

IMPACTS OF REGULATIONS ON UNDEVELOPED LAND PRICES

A CASE STUDY OF BOGOTÁ

Oscar Borrero Ochoa and Carlos Morales Schechinger

Urban regulations in Latin America that create benefits to landowners as increased gains are usually welcomed, especially by those who own land where more benefits have been concentrated; for example, when zoning plans authorize development in one area but restrain it in another, or when building codes stimulate a type of housing but condone the provision of infrastructure. But urban regulations that impose charges on development, such as the provision of trunk roads, the dedication of land for environmental purposes, the inclusion of social housing, the readjustment of land with neighbors, or the payment of special charges, generate strong resistance.

Confronting Conventional Wisdom

One of the most frequent arguments against imposing charges on land development is that those charges will be transferred to the consumer through higher prices. However, land economics theory tells us that charges will be capitalized in the price of land, and therefore will be absorbed by the landowner. This happens because of the relative inelasticity in the supply of land that is well-located, has infrastructure, and is available for development. The relative scarcity of such land allows the landowner to collect the highest bid price, usually taking all of the payment capacity from the demand side, whether from the developer or the final user of the land.

Latin American stakeholders are skeptical about these theories, especially when discussing urban regulations. They are skeptical (if not cynical) about any land policies that impose new charges, including new laws and the implementation of

existing ones. This subject generates intense debate throughout the region for three reasons:

- 1) **ignorance**—architects, who are largely responsible for urban planning in the region, generally have little or no training in economics, and even economists working in fiscal policy may not differentiate the economic behavior of land taxes from other types of taxes;
- 2) **ideology**—right-wing politicians prefer deregulated markets, including land markets, but, paradoxically, left-wing politicians also favor deregulating the production of social housing for different reasons, but with similar effects; and
- 3) **interest**—landowners and land-holding developers seeking higher short-run gains versus lower yet more stable and sustainable profits resist extra costs, scaring consumers with an increase in prices and threatening politicians with an eventual collapse of business.

A Case Study of Bogotá

There have been few studies in Latin America on how regulations impact land prices, in part because information is difficult to come by and there are many methodological problems when one tries to isolate effects on prices that are dependent on many variables. A recent study in Bogotá, Colombia, sponsored by the Lincoln Institute, is producing some interesting though preliminary findings. One key purpose of the study was to measure how recently issued regulatory benefits and charges are impacting prices of undeveloped land.

Colombia introduced a new comprehensive urban law ten years ago, Law 388 of 1997. One of its main principles is “equitable distribution of costs and benefits of urban development.” That is, if a landowner wants to reap the benefits of land

TABLE 1
Regulatory Benefits and Charges on Undeveloped Land in Bogotá

	Group A	Group B	Group C	Group D
Specific Regulation	Decree 327, 2004, for undeveloped large parcels below 10 hectares	Decree 436, 2006, for undeveloped large parcels above 10 hectares	<i>Plan Zonal Norte</i> for the northern periphery (decree expected to be approved in late 2007)	<i>Plan Zonal Nuevo Usme</i> for the southern periphery (Decree 252, 2007, approved after this market fieldwork was done)
Basic Benefits	FAR: up to 1.0 (1)	FAR according to zoning contained in the urban plan (POT)	None; see extra benefits	None; see extra benefits
Basic Charges	Those derived from discounts when calculating FAR (1) and for standard neighborhood facilities (2)	Those derived from land readjustment, for discounts when calculating FAR (1), and for standard neighborhood facilities (2)	Those derived from land readjustment, for discounts when calculating FAR (1), and for standard neighborhood facilities (2)	Those derived from land readjustment, for discounts when calculating FAR (1), and for standard neighborhood facilities (2)
Extra Benefits	Additional FAR, depending on zoning, up to: 1.75 residential 2.0 residential 2.5 mixed, office and commercial	Additional FAR, depending on zoning and shared with neighbors through land readjustment, up to: 1.75 residential 2.0 residential 2.5 mixed, office and commercial	Profitable land uses and higher FAR established in a specific partial plan and shared with neighbors through land readjustment	Relatively profitable land uses and higher FAR established in a specific partial plan and shared with neighbors through land readjustment
Extra Charges	<ul style="list-style-type: none"> • 20% social housing • Payment for trunk roads 	<ul style="list-style-type: none"> • 20% social housing • Payment for trunk roads, except if 100% is for social housing • 4.0 m² per inhabitant for green space; minimum of 17% of total area • Develop the land only by establishing a specific partial plan implemented through land readjustment 	<ul style="list-style-type: none"> • Social housing in various proportions; unprofitable land uses and costs of infrastructure and major facilities established in a specific partial plan and shared with neighbors through land readjustment • Land value increment tax at a rate of 50% (3) 	<ul style="list-style-type: none"> • High percentage of social housing; plots and services for self built housing; unprofitable land uses, costs of major facilities and infrastructure established in a specific partial plan and shared with neighbors through land readjustment • Land value increment tax at a rate of 50% (3)

