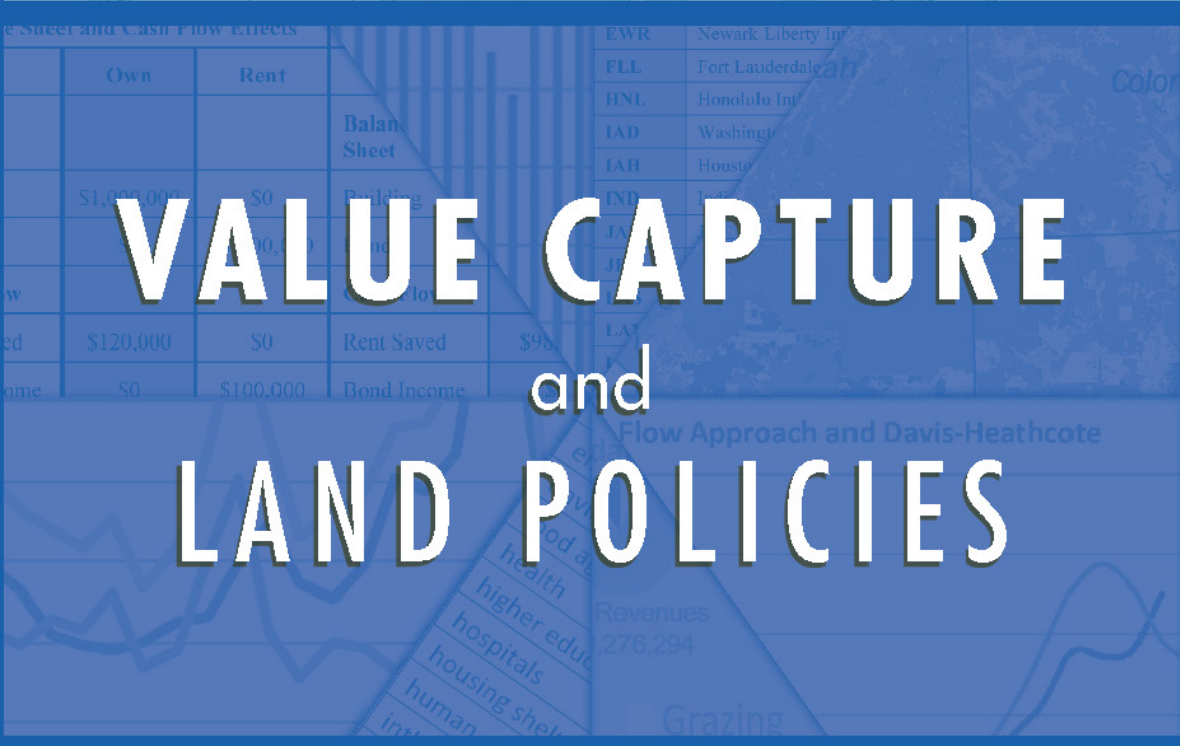
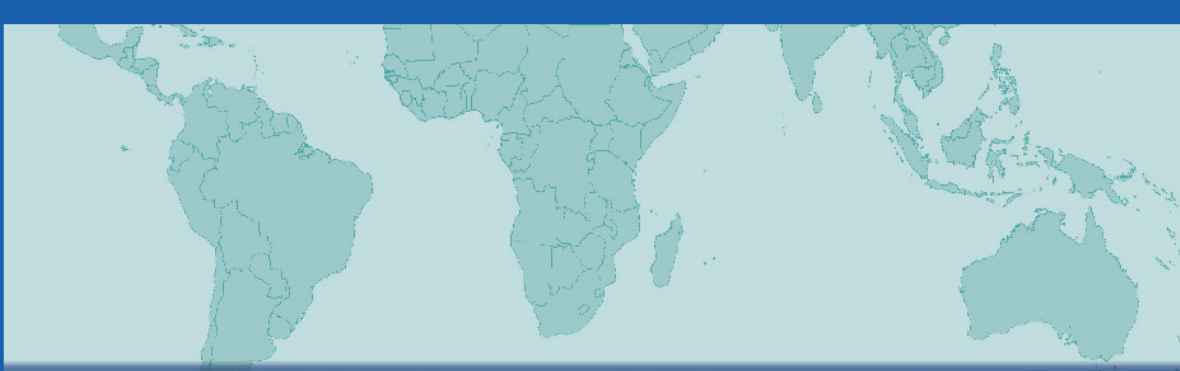
Proceedings of the 2011 Land Policy Conference

