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New York City
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Patterns of Global Urban Expansion: Implications for the Future

Data from global satellite imagery and new technologies for processing digital maps are facilitating the study of urban expansion on a global scale. The Lincoln Institute of Land Policy's most recent policy focus report, *Making Room for a Planet of Cities*, by Shlomo Angel and his colleagues, demonstrates this new capability (see page 24). It analyzes the spatial structure of cities using four complementary data sets: Landsat satellite images

for 3,646 global cities with a population over 100,000 in 2000; a detailed stratified sample of 120 of these cities with data from 1990 and 2000; geo-coded census tract data for 20 U.S. cities from 1910 to 2000; and data drawn from digitized historic maps for 30 representative world cities from 1800 to 2000.

Metrics of urban spatial structure based on these data sets measure a city's built-up area (containing buildings and impervious surfaces) and the city footprint (the built-up area plus open spaces surrounded by or within 100 meters of built-up area). Available population data allow the calculation of population densities for these areas.

The population and area measures produce comparable urban built-up area average densities in 2000 that range in the sample of 120 global cities from 555 persons per hectare in Dhaka, Bangladesh to only 15.7 in Tacoma, Washington. Urban built-up area average densities vary systematically across country groups, ranging from 25 persons per hectare in land-rich developed countries (United States, Canada, and Australia); to 50 in other developed countries (Europe and Japan); and 130 in developing countries. Analysis of built-up area densities across cities supports the predictions of urban theory: for example, higher incomes and land availability are associated with lower densities; and larger city populations are associated with higher densities.

Urban average densities have declined in the three data sets with time series data: they fell at 2.0 percent per year for built-up area density in the 120 global cities from 1990 to 2000; at 1.9 percent per year for census tract density in



Gregory K. Ingram

the 20 U.S. cities from 1910 to 2000; and at 1.5 percent per year in the 30 representative cities from 1800 to 2000. In this 30-city sample, densities typically peaked around 1900 and declined since then. A U.S. exception is Los Angeles, where average census tract densities have increased since 1940 and now exceed those of New York City. The average census tract density in several other U.S. cities has leveled off since 1990,

albeit at low levels around 20 persons per hectare.

In terms of fragmentation, the average city footprint density is half of the built-up area average density, implying that a typical city has as much land in its urbanized open spaces as in its built-up areas. In 2000, urbanized open space as a share of built-up area ranged from a low around 0.4 (São Paulo, Brazil) to a high around 1.8 (Zhengzhou, China). The proportion of urbanized open space across cities decreased somewhat from 1990 to 2000. Although fragmentation values did not differ between developed and developing countries, fragmentation in Chinese cities is particularly high, with much land remaining under cultivation within their city footprints.

Demographic forecasts indicate that the world's urban population will double from 3 billion in 2000 to 6 billion in 2050, with nearly all such growth occurring in developing countries. This implies a doubling of urban built-up areas in the unlikely event that urban population densities will remain constant. If densities decline by 1 percent annually (half the historic rate), city built-up area will triple, and a 2 percent annual decline will increase built-up area five-fold.

Containment strategies that may be appropriate in the United States and other low-density developed countries are likely to fail in developing countries where city populations are expected to grow several-fold over the next few decades. These cities need to prepare for their future expansion by realistically projecting their built-up areas and allocating land for both open spaces and rights-of-way for the arterial road networks and other infrastructure that will be needed to support urban growth.

Implementing Local Property Tax

Omar Pinto Domingos



Photo courtesy of the Municipality of Belo Horizonte (Archive / PBR)

Belo Horizonte, founded in 1897 as the capital of Minas Gerais state, is the first planned city in Brazil.

Cities face major difficulties when attempting to introduce a more efficient property tax system. One such challenge is controlling volatile political issues associated with taxes levied directly on assets, such as the highly visible property tax. The close proximity between the taxing authority and the taxpayer translates into political pressure to reduce taxes and avoid updating property valuations. City officials become an easy target of criticism and may suffer electoral consequences.

Although the property tax is recognized internationally as a preferred instrument to finance urban public services, in most Latin American countries the tax has limited significance as a source of revenue, representing on average 0.32 percent of GDP (De Cesare 2010). Brazilian cities collect an average of about US\$46.50 per capita in property taxes per year. However, most cities do not reach the national average. In more than half of the municipalities, revenues do not exceed US\$5.00 per capita (Afonso et al. 2010).

The Brazilian Property Tax Model

The property tax (IPTU: *Imposto sobre a Propriedade Predial e Territorial Urbana*) is a direct tax paid to the local municipality based on the estimated fair market value of real estate property. In Brazil, much of the potential for collecting this tax is lost because local authorities fail to administer the tax correctly and effectively. Discussions of legislative revisions of the IPTU always result in heated debates and intense political response, in many cases causing mayors and other officials to avoid embarking on the process.

An added problem is the strict legal requirement that valuation criteria must be approved by law before the tax base can be updated. The criteria must include the characteristics of the property and its components, as well as the monetary value attached to each component. In other words, it is not enough for Brazilian legislators to set criteria to determine that one property is more valuable than another and therefore must pay a higher tax.

Reform in Brazil

The law itself must clarify how a property with certain characteristics will be appraised in monetary terms.

After years of debate, Brazil's Superior Court ruled in 1996 that a municipal law would be required to update the IPTU tax base whenever the adjustment is higher than the official consumer price index (Statement 160). Before this ruling, cities used to reappraise the property values for tax purposes by executive acts (decrees), independently of the municipal legislature. Since this legal requirement was introduced in 1996, many local governments chose not to send the necessary bills to the municipal legislature for the much-needed updates of property valuation.

In some cases the resulting political disasters served as an alarming inhibitor to any new attempt to revise the tax base. To resolve this dilemma, several cities opted instead to raise the IPTU tax rates to compensate for their reluctance to reappraise properties. Moreover, for each new law approving an assessment update, new types of exemptions or tax reductions tend to be created, often cancelling the efforts to enhance the performance of the IPTU.

As a result of political resistance, the IPTU was often disregarded as a revenue source for municipal finance in Brazil. The largest cities, with more than 500,000 inhabitants, began to concentrate their efforts on the tax on services (ISS: *Imposto Sobre Serviços*); smaller cities relied more on funds transferred from state and federal government through the municipal revenue-sharing fund (FPM: *Fundo de Participação dos Municípios*) (table 1).

The federal Applied Economic Research Institute (IPEA 2009) reports the loss of IPTU's importance as a share of direct municipal revenues at the national level and the rise in revenues from the service tax—an indirect tax that tends to be regressive. The share of the IPTU in direct municipal revenues decreased from 38 percent to 28 percent between 1991 and 2007, causing it to lose its position to the ISS as the principal source of direct municipal revenue (table 2).

An important change that directly affected the IPTU came in December 2009, when the Ministry

TABLE 1
Composition of Municipal Revenues by Size of Municipality

Population Bracket (1000s of Inhabitants)	IPTU Share in Total Revenue (%)	ISS Share in Total Revenue (%)	FPM Share in Total Revenue (%)
Up to 5	0.5	0.9	51.4
From 5 to 10	1.1	1.5	35.9
From 10 to 20	1.4	2.0	33.7
From 20 to 50	2.7	3.0	25.7
From 50 to 100	4.8	5.0	17.5
From 100 to 500	6.4	7.4	11.7
From 500 to 1000	6.8	8.7	8.4
Over 1000	12.1	15.9	3.6

Source: National Treasury Secretary: FINBRA System (2004).

TABLE 2
Share of the IPTU in Direct Municipal Revenues (%)

Year	IPTU	ISS	ITBI	Municipal Charges	Municipal Welfare Contributions	Other
1991	37.9	27.9	11.2	15.9	2.29	4.93
1992	31.8	31.9	9.32	18.4	1.62	7.12
1993	18.9	44.1	7.62	16.2	2.43	10.84
1994	20.6	41.7	8.30	17.2	5.01	7.26
1995	30.0	36.0	7.09	18.9	5.20	2.77
1996	30.5	38.1	6.66	20.3	4.09	0.37
1997	30.9	39.6	6.41	19.9	2.88	0.34
1998	30.2	39.3	5.64	18.4	5.51	1.02
1999	31.2	37.3	4.94	19.0	7.08	0.56
2000	30.7	38.3	5.29	18.7	6.29	0.79
2001	28.5	37.5	5.81	19.8	6.14	2.21
2002	32.1	39.0	7.02	11.8	9.69	0.39
2003	32.5	38.4	6.34	11.1	11.2	0.40
2004	31.9	40.2	5.96	9.66	11.8	0.47
2005	30.9	43.1	6.20	9.47	9.94	0.33
2006	29.8	45.2	6.62	8.37	9.62	0.33
2007	28.6	47.0	7.01	7.34	9.73	0.33

Note: ITBI is a real estate transfer tax.

Source: FINBRA (Finances of Brazil); data from the National Treasury, processed by IPEA.

of Cities published Resolution Act No. 511 establishing National Directives for the Multipurpose Cadastre (CTM: *Cadastro Técnico Multifinalitário*). This law provided local governments with a valuable standard instrument on which to base their legisla-

tive proposals to update the IPTU tax base. The Lincoln Institute of Land Policy had a major role in supporting the development of the technical aspects of this legislation.

The Resolution Act states that property assessment for fiscal purposes is a technical process that must be carried out according to guidelines from the Brazilian Technical Standards Association (ABNT) to reflect fair market value. It also states that an effective IPTU promotes fiscal and social justice by ensuring equitable treatment of taxpayers. Periodic updating of the IPTU tax base is recommended either (1) every four years for cities of 20,000 inhabitants or more (smaller cities may adopt longer cycles); (2) when the assessment ratio is less than 70 percent or greater than 100 percent compared to the market value; or (3) when cumulative property values are not distributed equally, as measured by a dispersion coefficient greater than 30 percent.

What Prompted the Property Tax Reform?

Combined with a strengthened institutional framework, two other factors have put the IPTU back into the current debate about sources of municipal financing in Brazil. The first was the accelerated appreciation of urban land in both large and mid-sized cities. This appreciation was caused principally by economic growth, the housing credit explosion, low taxation, and low risk compared to investment in financial assets from 2003 to 2007 (Carvalho Júnior 2010). The expansion of the real estate sector exposed the discrepancy between the collection potential and the actual flow of funds into the public treasury from the property tax.

A second factor that unleashed the discussion about updating tax assessments to enhance the performance of the IPTU was the global economic crisis that began in 2008 and reached Brazil in 2009. As economic activity declined, reflecting lower consumption and production and a credit contraction, federal transfers to municipalities declined as well. The cities facing this loss of revenue had little alternative but to revive the IPTU, the oldest and most traditional local tax.

In this context, some of the larger Brazilian cities updated their property value maps with revised land value estimates, as well as the construction cost tables used to assess property values, both of which were extremely undervalued. Belo Horizonte, São Paulo, and Salvador are among the cities that

acted to strengthen their revenues by updating the tax base for the IPTU. These cities also introduced new policies to guide the implementation of the property tax.

It should be noted that to keep the IPTU tax base unchanged is a risk. One of the major sources of tax injustice, along with the problem of omissions in registering land or development areas, is the use of outdated appraisals when imposing the IPTU (Smolka and De Cesare 2009).

The Case of Belo Horizonte

Belo Horizonte is the capital and largest city of the state of Minas Gerais, located in the southeastern region of Brazil. With a population of 2.4 million, it is the fifth largest Brazilian city and the center of a metropolitan region with a population of approximately 5 million.

The local government has a long history of innovation and good governance. It was a pioneer in introducing the participatory budgeting process in 1993, in adopting GIS applications to improve city management, and in carrying out a widely successful campaign to eradicate hunger, among other noteworthy initiatives. Belo Horizonte collected approximately \$332 in property tax per capita per year in 2007, prior to the reform, ranking seventh among Brazil's large capital cities (Afonso et al. 2010).

The property tax reform started in Belo Horizonte with a revision of the tax base and was guided by the dual desire to eliminate distortions created by its antiquated model and to introduce a new fiscal culture that would support a permanent process of updating property valuation to reflect market variations.

The need for additional revenues and the experience of the 2009 financial crisis also influenced the mayor's decision. The subsequent reductions in economic activity and federal transfers convinced the local government that it had to establish more sustainable financial conditions to maintain administrative autonomy. Intensifying the use of the IPTU and convincing the lawmakers of this necessity was the first step on the road to update the property tax base.

In devising a strategy for tax reform, the city government realized the change could not be presented simply as a revision of property valuation driven by the need to increase revenues. It also had to involve other aspects, such as measures to miti-

gate the impact of the tax increase and to provide incentives for taxpayer compliance. Smolka and De Cesare (2009) note that despite the accuracy of valuation estimates, if the reassessment generates large differences in the amount of taxes due, there will be a reaction from taxpayers who are substantially burdened. In this case, plans must be offered that ease such impacts.