Notes

- (1) For basic FAR (floor to area ratio) the 'area' is the net surface of the undeveloped land, i.e. after major rights of way, environmental areas, and areas of unfeasible development have been discounted.
 (2) All developments are required to provide basic standard neighborhood services and land dedications (approximately 40% of net area).
 (3) According to Municipal Bill 118, 2003, all parcels are subject to this tax (*Participación en plusvalías*). Parcels in groups A and B were virtually exempted from the tax because they are located in areas that were downzoned in the new zoning regulations of the urban plan.

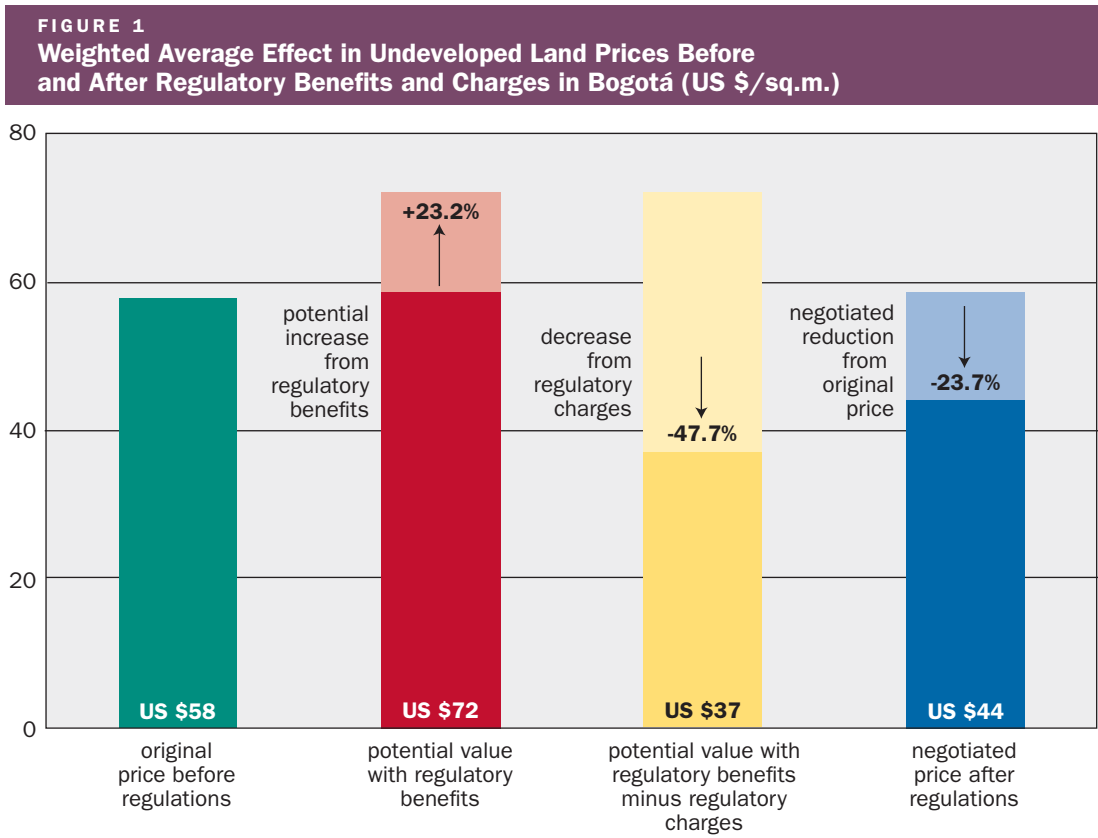
Source: Adapted from Borrero (2007)

being developed for urban purposes, he or she should bear part of the costs of doing so.

