoter of the partial plan, concentrated on strengthening the bonds of trust with these stakeholders, and established different channels and forms of communication and coordination with each group of stakeholders in order to know more about their expectations and needs with respect to the project. (...) “The results of these participatory workshops later became the starting points for development of the urban proposal” (Pinilla & Rodriguez, 2018; P.104)

2.4. Land policy and legal innovations are most effective in avoiding displacement when they are appropriated by and co-created with neighborhood community leaders rather than just implemented by planners.

“With the implementation of this project, it is expected that 900 housing units will be built, of which around 20% will be social housing (108 units), 400 will be replacement housing for the original owners and 500 units will be new housing, with which to accommodate approximately 3,100 new inhabitants that are expected in this sector of the city.” (Pinilla & Rodriguez, 2018; p. 103)

The case of Fenicia highlights the importance of a combination of factors in the formulation of policy actions among which the meter-by-meter recognition stands out. Critical factors included receiving the same original area in the new project; the obligation to generate replacement homes and businesses for residents as part of the financial year developed by the developer; the freezing of the socioeconomic stratum of the original residents (stratum 1), for 10 years; recognition of the rights of holders and traditional traders as residents; and the formulation of community support programs that build trust between the parties; among others (Decree 420/2014). Its

effects may continue to be analyzed in subsequent years, with the implementation of the project, which is just beginning to make progress.

“(...) We have some agreements, for the suspension of stratification and that, if they are going to change the stratification, the freezing of the ten years of the stratum. (...) We looked a lot at the stratification issue because we knew that a very serious gentrification process was going to happen.” (F. Polanía. Member of the Committee “No se tomen las Aguas”. Focal Group Fenicia, March 28, 2019)

2.5. Decree 448 / 2014 was key in creating trust and assuring the implementation of agreements between district promoters and affected communities. These represent a very interesting way of generating participation.

In the cases where special districts have inclusive foundations, such as the case of Fenicia, this has been due to an active organization of the community around a set of leaders who have demanded their rights to stay in the neighborhood and have negotiated a series of legal measures to guarantee this, for instance, Decree 448 / 2014 (see Table 1),

The formulation of these plans, whether initiated by public or private sector, has been led by real estate developers with little participation of the communities settled in the renewal area, as initially happened with the Fenicia Partial Plan, where development was initiated in mid-2005. Like most plans, the process begins in relatively deteriorated areas (with low land prices) through the purchase of land with mechanisms such as the “man with the briefcase” who gives partial (or false) information and ends up convincing the owners to sell their properties. This situation aroused the interest and distrust of the neighbors, who organized in 2013 through the committee “No se tomen Las Aguas” (by the original name of the neighborhood), to “stop the project” and get the attention of the authorities’ defenders of human rights. The pressure of the community motivated a turn in the way in which the project was being carried out by its promoter (Universidad de Los Andes) who initiated dialogues and work tables in order to carry out a process of participatory urban design that allowed in 2014 the generation of several agreements that served as the basis for the formulation of inclusive mechanisms that also apply to other areas of the city.⁹

This policy served as the basis for Fenicia to build the necessary confidence to advance in the “binding” formulation of the project, which establishes alternatives for linking and participation in the project (DTS and Decree 420 of 2014, Partial Plan Fenicia Triangle). Likewise, replacement units were defined with a specific target, which includes merchants and holders and not only owners. Among the fees assumed by the project, the highest percentage is in the replacement units (about 50% of the overall project charges, while in the Bronx it is close to 10%) (ERU Web Page).

⁹ Based on the stories of the interviewed actors and secondary information obtained from <https://www.facebook.com/NosetomenLasAguas/>

V. Conclusion

Cities often designate special districts as a way to attract development, concentrate activity, foster innovation, and spur revitalization. Although such districts can help overcome the challenges of infill development, they also may displace existing residents and businesses, either through direct redevelopment activity or through gentrification processes that raise land values and make it difficult for more vulnerable residents to afford rents.

In this study, we investigate two such districts: Parque Patricios in Buenos Aires and Triángulo de Fenicia in Bogotá. The cases present a stark contrast: The City of Buenos Aires selected Parque Patricios to participate in its economic district program as a technology district that receives special tax incentives, while the City of Bogotá selected Fenicia as a special urban renewal plan (plan parcial) area in part to accommodate the growth of the Universidad de Los Andes. The stated goal of Parque Patricios was to revitalize an area while creating economic development, while the goal for Fenicia was to revitalize a neighborhood area in the city center, without the same focus on innovation. However, both conform to most of the consensus criteria for special districts: they are physically demarcated, amenity-rich, and driven by leadership. According to the Brookings typology, the Parque Patricios case is essentially a “re-imagined urban area,” while Fenicia is “anchor-plus” (Katz & Wagner 2014).

