BUILDING

In Brazil, Land Value Capture Supports the Needs of the Community

VALUE

By Ignacio Amigo

STANDING JUST a few meters from São Paulo's iconic Octávio Frias de Oliveira bridge, the Jardim Edite public housing complex is hard to miss. The eye-catching cluster of buildings includes three black-and-white residential towers perched above brightly colored ground-floor facilities that include a public health center, day care facility, and culinary school. The complex has won several prizes for urban design, but the story behind this project is even more remarkable than its architecture.

Thirty years ago, this neighborhood was on the swampy southern outskirts of the city, and Jardim Edite was the name of a favela, or informal settlement, that had taken shape here. It provided a home for hundreds of families, most of whom had arrived from rural northeastern Brazil in a bid to escape poverty. In the 1990s, as São Paulo's population grew and its urban core began to expand southward, this area underwent a radical transformation, and construction and roadbuilding near Jardim Edite surged.

In 2001, city leaders approved an ambitious program to redevelop several neighborhoods, expand the subway network, and build the Octávio Frias bridge across the Tietê River to connect this area with the west side of the city. To make room for the project, local authorities wanted to relocate the more than 800 families living in the favela to other parts of the city. The residents of Jardim Edite, however, made it clear that they wouldn't leave their homes without a fight. They created a neighborhood association and publicly declared their opposition to the relocation. In 2002 they won a major victory: the city's new master plan classified the favela as a Special Zone of Social Interest, a designation under Brazilian law that can be used to ensure affordability in urbanizing areas (Fontes 2011). This meant the residents had the right to remain in the vicinity—and the city had to provide housing for them.

> For most cities, the costs of creating public housing in an increasingly expensive area would have been prohibitive. But São Paulo relied on a land-based financing tool to generate revenue it could reinvest.

Over the next several years, private and public investments in the area sent the land value soaring to $4,000 per square meter in 2008, compared to an estimated $100 per square meter in 1980 (UN-Habitat 2010). City leaders, eyeing other potential uses for the Jardim Edite site, offered a small amount of compensation to residents who were willing to leave, and many took them up on the offer. But others persevered, and in 2012, 252 families received keys to apartments in the brand-new Jardim Edite housing complex (Lacerda Júnior 2016).

"We have everything here," says community leader José Vilson. "We have public transport at our door, we have four public schools [in the area], we have a health unit right below our house."

For most cities, the costs of creating public housing in an increasingly expensive area would have been prohibitive. But in this neighborhood and others, São Paulo has relied on an innovative financing tool called CEPACs, or Certificates of Additional Construction Potential, to generate revenue it can reinvest in the area.

CEPACs are a form of land value return, also known as land value capture. This policy approach, in use in many countries around the globe, allows communities to recover and reinvest land value increases resulting from government actions and public investment. The implementation of land value capture in Brazil has been "extremely sophisticated," says Martim Smolka, director of the Program on Latin America and the Caribbean at the Lincoln Institute. Smolka says CEPACs in particular "are a brilliant idea . . . in São Paulo they have delivered something like $3 billion since 2004. Not millions, billions. This is unprecedented in the world."

The Jardim Edite favela, top, and the housing complex that took its place. The Octávio Frias de Oliveira Bridge is visible in the background. Credits: Daniela Schneider, Nelson Kon. Project design: H+F Arquitetos, MMBB Arquitetos.

Panoramic view of the Santo Amaro district of São Paolo. The city is one of the 10 largest urban areas in the world. Credit: Viktar Palstsiuk/Flickr CC BY 2.0.

The Building Blocks of Land Value Capture

São Paulo is South America's largest city and Brazil's economic hub. More than 20 million people live in the metropolitan area, which extends over more than 3,000 square miles, making it similar in size and population to the New York metropolitan area.

Across the São Paulo region, affluent areas with luxurious houses adjoin crowded, economically precarious neighborhoods where residents have built their own houses out of brick and metal. Some neighborhoods are characterized by tall buildings and high population density, while other areas are more bucolic, with streams, waterfalls, and scattered houses. Within the city limits are dozens of favelas and two indigenous villages. Like many large cities, São Paulo is home to both profound poverty and vast wealth. That wealth is made possible, at least in part, by municipal zoning decisions and public investments in infrastructure.

When cities make changes to zoning and infrastructure, such as allowing greater density, improving roads, or building new rail lines, the value of nearby properties tends to rise. The improvements themselves are typically paid for by the public, in the form of taxes and other revenues, but the rise in property value tends to benefit private landowners. In other words, the community pays for improvements that benefit only a few.