VALUE CAPTURE and LAND POLICIES





Edited by Gregory K. Ingram and Yu-Hung Hong

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LINCOLN INSTITUTE
OF LAND POLICY
CAMBRIDGE, MASSACHUSETTS

Library of Congress Cataloging-in-Publication Data

Value capture and land policies /
edited by Gregory K. Ingram and Yu-Hung Hong.
p. cm.
Includes bibliographical references and index.
ISBN 978-1-55844-227-6
1. Public lands—Valuation. 2. Real estate development—
Finance. 3. Land use, Urban. 4. Public investments.
I. Ingram, Gregory K. II. Hong, Yu-Hung.
HD216.V33 2012
333.10973—dc23 2012008363

Designed by Vern Associates

Composed in Sabon by Achorn International in Bolton, Massachusetts.
Printed and bound by Puritan Press Inc., in Hollis, New Hampshire.
♻ The paper is Rolland Enviro100, an acid-free, 100 percent PCW recycled sheet.

MANUFACTURED IN THE UNITED STATES OF AMERICA

CONTENTS

PREFACE

Privately funded improvements by landowners increase the value of their land and property, as do other changes such as growth of the surrounding population and neighborhood economic activity, public investments in infrastructure, the provision of public services, and planning and land use regulations. Value capture focuses on realizing as public revenue (through taxes, fees, or in-kind services) some portion of the increase in land value that stems from these latter changes. It is an idea dating back to Adam Smith in the eighteenth century and to Henry George in the nineteenth century. Value capture has been practiced by many countries, particularly in Latin America, but the term is not widely used in the United States. Here, specific instruments of value capture (such as tax increment financing, business improvement districts, and fiscal impact fees) are well known, but local public finance analysts often have not linked these instruments to the framework of value capture. However, attention to value capture as a source of public revenue has been increasing in the United States and internationally in the current economic environment, during which local governments have seen declines in revenue from traditional sources and rapid urban population growth requires large investments in public infrastructure. This volume, based on a conference held in May 2011, introduces concepts of value capture, reviews selected relevant historical experiences and examples of recent instruments, and speculates about future applications.

The first section, on the conceptual frameworks and history of value capture, reviews the analytics and addresses the issue of symmetry related to compensation for partial takings. Without value capture, property owners keep the gains from public actions that increase their property's value, but generally are not compensated for public actions that decrease the value of their property. The issue of compensation for partial takings naturally arises when the public sector seeks to appropriate increases in land values that stem from its actions. This section also reviews the long and inconstant history of value capture policies in France and the United Kingdom, as well as the remarkable expansion of tax increment financing in California. The second section reviews the application of particular instruments or means of value capture, including the conversion of rural to urban land in China, town planning schemes in India, community benefits agreements, and the property tax itself. The third section focuses on ends instead of means and examines the use of value capture by community land trusts to provide affordable housing, the use of land development to finance transit, and the use of various fees to fund airports. The final section explores potential extensions of value capture mechanisms to tax-exempt nonprofits and to the management of state trust land in the United States.

In addition to the authors and conference participants, many others contributed to the design of the conference and the production of this volume. We are indebted to Armando Carbonell, Martim Smolka, and Joan Youngman for

advice and counsel on the selection of topics and the program design, and to Karin Brandt, who provided background information on topics and managed many details related to the conference. The conference would not have been possible without the logistical support of our conference event team, including Melissa Abraham, Brooke Burgess, and Kristin DiLorenzo. Our special thanks go to Emily McKeigue for her overall management of the production of the volume; to Vern Associates for the cover design; to Nancy Benjamin for manuscript and proof preparation; and to Barbara Jatkola for her tireless and reliable copyediting.