The Legislative Process

Once the reform was designed and its virtues and vulnerabilities were identified, the project was submitted first to the municipal legislative council to keep the focus on those empowered to vote and approve the bill. It is a common mistake to seek popular support before or during the voting process, and the executive often loses the battle if it tries to act on two fronts at the same time.

Voting processes in the case of the IPTU are established by municipal law. However, intimate knowledge of the legislative process is necessary, and it is a trump card at the same time. In Belo Horizonte it was important to avoid having either a long, drawn-out process that could leave room for extended questioning or too short a process because an unexpected event could put voting off indefinitely.

Once presented to the lawmakers, all points of the tax reform project were thoroughly clarified. All aspects, positive or negative, were discussed at the council and, of course, favorable aspects were always compared to any noted weaknesses. Legislators must be sheltered from the doubts that are always posed to them and constantly be well-informed and committed to the tax justice criteria embedded in the project. This is the main role of the mayor's representative, a key member of the core group that implemented the reform. As expected, at the end of November of 2009, the project was approved in its second and final round.

The legislative debate on the bill was both an end in itself and a preparation for the public presentation of the project. During the legislative approval process many expectations were created about the reform, especially by the press. From that point on, the strategy was to promote all of the benefits of the new IPTU system of assessment and collection to quell fears until the actual arrival of the tax bill in January 2010.

The Public Information Campaign

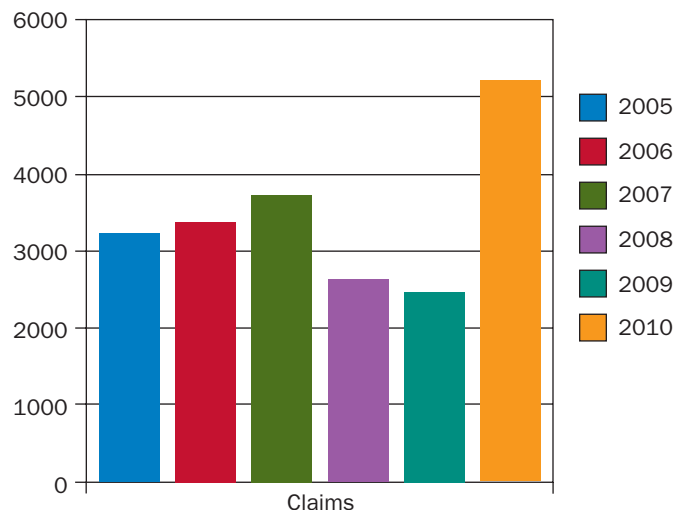
The main instruments used to present the reform to the public were launching a public information campaign and setting up information desks throughout the city to resolve citizen's queries. The next phase implemented the measures intended to mitigate the impact of the reform and to provide incentives for taxpayer compliance.

In the campaign, the administration emphasized the message that all the revenues from the IPTU are used for works that transform people's lives. The goal was to make the benefits of IPTU revenues concrete and visible, and that proved to be an efficient way of showing citizens the practical importance of the tax for the development of the city and for the well-being of its citizens. This message was repeated frequently.

In January of 2010, ten taxpayer assistance desks were operating in different parts of the city. Around 200 municipal staff participated directly in assisting taxpayers in more than 20,000 personal consultations. Of these, 26 percent became requests for review of the tax bill. This number was higher than in 2009, but much lower than the pessimistic expectations of those who foresaw a flood of claims (figure 1).

The overall strategy was to determine how well the situation was controlled, which involved implementing a tax structure compatible with the level of claims expected. Building this structure requires extraordinary foresight and attention to

FIGURE 1
Total Tax Claims by Year in Belo Horizonte



Source: Municipality of Belo Horizonte.



Photo courtesy of the Municipality of Belo Horizonte (Archive /PBH)

Belo Horizonte has more than 3.5 square meters of green area per inhabitant.

soothing the taxpayer and concentrating his attention on what really matters—the correct calculation of the tax and its payment within the timeframe established by law.

However, a good tax structure is not enough. Also important is training staff to provide taxpayer services. Trustworthy, relaxed, quick attention precludes spoiling the quality of the process, the revision of the tax base, and the new tax policies; good taxpayer services also lower the political risks of periodically updating property valuations.

Managing the Process

Among the useful lessons from the Belo Horizonte tax reform process is to avoid updating the tax base only in times of financial crises as an effort to boost revenues. Doing so may undermine the work of instituting accurate valuation practices. Instead, it is advisable to adopt and maintain a permanent updating policy that ensures fairness.

Second, the fairness of the revaluation process should be emphasized in light of the ever-changing market, which imposes price variations that require tax adjustments. Consumption taxes are indiscriminate as to the taxpayer's economic condition and have a regressive effect, whereas IPTU permits progressive rates and thus helps to improve equity, which in turn improves access to housing, contributes to municipal autonomy, and leads to efficient city planning. Instead of relying primarily on indirect taxes or federal transfers, the municipality that uses the property tax efficiently can reduce

social inequalities and better order urban spaces, while also avoiding speculation and helping to preserve the environment (IPEA 2009).

A third important point is to establish clear channels for discussing the reform plan. Preferably, policy steps should be taken by a trusted representative of the mayor who is authorized to negotiate on his behalf through a democratic and collective process. Belo Horizonte established a core group with one person named to coordinate what information will be disclosed and how it will be discussed with the public.

A misunderstanding of the process can create insurmountable resistance and place the complete project in jeopardy. Thus, a key factor is having a well-informed press agent who is capable of dealing with the criticism and inquiries that will surely come, as well as a technical person who knows the reform project well and can offer the explanations required by the different actors in the process.

Property Tax Relief Measures

Belo Horizonte succeeded in achieving its goal through arguments for justice and administrative autonomy that culminated in the approval of a complete revision of the property tax system, including the following relief measures.

- *Tax rate reductions.* These were introduced after updating the tax base to avoid a tax burden beyond the capacity of the taxpayer to pay.
- *Adjustment of the progressive tax.* The city also introduced graduated tax rate brackets consistent with property values, effectively replacing what had been, in practice, a single tax rate.
- *Expansion of the exemption value threshold.* This would correct for the fact that, in a dynamic real estate market, many older properties or those belonging to lower-income owners would be priced out of the IPTU exemption band once the revaluation is completed. To avoid this situation, the threshold was raised for property values exempt from the tax.
- *Spreading the impact of the reform over two fiscal years.* Even for taxpayers who have the capacity to pay, an increase in the IPTU could cause an imbalance in their personal budgets because of other financial commitments. Thus, the city allowed payment of half of the increase in 2010 and the full amount in 2011.
- *Deferred payment.* Special circumstances, such as unemployment, illness, or prior debt, can affect

one's ability to pay the property tax. The reform established that a taxpayer who demonstrates conditions of duress could request the postponement of a portion of his tax until 2013.

- *Creation of discount programs.* One of the objectives of the tax reform in Belo Horizonte was to make the IPTU a tax that promotes redistribution of income and contributes to a higher quality of urban life. Thus, the city offers tax discounts in exchange for citizen's participation in social, health, education, and economic development programs that foster development.
- *Discounts for early payment.* The annual IPTU in Belo Horizonte can be paid in eleven equal installments, due on the 15th of each month between February and December. Taxpayers who make a minimum of two installments by January 20 receive a 7 percent discount for pay-

ing in advance, and historically a large number of taxpayers chose this option. These advance payments guarantee sufficient revenues to meet financial commitments in the beginning of the fiscal year, which runs from January to December.

Evaluating the Results

The final part of the reform is to verify the results. In Belo Horizonte, this evaluation confirmed the success of the entire planning and implementation process, and is a source of information for future improvements. This success can be measured in part by the increase in early payments, which illustrates taxpayer acceptance of the model. Table 3 compares increases in numerous measures from 2009 to 2010, and table 4 compares increases in IPTU revenues for the first six months of both years.

	2009	2010	Variation (%)
Number of properties taxed	679,626	687,736	1.19
Total revenues assessed	R\$627,580,715.62	R\$744,701,235.66	18.66
Exemptions granted based on property value	55,087	96,195	74.62
Number of taxpayers making discounted payments¹	351,362	391,496	11.42
Revenue received in advance in January 2010 (R\$)²	R\$259,432,033.95	R\$328,670,247.90	26.69
Percentage of total revenues paid in advance	44.42%	47.45%	6.82
Number of taxpayers paying the tax in January 2010³	281,654	291,562	3.52
Total discount given to taxpayers who paid in advance	R\$19,346,644.04	R\$24,702,781.16	27.69

Notes: 1. Discount granted for prepayment in January, as well as other types of discounts. 2. Includes public services taxes collected along with the IPTU (trash collection, for example). 3. Payment discount is granted for prepayment of at least two of the eleven tax payment installments.

Source: Municipality of Belo Horizonte.

Fiscal Year	Revenue Collected from the IPTU (R\$1,000)						
	JAN	FEB	MAR	APR	MAY	JUN	JUL
2009	241,142	21,059	20,000	19,233	19,491	19,362	21,034
2010	278,179	26,650	24,239	24,021	24,231	23,365	23,735
% Change	+15.36	+26.55	+21.20	+24.89	+24.32	+20.67	+12.84

Source: Municipality of Belo Horizonte.

TABLE 5
Points to Observe in Planning a Strategy for Revision of Land Value Maps

Project Development	Voting on the Project	Public Presentation of the Project	Assistance	Process Evaluation
Identifying flaws in the prior model	Estimating voting time	Maintaining unique technical standards to clarify doubts	Creating a comfortable service structure	Comparing results
Encouraging political involvement of public authorities and creating work coordination groups	Maintaining the necessary approval base		Training specialized personnel to provide information and receive claims	Identifying structural flaws and proposing corrective measures
Developing a performance strategy for the approval of the reform	Supplying information necessary to convince legislators	Investing in publicity showing investment of revenues collected	Maintaining computational systems, monitoring risk, and immediately correcting flaws	Searching for mechanisms to permanently ensure quality control and fair market value data
Creating a mechanism to compensate tax increases and protect economically deprived sectors				

Nevertheless, all of these achievements can be lost over the long term if certain conditions are not met. One such condition is to institutionalize the periodic updating of property values used to

calculate the property tax. This is critical since the strategic planning for this reform was motivated precisely by the long period during which the Belo Horizonte land values map had remained unchanged, creating discrepancies from actual market prices and eroding city revenues.

A second condition is to create mechanisms that both guarantee the technical quality of tax assessments and relieve the local government of the political burden of performing the necessary updates. The objective is to make the updating procedure a legal obligation of a technical nature instead of a political decision.

Another option considered was the creation of an assessment committee to perform mass valuations coordinated by municipal authorities. Such a committee would bring together collaborators from entities that operate in the real estate market, such as brokers, builders, private assessors, or financing entities. This measure could help to mollify the political overtones that permeate the property tax system and develop property reassessment programs that rely on participants instead of critics.

Belo Horizonte’s successful experience (albeit with room for improvement) can serve as a reference for other cities that expect to update their property cadastre and their guidelines for mass assessment. Table 5 outlines some of the issues to be considered. **L**

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REFERENCES

Afonso, José, et al. 2010. The urban property tax (IPTU) in Brazil. Unpublished research report. Cambridge, MA: Lincoln Institute of Land Policy.

Carvalho Júnior, Pedro Humberto Bruno de. 2010. Defasagens na cobrança de IPTU. *Desafios do Desenvolvimento* 61 (January/February): 32.

De Cesare, Claudia M. 2010. Overview of the property tax in Latin America. Working Paper. Cambridge, MA: Lincoln Institute of Land Policy.

IPEA (Instituto de Pesquisa Econômica Aplicada). 2009. https://www.ipea.gov.br/portal/images/stories/PDFs/comunicado/090827_comunicadoipea28.pdf (27August).

Smolka, Martim, and Claudia De Cesare. 2009. Necessária, revisão requer transparência. *Folha de São Paulo*, October 14.

ASSESSMENT REGRESSIVITY

A TALE OF TWO ILLINOIS COUNTIES



istockphoto

Daniel P. McMillen

Most jurisdictions require residential assessments to be proportional to market value, but in practice assessment ratios—assessed value divided by sale price—are often lower for high-priced than low-priced properties. This tendency for assessment ratios to fall as sales prices rise is termed *regressivity*, because it means that property taxes are a higher percentage of property value for lower-priced properties. Regressive assessments have been identified in many jurisdictions and times (such as Cornia and Slade 2005; McMillen and Weber 2008; and Plummer 2010).