But as many communities have discovered, it is possible to recover these increases in value and reinvest them for the public good (see sidebar page 59). In São Paulo, as development has surged over the last few decades, land value return has played a critical role in ensuring that the public sees some benefit from private development, in the form of affordable housing, parks, public transit, and other amenities (Smolka 2013).

The city accomplishes that by charging developers for the new development potential created by rezoning and public investments in well-defined areas, such as for taller buildings

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or more dense developments. Those fees can then be earmarked for public goods and services. Charging developers for the right to build taller structures or denser developments makes sense, say proponents of this approach, because high-rise buildings require wider roads, higher water pressure, more powerful electricity grids, and other infrastructure upgrades.

In Brazil, such charges are broadly known as Outorga Onerosa do Direito de Construir (OODC, literally "onerous grant of the right to build"). The Brazilian Constitution of 1988 puts public interest above private gain, stating that the goal of urban development is to "guarantee the well-being" of citizens and to ensure the "full development of the social function of the property." These ideas were codified in 2001 through a federal law known as the City Statute, which stipulates that each city must include OODC guidelines in its master plan and must pass municipal laws to define the details (Furtado et al. 2012).

Smolka notes that the system has withstood legal challenges claiming the charges are essentially a tax. In 2008, the nation's Supreme Court ruled that the OODC is not a tax, because developers do not have to pay for the rights if they do not choose to use them.

In São Paulo, city leaders have taken the OODC framework one step further with CEPACs, the tool that paid for both the Jardim Edite housing complex and the nearby Octávio Frias de Oliveira bridge (Sandroni 2010). Unlike traditional charges for building rights, for which a city sets the price, CEPACs are sold via electronic auction, with developers paying what they think the market will bear.

CEPACs have become an essential source of revenue for São Paulo and for other Brazilian cities, including Rio de Janeiro and Curitiba. "This is essentially money that, if you didn't have this instrument, would be going into the pockets of landowners in areas that have benefited from public investment," Smolka says.

LAND VALUE CAPTURE AROUND THE GLOBE

In an era of tight budgets and exploding need, cities around the world are funding infrastructure and other public improvements through land value return, also known as land value capture. This policy approach involves an array of public finance tools that enable communities to recover and reinvest land value increases resulting from public investment and government actions. Examples of reinvestment include the following:

- The city of **San Francisco, California**, collected $423 million in impact fees—one-time charges designed to cover the costs associated with a development's impact on certain public services and infrastructure—from fiscal year 2013 through 2016. It used the funds to invest in transit needs, bicycle infrastructure, pedestrian capital improvements, and more.

- In **Manizales, Colombia**, betterment fees—which are paid by property owners to defray the cost of a public improvement or service that the owner specifically benefits from—have contributed to the city's revenue base for urban infrastructure financing and funded road improvements, urban renewal, and notable projects such as the renovation of Alfonso Lopez Plaza.

- In one of the most successful examples of large-scale redevelopment in the 20th century, Japan's **Greater Tokyo Railway Network** used land readjustment—a model in which landowners pool their properties to accomplish a redevelopment project, then receive smaller parcels of land that have greater value due to the improvements made—as a strategic component of its financing.

- **Cambridge, Massachusetts**, has used its 1998 Inclusionary Zoning Ordinance, which requires developers to provide a certain amount of low- or moderate-income housing in exchange for the right to construct market-rate residential or commercial properties, to create 1,000 units of affordable rental and ownership housing.

Successfully implementing land value return demands the management of many complex factors and diverse stakeholders; proper understanding of land market conditions; comprehensive property-monitoring systems; fluid communication among fiscal, planning, and judicial entities; and the political resolve to realize the full potential of this suite of tools.

Adapted from Land Value Return: Tools to Finance Our Urban Future*, a policy brief by Lourdes Germán and Allison Ehrich Bernstein published in 2020 by the Lincoln Institute of Land Policy (Cambridge, MA).*