Bogotá's local government has been quite advanced in implementing many aspects of the law. Among the city's initiatives are: an urban plan (*Plan de Ordenamiento Territorial, POT*) with many specific zoning regulations; a new tax on the increase in land value due to public investments or changes in land use; two specific regulations that allow extra density for undeveloped parcels that pay for trunk roads and include social housing and extra green space; and two major zonal plans in the expansion areas that will regulate how land-

owners assemble their land in large projects, and how they should share costs and benefits under a multiple land use *Plan Parcial*. Table 1 organizes and summarizes regulations for four groups of parcels in Bogotá.

The research team defined a sample of 30 properties comprising 335 hectares, or about 13.6 percent of the urban area of Bogotá. This area represents 45.4 percent of the 737 hectares of undeveloped land that was offered in the market from June 2005 to March 2007, and 6.2 percent of the 5,408 hectares of undeveloped land regulated by the four types of regulations.



For each parcel the research team:

- surveyed the original asking price either before regulations were imposed or before landowners became aware of them;
- calculated the potential value of each parcel with extra regulatory benefits derived from new densities or land use allowances;
- calculated the cost of regulatory charges deducted from the potential value (actually calculating the residual value of land), and confirmed with developers if it was the maximum value that they would view as acceptable; and
- negotiated the price with the landowners to see how much they would reduce (or increase) their original value after arguing that new regulatory charges and benefits would be involved. Actual closing prices were used when they were available instead of the (hypothetically acceptable) negotiated prices.

Figure 1 shows the behavior expected under different conditions using the average value of the 30 cases surveyed, weighted by the surface of each parcel. The findings show that the regulatory benefits increase the potential value to 23.2 percent higher than the original price. But these benefits are only possible when used against regulatory charges, which then reduce the potential value by

almost 47.7 percent (or 35.6 percent if compared with original price). When landowners are made aware of regulatory charges and benefits and negotiate a new price, they are accepting a reduction of only 23.7 percent of their original price.

These are weighted averages, yet they show a trend: in general, prices are not going up as skeptical stakeholders in Latin America usually expect, but in fact are going down. It is quite understandable that if regulations on land only increased benefits, then prices would go up in those areas that are affected. But if regulatory benefits are combined with extra charges, then the increase might be offset. If these charges outweigh the benefits, then prices are likely to go down. This seems to be true in most of the cases under study, but the exceptions are also of interest.

A Closer Look at Affected Properties

Owners of 18 of the 30 properties in the survey accepted reductions of their original asking prices at a level that would allow the developer to absorb all the statutory charges, thus not transferring them to the consumer. In seven cases the landowners agreed to reduce their prices, although not enough to incorporate all of the charges; two of these owners came within 5 percent and 7 percent

of covering all charges. In five cases, landowners actually asked for higher prices than originally, arguing that their expectations were now higher, whether because of better zoning or different market conditions that would allow regulations to be changed. On the other hand, developers were not willing to pay higher prices than those calculated by the research team, even in cases where the parcel was considered well-located.

The difference in original and negotiated prices varies from one group to the other; apparently this depends on the balance between the regulated benefits and charges (see tables 2 and 3 for survey results and weighted averages in each group).

In Group A, where regulations allow for extra FAR, benefits may increase the value to a weighted average of 18.1 percent above of the original ask-

ing price. Yet, regulatory charges such as social housing and payments for trunk roads represent 25.2 percent of the potential value of the parcels once new regulatory benefits have been incorporated. Since charges outweigh benefits, the end result is that original prices drop by 12.5 percent on average.

In Group B, with similar regulatory benefits, potential values actually decreased by 15.2 percent when compared to the original asking prices, apparently because old regulations allowed for higher densities and almost any land use, and therefore expectations were high; new zoning has curtailed this intensity of development because of infrastructure constraints. Regulatory charges for this group include those of the previous group plus extra green space and land readjustment with their

TABLE 2
Regulatory Benefits and Charges on Undeveloped Land in Bogotá

	Group A			Group B			Group C			Group D		
Total surface of regulated undeveloped land	909.0 ha			2,705.0 ha			1,044.3 ha			749.7 ha		
Surface of undeveloped land actually in the market or being negotiated during the period of survey (June 2005–March 2007)	284.9 ha			129.3 ha			139.5 ha			183.7 ha		
	# (1)	ha (2)	% (3)	#	ha	%	#	ha	%	#	ha	%
Parcels surveyed	13	27.6	3.0	9	47.1	1.7	6	99.4	9.5	2	160.3	21.4
Subgroup of parcels that reduced the price enough to absorb regulatory charges	9	20.6	2.3	4	29.5	1.1	4	80.6	7.7	1	6.3	0.8
Subgroup of parcels that did not reduce the price or not enough to incorporate all regulatory charges	4	7.0	0.8	5	17.6	0.7	2	18.9	1.8	1	154.0	20.5