Assessment regressivity is an important issue because it has the potential to undermine support

for a property tax system. Consider a simple system in which taxes are 1 percent of a home's assessed value, with no exemptions or deductions. For example, a \$100,000 home should have a \$1,000 tax bill, and a \$1 million home a \$10,000 tax bill. However, it is not uncommon to find that a \$1 million home is actually assessed at \$800,000 or \$900,000, resulting in effective tax rates of 0.8 or 0.9 percent rather than the statutory 1 percent.

Having lower-than-prescribed assessment rates for some high-priced properties may result in greater variability in assessments within price groups. One owner of a high-priced home may accept a \$1 million assessment as an accurate measure of market value, while another may appeal and win a lower assessment. Different tax bills for identical properties can cause taxpayer resistance and resentment.

Residential towers on the north side of Chicago bordering Lake Michigan and Lincoln Park

TABLE 1
Traditional Assessment Performance Measures

	City of Chicago (2006)	DuPage County (1999)
Mean	9.4%	29.8%
Median	9.2%	29.9%
Value-Weighted Mean	9.0%	29.2%
Price-Related Differential	1.047	1.021
Coefficient of Dispersion	18.279	8.702

Source: Author calculations based on data from the Illinois Department of Revenue.

The Assessment Process in Illinois

I have analyzed data from two counties in the Chicago metropolitan area that provide quite different perspectives on assessment regressivity. In suburban DuPage County, assessment ratios decline uniformly with sales prices and there is no marked difference in the degree of variability in assessments across the range of sales prices. In the City of Chicago, which is part of Cook County, the degree of variability in assessment ratios is greater than the degree of regressivity. Notably, assessment ratios in Chicago are highly variable at low and very high sales prices, while not varying greatly with mid-range sales prices.

Illinois has a simple flat-rate property tax, but the homestead exemption produces a degree of progressivity. This exemption is generally a flat amount that does not vary by price, although Cook County has an “alternative general homestead exemption” that can make the exemption higher in areas with rapid price appreciation. The basic homestead exemption is designed to produce much lower effective tax rates for low-priced properties—where the exemption is often high relative to market value.

Assessment practices in DuPage County are similar to those in all but one of the 102 counties in Illinois, where properties are assessed on a four-year cycle at 33 percent of market value. In DuPage County, properties were most recently assessed in 2007 and new assessments will be established in 2011. Cook County alone has a classified system with varying statutory assessment rates. Prior to 2009, the statutory rates were 16 percent for residential properties, 38 percent for commercial, and 36 percent for industrial, although actual assessment rates were much lower. In 2009, the statutory rates were “recalibrated” to 10 percent for residen-

tial and 25 percent for commercial and industrial properties. Cook County assesses its properties on a rotating, three-year cycle. The City of Chicago was last reassessed in 2009, and all city properties will be reassessed again in 2012. Properties in the north suburban part of Cook County were reassessed in 2010, and south suburban properties will be reassessed in 2011.

Traditional Measures of Regressivity

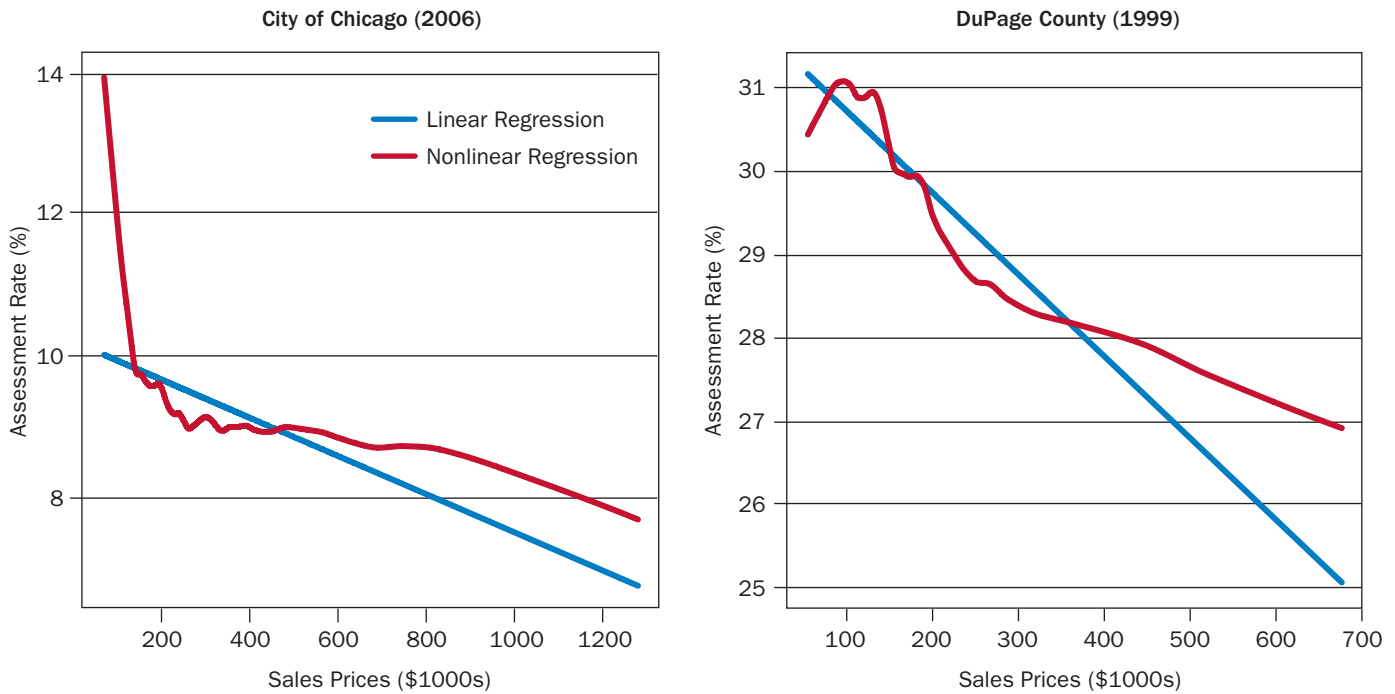
The importance of assessment regressivity has led the International Association of Assessment Officers (IAAO 2007) to recommend that an analysis of regressivity be included as part of any study of assessment accuracy. One common procedure recommended by the IAAO to evaluate assessment regressivity is a descriptive statistic, the price-related differential (PRD), which is the ratio of the simple mean assessment ratio to a comparable statistic that places more weight on higher-priced properties. Typically this ratio is greater than one, which implies that higher-priced properties have lower average assessment ratios than lower-priced homes.

Table 1 presents traditional IAAO measures of residential assessment performance for the most recent reassessment year for which I have data—2006 in Chicago and 1999 in DuPage County. The data on sales prices and assessed values come from the Illinois Department of Revenue, which is responsible for monitoring assessment performance for all counties in the state. I focus on Chicago rather than all of Cook County to keep the sample size more manageable, to focus on a single assessment year, and to avoid combining the county’s three assessment districts.

Chicago’s average assessment rate (mean) of 9.4 percent differs significantly from the statutory value of 16 percent. In DuPage County, the average assessment rate of 29.8 percent is much closer to the statutory 33 percent rate, and it would likely be even closer if the timing of the sales prices and assessment origination dates were closer. The value-weighted mean is calculated by weighting each observation by its sale price. The finding that the value-weighted mean is less than the arithmetic mean implies that higher-priced properties tend to have lower than average assessment ratios in both counties.

The price-related differential (PRD), which is the ratio of the value-weighted mean to the arithmetic mean, formalizes this measure. IAAO stan-

FIGURE 1
Regression Estimates



Source: Author calculations based on data from the Illinois Department of Revenue.

dards call for the PRD to be no higher than 1.03; by this standard, DuPage County’s degree of regressivity is acceptable while Chicago’s is not. The coefficient of dispersion (COD) is the traditional measure of assessment variability. By IAAO standards for residential properties, the COD should not exceed 15. Again, Chicago’s COD indicates excessive variability while DuPage County’s degree of variability is within IAAO’s acceptable range.

Statistical Analysis of Regressivity

A second IAAO-recommended procedure to measure regressivity is a statistical regression of a sample of assessment ratios on sales prices, which typically produces a negative coefficient for the price variable, i.e., a downward sloping line. This type of analysis provides estimates of the conditional expectation of the assessment ratio for any given sale price. Although several approaches exist in the literature, the basic idea is to estimate a function that produces a simple relationship between sales prices and assessment ratios. If the function implies that assessment ratios decline with sales prices, the assessment pattern is said to be regressive.

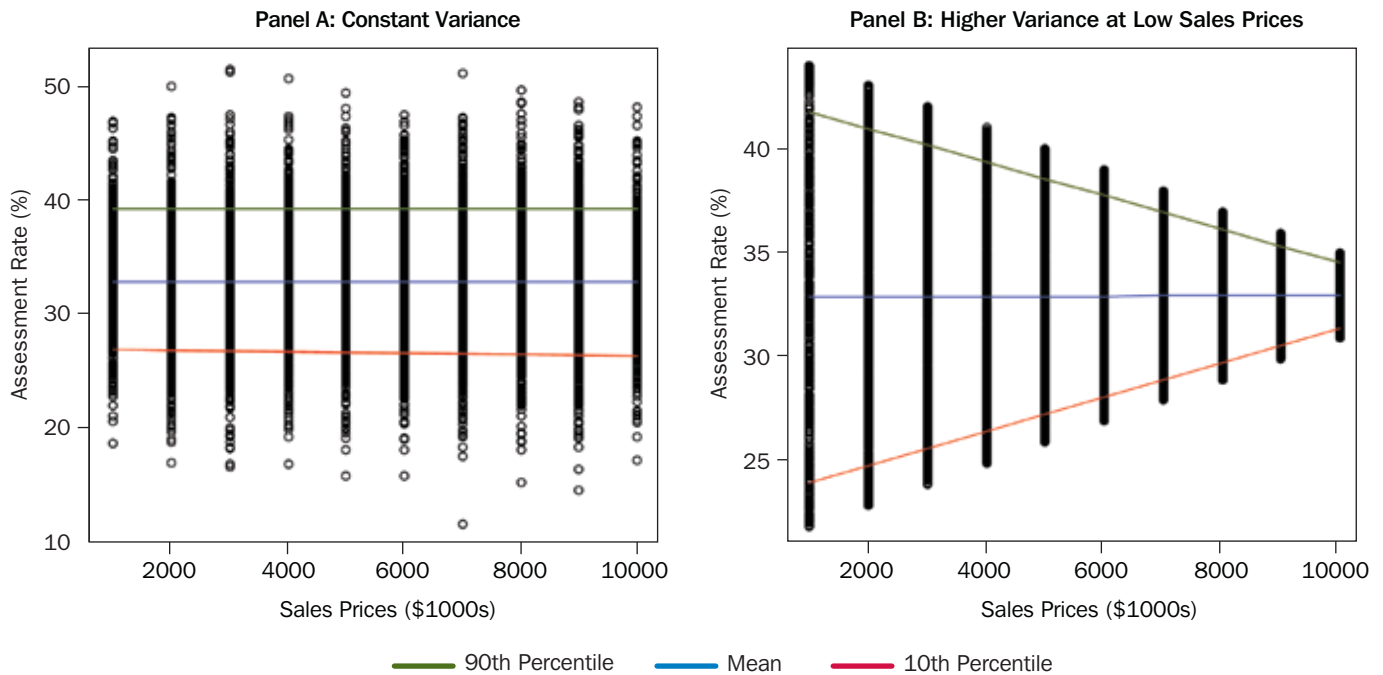
Figure 1 shows the estimated functions when assessment ratios are regressed on sales prices

using data from Chicago and DuPage County. The straight lines are simple linear regressions. The curved lines are a nonlinear estimation procedure—a locally weighted regression technique that estimates a series of models at various target values, placing more weight on values closer to the target points. For example, to estimate a regression with a target point of \$100,000, one might use only observations with sales prices between \$75,000 and \$125,000, with more weight placed on sales prices closer to \$100,000.

The linear and locally weighted regression estimates are much more discrepant for Chicago’s data set than for DuPage County’s. While both approaches indicate that assessment ratios fall with sales prices, the nonlinear procedure indicates that expected assessment ratios are extremely high in Chicago at very low sales prices—but still below the statutory rate of 16 percent.

The regression lines imply precise relationships, but they do not address differences in the degree of variability at different sales prices. It may be that both unusually high and unusually low prices are simply hard to assess accurately. If so, assessment ratios could have high variances at both low and high sales prices while being tightly centered

FIGURE 2
Simulated Data with Proportional Assessments



Source: Author calculations.

on statutory rates near the mean sale price. Neither the traditional PRD statistic nor standard regression procedures are well-suited for analyzing a situation where the accuracy of the assessment process varies with sales prices.

Quantile Regressions Using Simulated Data

Another statistical procedure, quantile regression, provides much more information on the relationship between assessment ratios and sales prices by showing how the full distribution of ratios varies by price. The easiest way to understand quantile regression is to imagine two data sets, A and B, where both have 10,000 observations. Each observation represents a sale price and assessment ratio pair, but sales prices are constrained to integers between 1 and 10 (figure 2).