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1

Land Value Capture: Types and Outcomes

Gregory K. Ingram and Yu-Hung Hong

Urban public finance in both developed and developing countries has undergone dramatic changes in the past decade. In the developing world, cities are grappling with the provision of basic services and infrastructure to meet the increasing demand of their growing populations. One major challenge is the limited fiscal resources available to finance local public goods. In some cases, central authorities have implemented fiscal decentralization programs, hoping to mediate this problem by delegating certain taxing powers and spending autonomy to local governments. In practice, however, many central authorities have transferred spending responsibilities to local jurisdictions without giving up their control over tax revenue sources. As a result, local officials are under pressure to increase public spending, but they lack the taxing power to raise funds to carry out their unfunded mandates.

Cities in the industrialized world are also under fiscal stress. One perennial problem is the disagreement among constituents about the amount of taxes and fees they should pay for local public services. Attempts by local governments to raise taxes and fees to cover the costs of services are often met with public opposition. The current global economic downturn has made matters worse, because central and state governments have curtailed financial assistance to cities at the same time their highly cyclical income and sales tax revenues have declined and demands on their entitlement programs have increased.

The current fiscal crisis has stimulated interest in new revenue sources, including capturing land value increments created by public investment in infrastructure. This revenue source is efficient because beneficiaries of infrastructure are required to pay part of the investment costs, thus preventing the public from undervaluing public goods. It is equitable because those who did not contribute

to the increased land value do not retain the financial benefits, which can then be used to fund programs to serve the community at large.

Land value is determined by a number of factors, including (1) public investments in infrastructure and social services; (2) changes in land use regulations; (3) population growth and economic development; (4) private investments that increase land value; and (5) the original productivity of the land (Hong and Brubaker 2010). A conceptual delineation of these five elements of land value and their ownership can facilitate the discussion of who should capture what. Land value is the result of both public and private investments and actions, and each entity is entitled to some portion of this value.

The value related to the original productivity of the land paid for by the owner and the increment in value generated by private land improvements should remain in private hands. When we discuss land value capture in this book, we are not addressing this privately created value. Indeed, a value capture mechanism that tried to confiscate all increments from private landowners would eliminate private incentives to invest in land and real estate. The three remaining land value determinants are at the core of the discussions in this book.

There seems to be a consensus among scholars that public investment costs should be at least partially covered by the financial benefits that these investments generate. The effectiveness of various instruments used to achieve this objective—such as special assessments, property taxation, and airport improvement fees—is discussed here. Although the idea of capturing land value in order to finance public investment is uncontroversial, there are problems with its implementation—a topic that we will return to later in this chapter.

When it comes to capturing land value created by changes in land use regulations, however, there is no clear consensus. In the United States, for example, some private landowners believe that they possess the entire bundle of property rights in perpetuity. In such cases, a policy requiring owners to pay for any increased development rights due to regulatory changes would create political opposition and conflict. Private landowners and developers might support such a policy, depending on the conditions of the real estate market and their bargaining positions (Dillman and Fisher 2009), or they might challenge the legality of value capture mechanisms such as inclusionary housing and development impact fees. Hence, the distribution of regulation-related changes in land value is more the result of political maneuvering and bargaining than of straightforward economic and technical arguments. Case studies of such experiences in Sweden, Britain, France, and the United States are presented in the following chapters.

The allocation of land value increments resulting from long-term trends in population growth and economic development is also controversial. In most cases, it is difficult to determine what share of increased land value stems from these factors.

To complicate matters further, property value assessment for either a market transaction or tax purposes usually produces an estimate that includes both land and building values combined. Even when a distinction is made, the land value is often a crude estimate, such as a fixed percentage of the property value. Although

econometric models can be used to calculate land value in a rigorous manner, such use is uncommon (Barker 2007; Case 2007; Davis and Heathcote 2007).