In Buenos Aires, the majority of neighborhoods at the time of this intervention are experiencing an ongoing churn of low-educated residents and continue to be vulnerable. About 15% of neighborhoods have gentrified – a figure that is typical of global cities – while almost one-fourth are exclusive, with few low-educated residents moving in. Parque Patricios has experienced little gentrification except in the northeast sector of the district; in general, the area is experiencing churn and vulnerability.

Special district interventions have direct benefit not only if they enable land to switch from a low- to a high-value use, but also if the regulatory change yields social benefits in three distinct and additional ways: (1) by increasing productivity and capturing raising land values, (2) via indirect effects that interact with other market failures, such as creating formal sector jobs (if the marginal product is greater than the alternative in the informal sector), or (3) growing the urban cluster with both positive external economies and social impacts. Yet, special district policies may inadvertently cause displacement effects. When cluster expansion occurs because of labor relocation from other areas, agglomeration gains in the targeted area will come at the expense of agglomeration losses elsewhere.

Buenos Aires’ special districts have generally experienced increases in land values, and the Technology District in particular has experienced increases in land values, apartment prices, rental prices, permits, land use change to economic use, and the number of firms. Economic modeling reveals that the district designation has had a significant – and even anticipatory -- effect on land values and apartment prices. However, fiscal analysis suggests that these benefits are largely erased by their cost, an estimated \$140 million (US), although there are some intangible benefits.

Because fiscal incentives focus on new residents and firms, while the district designation places an artificial upward pressure on real estate prices, the policy may harm existing residents. In other words, a demand shift occurs that appears to lead to a mismatch between the types of

housing that new residents want, what existing residents can afford, and what is available to buy or rent. This then could lead to displacement, particularly given that this area has been prone to displacement in the past.

What land policy instruments might mitigate this impact? When we examine the potential of Buenos Aires' new land value capture law to stabilize the community, we see very low revenue potential citywide, although some revenue would likely be redistributed to Parque Patricios. Other instruments may be more effective for inclusion and are worth exploration, such as inclusionary zoning and affordable rental housing programs.

In Bogotá, like Buenos Aires, the majority of neighborhood change is simply vulnerability and displacement (53%); a much lower share of neighborhoods are exclusive (11%) but the incidence of gentrification across neighborhoods is slightly higher than in Buenos Aires (18%). The Fenicia area is generally experiencing churn and vulnerability.

In general, the Fenicia district has experienced lower land value increases and less land use change than the control area. Modeling confirms the lesser impact on land values. A qualitative analysis provides some potential explanations for why the Fenicia district has remained relatively stable. Initially, the government's active promotion of displacement, while providing little information about district plans, led to uncertainty. However, over the years, there has been considerable community organizing that has led to the co-creation of land policy innovations and the implementation of instruments like fiducias and land readjustment which have helped mitigate the risk of displacement in Fenicia.

Throughout both cases, a recurring theme is that long periods of time are necessary to realize changes. Special districts might yield enough revenue to support more inclusive development when designed to be more inclusive. As the Fenicia case shows, they will likely have minimal impact in terms of land value increase but they can help mitigate displacement. Therefore, district designations might exacerbate existing patterns of gentrification with displacement when they lack protections and incentives for existing residents built into urban land tools. For example, our two cases demonstrate that special districts exacerbate inequalities when most of the incentives are targeted to new residents rather than including the existing community. When subsidies such as low interest mortgage rates and tax exemptions are exclusively targeted to new residents of the special districts, they are capitalized in increasing real estate prices, thereby creating greater affordability constraints for existing low-income residents, especially for households in rental markets.

This raises serious questions about whether special district designations are worth the effort. At the very least, we call for assessing this type of place-based policy considering not only their physical and economic development impacts, but also their fiscal and social effects.

Finally, the contrast between the two cases reveals how the complications of assessing districts quantitatively: there are not only challenges in measuring costs and benefits, but also in ascertaining who is affected by each. Qualitative research in the form of in-depth interviews can help reveal unintended negative consequences of district policies.