In constructing data set A, a sale price is assigned, and then an assessment ratio is drawn from a normal distribution with a mean (and median) of 0.33 (the statutory rate in DuPage County). Data set A then matches the assumptions of a classical regression model, where the variance of the assessment ratios is constant across all values of sales prices. In constructing data set B, however, the

variance of the assigned assessment ratio is higher for lower sale price levels, but the mean is constant and equals 0.33 at each price.

In both data sets the mean is equivalent to the estimated linear regressions in this case, indicating no relationship between sale price and assessment ratio. If these regressions were estimated using real data, they would be interpreted as indicating that assessment ratios are proportional to sales prices, i.e., assessments are neither regressive nor progressive. Despite this finding, figure 2 clearly shows that in data set B assessments converge on the statutory 33 percent rate at high sales prices, whereas homes with low sales prices run the risk of having extremely high assessment rates.

Quantile regression estimates reveal the differences between data sets A and B in the degree of assessment ratio variability, and this approach can be estimated at any target value of the assessment ratio distribution. For example, since the 10 percent and 90 percent quantile lines are converging as sales prices increase, the quantile regression reveals what standard regression procedures do not—low sales prices have highly variable assessments and high sales prices have more precise assessments.

Quantile Regressions for the City of Chicago and DuPage County

In practice, linear regression, locally weighted regression, and a linear version of quantile regression all proved too restrictive to represent accurately the relationship between assessment ratios and sales prices in Chicago and DuPage County, especially for extremely low and extremely high sales prices. Instead, a nonlinear version of quantile regression provides the most accurate representation of the underlying relationship.

Figure 3 shows the results of nonlinear versions of the quantile regressions, which can be estimated at a series of target points, with more weight given to observations that are near the targets. From bottom to top, the graphs show the estimated 10, 25, 50, 75, and 90 percent quantile regression lines.

Chicago's results suggest that assessment ratios are relatively high at all quantiles for quite low prices, but the high variability is evident in the large spread between the 10 and 90 percent quantile lines. However, as the sale price increases from about \$250,000 to nearly \$800,000, the regression lines are close to horizontal. The variability is also low in this range. The quantile lines begin to have

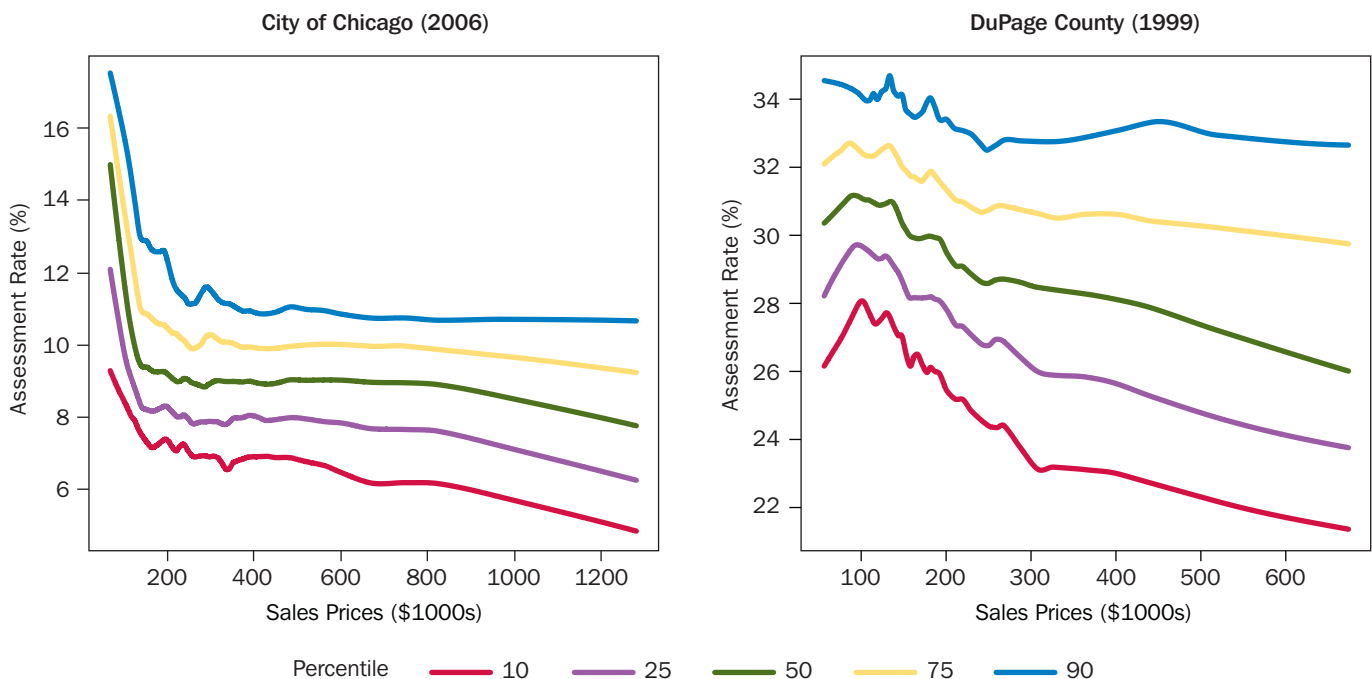
a downward slope again for prices above \$800,000, with a moderate increase in the variance. Thus, the Chicago results suggest that the standard analysis of regressivity is misleading in that most of the regressivity is concentrated at low sales prices where the variance is also quite high.

In contrast, DuPage County has relatively high assessment ratios and lower variances in the \$100,000–\$200,000 range of prices where most sales took place in 1999. Assessment ratios decline with sale price for all prices beyond about \$100,000, while the variance is increasing. The pattern of results for DuPage County is closer to what is implicitly assumed in a standard regression analysis of assessment regressivity.

Assessment Ratios Distributions at Alternative Sales Prices

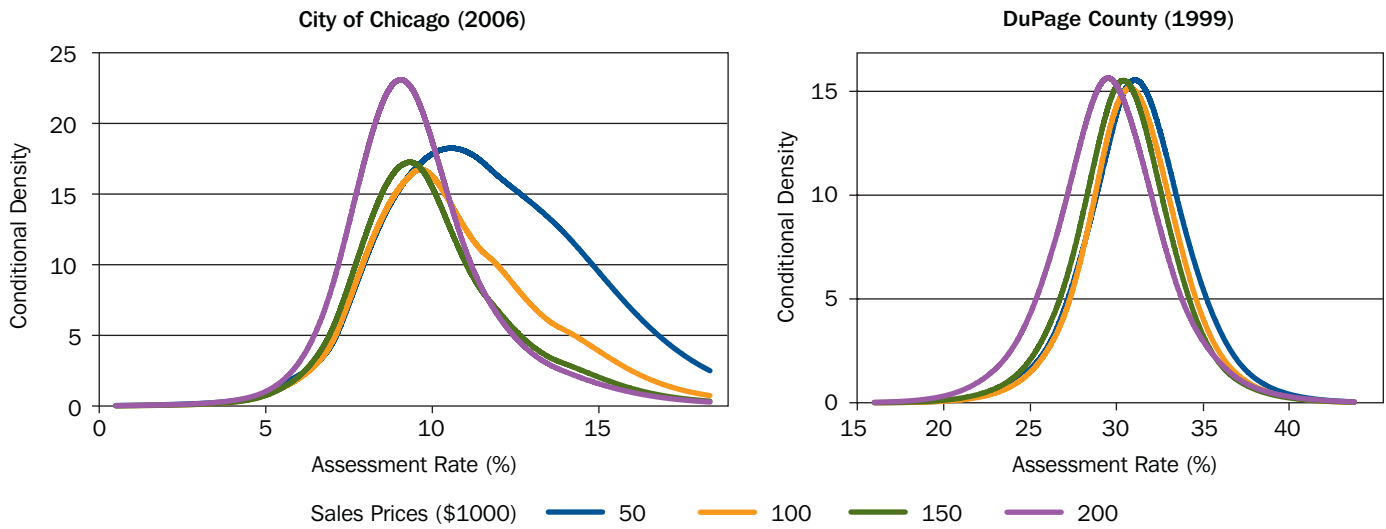
An alternative to quantile regression is to examine the actual distribution of assessment ratios at a variety of different target values for sales prices to see how assessment ratios vary at given sales prices. Since most of the interesting patterns occur at low sales prices, figure 4 shows estimated conditional density functions for prices ranging from \$50,000

FIGURE 3
Nonlinear Quantile Regression



Source: Author calculations based on data from the Illinois Department of Revenue.

FIGURE 4
Conditional Densities at Low Sales Prices



Source: Author calculations based on data from the Illinois Department of Revenue.

to \$200,000. The density function for Chicago has a huge variance at a sale price of \$50,000. As the price increases to \$100,000, \$150,000, and finally \$200,000, the density function moves to the left, meaning that lower assessment ratios become more common—an indication of regressivity. The distribution is also much more tightly clustered around the mean value of 9–10 percent, which indicates that the variance is reduced substantially.

In the contrasting case of DuPage County, the conditional density functions simply shift to the left as the target sale price increases with no pronounced change in variance. This parallel leftward shift of the conditional density function

shows what would be predicted by a classic regression analysis of a regressive assessment system.

Implications for Property Taxes

Assessment regressivity has important implications for individual tax bills, as exemplified in a simplified analysis of residential taxes in Cook County. Though not a literal representation of the county’s tax system, the analysis is a close approximation. The starting point for table 2 is the estimated market value, which we assume to be accurate. Although the statutory assessment rate in Cook County was 16 percent prior to 2009, I use an assessment rate of 10 percent because it is closer to the actual rate and it matches the recent recalibration. Thus, the proposed assessed valuation for the property is \$10,000.

However, Illinois also requires that assessments across the state must average 33 percent of market value. If assessments average less than 33 percent—as is mathematically a near certainty under Cook County’s classification system—the Department of Revenue calculates an equalization factor by which all assessments are multiplied. Using a representative value of 2.7 for the multiplier in table 2, the \$10,000 assessment turns into an adjusted equalized assessment value of \$27,000. Finally, the standard homestead exemption of \$5,500 (again, a representative value) is subtracted to produce the base for the homeowner’s property tax bill. Thus,

TABLE 2 Representative Homeowner’s Tax Bill in Cook County	
\$100,000	Estimated Market Value
X .10	Assessment Level (10 percent)
\$10,000	Proposed Assessed Valuation
X 2.7	2006 State Equalizer (multiplier)
\$27,000	Equalized Assessed Value (EAV)
– \$5,500	Homeowner Exemption
\$21,500	Adjusted Equalized Assessed Value (AEAV)
X .10	Sample Tax Rate
\$2,150	Estimated Tax Bill

Source: Author calculations.

TABLE 3
Property Tax Scenarios for Houses Valued at \$100,000 and \$500,000 in Cook County

Market Value	\$100,000			\$500,000		
Assessment Rate	9%	10%	14%	8%	10%	12%
Assessed Valuation	\$9,000	\$10,000	\$14,000	\$40,000	\$50,000	\$60,000
Equalized Assessed Value	\$24,300	\$27,000	\$37,800	\$108,000	\$135,000	\$162,000
Adjusted Equalized Value	\$18,800	\$21,500	\$32,300	\$102,500	\$129,500	\$156,500
Property Tax Bill	\$1,800	\$2,150	\$3,230	\$10,250	\$12,950	\$15,650
Effective Tax Rate	1.80%	2.15%	3.23%	2.05%	2.59%	3.13%

Source: Author calculations.

the sample tax rate of 10 percent and the adjusted equalized assessed value of \$21,500 produce a tax bill of \$2,150.


Table 3 compares house values and property tax rates under the assumption that assessments are regressive and are more variable for \$100,000 houses than for \$500,000 houses. Due to the homestead exemption, the property tax is somewhat progressive even when assessments are proportional to market value. Thus, a \$100,000 house that is accurately assessed at 10 percent of market value (\$10,000) ends up with a tax bill of \$2,150 or an effective tax rate of 2.15 percent, while a \$500,000 house that is assessed correctly at \$50,000 has a tax bill of \$12,950, or 2.59 percent of market value.

But, suppose that assessment rates for \$100,000 homes actually range from 9 to 14 percent, while the range for \$500,000 homes is only 8 to 12 percent. In this case, the progressivity of the homestead exemption can be reversed completely. Owners of low-priced homes who are “unfortunate” in receiving high assessments end up with effective tax rates of 3.23 percent, which is much higher than the average 10 percent value for owners of \$500,000 homes, and is even higher than the 3.13 percent tax rate paid by owners of high-priced homes assessed at 12 percent.