Even if land value is assessed independently, it must then be allocated to privately created and publicly created components. This is difficult to do for the entire value of a parcel and is seldom attempted. It is much easier to estimate the change in land value associated with an action that took place over a relatively brief period of time, such as a public infrastructure project, a regulatory change, or a private investment. Accordingly, most value capture policies do not attempt to allocate the existing land value to different causes. Instead, they focus on the change in value that can be attributed to a particular time-bound action. This is the case with most of the value capture policies examined in this volume.

This chapter introduces the conceptual frameworks of value capture and presents selected historical experiences. It then describes the use of some common instruments, such as public land leasing and property taxation, and explores some project-based applications, such as town-gown investments in science parks and transit-oriented development. Finally, it addresses the extension of value capture to nonprofits and state land trusts.

Conceptual Frameworks and Historical Experiences of Land Value Capture

In chapter 2, Susan S. Fainstein examines the arguments for using land value capture for distributive purposes. Her assertion is founded on Henry George's idea that land value increments created by regulatory changes, population growth, and economic development should belong to all the inhabitants of a city. She also cites Henri Lefebvre's argument that the wealth of a city is created through collective action and therefore should not be privately owned. After justifying community ownership of publicly created land value, Fainstein examines in detail two value capture mechanisms: public leasehold systems, and monetary and in-kind exactions.

In principle, Fainstein argues, public land ownership, with periodic increases in land rents, could be the most effective method of ensuring the equitable distribution of land value increments. In practice, however, some countries may not have the supporting institutions to enable the government to modify rents to reflect changes in land values. In addition, public land leasing without proper public oversight could open the door for government rent-seeking behavior or malfeasance. Property rights institutions are also path dependent. Once freehold rights have been assigned to citizens, it is very hard to convert those rights to public leaseholds unless the government is willing to endure the fiscal and political costs of acquiring existing freehold rights and then leasing them back to users, a process that Fainstein believes is infeasible in the United States.

Fainstein argues that the public sector could still take part of the gains in land value through the exercise of its land use regulatory powers. Cities could

collect linkage fees from private developers for permits for new development. For instance, the Boston Redevelopment Authority imposes on new commercial development over 50,000 square feet a linkage fee of $7.18 per square foot for affordable-housing development and $1.44 per square foot for jobs development. Some cities also engage in public-private partnerships, providing public land as equity in projects with private developers in return for a share of the land development profits.

Communities can also negotiate with private developers to bring jobs and housing to their neighborhoods. In return, communities promise to support the proposed projects. (Laura Wolf-Powers discusses this approach in great detail in chapter 9 on community benefits agreements.) Essentially, Fainstein alludes to the varied possibilities of public land value capture through the use of zoning and community organizing in situations where land is owned freehold.

In chapter 3, Perry Shapiro examines the efficiency of value capture by analyzing the symmetries and asymmetries between givings and takings. Ideally, if a government asks landowners to reimburse it for the costs of infrastructure improvements based on the associated increases in land values, it will also compensate landowners for reductions in land values that stemmed from its actions. The U.S. Constitution prohibits takings without just compensation, but it is silent on the issue of givings without reimbursement. This legal tradition has roots in the historical desire to protect private property rights from the power of the state. From an efficiency standpoint, the takings clause reduces the incentive for the government to take more land than it needs for public projects, but there is no parallel policy concerning public benefit recovery.

In view of this imbalance, Shapiro proposes a set of rules (which he terms the *ideal mechanism*) for deciding what damages are compensable, what benefits are recoverable, and how compensation payments and recovery charges can be determined. Using the construction of a road as an example, he illustrates the shortcomings of market value compensation for land takings and ad valorem property tax recovery for public infrastructure provision. He then suggests two alternatives: (1) a compensation assessment method based on the increased value of non-taken property; and (2) a strong Pareto mechanism based on an auction theory. He claims that both mechanisms would lead to efficient and fair outcomes for givings reimbursement and takings compensation.

