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MUNICIPAL REVENUES AND LAND POLICIES

Edited by Gregory K. Ingram and Yu-Hung Hong

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A New Financial Instrument of Value Capture in São Paulo: Certificates of Additional Construction Potential

Paulo Sandroni

Certificate of additional construction potential bonds (CEPACs) are issued by the São Paulo city hall and are sold in electronic auctions in the São Paulo Stock Market Exchange (Bovespa). They give the bearer additional building rights such as a larger floor area ratio and footprint and the ability to change uses of the plot. Financially speaking, CEPACs are the economic compensation a developer gives the public administration in return for new building rights.

This tool was created in 1995 in the Faria Lima Urban Operation, but it only began to operate in 2004, after the 2001 approval by Estatuto da Cidade, which included the CEPAC as an instrument that could be used in all Brazilian territory.

The Joint Urban Operations

Before explaining CEPACs, it is necessary to describe the joint urban operations—called UO (urban operation)—where the CEPACs are used.[1] A UO can be described as a tool for structural transformation of part of the city, basically promoted through a partnership of public authorities and private developers. It also involves the participation of landowners, investors, residents, and other

1. For a detailed description of Urban Operation, see Montandon and De Sousa (2007).

stakeholders and has to be approved by the city council (Montandon and De Sousa 2007).

Since this is a public-private partnership tool for urban development, the UO has special elements. The most important are urban incentives tied to payments that work both as an attraction for private investment and as a way to induce developments to adjust to the transformations desired in urban policy. The incentives, which were defined by the specific laws of each UO and are now established in a general form by a city statute, are modification of plotting indexes and characteristics (floor area ratio, for instance), land use, and footprints.

In practical terms, an urban operation is an intervention in a large area of the city that requires infrastructure and urban betterments such as avenues, drainage, houses for people living in slums, public areas, public equipment, and other investments. The funding should come from the incremental value originated in changes in zoning. Owners and/or developers of plots located inside the perimeter of the urban operation may present projects and pay with CEPACs for the additional rights to build.

The public administration examines the project and analyzes whether it is adequate from the architectonic and urban points of view. If it is approved, the next step is to estimate the value increment and how this value will be shared between the owner/developer and the public sector.[2] Each UO has a specific percentage of public-sector participation in the value created by the new zoning coefficients. In some, like the Agua Branca UO, the participation is 60 percent minimum; in others, such as in Faria Lima UO, it was 50 percent until 2004, when the system began selling CEPACs (Sandroni 2000).

From 1990 to 2002 São Paulo's administrations proposed and approved four UOs: the UO Anhangabaú-Centro, the UO Agua Branca, the UO Faria Lima, and the UO Agua Espraiada. The São Paulo master plan of 2002 consolidated these four operations and created nine more: Diagonal Sul, Diagonal Norte, Carandiru-Vila Maria, Rio Verde-Jacu, Vila Leopoldina, Vila Sônia, Celso Garcia, Santo Amaro, and Tiquatira. Of these and until April 2008, only the Rio Verde-Jacu was approved by the city council. The total area occupied by all 13 UOs is around

2. The following formula is used to calculate the value of economic compensations used in urban operations such as Agua Branca:

$$EC = K1 \times (Vt2 - Vt1) \times TA, \text{ where}$$

EC = Economic compensation
Vt2 = Market value of the lot (m2) after benefits
Vt1 = Market value of the lot before benefits
TA = Total area of the lot
K1 = Coefficient (60 percent) determining the minimum percentage of value increment that corresponds to the administration

20 percent of the 1.5-thousand-square-kilometer municipality. Each of these operations had particular characteristics and different motivations.

Going Back to CEPACs

The CEPACs are issued by city hall through EMURB (Empresa Municipal de Urbanização) and are sold in auctions in the stock market as financial bonds that give the bearer additional building rights in the plot. They may be used only inside the perimeter of the UO in which they were issued. In São Paulo as of December 2009, the CEPACs can be used by only two of the five approved UOs: Faria Lima and Agua Espraiada. The others, like Agua Branca and Centro (the first UO created in São Paulo), don't use this tool because CEPACs did not exist at the time they were presented to the council. Now the Agua Branca UO law is being revised, and the intention is to adopt the CEPAC system to capture incremental value.

The total amount of CEPACs that can be issued depends on the total additional area each UO is able to support. This number is based on the previous analysis by architects, engineers, economists, and technical servants who compare this upper limit with the existing infrastructure and all the additional works that will be financed with funds originated by selling CEPACs.

CEPACs all have the same face value but correspond to different amounts of square meters depending on the location (inside the perimeter) of the plot where they are going to be used. This difference is due to the different prices of plots depending on the sector inside the perimeter where they are located. In the Agua Espraiada UO, the total additional area to be sold corresponded to 3.75 million CEPACs, of which 1,483 million had been sold by December 2009. In the Faria Lima UO, since 2004 when the CEPACs began to be used until December 2009, 545,923 CEPACs have been sold, and the administration has around 610,000 to offer in future auctions.