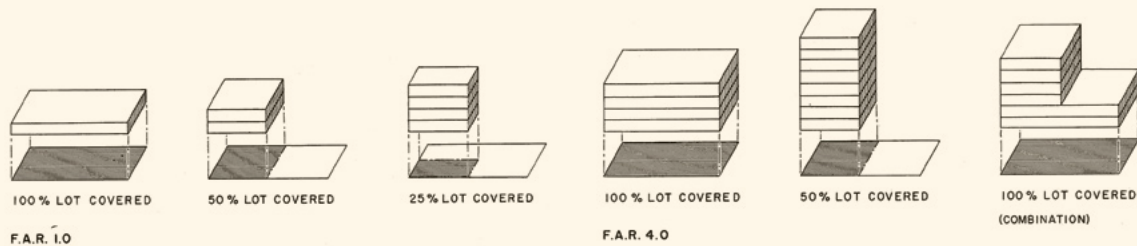## Managing Growth in São Paulo

Compared to other cities in Brazil, São Paulo had a head start in charging for building rights. In the late 1980s, the city was negotiating a loan with the World Bank for a river-rechanneling project. The World Bank conditioned the loan on the city's providing housing for low-income people who lived along the river's banks, many of them in favelas. To fulfill this condition, São Paulo passed a law that required developers who wanted to build taller buildings or more dense developments to construct public housing or provide money for the government to do so. The law lasted only a decade, but it provided an invaluable learning experience for the city.

"Many businesspeople who wanted to get rid of favelas on land they owned or who needed additional building rights accepted this deal,"

says Paulo Sandroni, an economist and Lincoln Institute associate. Initially, developers chose where to build the affordable housing. Not surprisingly, they often chose sites at the urban periphery, where land was cheaper. Also, the law did not specify a minimum size for these units, which tended to be very small. As a result, people were displaced from favelas in desirable locations and forced to relocate to cramped, inadequate housing far from jobs, schools, and other sources of opportunity. The city fixed these loopholes, setting a minimum size for affordable units and taking over the responsibility of siting them. Though the law was invalidated in 1998 because of a conflict with the São Paulo State Constitution, the city was ready when the federal government codified the OODC in 2001. São Paulo swiftly approved a master plan and passed laws to implement the OODC.

The Old Downtown area of São Paulo. Credit: Diego Torres Silvestre/Flickr CC BY-SA 2.0.

| 100 % LOT COVERED | 50 % LOT COVERED | 25% LOT COVERED | 100 % LOT COVERED | 50 % LOT COVERED | 100 % LOT COVERED (COMBINATION) |

F.A.R. 1.0   F.A.R. 4.0

Floor Area Ratio (FAR) is the total constructed floor area of a building relative to the size of the parcel it occupies. This illustration shows possible building variations with a FAR of 1.0, which requires the floor area and lot size to be the same, and a FAR of 4.0, which permits the total floor area to be four times the size of the lot. The higher FAR makes it possible to construct taller buildings, which encourages density. Credit: Courtesy of American Planning Association.

São Paulo's master plan regulates the density of development in different neighborhoods through floor area ratio (FAR). A common unit of measure worldwide, FAR is the total constructed floor area of a building relative to the size of the parcel it occupies. For example, a FAR of 1.0 would allow a building with a total of 200 square meters of floor space on a parcel of 200 square meters. If the FAR is set higher, more floor area can be constructed. With a FAR of 4.0, for example, that same 200-square-meter parcel could hold a building four times the size, with a total floor area up to 800 square meters.

Cities can designate both a basic FAR—the density at which a developer can build without paying fees—and a maximum FAR, the most dense development permitted under any circumstances. Developers purchase building rights to construct buildings up to the maximum FAR allowed, which is often higher in commercial corridors, near transit stations, or in other areas where policy makers want to see growth.

Under the master plan, OODCs became a promising source of income for São Paulo. But city leaders soon recognized a problem common to such transactions everywhere: charge too little, and you leave unearned windfalls in the pockets of landowners; charge too much, and developers are reluctant to pay. To address this, the city introduced the certificates known as CEPACs. Sold through electronic auction, CEPACs are a market-based tool whose price is determined by bids from developers.

Each CEPAC enables the construction of a specific number of additional square meters in one of several "urban operations," which are areas identified as priorities for redevelopment. There are 13 urban operations in São Paulo, two of which have been especially lucrative: Água Espraiada, which includes the Jardim Edite housing complex, and Faria Lima, which has become the city's financial center (SP-Urbanismo 2017). The two areas are now among the most expensive in the city, and CEPACs allowed the city to capture a good part of this land value increase.

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Sandroni says Faria Lima offers a dramatic illustration of the economic potential of CEPACs. "The first bids [in 2004] were not very successful because nobody knew how the system would work . . . only in 2006 and 2007 did bids begin to be substantial." He believes the bids increased not only because people better understood the tool, but also because the real estate market was strong—and from there, the market for CEPACs boomed. In 2010, developers bought the Faria Lima CEPACs for 4,000 reais each (equivalent to US$750 today). This represented a 363 percent increase from the 2004 starting price of 1,100 reais. In the 2019 auction, each of the 93,000 CEPACs sold for a staggering 17,601 reais. That one sale garnered 1.6 billion reais in revenue for the city (more than US$400 million). Together, Faria Lima and Água Espraiada CEPACs have raised more than US$3 billion.

