



David Vetter (Ph.D., University of California) has worked for more than four decades on urban finance and economics issues in Latin America. He taught and conducted urban research in Brazil for 17 years at the Brazilian Institute of Geography and Statistics (IBGE), the Graduate Engineering Program (COPPE), the Institute of Urban and Regional Planning and Studies (IPPUR), and the Fundação Getúlio Vargas. In 1990, he joined the World Bank, where he developed subnational investment and reform programs for Argentina, Brazil, Chile, and Ecuador. To push for greater private-sector participation in urban financing, he joined Dexia Credit Local in 1998 as vice president and established lending programs in Argentina, Brazil, and Mexico. Since returning to Brazil in 2004, he has worked as a consultant and researcher for various clients, including the Inter-American Development Bank and the Lincoln Institute of Land Policy, where he has been a visiting fellow since July 2014. He recently authored two articles for *Land Lines*: “Residential Wealth Distribution in Rio de Janeiro” (January 2014) and “Land-Based Financing for Brazil’s Municipalities” (October 2011).

David Vetter

LAND LINES: *How did you become involved with the Lincoln Institute?*

DAVID VETTER: For many years—whether I was doing research, consulting, or working at the World Bank or in the private sector—I quite often found solid information to help me from the Lincoln Institute. More recently, the Institute financed my research on residential wealth and municipal finance in Brazil.

LAND LINES: *What will you research as a visiting fellow and why?*

DAVID VETTER: I will focus on strategies for financing urban infrastructure in Brazil. Like other Latin American countries, Brazil continually needs to make substantial investments to keep pace with the rapidly growing number of new households and to reduce the number of them without access to urban infrastructure. From 2000 to 2010, the number of households grew by more than 12 million—an increase nearly 7 times the 1.8 million households in the Boston-Cambridge Metro Area in 2010. Given this demographic pressure, the absolute number of Brazilian households without access to urban infrastructure remained high in 2010, despite sizeable investments over the previous decade. And the deficits of some types of infrastructure actually increased. From 2000 to 2010, for instance, the number of Brazilian urban households without adequate sewage systems rose by nearly 2 million—more than the total number of housing units in Metropolitan Boston in 2010.

Brazil’s Ministry of Cities estimated that basic sanitation (potable water, waste water, solid waste, and drainage) would cost more than US\$80 billion just for 2014 to 2018. Highways, street paving, public security, health, and education demand similarly high investments, and the amounts required often greatly exceed existing sources of financing.

LAND LINES: *How could value captured by these infrastructure investments help to finance them?*

DAVID VETTER: The benefits of infrastructure investments are capitalized into land and building prices. The Lincoln Institute’s 2013 forums on Notable Instruments for Urban Intervention showed that many governments in Latin America are effectively using a wide variety of tools to capture value created by their infrastructure investments, as detailed in Martim O. Smolka’s comprehensive review of the literature (2013): sale of development rights; betterment levies for street paving, drainage, and other improvements; and public-private partnerships (PPPs) involving value capture, as in the financial structure of Rio’s massive port renovation (Porto Maravilha). More efficient collection of the real estate property and transfer taxes help as well.

Value capture can generate positive feedback, creating a virtuous circle that generates additional resources for further investments. For example, the increases in value generated would increase the base for the property tax if real estate assessments were conducted in a timely manner, and the resulting revenue could be used to finance further investment.

LAND LINES: *To what extent could Brazilian municipalities increase the use of value capture?*

DAVID VETTER: According to economic theory, the value generated by infrastructure investments should roughly equal their cost. Because the supply of infrastructure would seem to be inelastic due to public finance constraints, the market value generated can actually exceed the cost of the investments.

For example, Brazilian municipalities invested more than US\$82 billion in infrastructure and equipment from 2006 to 2010 (about US\$16 billion per year). But in 2010 alone, state and national governments also invested more than US\$50 billion. Capture of even a relatively small percentage of the value created could provide significant resources for investment. For example, the Rio de Janeiro Metropolitan Region is receiving massive infrastructure investments from national, state, and municipal governments, as well as from private sector partners, for various projects including the new Arco Metropolitano beltway and a new Metro line. Some are concessions or PPPs with significant financing at below-market interest rates from the public development banks (BNDES and CAIXA).