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VII. Annex

Table VII-1. Main aspects of Law No. 2,972 on the Promotion of Information Technology and Communications Firms

Appearance	Articles	Description
Location	1st	It establishes the creation of the Technological District of the Autonomous City of Buenos Aires, within the area comprised of Sáenz, Boedo, Chiclana, Sánchez de Loria and Brazil Avenues, Alberti and Manuel García streets and Amancio Alcorta Avenue, on both sidewalks.
Law Enforcement Authority	4th and 5th	The Ministry of Economic Development is the Law Enforcement Authority, who will jointly coordinate, for certain issues, with the Ministry of Education
Accession to the National Regime	8th and 29th	The Autonomous City of Buenos Aires adheres to the Regime of Promotion of the Software Industry, in the terms of the National Law N° 25.922; as well as National Law No. 25,856
Recipients	2nd	Beneficiaries of the promotion policies established by law, are the natural or legal persons based or who reside in the District, whose main activity in the same refers to Information and Communication Technologies (ICT).
	22	The educational institutions established or established in the District, whose activities are concentrated in the area of ICT, are beneficiaries of the incentives provided for in the Law. The benefits reach Universities and University Institutes, and academic Research and Development Centers, Vocational Training Centers and Teaching Institutes, which are incorporated into official education plans and recognized by the Ministry of Education.
Benefits	9 to 18, inclusive	Companies located in the District receive special tax treatment, which includes the exemption or deferral of the Gross Income Tax, the extinction of the Stamp Tax, and the exemption of the payment of the Contributions of Lighting, Sweeping and Cleaning, Territorial and of Pavements and Sidewalks, and of the payment of Right of Delineation and Constructions. In turn, the law establishes the creation of Non-refundable Subsidy Programs, Preferential Credit Lines by the City of Buenos Aires Bank, and the making of contributions, also by the Bank.
District Internationalization	28	The District's internationalization strategy is aimed at generating international insertion actions, training in foreign trade, promotion of export associativity, provision of competitive intelligence, first export plans, as well as any other initiative that promotes the development of external markets.
Education	22 to 25, inclusive	The District is a priority area for the implementation of pilot projects for teaching English and computer science, and for the establishment of technical modality schools. On the other hand, the Ministry of Education, jointly with the Ministry of Economic Development, is responsible for administering and executing the ICT Scholarship for Excellence program, and professional technical training training programs that respond to the qualification needs of the District.
ICT Business Registry	6th and 7th	Within the scope of the Ministry of Economic Development, the ICT Business Registry must be created. Registration in the Registry is a condition for the granting of the benefits established by this Law.
Urban Infrastructure and Security	26 and 27	The Law establishes a series of measures to be implemented by the Executive Power related to the design and installation of wiring within the District, the provision of WiFi in all public areas of the District, and the promotion of ecological constructions within it.

Table VII-2. Main aspects of Law No. 2,972 on the benefits of the TD business promotion scheme

Tax	Appearance	Requirements	Entry into force and duration	Other conditions
IIBB	Exemption	The ICT companies, whose income is derived from activities within the District, and which are definitively registered in the ICT Companies Registry, will be exempt from the payment of IIBB.	From the administrative act that grants the inscription in the Regime, for 10 years from the effective date of the Law. Extended to years 2029 and 2034.	
	Deferral	The payment of IIBB may be deferred by natural and legal persons registered in the ICT Companies Registry on a provisional basis, who develop ICT activities, and who decide to settle and develop their activities within the District.	From the administrative act that grants the inscription in the Regime, the first 2 years from the date of entry into force of the Law	In case of absence of the cancellation of the deferred amounts, it will be applied on the deferred amount, the updates, interests and corresponding fines.
Stamps	Extinction	The companies that are granted the domain / possession of a property located in the District, destined mainly for ICT activities, and that they are registered in the Registry of ICT Companies within 3 months corresponding to the public deeds If ownership / ownership of the property is transferred, they will benefit from the extinction of the accrued tax corresponding to the granting of the instrument.	From the administrative act that grants the inscription in the Regime, for 10 years from the effective date of the Law	In the event that the property is not destined to develop ICT activities within 2 years of the granting of the instrument, the total tax must be paid together with the corresponding interest.
Lighting, Sweeping and Cleaning, Pavement and Sidewalks	Exemption	The properties located within the District that are mainly destined to the development of ICT activities, and on which improvements or new works are made, as well as those that are rented or owned by employees in relation to dependency of the registered companies will be exempt from payment. in the registry.	From the administrative act that grants the inscription in the Regime, for 10 years from the effective date of the Law. Extended to years 2029 and 2034.	
Delineation and Construction Law		All new projects that are built within the District, and that are mainly destined to some ICT activity, will be exempt from the payment of the Law.		
Non-refundable Subsidy Program		The subsidy program is for companies registered in the ICT Business Registry, and it must be used to finance up to 50% of the cost		
Preferential lines of credit				They seek to promote the relocation of ICT companies to the District.
Contributions to Reciprocal Guarantee Societies				They are for the purpose of granting guarantees in favor of beneficiaries registered in the ICT Companies Registry