With those funds, the city has been able to expand public housing, improve public transit, build and maintain roads and parks, and more.

The experience in São Paulo highlights the great potential of a well-implemented program of land value capture. The city's willingness to experiment with different methods and to correct mistakes along the way offers lessons for other cities—including Belo Horizonte, a city about 300 miles to the northeast that is implementing new OODC guidelines.

The Faria Lima district of São Paulo (left) has been a focus of urban redevelopment. By charging developers for certain building rights, the city has been able to invest in public transit (right). Credits (l-r): diegograndi/iStock, Alfribeiro/iStock.

Belo Horizonte, population 2.7 million, is the sixth-largest city in Brazil. Credit: Elton Menchick/Flickr CC BY 2.0.

Challenges in Belo Horizonte

Maria Caldas, the secretary of urban policy for Belo Horizonte—home to 2.7 million people and the capital of Minas Gerais state in southeastern Brazil—has seen firsthand how strong the opposition to the OODC can be. During 2018 and 2019, Caldas and other officials were targeted by an intense smear campaign for trying to create the right conditions to use the OODC. "I have never seen anything wilder in my life," says Caldas. "There was an incredible amount of fake news, bots, they invaded my [social networks] . . . they tried to hit the mayor through me."

At the center of this controversy was a vote on Belo Horizonte's new master plan. Under the old plan, landowners in many parts of the city could build up to the maximum floor area ratio (FAR) without having to pay anything to do so. This rendered the nationally endorsed concept of the OODC useless, as the city did not have any rights to sell to developers. To solve this, the city's new master plan set the basic FAR at 1.0 for the entire city. Developers who wanted to build more densely would have to pay the city for that right. According to Smolka, about 80 percent of the city already had a maximum FAR of 1.0, so the new rule would affect only a small percentage of properties. Nevertheless, the proposal met with fierce opposition.

"Before the recession [of 2015], the real estate market experienced a boom, and the big developer companies created a stock of land," says Caldas. "They became both developers and landowners" and they didn't want to pay for a right they had previously gotten for free.

The development companies united around the Federation of Industries of Minas Gerais (FIEMG), which lobbies for industrial companies in the state. With the federation's support, the developers launched an aggressive publicity campaign decrying the new master plan. Their slogan was "no more taxes," ignoring the fact that, as the national Supreme Court had established years earlier, the OODC is not a tax.

The campaign claimed that setting the basic FAR at 1.0 for the whole city would negatively affect low-income people. An animated video described how the new master plan would destroy the dreams of a fictional character called "Seu Pedro," a resident of an informal settlement who would no longer be able to build a three-story house for his family. However, Smolka says the cartoon showed a distorted reality. "With a floor area ratio of one, you can easily build a four-story house," he says, noting that although the computable area of a building can't exceed the area of the plot of land, a house can have more than one story. Elements such as corridors, garages, balconies, and terraces are also not included in the allowed area calculation.

The campaign against the OODC in Belo Horizonte did not succeed. The new master plan was approved in June 2019 and went into force in February 2020. Mayor Alexandre Kalil, a target of the anti-OODC campaign, was also handily

Maria Caldas, secretary of urban policy for Belo Horizonte, has helped implement value capture in that city. Credit: Ramon Bitencourt/O Tempo.

reelected in late 2020. However, the developers did score one victory: the municipal government agreed to a three-year transition period during which the old basic floor area ratios would prevail. Smolka says the interim period could see developers speed up projects to take advantage of the opportunity to build up to the maximum FAR at no extra cost, but notes that the pandemic could affect those plans.

Ultimately, the government of Belo Horizonte prevailed against opponents of the OODC, making it clear that the new rule would be good for the city and wouldn't harm ordinary citizens. In fact, it will allow the city to expand its stock of affordable housing, with proceeds earmarked for a specific public housing fund.

Smolka says land-based financing tools will likely gain momentum globally as cash-strapped cities struggle to find new ways to finance urban infrastructure. "There is a big discussion among the United Nations, the World Bank, and other multilateral agencies about the global infrastructure backlog—they talk about trillions of U.S. dollars to renew and build needed infrastructure," he explains. "Governments are looking at many different ways to pay these costs, and land value capture is a classic tool for this purpose." ▢

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