Moreover, actual tax payments vary significantly for otherwise identical homes—from \$1,800 to \$3,230 for \$100,000 houses and from \$10,250 to \$15,650 for \$500,000 homes. In other words, a homeowner may receive a tax bill that is nearly 80 percent higher than the neighboring house even if both have a market value of \$100,000.

Conclusion

Because assessment accuracy is the key to an equitable property tax, statistical measures of

regressivity are essential tools for evaluating property evaluation systems. Standard measures of regressivity can present an incomplete or even misleading picture of the range of assessment ratios in a jurisdiction. Newer analytic tools such as quantile regression can improve our understanding of the distribution of tax burdens and in this way help improve assessment equity. 

NOTE: *The statistical tools used in this article are included in a contributed extension package for the statistical program R. The package (aratio) is designed to be accessible to people who have limited knowledge of the R program but are familiar with other statistical software packages. Both R and aratio can be downloaded at no charge from www.r-project.org.*

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▶ REFERENCES

- Cleveland, William S., and Susan J. Devlin. 1988. Locally weighted regression: An approach to regression analysis by local fitting. *Journal of the American Statistical Association* 83(403, September): 596–610.
- Cornia, Gary C., and Barrett A. Slade. 2005. Property taxation of multi-family housing: An empirical analysis of vertical and horizontal equity. *Journal of Real Estate Research* 27(1, January/March): 17–46.
- International Association of Assessing Officers (IAAO). 2007. *Standard on ratio studies*. Kansas City, MO: IAAO.
- McMillen, Daniel P., and Rachel Weber. 2008. Thin markets and property tax inequities: A multinomial logit approach. *National Tax Journal* 61(4, December): 653–671.
- Plummer, Elizabeth. 2010. The effect of land value ratio on property tax protests and the effects of protests on assessment uniformity. Working Paper. Cambridge, MA: Lincoln Institute of Land Policy.

Affordable Housing in China



The Huilongguan affordable housing project is a large community of middle- and low-income families, including civil servants and teachers. It is located in the northeastern part of Beijing and has subway connections.

Photo courtesy of Juan Jing

Joyce Yanyun Man

Since 1978, the Chinese government has pursued various economic and housing reforms to expand private property rights in housing and to promote home ownership through the commercialization and privatization of urban public housing. This has involved terminating the old system of allocating housing units through public-sector employers and establishing a more market-based system of housing provision. The government now provides affordable housing by subsidizing commercial housing purchases or by offering low-rent public (social) housing to middle- and low-income families. At the same time, it

relies on the private commercial housing market to meet the needs of higher-income groups.

Recent Housing Reform and Outcomes

China's housing policies experienced a drastic change in 1998 when the central government ended direct housing distribution to employees through the former *danwei* or employer-based system. According to government plans, the affordable housing system targeted at middle-income households was established to provide support to nearly 70 percent of urban families. It also introduced housing cash subsidies to new employees and set up a Housing Provident Fund—a compulsory housing savings system to provide subsidized loans to employed homebuyers. Low-rent public housing is provided

by the government to low-income urban households, while commercial housing is provided by the market to meet the needs and demands of high-income families at the top 15 percent of the economic spectrum that have access to mortgage financing (Wang 2011).

This housing reform has resulted in a vigorous and fast-growing urban housing market and greatly improved housing conditions for urban residents. For example, the floor area per capita in urbanized areas increased from 6.7 square meters in 1978 to 28.3 square meters in 2007, and the home ownership rate reached to 82.3 percent in urban China in 2007 (Man, Zheng, and Ren 2011).

However, with urban housing prices skyrocketing since 2005, housing affordability has become a major issue in a number of large cities, and municipal governments have been called upon to increase the provision of affordable housing to middle- and low-income households. Government policies have been implemented in an attempt to stabilize urban housing prices, to discourage speculative behavior of homebuyers, and to reduce both the excessive lending practices of state-owned banks and the possible financial risks associated with the housing sector.

Urgent Need for Affordable Housing

Affordable housing is often defined as an adequate dwelling where less than 30 percent of monthly household income is devoted to rent, or where the dwelling's purchase price is less than three times a household's annual income. The housing price-to-income ratio (PIR) is the basic affordability measure for housing in an urban area. It is generally defined as the ratio of the median house price to the median family income. In the Global Urban Observatory Databases of UN-HABITAT, PIR is one of the important urban indicators, and a ratio between 3 and 5 is considered normal or satisfactory. In the United States and Canada, the PIR is 3.2 and 3.5, respectively, which meet the international standard for a normal or affordable level of housing (Demographia 2009).

Our study used the Large-Sample Urban Household Survey data collected by the National Bureau of Statistics of China to calculate the PIR in 2007 for urban China, and found it to have a value of 5.56 nationwide (Man, Zheng, and Ren 2011). This ratio falls in the category of "severely unaffordable" according to the criteria proposed by

UN-HABITAT, and is well above the normal range of 3 to 5. It indicates that the median price of the housing stock in the sample of 600 Chinese cities (based on the survey of 500,000 urban households) is more than five times annual household median income.

The Current Situation and Challenges

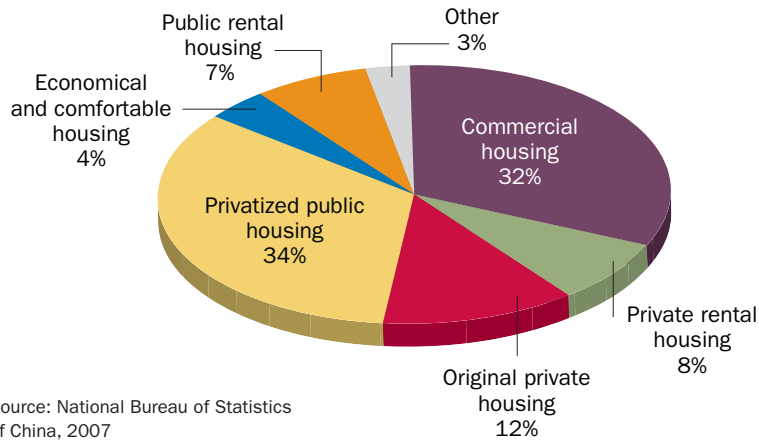
Affordable housing is often measured in terms of median values and incomes, but the concept is applicable to both renters and purchasers in all income ranges. Affordable housing in China, commonly known as "economical and comfortable housing," is designed to be available to middle- to low-income households, including public-sector employees, to encourage home ownership.

In general, the Chinese central government sets policies and mandates with respect to affordable housing, and the subnational governments, cities in particular, are responsible for the construction, financing, and management of that housing. The central government does not provide financial support to provincial and local governments for affordable housing through its budgetary spending or intergovernmental transfers, except for a few subnational governments in the fiscally strained and underdeveloped central and western regions.

Local governments are required to provide free land, reduce government charges and fees, and control developers' profits to lower the housing price for those who are qualified based upon government eligibility standards. In some cities, such as Beijing, affordable housing also includes price-controlled commercial housing whose price is held down by the provision of reduced land use fees and charges, as well as favorable land allocation by the government to help lower- and middle-income families become homeowners. The Housing Provident Fund, a compulsory saving plan with contributions by both employers and employees for housing purposes, helps employees buy a house with subsidized loans.

Local governments provide state-owned land to affordable housing projects through appropriation mechanisms. They usually appropriate land to developers who finance, construct, and sell the economical and comfortable housing units to the people considered eligible according to government standards and regulations. Middle-income families seeking market-oriented commercial housing may receive a subsidized loan from the

FIGURE 1
Housing by Tenure Type in Urban China (2007)



Source: National Bureau of Statistics of China, 2007

Housing Provident Fund. With housing prices lingering at levels inaccessible even to average salary earners, the current affordable housing system has encountered a number of serious challenges.

First, there is an enormous and growing demand for affordable housing in China. By the end of 2008, there were about 7.4 million low-income urban households in need of government support for housing (Lin, forthcoming). In addition, government population and labor statistics indicate that cities have an estimated “floating population” of 147 million, most of whom are migrant workers who often fall within the low-income group. At

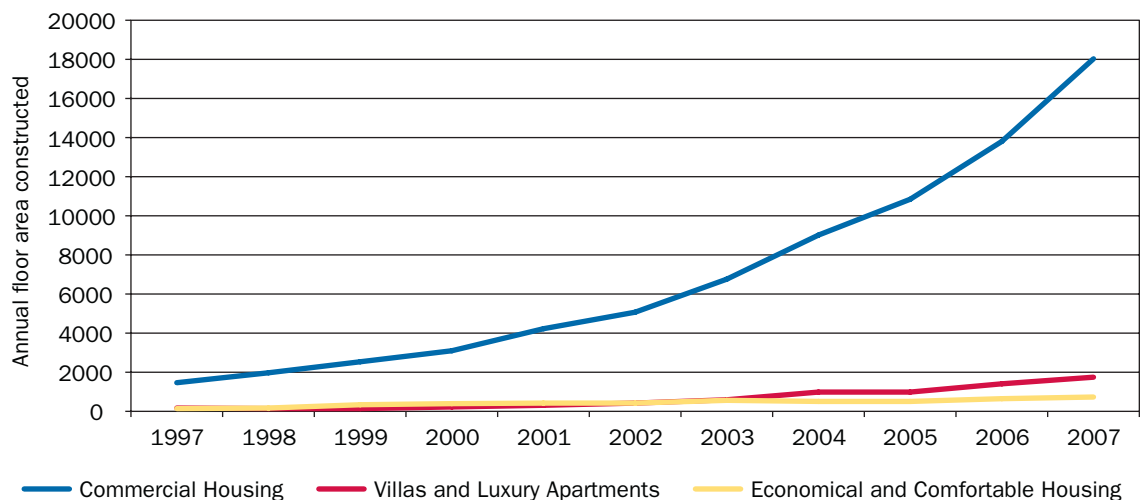
the current rate of urbanization, there will be an increase of about 10 million people in cities every year. Most of them will be unskilled and semi-skilled workers in the low- and middle-income levels in need of housing assistance.

Second, affordable housing accounts for only a small portion of the total housing stock, underscoring inadequate government support for middle- and low-income households in urban China. Our research reveals that government-sponsored low-rent housing, as well as heavily subsidized economical and comfortable housing, accounted for only 7 percent and 4 percent of the total housing stock on average in urban areas, respectively (figure 1). In contrast, the two most prevalent types of housing are commercial housing (32 percent) and privatized public housing (34.2 percent).

Among the 256 prefecture-level cities we studied, the median share of the total housing stock that was affordable housing was 5.57 percent. One-third of the cities had less than 5 percent of affordable housing in the total housing stock, indicating a seriously inadequate supply of affordable housing for low- and middle-income urban households. The underdeveloped private rental market in China further aggravates this problem.

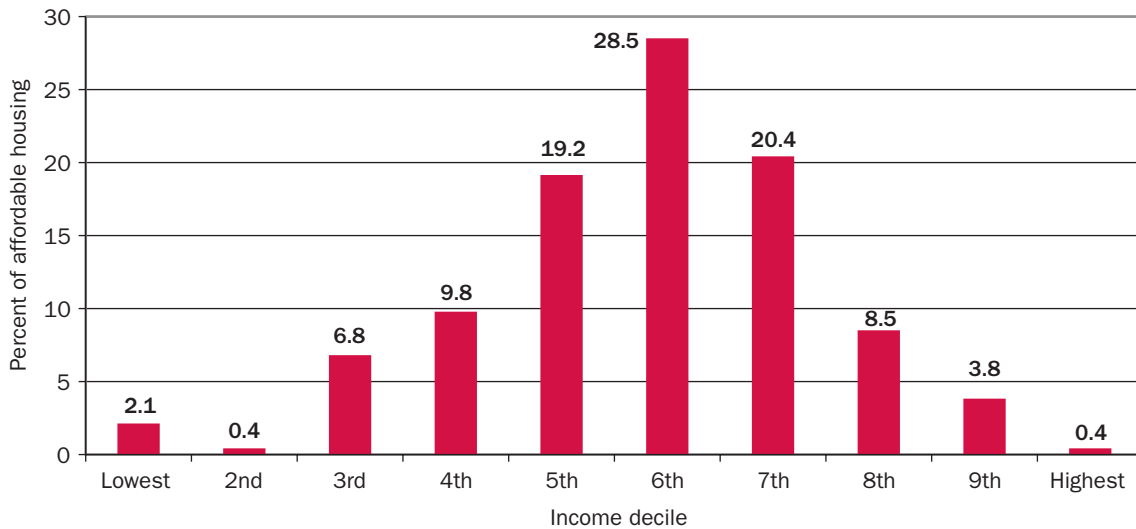
Figure 2 reveals that investment in economical and comfortable housing has barely increased in contrast to the rapid rise of investment in commercial housing during the period between 1997

FIGURE 2
Constructed Floor Area Trends by Housing Type



Source: Chinese Statistical Yearbook, 2008

FIGURE 3
Percent of Affordable Housing by Income Decile



Source: National Bureau of Statistics of China, 2007

and 2007. The completed floor area of economical and comfortable housing as a share of the total decreased between 1999 and 2007, contributing to the chronic shortage of affordable housing in large cities. In addition, the eligibility criteria is either too high or the enforcement is problematic. As a result, figure 3 shows the coverage of affordable housing is overly broad, benefiting more high- and middle-income families than lower-income households, and thus causing accusations of corruption and calls for reform.