One of the main advantages of this form of value capture is to obtain compensation before the developer begins building the project. This allows the public administration to finance the construction of infrastructure without creating a deficit or public debt or using budget resources that could be employed in other activities, such as education or health (Afonso 2004). Buying CEPACs allows the entrepreneur to acquire additional building rights that may be used whenever the real estate business cycle is at the optimal point, or when the entrepreneur decides it is the best moment to launch the project.

The administration may also use CEPACs, through private auctions, to pay firms (if they accept) that have contracts to build infrastructure, including affordable housing. In other words, CEPACs may be used directly as a nonbudgetary fund to pay for goods and services that are necessary to build or renew infrastructure or build affordable housing to remove or urbanize slums.

Until December 2009 all income produced by CEPACs in the Faria Lima UO and Agua Espraiada UO corresponded to R$825 million and R$799, respec-

tively, with a total income of R$1.624 billion (US$812 million at the exchange rate of US$1 = R$2 on average; see tables 8.2 and 8.3). Comparing this income with the revenue produced by property taxes, in 2007 the revenue in the municipality of São Paulo was equivalent to US$1.4 billion (of a total municipal revenue of US$10 billion), and the income produced by CEPACs in five years was around US$812 million, or 58 percent of property tax revenue, about 11 percent per year. This compares all the property tax revenue in the city with the revenue obtained from only two UOs. The property tax revenue is in a continuous flux, and the revenue that comes from selling CEPACs depends on the market (prices and quantity sold each year) and ends when the total amount of CEPACs have been sold.

The new buildings for residential and commercial use constructed with the rights provided by CEPACs also contributed to increment the revenue from property taxes for two main reasons: (1) there is a discount in property tax of up to 30 percent of the initial value depending on the age of the buildings and the quality of the construction, and the new buildings replaced low-quality houses more than 30 years old; and (2) the new buildings initiated a rise in land prices. Some preliminary calculations show that, in some cases, the property tax income from the new buildings could increase 4.4 times per square meter over the former income. This aspect of the influence of CEPACs is not yet clear and should be the object of further research (Biderman, Sandroni, and Smolka 2006).

Each square meter sold by CEPACs yields more revenue than was produced according to the former mechanism of a minimum percentage of the incremental value. A sample of 12 important projects in the Faria Lima UO shows that the use of CEPACs will result in a large increase in income (see table 8.1). In the several auctions that have so far taken place, prices have risen around 50 percent more than inflation in the Faria Lima UO, and more than 80 percent on average in the Agua Espraiada UO.

Value Capture Before the CEPACs

Although an onerous grant mechanism (additional rights of construction paid by the developers) had been established in municipal law on urban development since the beginning of the 1990s, the practical use of this tool raised some problems that are worth considering. First, there was a problem with the calculation of the benefit received by the developer and the percentage of this benefit that the developer should pay the administration. The legislation on interlinked operations determined that the public administration should receive a minimum of 50 percent of the incremental value created by the benefit received by the developer, although in the UO Agua Branca, this minimum was established as 60 percent. This mechanism allowed certain flexibility for negotiations. The law determined that a minimum should be given to the public administration, but the final amount could be higher, as indeed it was in many interlinked operations. All depended on whether the public administration negotiators tried to get more

than the minimum. In the UO Faria Lima until the approval of CEPACs, the bureaucratic practice was to ask only for 50 percent.

Another important problem was the form in which the payment was made. Urban operation norms determined that the developer should pay the calculated value in works chosen from among several interventions listed in each UO. These interventions were linked to the necessary infrastructure inside the perimeter of each UO, but also included affordable housing. This was the situation of the two first urban operations, Anhangabaú-Centro and Agua Branca. These infrastructure works were done at the same time the developer constructed the buildings.

So the timing of construction of the infrastructure was similar to the development of the project. If the project was delayed, interrupted, or even abandoned, the same thing happened to the infrastructure work and the construction of affordable housing.[3] This happened only once until 2008, but it demonstrates the importance of separating the timing of the developer investment and the payment to the public sector of the respective land incremental value. The CEPAC mechanism can help to solve this problem.

Another important problem in receiving the economic compensation from the developer was that before paying for the benefit received, the developer had to obtain approval of the project from the architectonic and urban perspectives. This could take more or less time depending on the capacity of administration groups in charge of the respective analyses.

In short, there were two major problems concerning the way the economic compensation was paid by developers. First, the economic compensation was paid in works chosen by the developer from a menu established by the administration, but if for any reason there was a delay or interruption in construction, the same delay or interruption affected the infrastructure works, including the affordable housing. Second, the amount of economic compensation depended on the number of projects presented, and some of them could take a long time to be approved.

The Creation of CEPACs

CEPACs were created basically to separate the economic compensation from the realization of the developer's project and to provide the public administration with funds to pay for infrastructure independent of the moment the project began. In March 1995 CEPACs were created to be used in the recently approved UO Faria Lima and to finance the enlargement of the avenue of the same name.