Notes

(1) Number of parcels in the group or subgroup

(2) Total surface of parcels in the group or the subgroup

(3) Percent of surface of parcels in the subgroup, compared to the total surface of undeveloped land regulated in the group

ha = hectares

Source: Adapted from Borrero (2007); Maldonado (2007)

TABLE 3
Average Variations of Values Weighted by Total Surface of Parcels by Group

	Group A	Group B	Group C	Group D
Extra regulatory benefits as % of original price	18.1%	-15.2%	25.9%	142.7%
Extra regulatory charges as % of original price (before extra benefits)	11.7%	28.5%	49.2%	39.3%
Extra regulatory charges as % of potential value (after new regulatory benefits)	25.2%	15.7%	59.6%	75.0%
Reduction of price after new regulations as % of original price	12.5%	14.3%	38.6%	10.2%

Source: Adapted from Borrero (2007)

neighbors, representing 28.5 percent of the original asking price. Five of the nine landowners in this group resisted price reductions and in fact increased their original price. This is a possible explanation for a reduction of 14.3 percent of the group's weighted average, similar to the first group where charges are not as high yet benefits were similar.

Groups C and D are more complex because these northern and southern areas of the city are experiencing the most pressure to develop and are subject to special provisions. These additional regulations not only require land readjustment with specific partial plans, but also must include a mixture of profitable and unprofitable land uses (such as high schools and special environmental areas); substantial social housing, and in the southern area substantial numbers of plots for self-built housing; important investments in infrastructure; and a land value increment tax of 50 percent to be paid by the developer. In such areas the discussion about the impact of regulations on land prices has become quite heated, yet preliminary evidence from the survey shows that prices are going down and will continue to do so.

Table 3 shows that for Group C in northern Bogotá regulatory benefits will increase the value of the parcels on average by 25.9 percent above the original value, but regulatory charges will be 49.2 percent. The original prices already contained some high expectations because the parcels are located in the path of the most noticeable development of Bogotá and in high-income and commercial areas. Nevertheless, four cases that actually closed transactions have fully accepted the charges, and two others accepted substantial reductions, though not enough to cover all charges. The average weighed reduction from the original asking prices was 38.6 percent for this group.

Group D, in the Nuevo Usme area south of Bogotá, represents an interesting situation where the government is trying to win the battle against illegal subdividers that supply unserved plots to the poor at comparatively high prices (Maldonado and Smolka 2003). The government's intentions are to provide for alternative serviced land at reasonable prices by engaging landowners and developers in land readjustment schemes that are almost self-financed. The city is using most of the land management tools provided by the new law, although the subdividers are resisting the new regulations as much as they can.

To understand how regulation affects land

prices, the research team was able to document two cases in Group D: one landowner closed the deal by accepting a price reduction and incorporating the full cost of extra charges; the other—the largest parcel in the survey and in the area—had not closed at the time of the survey, but had substantially curtailed his expectations. The average increase in value of these parcels from the extra benefits of mixed land uses and increased density represents 142.7 percent of the original asking value; thus the potential value represents 242.7 percent of original price.

Yet the extra charges in Group D are also high at 75 percent of the potential value, or 39.3 percent below the original value. The weighted average shows that the landowners are accepting a 10.2 percent reduction compared to their original asking price. (Just as this article was being finalized, the large landowner was negotiating an additional reduction of his asking price, which would bring the weighted average to 39.3 percent instead of the 10.2 percent reported in the survey, in fact accepting all of the regulatory charges.)

Some Observations

One of the most important results of this data, preliminary though it may be, is that individual land prices tend to go down when regulatory charges are imposed. These charges are clearly not transferred to prices as erroneously argued by some stakeholders. It is expected that other findings from the Bogotá survey will add to the discussion, along with other studies that the Lincoln Institute is undertaking in Latin America. At the same time, more questions need to be asked.

For example, the Bogotá research team found very diverse levels of awareness of the 1997 law and other regulations among the landowners, and even among some of the brokers who act on their behalf. Among property appraisers and developers the implications of the regulations seem to be more internalized. Local authorities and policy makers seem to have mixed feelings, though they are putting the new law into practice slowly. Scholars from universities in Bogotá have played a major role in explaining the issues to the stakeholders involved.