LAND LINES: *What role could value capture play in housing policy?*

DAVID VETTER: Infrastructure investment creates residential wealth, as its value is capitalized into housing value. Residential structures represent about one third of Brazil's total net fixed capital in the national wealth accounts, as is typical for other countries around the world. Given this importance, we ask in our own work on the Rio de Janeiro Metropolitan Region: What generates residential wealth? How much residential wealth exists? Who holds it? We found that there are winners and losers. For example, the increase in value generated by infrastructure investment increases the residential wealth of homeowners, but it raises prices for renters in the benefitted area and housing cost for homebuyers wishing to locate there.

LAND LINES: *Would a housing policy focused on generating residential wealth and the equity of its distribution differ from most low-income housing programs?*

DAVID VETTER: It would be quite different. Most low-income housing programs keep unit costs down by building on low-cost land. Land price is low when it lacks access to employment and basic urban services, so affordable units often end up in these poorly serviced areas. A housing policy focused on residential wealth would emphasize access to employment and basic services, as they are among the key determinants of housing value.

LAND LINES: *But isn't this utopian? How could value capture help to increase the residential wealth of lower-income families?*

DAVID VETTER: The challenge is certainly great. But value capture from higher-income families could allow cross subsidies to lower-income ones, especially renters who wish to locate in the areas benefiting from infrastructure investments.

Let me illustrate. The number of households in the Rio de Janeiro Metropolitan Region increased by more than 600,000 from 2000 to 2010 (that's twice the number of households in Washington, DC, in 2010). As a result, the region's urban infrastructure deficits remain high despite high investments. A recent impact study of metropolitan Rio de Janeiro's

new beltway (Pontual et al. 2011) explored the possibility of developing whole new socially integrated and fully serviced neighborhoods to hold the huge expected increase in the number of households along the beltway. This development could be financed in part by capturing value generated by the massive infrastructure investments planned and being implemented. Part of the value captured from higher-income families could be used to finance lower-income ones.

This impact study analyzed where such neighborhoods might best be located. Which value capture instruments might work best in this case? It is interesting that the private sector is already developing what they describe as "green neighborhoods" in the outlying regions of metropolitan Rio. Does it make sense to plan individual housing projects when such large increases in households are involved?

LAND LINES: *Would lower-income families be able to pay for infrastructure?*

DAVID VETTER: In Latin America, the eligibility criteria for value capture programs almost always include a test for capacity to pay. Of course, value capture should only be applied to families who can afford it.

LAND LINES: *How do you respond to the Brazilian professionals working on urban issues who argue that it is impossible to capture value for legal or cultural reasons?*

DAVID VETTER: Although Brazil's constitution provides broad powers for value capture, only the largest municipalities, such as São Paulo and Rio de Janeiro, appear to be using them. Other sub-national and national governments are doing much less to capture the value of considerable public investments.

This failure is probably due in part to resistance by some who think that value capture is legally impossible. Yet while betterment levies meet with similar resistance, Silva and Pereira (2013) estimate that total revenue from them exceeded US\$300 million among municipalities in the states of São Paulo, Paraná, and Santa Catarina from 2000 to 2010, even though relatively few municipalities employed them. This amount is not very

significant for states of this size, but it does show that betterment levies are feasible.

One reason why betterment levies were successful in Paraná and Santa Catarina was that the World Bank and Inter-American Development Bank have required cost recovery in their municipal development projects since the 1980s. This success supports the idea that incentives of a national or state program can encourage use of value capture at the municipal level.

In addition, many cases of value capture seem to go unnoticed. In the City of Rio de Janeiro, for example, the sale of excess land from the existing subway system partly financed the expansion of a whole new line, and developers provide water and sewerage trunk lines as a condition for project approval in a higher-income neighborhood, Barra da Tijuca.

LAND LINES: *How might national or state government programs encourage greater use of value capture?*

DAVID VETTER: One way would be to provide access to financing as an incentive for the municipalities that use value capture. Ecuador's development bank (Banco del Estado) uses such access to encourage municipalities to employ betterment levies. Access to financing could be used to provide access to a broader range of value capture instruments, such as the sale of development rights and impact fees, as well as betterment levies.

LAND LINES: *How can the Lincoln Institute encourage infrastructure financing through value capture?*

DAVID VETTER: Lincoln has done an excellent job of generating knowledge about value capture through its research, forums, training program, and publications. The Institute could scale up its excellent work on value capture in the region through more forums and publications, and by directly advising policy makers regarding program design and implementation. ■