3. In the case of UO Agua Branca, one of the approved projects produced an economic compensation of R$20 million. This was the value of infrastructure works the developer had to do at the same time the project was developed. The developer intended to build thirteen towers for business uses. But the real estate business cycle went down, and he built only four towers, and delivered only 30 percent of the infrastructure work that had been scheduled.

The CEPACs were supposed to be sold to developers in electronic auctions at the Stock Market Exchange. Developers could then use CEPACs to obtain more building rights for their projects. The CEPACs could also be used to pay contractors and/or to pay for indemnities necessary to the enlargement of the avenue as long as they were accepted by the owners of the plots that had to be expropriated.

The instrument was not immediately approved by the council because of doubts about whether it increased municipal indebtedness. The municipal debt was already at its maximum, and the issue was a federal and constitutional matter. As a result, the first auction of CEPACs did not take place until 2004.

The nature of the CEPAC operation was mercantile: the administration was selling the developers new building rights created inside the perimeter of the UO, so there was no municipal indebtedness increment. The concept finally was accepted six years later, in 2001, with the approval of the Estatuto da Cidade, a federal law regulating articles 182 and 183 of the 1988 federal constitution, and CEPACs were allowed to be used in all Brazilian territory. But only in 2004 were CEPACs specifically approved in two urban operations in São Paulo: Faria Lima and Agua Espraiada.

The First Two Auctions in 2004

The first auction of CEPACs was made in UO Agua Espraiada in July 2004; 100,000 CEPACs were offered at the minimum price of R$300 (US$150). All of them were sold, producing revenue of R$30 million (US$15 million). This income was linked to two infrastructure interventions: the construction of a cable-stayed bridge over the Pinheiros River, and the construction of 600 affordable houses for the urbanization of the Jardim Edith slum.

The building rights each CEPAC allows depends on where the lot is located in the UO. In the case of Agua Espraiada, in sectors of the UO where the land is cheaper, each CEPAC corresponds to 3.0 square meters, and where it is more expensive to 1.0 square meters. In the case of Faria Lima UO, these limits ranged from 0.8 square meters to 2.8 square meters.

In December 2004 the first CEPAC auction was held in Faria Lima UO, and 90,000 CEPACs were offered at a initial price, determined by law, of R$1,100 (US$550) each. Only 9,091 were sold, resulting in revenue of around R$10 million (US$5 million). The failure of this auction and the apparent lack of interest of developers in a very dynamic area of the city (from the real estate business point of view) were due to many causes. From the middle of 2004 on, the only way to acquire additional building rights in UO Faria Lima was to buy CEPACs. The minimum price of CEPACs, established as R$1,100, represented more than was paid under the former rule of 50 percent of the incremental value. Since the sale was by auction, the minimum price could be raised depending on the bids of the participants. In short, the new system represented an increase in land prices for the developers. Also, when it became clear at the beginning of 2004 that

the CEPAC law was going to be approved in UO Faria Lima, many developers obtained licenses to build in accordance with the former method of economic compensation. Therefore, when the first auction was proposed for the Faria Lima UO, the developers already had their licenses and did not need to buy additional building rights in auctions.

It is also possible that developers shifted their investments from the Faria Lima UO to the Agua Espraiada UO, where the CEPACs were considerably cheaper and the best areas were very near the Faria Lima perimeter. In other words, there was a kind of cannibalism. But between 2004 and 2008, there was a more intense rise in prices in the Agua Espraiada CEPACs than in Faria Lima, and the difference was gradually reduced. In one auction in Agua Espraiada in 2008, the CEPAC price rose from R$411 to R$1,110 (US$205 to US$555), higher than the initial price in Faria Lima and an unusual increment probably due to a failed speculative intention to corner the market. But in a new auction some months later, at the beginning of the international financial crisis, the price dropped to R$535, and only 58 percent of the CEPACs offered were sold. However, the recovery of the Brazilian economy during the second half of 2009 resulted in prices of CEPACs increasing to R$615.50 and R$700 respectively (as will be shown later in tables 8.2 and 8.3).

Additional reasons for the huge failure of the first auction in the Faria Lima UO were a recession in the real estate business cycle and the fact that the auction took place during the last week of the mandate of the mayor who had lost the election to the opposition. The new administration had been critical about urban operations during the electoral race, and this caused some uncertainty about the future of urban operations in general.

A second auction in November 2006 in the Faria Lima UO also failed. Only 10,000 CEPACs were auctioned, and the insignificant amount of 2,729 sold at the initial price of R$1,100, with revenue of around R$3 million (US$1.5 million).

To demonstrate the difference between obtaining economic compensation from the former method of 50 percent minimum of the incremental value and the CEPACs, we created a simulation. We selected 12 residential, commercial, and service projects, large, small, and medium sized, all approved in 2000 following the former norms of value capture, and we estimated how much these developers should pay if they had to use CEPACs to obtain the necessary additional building rights for their projects. Table 8.1 shows that the total value of the economic compensation of these 12 projects was almost R$62 million. But if the projects had been approved with the CEPAC rules, this amount would rise to R$281 million, around 350 percent more in nominal terms. Factoring in inflation of 20 percent during 2000 to 2004, this would represent an increase of about 280 percent.