Third, local governments in China lack incentives and financial means to provide affordable housing. The fiscal reform of 1994 left subnational governments with the obligation to provide nearly 80 percent of total government expenditures, but with direct receipt of only 47 percent of total government revenues (Man 2010). Such fiscal imbalances, plus many unfunded central government mandates and expenditures related to interjurisdictional competition, have driven many local governments to rely on land leasing fees for revenue to



Photo courtesy of Juan Jing

Affordable housing projects on Niu Street in the southeastern part of Beijing, where there is a concentration of Muslim communities and some low-income urban families.

finance infrastructure investment and economic development.

Local governments prefer offering state-owned land to the highest bidder among developers through the auction process to maximize revenue, and they have little incentive to provide land for the construction of affordable housing for low- and middle-income families. In addition, the financing of affordable housing in China depends upon funds from the Housing Provident Fund, but its deposits come from sources such as fees from land transfers that are unstable and inadequate to sustain affordable housing investment.

According to a recent report of the Chinese National Auditing Office (CNAO 2010), some cities, including Beijing, Shanghai, Chongqing, and Chengdu, have failed to collect the 10 percent of funds from the net profit of land transfer fees earmarked for low-rent housing construction as required by government regulations. A total of 14.62 billion yuan (about US\$2.2 billion) was not collected during the 2007–2009 period, accounting for about 50 percent of the total 29.68 billion yuan

(\$US4.47 billion) that was due, according to CNAO's survey of the 32 major cities.

Finally, the current affordable housing system in China is targeted only at urban residents who have city residence permits as part of its household registration system (commonly known as the *hukou* system). Migrant workers, floating populations, and others without urban residence permits are not covered. These people have to find shelter in the informal housing market, such as urban villages with substandard living and sanitation conditions.

Furthermore, this system suffers from poor administration, widespread corruption, and even fraud. For example, many ineligible applicants have received low-rent housing, and a number of high-income households own government-subsidized economical and comfortable housing units. At the same time, many qualified families have been denied housing assistance.

Conclusions

The rapidly rising housing prices and lack of affordable housing for low- and middle income urban households in China, particularly in big cities, have posed risks and challenges for a stable and harmonious society as sought by the Chinese central government. The current issues and challenges in the affordable housing system warrant attention and support from the Chinese government and the entire country to search for cost-effective and equitable public policies to deal with affordable housing needs to ensure sustainable development and a harmonious society in the future.

The government needs to redouble efforts to curb speculative housing activities, increase land supplies for affordable housing construction, and use fiscal policies and tax incentives to encourage private developers to participate in the provision and management of affordable housing. Moreover, China should establish an efficient and effective local public finance system and a modern property tax to diversify local government revenue sources. This would help reduce reliance on the leasing of public land for revenue and would encourage the supply of more land for low- and middle- housing. Chinese governments also should accelerate the development of private rental markets and encourage the private sector and nonprofit organizations to participate in the construction, financing, and management of housing for middle- and low-income families. **L**

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REFERENCES

- Chinese National Auditing Office (CNAO). 2010. Audit report on 19 municipalities and provinces for government-invested affordable housing during the period 2007 to 2009. No. 22. <http://www.audit.gov.cn/n1992130/n1992150/n1992500/2596931.html>
- Demographia. 2009. The Fifth annual Demographia international housing affordability survey. <http://www.demographia.com/dhi.pdf>
- Lin, Jiabin. Forthcoming. The design of China's affordable housing system. In *Low-income housing in China: Current issues and policy design*. Beijing, China: Commercial Press.
- Man, Joyce Yanyun. 2010. Local public finance in China: An overview. In *China's local public finance in transition*, eds. Joyce Yanyun Man and Yu-Hung Hong. Cambridge, MA: Lincoln Institute of Land Policy.
- Man, Joyce Yanyun, Siqi Zheng, and Rongrong Ren. 2011. Housing policy and housing markets: Trends, patterns, and affordability. In *China's housing reform and outcomes*, ed. Joyce Yanyun Man. Cambridge, MA: Lincoln Institute of Land Policy.
- Wang, Ya Ping. 2011. Recent Housing Reform Practice in Chinese Cities: Social and Spatial Implications. In *China's housing reform and outcomes*, ed. Joyce Yanyun Man. Cambridge, MA: Lincoln Institute of Land Policy.

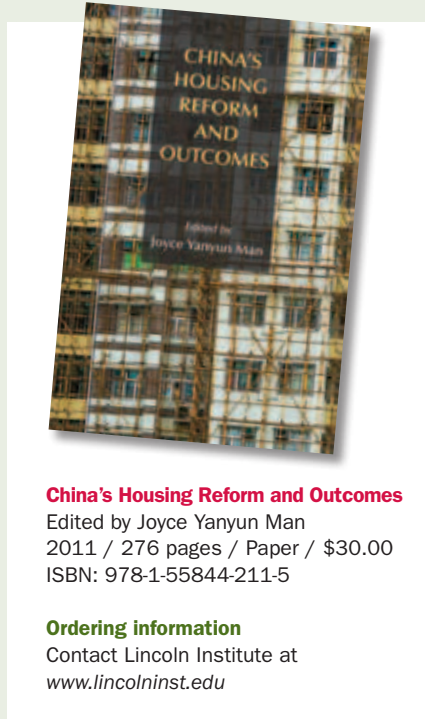
China's Housing Reform and Outcomes

Since the housing reform in 1998 that abandoned China's old system of linking housing distribution with employment, the housing market has experienced rapid development and is now a significant source of economic activity and a growing tax base for the Chinese government. Despite improvements in housing conditions for urban residents, the considerable increase in housing prices and the resulting affordability problems in many cities have posed enormous challenges at both central and local government levels.

Many observers and analysts are familiar with the remarkable growth of China's economy, its market-oriented reforms, and the large investments from both domestic and foreign sources over the past 30 years. Less well known is how these economic changes have affected the housing market. For example, China now represents the world's largest construction market in terms of built space, adding more than 2 billion square meters of floor area annually—nearly half the global total. About half of China's annual constructed space is residential, divided about evenly between urban and rural housing.

Some of the growth in housing construction results from population growth: China's population has increased by about one-third in 30 years, from 1.0 billion in 1982 to an estimated 1.33 billion today. However, the more significant factor has been the dramatic increase in housing standards, especially in terms of residential space per capita, which now exceeds the averages in Japan and Europe.

This volume provides background and explanations on the causes and consequences of China's residential construction boom, and reviews how some established trends and predictions are likely to challenge China's housing sector in coming years. First is the high rate of migration and the projection that 15 million migrants annually will move from rural areas to the cities. Second is the aging of the population, which will lead to both more demand for specialized housing and a likely decrease in household size.



China's Housing Reform and Outcomes

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The chapters in this volume represent the proceedings of a conference cosponsored by the Lincoln Institute and the Peking University–Lincoln Institute Center for Urban Development and Land Policy in May 2009. Scholars who specialize in China's housing market offer valuable information for government officials, academic researchers, university faculty and students, and others concerned with housing policies and practices in China. This volume will be translated into Chinese and published in association with the Peking–Lincoln Center in Beijing.

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ABOUT THE EDITOR

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Ciro Biderman is an associate professor in the graduate and undergraduate programs in public administration and in economics at Getulio Vargas Foundation (FGV) in São Paulo; associate researcher at the Center for the Study of the Politics and Economics of the Public Sector (CEPESP/FGV); and associate researcher at the Metropolis Laboratory of Urbanism at São Paulo State University (LUME/FAUUSP). He received his Ph.D. in economics at the FGV and his postdoctoral degree in urban economics at the Massachusetts Institute of Technology in 2007.

Biderman was a visiting fellow at the Lincoln Institute of Land Policy from 2006 to 2009, and he continues to teach courses and conduct research with Martim Smolka and others affiliated with the Program on Latin America and the Caribbean. He also consults on the economics and politics of local development for the World Bank and other organizations. His research interests include urban and regional economics focused on public policies at the subnational level, with particular emphasis on land policy interactions with real estate markets and transport costs.

*He has published articles in academic journals, and coauthored or coedited three books, including the 2005 volume *Economia do Setor Público no Brasil* (Public Sector Economics in Brazil). At the Lincoln Institute he has written several Land Lines articles and working papers, all of which are available on the Institute Web site. Contact: biderman@mit.edu*

Ciro Biderman

LAND LINES: *As a Latin American scholar specializing in land economics issues, how do you compare the state of the art of research in the region to other countries?*

CIRO BIDERMAN: In Brazil, as in most of Latin America, there is a lack of research in urban economics in general and in land issues in particular. The same is true to some extent in the United States and Europe, although the research interests are quite different, and urban economics is more in the mainstream in those countries.

Some relevant characteristics of cities in Latin America are similar to those in other developing countries, and all would benefit from additional research. For instance, despite the large informal market in Latin America, most economists have neglected that sector. Ironically, most urban economics analysis of informality has been conducted by U.S. and other international scholars.

Second, Latin American cities are usually not as sprawling as cities elsewhere, yet their historic downtowns are often deteriorated and we know little about why this is happening. Third, most countries in the region have recently adopted decentralization policies that shifted the responsibility for the provision of public goods to local governments. However, the revenues of local governments are low and most rely heavily on federal transfers.

LAND LINES: *How did you become associated with the Lincoln Institute of Land Policy?*

CIRO BIDERMAN: My first contact was in 1998, when I was awarded a dissertation fellowship to finish my Ph.D. Working with Paulo Sandroni at FGV, I studied the impact on land prices of a zoning change in São Paulo. At the time, the central business district was expanding toward the southwest, but the expansion was blocked by Jardim Europa, then a low-density, high-end residential neighborhood. New office development bypassed the area, moving towards the new Luiz Carlos Berrini Avenue. To reverse this pattern, in 1996 the city changed the zoning in part of Jardim Europa, increasing density and auctioning building rights to encourage new development.

I compared the part of the neighborhood where zoning did not change with that which experienced exogenous changes from being a low-rise residential area to a high-rise, mixed-use area of high-end residential and office space. In an article written with Sandroni and Smolka (2006) we showed that the change in density increased land prices as expected.

The most interesting finding, however, was the local government's capture of the land price increment through a fiscal mechanism called CEPAC (Certificate of Additional Potential of Construction). These certificates are auctioned as part of the process by which developers obtain building licenses in specified areas. In the adjacent neighborhood where business development had leapfrogged without CEPACs, the incremental land rent generated by the zoning change was instead captured by the developers.

LAND LINES: *What other research have you pursued at the Institute?*

CIRO BIDERMAN: Since becoming a visiting fellow in 2006, I have focused on the economics of informal housing, particularly on the extent to which urban regulation was statistically associated with different measures of informality, including the role of regulation on prices in formal and informal housing markets (Biderman 2008).

In a related study in 2009, Martim Smolka and I discussed the policy implications of how and why different international agencies define informality to reflect one or more housing attributes. The consequence is that different definitions produce different estimates of the incidence of informality. Thus, when governments improve only one informal housing attribute but not the others, they may report a reduction in informality when in fact there is none.

In a new line of research I am looking at the causes and consequences of sprawl in Latin America, focusing on ten large Brazilian cities. Preliminary findings show

that these cities are less sprawled than their North American and European counterparts, but more than comparable Asian cities. Transport systems are based on the automobile, as in the United States, except that less than 10 percent of the population owns a car. Yet the socioeconomic spatial pattern is more similar to Europe, with the rich living in the center and the poor on the periphery.

LAND LINES: *You help the Latin America Program evaluate research proposals submitted for Institute funding. What have you learned from that experience?*

CIRO BIDERMAN: I have been involved in evaluating these proposals since 2006, and the number of high-quality scholarly applications has grown steadily. I have noticed that the research questions from Latin American scholars are often better presented than the techniques to address them, in contrast to what occurs in the United States.

I think this is a problem faced in many aspects of social science research, and not only in Latin America. Although the origins of urban economics were grounded in the connections among urban equilibrium, transport costs, and land prices, each of these fields has developed almost independently and there is a general need for more integrated analysis.

LAND LINES: *What do you see as the main strengths of Latin American researchers?*

CIRO BIDERMAN: Highly qualified professionals in Brazil and other countries often move between public office and academia. As a result, they are aware of the respective issues and needs in the public sector and academia, and may have a more direct impact on the implementation of urban policies.