Markets take time to adjust to new regulations. Thus, some of the cases in the survey that have shown little or no reduction in prices might take longer to adapt. It is not surprising that landowners are slow to assimilate new regulations, because for many of them this land transaction will be a

once-in-a-lifetime experience. Other stakeholders representing the demand side will have many such opportunities and tend to be more aware of the impact of regulations. This difference fosters even further asymmetric information from the supply and demand sides, which is characteristic of Latin American land markets.

Another interesting point is that, except for the increment in land value tax, the regulations affecting parcels in groups C and D had not fully come into force at the time of the survey. Nevertheless, the benefits and charges were already having an impact on prices. Two possible reasons are that some of the landowners have been involved in discussions about the new regulations and are thus more aware of the future implications, and there has been a stronger commitment from the local government to implement the regulations in these areas.

A related issue has to do with the stability of regulations, or at least of public policy, and the commitment of politicians and city officials. Some landowners in the survey asked for higher prices originally, betting that regulations would change in their favor—that is, that regulatory charges would be removed or subsidized—and that benefits would remain or increase to reflect more profitable land uses, even when demand would not pay for them in the long run.

In some cases the negotiated price was even lower than the potential value that had already been diminished by the regulatory charges. We suggest two possible explanations. One is a manifestation of asymmetric information, that is landowners might be aware of the new regulations, yet they can not calculate the impacts as well as developers. Another explanation is that these parcels have not been on the market long enough for more than one developer to bid on the land and take the price to a more realistic residual value. The regulations are still in the process of being enforced, and developers have been acting very cautiously. Furthermore, many of the negotiated prices are not yet closing prices. Even though substantial amounts of land appear to be on the market, in the few transactions actually completed, landowners seem not to be in the position to retain their land until they have a clearer picture of the future.

Owners who retain land benefited by regulations in anticipation of a more favorable gain might impose burdens on cities that would then have to expand future development into unfavorable areas

▶ ABOUT THE AUTHORS

OSCAR BORRERO OCHOA is an economist, a certified appraiser, and a private consultant on property markets, real estate development projects and management. He has been president of Camacol, the Colombian organization of the building industry, and Fedelonjas, the Colombian organization of property appraisers. He is lecturer on urban economics at the University of the Andes and the National University of Colombia-Bogotá, and is a frequent speaker in Lincoln Institute courses. Contact: oscarbarrera@cable.net.co

CARLOS MORALES SCHECHINGER, an architect and urban planner, lectures on land policy at the School of Architecture of the National Autonomous University of México and the Institute for Housing and Urban Development Studies (IHS) in Rotterdam, The Netherlands, and he coordinates and participates in classroom and online courses for the Lincoln Institute. He has held various posts in federal and local government and in development and commercial banks in Mexico. Contact: moralesschechinger@gmail.com

▶ REFERENCES

- Borrero, Oscar. 2007. The effects of land policies on urban land prices in Bogotá. Working Paper. Cambridge, MA: Lincoln Institute of Land Policy.
- Maldonado Copello, Maria Mercedes. 2007. Inclusión y derecho a la ciudad: Línea gestión del ordenamiento territorial. Secretaría de Hábitat de Bogotá, Misión Hábitat Bogotá. <http://www.habitatbogota.gov.co/>
- Maldonado Copello, Maria Mercedes, and Martim O. Smolka. 2003. Using value capture to benefit the poor: The USME project in Colombia. *Land Lines* 15(3) July.

at higher costs. A sharing of costs and benefits between supply and demand in the land business, a central principle in the Colombian law, seems to be a constructive alternative. One of the benefits to the landowner from retaining land is to put pressure on the market to get to higher prices.

When the increment on land value charge (*Participación en plusvalías*) was introduced in Bogotá, it included a rate that increased during the first three years, from 30 percent in 2004 to 50 percent starting in 2006. Landowners were thus eager to sell as quickly as possible during the first two years in order to prevent their gains from diminishing further. A 50-percent rate on net land value increment reduces the retention premium in half, though not enough to preclude retention, and is certainly a mitigating factor.

This Colombian case is increasingly under scrutiny by policy makers throughout Latin America who are considering similar options. These preliminary findings on the impacts of regulatory benefits and charges on land prices will help to throw some light, if not on actual policy making, at least on inviting more research to be done on additional parcels and conditions. **L**