Even without comparing the price paid by the developers following the former method with the cost of CEPACs, it was inferior to the fiscal price of land in the area (the value determined by the Planta Genérica de Valores) except in two cases: Mappin and Pablo Siemenson (see table 8.1). These results cannot

Table 8.1
CEPACs in Twelve Selected Projects in Faria Lima UO, 2000

	Additional Area (sq. m.)	Price Paid per Square Meter (R$)	Total Paid (R$)	Fiscal Value per Square Meter (R$)	Square Meter per CEPAC	Price per Square Meter in CEPACs (R$)	Total Value in CEPACs (R$)
Eletropaulo	104,167	286	29,791,762	320	0.8	1,375	143,229,625
Duomo	18,486	61	1,127,646	3,176	0.5	2,200	40,669,200
Tecelagem Lady	13,840	206	2,851,040	469	1.0	1,100	15,224,000
Mappin	7,971	813	6,480,423	574	1.0	1,100	8,768,100
Munir Abbud	19,554	173	3,382,842	350	0.9	1,222	23,894,988
Ibisa	15,518	495	7,681,410	2,174	0.8	1,375	21,337,250
Bueno Neto	9,444	466	4,400,904	469	1.0	1,100	10,388,400
Pablo Siemenson	6,300	340	2,142,000	321	2.5	440	2,772,000
Mac. Investimentos	8,489	121	1,027,169	447	1.5	733	6,222,437
Seisa Mester	8,761	150	1,314,150	332	2.6	423	3,705,903
Tecnisa	5,000	222	1,110,000	447	1.5	733	3,665,000
Vivenda Nobre	3,465	176	609,840	332	2.6	423	1,465,695
Total			61,919,186				281,342,598

Source: EMURB (2000).

be generalized because the number of cases is relatively small, and one of them (Eletropaulo) represents almost 50 percent of the total. But they give some idea of the difference.

The CEPAC Auctions in the Faria Lima UO

As indicated earlier, the first two public auctions in the Faria Lima UO failed. The three private auctions between 2004 and 2006 sold more CEPACs than the public ones. In private auctions the administration offers contractors and/or suppliers the payment of the bills in CEPACs at a determined price. If they accept, the administration transfers CEPACs to them proportional to their credits, and the instrument works as nonbudgetary money.

As discussed earlier, developers had a stock of licenses purchased in accordance with the former rules (because that was cheaper), and they did not have to buy CEPACs for their projects. However, the opposition had won the

election, and the new mayor threatened to stop the process in Faria Lima UO and to examine all contracts concerning the infrastructure work being done with the money that came from CEPACs. Fearing that they wouldn't be paid, some contractors agreed to receive their credits in CEPACs before the current mayor left office. Contractors who had credits with the former administration and had outstanding bills at the end of 2004 did not receive money until almost three years later. The next administration (2005 to 2008) continued to offer to pay credits in CEPACs, and some contractors accepted, as can be seen in table 8.2.

The third public auction in 2007 was very successful. In this auction, 156,730 CEPACs were offered at an initial price of R$1,225, and all of them were sold for R$1,240, an increase of almost 13 percent over the nominal value of R$1,100. The total value obtained was R$194 million. Contractors also accepted 72,942 CEPACs in private auctions as payment for their credits. Two factors may explain this success. It is possible that by 2007 the licenses obtained before the introduction of CEPACs had ended, and the real estate business cycle was then in a phase of intense expansion.

This explanation is reinforced by the fact that in the first auction of 2008, all 83,788 CEPACs offered at an initial price of R$1,300.00 were sold at R$1,538, a difference of almost 16 percent—or 40 percent over the nominal value of R$1,100. This resulted in income of around R$129 million. The pressure of demand and the rising prices permitted the administration to increase the prices of CEPACs offered to contractors to pay for their credits. It is possible that contractors who were also developers accepted this higher price at a time the real estate business cycle had peaked. It is also possible that contractors saw an opportunity to speculate because developers were demanding more CEPACs (all CEPACs offered in 2007 and 2008 were sold), and the price probably would increase in the near future because nobody knew when the administration was going to have another CEPAC auction. Maybe their intention was to sell these CEPACs to developers in private transactions that did not necessarily have to become public. We do not know whether this happened and, if so, whether their speculative operations succeeded. But in September 2008 the financial crisis hit the real estate market.

The effect of the crisis may be seen in the results of the auctions in February and March 2009. In February 100,000 CEPACs were offered at a price of R$1,700, but only 55,612 were sold (at that price), producing income of around R$94 million. In March 30,000 CEPACs were offered at a price of R$1,715, but only 1,521 were sold, producing income of only R$2.6 million. Maybe the failure of this last auction was due not only to the financial situation of many developers, but also to EMURB's poor job of preparing and informing the market about the auction. However, an auction of 120,000 CEPACs in October 2009—when the economic recovery began—was successful, and the entire lot was sold at a price of R$2,100.