Furthermore, researchers can bring to focus what is specific to Latin American cities compared to cities elsewhere, thus expanding the scope of applied research. For example, to the best of my knowledge, there is no economic model for housing demand that allows the quality of the housing to change in order to adjust housing consumption to budget constraints. This is quite a relevant question in Latin America, but not to researchers in the United States or Europe.

LAND LINES: *Can you elaborate on the kinds of issues facing scholars in different world regions?*

CIRO BIDERMAN: As with most social phenomena, patterns of land use have evolved historically. For instance, sprawl in the United States is closely related to the movement of high-income groups to the periphery of metropolitan areas. In Latin America the movement of income groups is usually in the opposite direction, with poor people seeking affordable land on the periphery. Although fundamental principles of urban economic theory might apply, the consequences are quite different. Studying different patterns using the same theoretical framework would advance our understanding of urban economics.

LAND LINES: *What topics or issues are especially lacking in strong empirical work?*

CIRO BIDERMAN: In terms of land policy, in my opinion, we need more research on property taxation; the interactions of fiscal and regulatory policies with land use planning issues; socioeconomic patterns of sprawl; and the connections between land use and transport. The lack of research on the economics of the informal housing market is surprising since informal settlements represent more than one-third of the total urban housing stock in some countries. Although this problem could eventually be solved with subsidies, the amount of resources needed is probably prohibitive for most countries.

Currently there is a branch of the literature studying the impact of tenure security on general welfare, suggesting that titling programs may be improving welfare, but there are few similar studies on the impacts of slum upgrading programs. While some evidence suggests that inappropriate regulation may induce more informality, we do not yet fully understand the economic nexus between formal and informal housing markets. We also lack systematic cross-country studies.


LAND LINES: *Do you think there a trade-off between policy experience and technical research capability?*

CIRO BIDERMAN: As an economist, I know the virtues of the division of labor and gains from trade, so it is important that academics and public officials complement each other. Thus, researchers need to be

as rigorous as possible and able to expose the unintended consequences of public policies, and policy makers must ensure that their policies are designed so they can be implemented effectively and efficiently to reach the intended goals.

For example, a major policy issue is how to increase the supply of affordable, high-quality housing for the poor in developing countries, which requires understanding the opportunity costs between affordability and quality. The trade-offs may be technical, but the alternatives are clearly political. How can this housing imbalance be fixed? Who has to pay the cost (the residents or the society)? What are the consequences of different policy options? These are practical questions. Empirical evidence that helps to evaluate current policies might be a major resource for a policy maker.

LAND LINES: *How do you think the Lincoln Institute can contribute to narrowing the gap between rigorous empirical research and policy relevance?*

CIRO BIDERMAN: I believe that the Institute is already doing that by working with both scholars and policy makers in a variety of programs and fellowship opportunities. Classroom and online courses offer training to policy makers to help improve their dialogue with researchers, and to young scholars to expand the pool of policy-sensitive researchers. The intensive courses in methods for land policy analysis also inform researchers about advances in urban economics theory and strengthen both their methodological skills and their knowledge of new analytical techniques. 

REFERENCES

Biderman, Ciro. 2008. Informality in Brazil. Does urban land use and building regulation matter? Working Paper. Cambridge, MA: Lincoln Institute of Land Policy.

Biderman, Ciro, Paulo Sandroni, and Martim Smolka. 2006. Large-scale urban interventions: The case of Faria Lima in São Paulo. *Land Lines* 18(2).

Smolka, Martim, and Ciro Biderman. 2009. Measuring informality in housing settlements: Why bother? *Land Lines* 21(2).

Making Room for a Planet of Cities

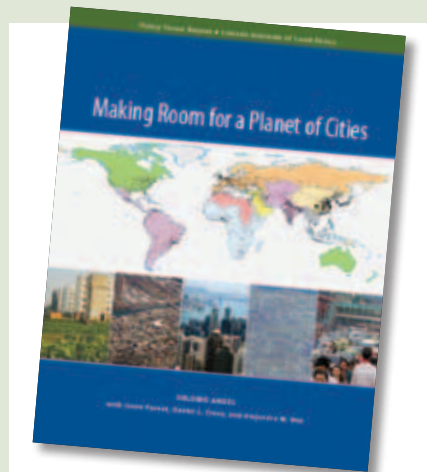
The prevailing urban planning paradigm now guiding the expansion of cities and metropolitan areas is premised on the containment of urban sprawl, but containment is not appropriate in rapidly urbanizing countries where most growth is now taking place. Shlomo Angel and his colleagues have analyzed the quantitative dimensions of past, present, and future urban land cover and propose a different paradigm—the making room paradigm—as a more realistic strategy for cities and metropolitan regions that need to prepare for their inevitable expansion.

This policy focus report seeks to enrich understanding of the context in which preparations for urban expansion must take place in cities around the world using empirical data on key parameters that characterize their spatial structure and its changes over time. Carefully selected metrics measured in four new data sets with ArcGIS software now allow us to construct a comprehensive and consistent global and historical perspective on urban expansion. These data sets are:

1. A global sample of 120 cities with 100,000 people or more in 1990 and 2000;
2. A set of 20 U. S. cities, 1910–2000;
3. A representative sample of 30 global cities, 1800–2000, from the set of 120 cities; and
4. A universe of 3,646 cities that had 100,000 people or more in 2000.

The report examines three discrete attributes of urban spatial structure and their change over time: density, the average population density of the built-up area; fragmentation, the amount of open space in and around cities that is fragmented by their built-up areas; and urban land cover, the total land area occupied by cities. Some of the research findings are:

- on average, densities in developing countries are double those in Europe and Japan, and densities in Europe and Japan are double those of the United States, Canada, and Australia;



Making Room for a Planet of Cities

Shlomo Angel with Jason Parent, Daniel L. Civco, and Alejandro M. Blei
2011 / 72 pages / Paper / \$15.00
ISBN 978-1-55844-212-2
Policy Focus Report / Code PF027

Ordering Information

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www.lincolninst.edu

- average built-up area densities declined by 2 percent per annum between 1990 and 2000 and have been in persistent decline for a century or more;
- cities have fragmented open spaces in and around them that are equivalent in size to their built-up areas;
- at present rates, the world's urban population is expected to double in 43 years while urban land cover will double in only 19 years; and
- the urban population of the developing countries is expected to double between 2000 and 2030 while the built-up area of their cities can be expected to triple.

These projections of urban expansion in all regions, especially in developing countries, should give pause to advocates of global urban containment. The proposed making room paradigm is grounded in the conviction that we need to prepare for the sustainable growth and expansion of cities in rapidly urbanizing countries rather than seek to constrict and contain them.

This alternative paradigm consists of four key components: (1) realistic projections of urban land needs; (2) generous metropolitan limits; (3) selective protection of open space; and (4) an arterial grid of roads.

This report provides both the conceptual framework and, for the first time, the basic empirical data and quantitative dimensions of past, present, and future urban expansion in cities around the world that are necessary for making minimal preparations for future growth. At the very least, the report lays the foundation for fruitful discussion of the fate of our cities and our planet as we seek to identify and employ appropriate strategies for managing urban expansion at sustainable densities.

ABOUT THE AUTHORS

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BOOKS

The following books published in 2010 document conference proceedings, course materials, and research sponsored by the Lincoln Institute. Selected free downloadable chapters are available on the Lincoln Institute Web site, and all books can be ordered directly from the site at www.lincolninstitute.edu/pubs.

Challenging the Conventional Wisdom on the Property Tax

Edited by Roy Bahl, Jorge Martínez-Vázquez, and Joan Youngman
2010 / 384 pages / Paper / \$30.00
ISBN: 978-1-55844-200-9

China's Local Public Finance in Transition

Edited by Joyce Yanyun Man and Yu-Hung Hong
2010 / 300 pages / Paper / \$30.00
ISBN: 978-1-55844-201-6

The Community Land Trust Reader

Edited by John Davis
2010 / 616 pages / Cloth / \$35.00
ISBN: 978-1-55844-205-4

Conservation Capital in the Americas: Exemplary Conservation Finance Initiatives

Edited by James N. Levitt
2010 / 256 pages / Paper / \$30.00
ISBN: 978-1-55844-207-8

Inclusionary Housing in International Perspective: Affordable Housing, Social Inclusion, and Land Value Recapture

Edited by Nico Calavita and Alan Mallach
2010 / 416 pages / Paper / \$30.00
ISBN: 978-1-55844-209-2

Municipal Revenues and Land Policies

Edited by Gregory K. Ingram and Yu-Hung Hong
2010 / 560 pages / Paper / \$30.00
ISBN: 978-1-55844-208-5

Perspectivas Urbanas: Temas críticos en políticas de suelo en América Latina

Urban Perspectives: Critical Land Policy Themes in Latin America
Edited by Martin O. Smolka and Laura Mullahy
2010 / CD-ROM / Spanish / \$10.00
ISBN: 978-1-55844-176-7

The Property Tax and Local Autonomy

Edited by Michael E. Bell, David Brunori, and Joan Youngman
2010 / 312 pages / Paper / \$30.00
ISBN: 978-1-55844-206-1

POLICY FOCUS REPORTS

These recent reports summarize differing viewpoints on timely land use and taxation issues. They are posted on the Institute Web site for free downloading and ordering.

Assessing the Theory and Practice of Land Value Taxation

Richard F. Dye and Richard W. England
2010 / 36 pages / Paper / \$15.00
ISBN: 978-1-55844-204-7
Policy Focus Report Code PF025

Large Landscape Conservation: A Strategic Framework for Policy and Action

Matthey McKinney, Lynn Scarlett, and Daniel Kemmis
2010 / 52 pages / Paper \$15.00
ISBN: 978-1-55844-210-8
Policy Focus Report Code PF026

Payments in Lieu of Taxes: Balancing Municipal and Nonprofit Interests

Daphne A. Kenyon and Adam H. Langley
2010 / 56 pages / Paper / \$15.00
ISBN: 978-1-55844-216-0
Policy Focus Report Code PF028

Planning for Climate Change in the West

Rebecca Carter and Susan Culp
2010 / 56 pages / Paper / \$15.00
ISBN: 978-1-55844-203-0
Policy Focus Report Code PF024

WORKING PAPERS

More than 700 working papers are currently available, including the results of Institute-sponsored research, course-related materials, and occasional reports or papers cosponsored with other organizations. Some papers by associates affiliated with the Institute's Latin America and China programs are also available in Spanish, Portuguese, or Chinese. Listed below are the papers that have been posted since September 2010.

United States Programs

Shlomo Angel, Jason Parent, Daniel Civco, Alexander Blei, and David Potere
A Planet of Cities: Urban Land Cover Estimates and Projections for All Countries, 2000–2050

Howard Chernick, Adam Langley, and Andrew Reschovsky
Revenue Diversification and the Financing of Large American Central Cities

Justin Hollander, Colin Polsky, Dan Zinder, and Dan Runfola
The New American Ghost Town: Foreclosure, Abandonment, and the Prospects for City Planning

Uma Lele, Aaron Zazueta, and Benjamin Singer
The Environment and Global Governance

William J. McCluskey and Nigel D. Woods
Property Tax Reform: The Northern Ireland Experience

John L. Mikesell, C. Kurt Zorn, Esteban Dalehite, and Sung-Jin Park
A Guide to the Structure of Property Tax Abatements in the United States

Elizabeth Plummer
The Effect of Land Value Ration on Property Tax Protests and the Effects of Protests on Assessment Uniformity

Emily Thaden
Outperforming the Market: Delinquency and Foreclosure Rates in Community Land Trusts

Latin America Program

Oscar Borrero
Efecto de las políticas del suelo en el precio de terrenos urbanos en Bogotá

Claudia M. De Cesare
Panorama do Imposto sobre a Propriedade Imobiliária na América Latina

Daniel A. Rodríguez and Carlos H. Mojica
Capitalización de los efectos de red del sistema de tránsito rápido de autobuses (BRT) en los precios del suelo

FELLOWSHIP *programs*

DAVID C. LINCOLN FELLOWSHIPS

The David C. Lincoln Fellowships in Land Value Taxation were established in 1999 to develop academic and professional interest in this topic through support for major research projects. The fellowship program honors David C. Lincoln, founding chairman of the Lincoln Institute, and his long-standing interest in land value taxation.

The program encourages scholars and practitioners to undertake new work in this field, either in the basic theory of land value taxation or its applications. These research projects add to the understanding of land value taxation as a component of contemporary fiscal systems in countries throughout the world.

The 2010–2011 David C. Lincoln fellows are listed below. The deadline for the 2011–2012 application process will be in the fall of 2011. For more information, visit the Institute's Web site at www.lincolninst.edu/education/dcl_fellowships.asp.