Five private auctions took place in Faria Lima UO (see table 8.2). The total amount obtained at private auctions until 2008 was almost R$140 million. By

Table 8.2
Public and Private Auctions of CEPACs in Faria Lima UO, 2004–2009

	Offered (no. of CEPACs)	Sold (R$)	Price (R$)	Income (R$)
2004				
Public	90,000	9,091	1,100	10,000,100
Private		24,991	1,100	27,490,100
2005				
Private		9,778	1,100	10,755,800
2006				
Public	10,000	2,729	1,100	3,001,900
Private		6,241	1,100	6,865,100
2007				
Public	156,730	156,730	1,240	194,345,200
Private		72,942	1,240	90,448,080
2008				
Public	83,788	83,788	1,538	128,865,944
Private		2,500	1,725	4,312,500
2009				
Public	100,000	55,612	1,700	94,540,400
Public	30,000	1,521	1,715	2,608,515
Public	120,000	120,000	2,100	252,000,000
Total		545,923		825,233,639

Source: EMURB (2004–2009).

August 2009 the total income by CEPACs in Faria Lima UO was, as mentioned before, R$825 million (US$412 million). Table 8.2 synthesizes these results.

The CEPAC Auctions in Agua Espraiada UO

Since the approval of Agua Espraiada UO, the only possible mechanism to acquire additional building rights was to buy CEPACs in auctions. Eleven public auctions were held between July 2004 and December 2009.

As table 8.3 shows, developers acquired all the CEPACs offered in all but five of the auctions. The December 2004 auction may be considered a failure:

of the 70,000 CEPACs offered, only 16,899 were sold, apparently for the same reason as the failure of the first Faria Lima UO—lack of confidence in the new administration. The auctions from 2005 on can be considered successful, with the exception of the second auction in 2008 and the second in 2009. In the February 2008 auction, the real estate business cycle was at its peak, and 186,740 CEPACs were offered at an initial price of R$460 (compared to the nominal price of R$300 of CEPACs in the Agua Espraiada UO). The competition between

Table 8.3
Public and Private Auctions of CEPACs in Agua Espraiada UO, 2004–2009

	Offered (no. of CEPACs)	Sold (R$)	Price (R$)	Income (R$)
2004				
Public	100,000	100,000	300	30,000,000
Public	70,000	16,899	310	5,238,690
2005				
Public	56,500	56,500	371	20,961,500
2006				
Public	180,000	152,969	370	56,598,530
Private		22,657	371	8,405,747
2007				
Public	50,000	50,000	411	20,550,000
Public	100,000	100,000	411	41,100,000
Public	167,781	158,773	411	65,255,703
Private		77,330	411	31,782,630
2008				
Public	186,740	186,740	1,100	205,414,000
Public	650,000	379,650	535	203,112,750
Private		36,113	411	14,842,443
2009				
Public	73,500	73,500	616	45,239,250
Public	175,000	72,270	700	50,589,000
Total		1,483,401		799,090,243

Source: EMURB (2004–2009).

developers was fierce; the price rose to R$1,110, an overprice of more than 140 percent; and the administration earned more than R$207 million. It is not clear why the price increased so much. If the intention of participants was to speculate and not to immediately use the CEPACs in projects, the final buyer made a huge mistake, because at an October 2008 auction—after the beginning of the economic crisis—the administration offered 650,000 CEPACs (the most CEPACs offered in a single auction) at the initial price of R$535 and sold only 379,650. In a few months the CEPAC price had dropped more than 50 percent. In an August 2009 auction, all 73,500 CEPACs were sold at R$615.50, and in November only 72,270 of the 175,000 CEPACs offered were sold at R$700, more than a 130 percent increase over the 2004 nominal price of R$300.

Private auctions in 2006, 2007, and 2008 sold around 136,000 CEPACs, and the income was R$54.9 million. The total income from CEPACs in Agua Espraiada UO from 2004 to December 2009 was R$799 million (see table 8.3). If the income from CEPACs is not immediately used to pay contractors, it can be invested in the financial market. Until July 2009, the total financial revenue in the two UOs was R$73 million (US$36.5 million).

The Use of CEPACs

CEPACs can be utilized only inside the perimeter of the UO that issued them. The amount obtained is linked to a specific use chosen from the menu of interventions approved for that specific UO. The total amount of CEPACs to be issued is also predetermined in the law of each UO; it corresponds to the total additional square meters that the present and future infrastructure can support. Each UO determines the maximum square meters that can be built in the perimeter for residential and nonresidential uses. The income from CEPACs also can be used to pay for expropriations.

In the Faria Lima UO (with a total area of 450 hectares), almost 950,000 of the total of 2.25 million square meters had been sold before the CEPACs were approved in 2004, leaving 1.31 million square meters to be sold, corresponding to 1.16 million CEPACs. In all the public and private auctions held from 2004 until December 2009, around 545,000 CEPACs were sold, leaving more than 610,000 to be offered in the next auctions. As noted earlier, in the Agua Espraiada UO, with a total area of 1,450 hectares, all economic compensations to developers have to be made through CEPACs. The initial stock to be sold was 4.85 million square meters in 3.75 million units of CEPACs. By December 2009, 1,483 million CEPACs had been sold, almost 40 percent of the total. It is clear that the administration possesses yet another large stock of CEPACs to be sold in both UOs.

In the Olimpíadas sector of the Faria Lima UO and the Berrini sector of the Agua Espraiada UO, however, all the CEPACs for nonresidential uses have been sold, and it is no longer possible for developers to increase building rights there. In the Faria Lima sector of the Faria Lima UO, less than 10 percent of the

nonresidential use CEPACs remain. This means that in the Faria Lima UO, developers can direct projects to the other two sectors, Helio Pelegrino and Pinheiros, which are not so attractive for buildings destined to be used for commerce or services. The fact that around 100,000 CEPACs in Faria Lima UO and more than 400,000 in Agua Espraiada UO are in private hands and not yet linked to projects seems to be due to the down slope of the real estate market since September 2008 rather than evidence of the formation of a secondary market.

A developer may use CEPACs in three ways: (1) to build up to floor area ratio of 4; (2) to change uses; and (3) to change footprints. To guarantee the use of CEPACs before the sector no longer has additional area available, the bearer must link the CEPACs to a specific lot. This linkage is important because if the stock of square meters ends in one sector, the developer will not be allowed to use the CEPACs there even if he has land in that sector, though he may use his CEPACs in other sectors of the same UO where there is still stock of additional rights available.

Issuing CEPACs

CEPACs are issued by the city hall agency EMURB (Empresa Municipal de Urbanização) and are auctioned by Banco do Brasil, a federal bank. The total amount of CEPACs issued cannot be larger than the total determined in each UO law.

Each CEPAC issue must specify the following:

- The UO where the CEPACs can be used
- Which interventions will be financed with the income produced
- The total value of the issue
- The price of each CEPAC
- The amount issued
- The coefficient of conversion in case CEPACs are used for changes in use rather than for additional building area

The Management and Fiscalization of the Urban Operations

In the case of the São Paulo UO, the EMURB is in charge of the management and all information, including the investment program, inside the perimeter of the UO, and the Caixa Economia Federal is in charge of the fiscalization of the process. The Caixa Economica Federal and the Banco do Brasil, whose mission is to prepare the auctions and execute them, are important because the CEPAC is a new financial instrument, and the issuer needs to make it reliable in the market.

The EMURB is also responsible for setting priorities for investments in infrastructure and affordable housing linked to each CEPAC auction. The timing of the auctions and the amount auctioned have strategic significance and require

a close examination of real estate market conditions so as to extract the maximum value from each auction. The management of the CEPAC auctions does not appear to have been following a general strategic plan. Sometimes an excessive amount of CEPACs have been offered, as in the 2004 and 2009 Faria Lima UO auctions and the 2004 and 2008 Agua Espraiada UO auctions. On other occasions, too few CEPACs have been auctioned, as in the 2008 auctions in both UOs (see tables 8.2 and 8.3).

CEPAC Risks

As do any other bonds sold in the stock market, CEPACs present risks, which are published in the notices before the CEPACs are auctioned. The prices may go up or down depending not only on the real estate market, but also on the financial market as a whole. In other words, besides the risk of the specific market there is also systemic risk.

Furthermore, CEPACs do not constitute a credit against the administration the way bonds of the public debt do; CEPACs constitute only rights to build. The buyer is supposed to use these rights to build a project. If for any reason the project is not built, the buyer cannot get the money back. When the administration sells CEPACs through auctions, it is transferring rights to construct, which belong to the public sector, to the private sector. The public debt of the municipality does not increase, and the buyer cannot ask for indemnification if CEPACs or land prices fall.

The total amount of CEPACs issued and sold in auctions is supposed to correspond to the total additional area that can be built inside the perimeter. The administration cannot issue more CEPACs than the limit established in the law that approves each urban operation. Each sector inside an urban operation has its own limit of additional construction area. If other developers demand all this capacity—that is, if the total amount of additional square meters in a specific area of one UO is exhausted—the bearer of CEPACs cannot claim any rights to build in that exhausted area, even if he has land there. This is why the administration recommends that the CEPAC buyer immediately link the CEPACs to the land through a specific document, so the right will be guaranteed. As noted earlier, if the additional area of one sector is exhausted, the bearer may use the CEPACs in other areas of the same urban operation.

JURIDICAL RISKS

The juridical risks may be classified as: (1) risks related to laws, decrees, and so on that created and regulate CEPACs; and (2) risks related to all laws, decrees, and so on, concerning the UO where the additional building rights may be used. The first kind of risk means that if, after a UO is approved, some juridical demands interrupt the use of CEPACs and/or the activities related to their use, these demands must be immediately publicized to make future buyers of CEPACs

aware of the new situation and the implicit risks. If CEPACs that have already been sold but are not linked to specific land cannot be used in a specific sector in consequence of a juridical change in the status of the area, the bearer cannot claim the right to use them, but the bearer maintains the right to use the CEPACs in areas not affected by this juridical change. As of December 2009 these situations have not arisen.