Leah Brooks

Assistant Professor
Department of Economics
University of Toronto, Canada

Byron Lutz

Economist
Fiscal Analysis Section
Division of Research and Statistics
Federal Reserve Board of Governors
Washington, DC

Estimating Land Value and the Regulatory Tax

Seong-Hoon Cho

Associate Professor
Department of Agricultural Economics
University of Tennessee, Knoxville

Dayton M. Lambert

Assistant Professor
Department of Agricultural Economics
University of Tennessee, Knoxville

Roland K. Roberts

Professor
Department of Agricultural Economics
University of Tennessee, Knoxville

A Dual-Rate Property Tax: Exploring the Potential for Moderating the Effects of Sprawl on Residential Development at the Metropolitan County Level

Gregory Burge

Assistant Professor
Department of Economics
University of Oklahoma, Norman
Urban Sprawl, Land Prices, and Impact Fees

Stanley D. Longhofer

Professor
Barton School of Business
Wichita State University, Kansas
Less Than Nothing: Land Value Taxation When Land Values are Negative

PLANNING AND URBAN FORM RESEARCH FELLOWSHIPS

The Lincoln Institute's Department of Planning and Urban Form supports research fellowships to develop academic and professional interest in the relationship between the form of the built environment and the mosaic of open spaces across the landscape. The theme of large landscape conservation runs through several of the department's recent programs, including books and policy focus reports, conferences, an ongoing large landscape demonstration project, the convening of a large landscape practitioners' network, and research on the character and effectiveness of large landscape initiatives across North America.

The Institute is seeking research proposals that will contribute to the design and implementation of a continental-scale database linked to a geographic information system (GIS) focused on tracking, evaluating, and advancing large landscape conservation initiatives in the United States and its neighbors, Canada and Mexico.

The application deadline is March 1, 2011, and fellowship awards will be announced by April 30, 2011. See <http://www.lincolninst.edu/education/fellowships.asp> for the complete application and guidelines.

KINGSBURY BROWNE FELLOWSHIP

Jay Espy, executive director of the Elmina B. Sewall Foundation and former president of the Maine Coast Heritage Trust, will serve as the fifth Kingsbury Browne Fellow at the Lincoln Institute of Land Policy during 2010–2011. The announcement was made in October at the Land Trust Alliance Rally 2010 in Hartford, Connecticut. Espy also received the Alliance's prestigious Kingsbury Browne Conservation Leadership Award for pioneering a collaborative approach to land conservation, setting a trend for other land trusts, making an impact across the land conservation movement, and serving as a mentor.

Espy joined the Elmina B. Sewall Foundation as its first executive director in January 2008. This private, grant-making foundation focuses on conservation, animal welfare, and social needs, primarily in Maine. For the prior two decades, Espy served as president of Maine Coast Heritage Trust, a statewide land conservation organization. During his tenure, the organization accelerated its land protection efforts along Maine's coast, conserving more than 125,000 acres and establishing the Maine Land Trust Network to help build capacity of local land trusts throughout the state.

A graduate of Bowdoin College, Espy holds master's degrees from the Yale School of Management and Yale School of Forestry and Environmental Studies. He serves on the boards of the Maine Philanthropy Center and the Canadian Land Trust Alliance, and is a former chair of the Land Trust Alliance, a national organization serving land trusts throughout the United States.

Kingsbury Browne (1922–2005) was a Boston attorney who served as a fellow at the Lincoln Institute in 1980, when he first envisioned a network of land conservation trusts. He convened conservation leaders who worked to establish the national Land Trust Exchange (later renamed the Land Trust Alliance) in 1982. Browne is considered the father of America's modern land trust movement, a network of land trusts now operating in every state of the nation.

FELLOWSHIP *programs*

GRADUATE STUDENT FELLOWSHIPS

The Lincoln Institute supports several graduate student fellowship programs for young scholars in the United States, Latin America, and China.

The C. Lowell Harriss dissertation fellows and the China Program graduate student fellows for the 2010–2011 academic year were announced in the October 2010 issue of *Land Lines*. See http://www.lincolninst.edu/pubs/1844_Land-Lines-October-2010

Latin America Program Fellowships

The Program on Latin America and the Caribbean offers fellowships to doctoral and masters candidates at Latin American universities. Following are the fellows named for the 2010–2011 academic year.

Jorge Enrique Agudelo Torres

Masters candidate
School of Administration, Finance and Business (EAFIT), Colombia
The Incidence of the San Javier Subway on the Price of Housing in the Surrounding Area

Héctor Julio Fuentes Durán

Masters candidate
School of Arts
National University of Colombia
Mobilization of Public and Private Resources in the Partial Plans of La Concordia and Río Frío Valley, Bucaramanga Metropolitan Area (Colombia), Via Implementation of Diverse Financing Instruments Based on Land Management

Alain Dimitrius Izquierdo Reyes

Masters candidate
School of Economics and Business
University of Chile
Factors Contributing to the Disparity in Local Tax Collection Performance Among Municipalities with Similar Characteristics: An Approximation to the Mexican Case

Liliana Mendoza Chávez

Masters candidate
School of Philosophy
Autonomous University of Querétaro
Mexico

The Role of Ejidatarios (communal land shareholders) in the Urban Expansion Process of the Querétaro Metropolitan Area and San Juan del Río

Gonzalo Neyra Araoz

Masters candidate
Department of Industrial Engineering
University of Chile

The Role of the Property Tax in Metropolitan Lima's Urban Finances: Analysis of Performance Indicators

Ana María Russo Valdés

Masters candidate
School of Architecture, Design and Urban Studies
Catholic University of Chile

Female Spatial-Occupational Patterns: The Case of Low-Income, Territorially Segregated Women in Santiago de Chile Today

Nicolàs Guadalupe Zúñiga Espinoza

Doctoral candidate
School of Economic and Social Sciences
Autonomous University of Sinaloa, Mexico
Effects of Transfers on the Taxable Base of the Property Tax, and the Tributary Effort of the Municipalities of Sinaloa, Mexico, 1993–2008

Application Deadlines for 2011–2012

C. Lowell Harriss Dissertation Fellowship Program

The C. Lowell Harriss Dissertation Fellowship Program assists Ph.D. students, primarily at U.S. universities, whose research complements the Lincoln Institute's interests in land and tax policy.

This program honors Professor Harriss (1912–2009) who taught economics at Columbia University and was a long-time member of the Lincoln Institute of Land Policy Board of Directors. Administered through the departments of Valuation and Taxation and Planning and Urban Form, the program provides a link between the Institute's educational mission and its research objectives by supporting scholars early in their careers.

To download a copy of the application guidelines and forms, visit the Institute's Web site at <http://www.lincolninst.edu/education/fellowships.asp>. The deadline for submitting an electronic version of the complete application is February 1, 2011. Fellowship awards will be announced by April 30.

International Student Fellowships/Latin America

The application deadline for 2011–2012 fellowships in Latin America will be announced on the Institute's Web site in the spring of 2011. For more information, contact lac@lincolninst.edu.

International Student Fellowships/China

Through the Peking University–Lincoln Institute Center for Urban Development and Land Policy, the Institute's China Program awards fellowships to masters and doctoral students residing in and studying land and tax policy in the People's Republic of China. Candidates participate in a workshop in China to present their proposals and receive comments from an international panel of experts. Awardees reconvene after one year to present their findings and receive further critiques from experts in land and tax policy.

The application deadline is April 15, 2011. For more information, see the Peking–Lincoln Center Web site at <http://plc.pku.edu.cn>.

Courses and Conferences

The education programs listed here are offered as open enrollment courses for diverse audiences of elected and appointed officials, policy advisers and analysts, taxation and assessing officers, planning and development practitioners, business and community leaders, scholars and advanced students, and concerned citizens.

For more information about the agenda, faculty, accommodations, tuition, fees, and registration procedures, visit the Lincoln Institute Web site at www.lincolninst.edu/education/courses.asp.

Programs in Latin America

FEBRUARY 22–MAY 28

Rotterdam, The Netherlands

Specialization Course on Urban Land Policies, Strategies, and Instruments

Martim O. Smolka, Lincoln Institute of Land Policy; and Carlos Morales Schechinger, Institute for Housing and Urban Development Studies (IHS), Erasmus University, Rotterdam

This three-month specialization course is open to those attending the Master Course in Urban Management and Development offered by IHS in cooperation with Erasmus University, Lund University of Sweden, and the Lincoln Institute of Land Policy. The specialization provides in-depth knowledge of the economic, legal, social, and political understanding of land-related issues; an array of policies, strategies, and instruments for land management and development; and analytical tools necessary to interact with stakeholders and other experts to make reasoned decisions.

MONDAY–FRIDAY, MARCH 14–18

Medellín, Colombia

Large-Scale Urban Redevelopment Projects

Martim Smolka, Lincoln Institute of Land Policy, USA; Eduardo Reese, Instituto del Conurbano, Universidad Nacional de General Sarmiento, Buenos Aires, Argentina; Beatriz Ravé, Área Metropolitana de Medellín, Colombia; Paulo Sandroni, Fundação Getulio Vargas, São Paulo, Brazil

This professional development course examines the large-scale projects designed to redefine uses of large land tracts in urban areas of Latin American cities. It focuses on the tools and instruments available for alternative land use regulatory regimes and on methodologies to evaluate the impacts of these projects. The projects include those designed to promote the redevelopment, regeneration or conversion of deteriorated or abandoned urban areas, and the rehabilitation of historic centers and city center building stock.

MONDAY–FRIDAY, MAY 2–6

Medellín, Colombia

Legal Dimensions of Urban Land Policy

Martim O. Smolka, Lincoln Institute of Land Policy; and María Mercedes Maldonado, National University of Colombia, Bogotá

This course, developed in cosponsorship with authorities of the Metropolitan Area of the Aburrá Valley in Medellín, examines the legal dimensions of urban land policy and management. It provides a review of civil law and public law, and discusses new legal frameworks, such as Colombia's Law 388 and the City Statute in Brazil, to address major land policy challenges. The course reviews the legal responsibilities and rights of land ownership, separation of building from land ownership rights, the legal basis for value capture, public land acquisition, and titling and regularization of informal land occupations. Senior legal professionals, urban planners, academics, and members of NGOs participate in broad interdisciplinary dialogues.

Lincoln Lecture Series

This annual lecture series highlights the work of scholars and practitioners who are involved in research and education programs sponsored by the Lincoln Institute. The lectures are presented at Lincoln House, 113 Brattle Street, Cambridge, Massachusetts, beginning at 12 p.m. (lunch is provided). Consult the Lincoln Institute Web site (www.lincolninst.edu/news/lectures.asp) for information about other dates, speakers, and lecture topics. The programs are free, but pre-registration is required. Go to the Web site or email bburgess@lincolninst.edu to register.

WEDNESDAY, FEBRUARY 16

Miami 21: Zoning as the Foundation for the Twenty-First Century City

**Ana Gelabert-Sanchez AICP
Loeb Fellow, Harvard University
Graduate School of Design
Former Planning Director, City of Miami**

WEDNESDAY, MARCH 23

Giving it All Away: Space Syntax Analysis and the Future of Urban Planning Software

**Tim Stonor
Lincoln Loeb Fellow, Lincoln Institute
of Land Policy and Harvard University
Graduate School of Design**

Reaching Out with Social Media



The Lincoln Institute Web site has been updated so users can now follow our news, events, research, publications, and other activities through social media channels directly from the homepage.



On Facebook, more than 400 fans of the Lincoln Institute page see updates, including advance notice of Lincoln Institute events. Our fans are primarily in the United States, but over 150 are in Latin America.



On LinkedIn, the company profile of the Lincoln Institute has a growing number of followers who are members. Recent blog posts are shown on the LinkedIn profile page.



On Twitter, join nearly 700 followers of @landpolicy to enjoy regular updates and links to reports and articles of interest, and to search options for others on Twitter with a focus on Lincoln Institute topics.



On YouTube, 13 videos are available, including Bruce Babbitt's Land Policy Conference keynote address, lectures presented at Lincoln House, and trailers from the "Making Sense of Place" film series. These videos have been viewed over 8,000 times.

In addition, users can access the three most recent posts of the At Lincoln House blog and all archived videos directly from the homepage.

Look for additional upgrades and design changes over the next few months.

Land Lines

JANUARY 2011

2010–2011 Program

The Lincoln Institute's annual Program for 2010–2011 presents a comprehensive overview of the Institute's mission and its diverse programs for the new academic year. It includes department descriptions; courses, seminars, conferences, and online education programs; research, demonstration, and evaluation projects; publications and multimedia products; Web-based resources and tools; and lists of fellows and faculty. The complete Program catalog is posted on the Lincoln Web site for free downloading. To request a printed copy, contact help@lincolninst.edu.