The second kind of risk involves changes in the urban operations in which the CEPACs were issued. Prices of CEPACs are determined by the interaction of supply and demand. When the stock of additional area in a sector inside an urban operation is nearly used up, the price of CEPACs is expected to rise to its peak. The same is expected to be true of the price of physical land in the sector. Buyers of CEPACs may pay very high prices to obtain exclusive additional rights to construct in the sector. But after the stock is exhausted (as already happened in the Olimpíadas sector of the Faria Lima UO and in the Berrini sector in Agua Espraiada UO for nonresidential building), the administration can change the law to increase the sector's additional construction potential. If so, land prices probably will increase because there is more building potential, and CEPAC prices may decline because the supply increases. If this happens, bearers of CEPACs are not entitled to financial damages for the loss of their exclusive rights to construct in that sector. The current administration of São Paulo, under pressure from developers, is trying to change these limits in both urban operations, but the legislative process is not yet completed.

REAL ESTATE MARKET RISKS

The real estate market is influenced by national and international general business cycles. Land and buildings are now a special kind of commodity, and the prices of land and investment in real estate may suffer from fluctuations. Buyers of CEPACs who pay very high prices when land prices are up may be disappointed when prices go down a few months later. If they bought to speculate, they may have huge losses (see Afonso 2007). The real estate business cycle reached a peak in Brazil, especially in São Paulo, at the beginning of 2008, but by the end of that year, the market dropped sharply. Prices of CEPACs followed this movement, as noted earlier.

Federal government economic policy may also influence the prices of CEPACs. For instance, when interest rates rise, the price of land tends to go down, and when they fall, land prices tend to go up. But the proportions of these increases and decreases differ; prices generally drop more than they increase.

Environmental restrictions also impact CEPAC prices. There are more, and more frequent, restrictions. They may represent changes in norms of construction and uses, and they may retroactively affect developers and the value of their CEPACs. In other words, a developer may not be able to use some or all CEPACs because the project does not conform to the new environmental restrictions. As of December 2009, this has not happened.

GOVERNMENT AGENCY RISKS

The municipal agency responsible for issuing CEPACs must obey the urban legislation of the municipality. This legislation may be changed, or legislative approval may be delayed. New environment protection legislation at the federal or estate level can cause delays in the execution of projects that have already obtained CEPACs. This can change the market price (in case there is a secondary market functioning) and diminish the credibility and/or legitimacy of the bond.

The municipal administration and the legislators have the prerogative to change laws concerning urban matters. The existing legal structure of the UO may change, producing shifts in demand for CEPACs and consequently changes in the value of unused CEPACs.

FINANCIAL BOND RISKS

This type of financial bond is a novelty in the Brazilian financial market. And as far as we know, only Colombia has something similar (1997 Law 388). In the Brazilian stock market, only stocks with the best reputations, companies with international backgrounds such as Vale do Rio Doce and Petrobras, are considered blue chip stocks and are well known to investors. Only recently, after 18 public auctions, are real estate developers and investors in general starting to understand the CEPAC system. This means that the formation of a secondary market in which these bonds could be traded, giving them more liquidity, may take some more time. Until such a market comes into being, developers will have to wait for auctions, whose timing is decided by the administration, to buy bonds for their projects. This can interfere with their planning.

As long as the administration has a large amount of CEPACs to be sold, it will be difficult to form a secondary market that could provide more liquidity for sellers and an immediate supply for buyers. Someone interested in CEPACs knows that the administration can hold a new auction, and the person may wait to buy the CEPACs at a lower price in the auction instead of buying them more expensively in the secondary market. Only when the stock controlled by the administration is almost gone will the speculative manipulation of the market occur. But if the price of CEPACs rises and the competition increases the income from selling the last lots of CEPACs, the public sector may benefit, and its capacity to implant infrastructure and build affordable housing may improve.

The municipal government links each auction of CEPACs to the construction of infrastructure work that includes affordable housing.[4] There are no guarantees

4. These betterment interventions increase the land prices inside the perimeter of UOs. To avoid gentrification, the instrument called ZEIS (Zonas Especiais de Interesse Social, or Special Zones of Social Interest) sets up an area in which developers can build affordable housing only. Land there has its highest and best use criteria reduced, so the prices have no significant increment. Jardim Edith, where a slum is being urbanized, is located in one of the more expensive areas for nonresidential uses in São Paulo. In the Faria Lima UO, a small slum (Coliseu) in a

that all CEPACs linked to such work will be sold, and the administration has no obligation to use budgetary money to finish the work. So developers' expectations that the realization of the works financed with CEPACs will increase the value of their projects may not come to pass, and they will be frustrated.

NONPAYMENT RISKS OF CEPACS

CEPACs may be paid in quotas. The administration allows a maximum of 10 quotas, so the risk of default is possible. It is not possible to estimate the probability of default. As of December 2009, there have been no defaults, but if there are in the future, the work linked to CEPACs not paid by developers will come to a halt, and the administration will have to decide whether to use budgetary money to finish the works or wait for new income produced in future auctions.

Registering CEPACs and Transforming Them into Financial Bonds

To be auctioned in the stock market, CEPACs must be authorized by the Comissão de Valores Mobiliários (CVM), which is comparable to the U.S. Securities and Exchange Commission. In 2003 the CVM established rules on registration with two important elements. First, CEPACs cannot be offered in auctions unless the UO with which they are linked has previously been registered in the CVM. Second, the registration of the UO depends on the presentation of the master plan approved by the municipality, which contains the UO, the specific law approving the UO, and a municipal decree authorizing the issuing of the CEPAC document certifying the acceptance of the registration of CEPACs in the stock market exchange.

Additionally, the administration has to provide the CVM with up-to-date information on the amount of bonds sold in public and private auctions and the amount of CEPACs that may be distributed in the future. The administration is responsible for immediately communicating relevant information that may directly or indirectly affect CEPAC prices and the existence of studies or law initiatives that can change the master plan, urban operations, or CEPACs.

The administration should provide real estate agents with information on the market value of lots inside the perimeter of UOs, the consequences of the infrastructure interventions on existing lots or buildings, analysis of demand for additional building rights, studies of the environmental impact of the UO, and how the total amount of CEPACs to be issued in each UO was estimated.

Funds obtained by selling CEPACs can be used for the following activities only: (1) land regularization, affordable housing projects, or land reserves;

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very highly priced land area also has a ZEIS. The São Paulo Master Plan of 2002 established 750 ZEISs occupying a total area of 31 square kilometers.

(2) directing and ordering the urban development; (3) implantation of public equipment; (4) creation of public and green areas; (5) creation of environmental interest areas; and (6) protection of historical, cultural, or landscape areas.

Conclusions and Recommendations

The new approach to land increment value due to urban development that was introduced in Brazil during the 1970s represented a major step in making Brazilian cities more economically, socially, and environmentally sustainable. The new legal and institutional tools, especially articles 182 and 183 of the Federal Constitution of 1988 and their regulation by the Estatuto da Cidade (city statute), provided local administrations with powerful tools to intervene in urban areas to help create balanced urban development. Incremental building rights and the onerous grant, the separation of the building right and the property right, and the social function of land property were crucial instruments in the creation of urban operations whose mission is to promote development in peripheral areas, revitalize central and historic areas, install new infrastructure mainly for public transportation, mitigate the problem of slums and build affordable housing, and avoid gentrification, among other functions.

The value captured through CEPACs has improved the efficiency of the system and has significantly increased the income per square meter sold. The initial price of CEPACs in Agua Espraiada UO was very low at R$300. Although prices rose after the fifth auction, around 300,000 CEPACs were sold for prices ranging from R$300 to R$371. In the eighth auction in Agua Espraiada UO, prices rose sharply to R$1,110; this may have been the first (failed) attempt of agents to speculate with CEPACs. In the next auction some months later, 650,000 CEPACs were offered at R$535 and 379,650 were sold at this price, more than 50 percent lower than in the former auction.

Trying to replicate the success of CEPACs in other countries should be considered, but with extreme care. A mechanical transfer of this tool will not work. The situation in Brazil and São Paulo has to be taken into account, but other realities should be the final criteria: the CEPAC mechanism to capture incremental value demands not only a buoyant real estate market but a robust financial market as well. The management of this new financial instrument requires considerable expertise on the part of the public servants who prepare the conditions for a favorable auction. The experience in São Paulo may help other cities use the same instrument while respecting the local conditions.

One perverse collateral effect of the success of an urban operation (even in those in which CEPACs do not exist) is that the rise in land prices promotes gentrification. Lower-middle-class people and families living in slums cannot afford to pay rent or buy houses in the UO areas. The only solution, which is being used in both the Faria Lima UO and the Agua Espraiada UO, is to declare some areas ZEISs in which the land can be used to build affordable housing only.

This changes the areas' highest and best use, and land prices tend not to increase. This instrument may mitigate gentrification and may also be used to provide land for houses for lower segments of the middle class.

One area in which research is needed is the effect of UOs and CEPACs on land and constructed area prices. With only five years of this practice and 18 public auctions in only two urban operations, it may be too soon to observe an effect. But it would be interesting to research the impact on property tax revenue, comparing the income obtained inside the perimeter of both UOs before 1995 up to 2009.

The CEPAC is a more efficient instrument to capture incremental value than was calculating the incremental value and sharing it with the developer on a 50 percent or 60 percent basis. This instrument should be extended to the other approved urban operations in São Paulo, such as Agua Branca and Anhangabaú-Centro.

In the UOs approved up to now, all the income from CEPACs or other forms of value capture must be invested in infrastructure (including affordable housing) inside the perimeter of the UO where it was produced. This restriction should be revised. In a UO in which the real estate market is dynamic—such as in Faria Lima UO—the total final income will probably be more than is needed for all the infrastructural projects. Part of the value created in a UO located in an expensive area should be destined to develop infrastructure in peripheral regions, where the needs of poor segments of the population cannot be met by UOs because developers are not interested in projects in such areas.

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