Adding to Shapiro's discussion, Henry E. Smith shows how viewing land and improvements together as variable-quality versus fixed-quality assets could lead to different investment decisions in response to takings and givings. In his commentary, Smith views taxes and subsidies as analogous to takings and givings. If land is perceived as having variable quality due to actions taken by owners, a per unit tax would increase quality, whereas an ad valorem tax would reduce quality, because the enhanced value generated by any improvement would be subject to taxation. Subsidies would have the opposite effects. A per unit subsidy would lead to a decrease in quality, whereas an ad valorem subsidy would lead to an increase in quality.

Owing to these differential impacts, Smith believes that there is a need for theoretical and empirical research to define the boundary between land and improvements. More refined empirical and theoretical definitions would allow us to benefit from Shapiro's insights about the contrary effects of takings and givings on improvements.

Land value capture is closely linked to institutions that define property in land. Thus, we need to consider how property has been constructed in the law, political philosophy, and constitution of a country to understand the outcomes of land value capture there. In chapter 4, Philip A. Booth provides an institutional analysis of the experiences of land value capture in Britain and France. Britain has a long history of government attempts to capture land value by using betterment levies. In contrast, France has employed direct state intervention in urban development to achieve the same goal. Despite these differences, Booth argues that the two approaches are both converging toward a contractual agreement system wherein private developers are asked to share their development profits with the state. Although the approaches are similar, the nature of contracting in the two cases differs due to dissimilarities in local administration.

Booth also identifies three problems associated with land value capture in Britain and France: (1) land valuation; (2) the use of contracts to secure infrastructure financing for new development; and (3) the unclear objectives of whether land value capture is for income redistribution or cost recovery. He argues that solutions to these problems can be found only by taking into consideration the two countries' different legislative and constitutional orders.

Commenting on chapter 4, Louis G. H. Albrechts argues that a framework for analyzing the connections among planning approaches, planning instruments, and societal contexts is needed to understand the outcomes of land value capture in Britain and France. Such a framework, he suggests, should identify (1) all beneficiaries of land value capture; (2) the instigators of changes in planning instruments and their approaches; and (3) the rationale and consequences of these changes. The focus of the analysis should be on the sociopolitical positions of decision makers and the coalitions they form to develop new value capture instruments. Booth and Albrechts successfully show the political and economic complexity involved in land value capture.

The use of special assessments in California is one of the longest value capture experiences in the United States. In chapter 5, Dean J. Misczynski describes this instrument and related financing devices such as the Mello-Roos Act that have financed parks, open space, gymnasiums, swimming pools, landscaping, rail transit, and other public facilities. In fact, the largest assessment district in the United States, encompassing nearly all of Los Angeles County and more than two million parcels, was created to fund parks and open space.

The use of special assessments in California has not been problem-free, however. The rapid expansion of special-assessment districts triggered the passage of Proposition 218 in 1996, which added new requirements for special assessments to the state's constitution. It called for a more rigorous definition of and

distinction between special and general benefits generated by projects financed by special assessments. Owing to the ambiguity of the language in Proposition 218, special assessments are now subject to a wide range of interpretations. In some situations, it is almost impossible for public officials to deploy this instrument, because they cannot adequately define and distinguish the special and general benefits of their proposed projects. In other cases, when the distinction can be made explicitly, special-assessment projects have renewed legitimacy. Misczynski predicts that it will take much time and many lawsuits to define the range of permissible uses of special assessments in California.

In her commentary, Carol E. Heim identifies an important issue discussed in Misczynski's chapter: the need to have a clear understanding of potential public opposition to special assessments. She wonders why residents of Los Angeles and San Francisco opposed financing of transit projects using special assessments, while residents of Seattle; Portland, Oregon; and Washington, DC, welcomed such financing.

Heim is also concerned about inequality. Special assessments are founded on the ability-to-pay principle; thus this method of financing may be feasible only for affluent neighborhoods. If this is the case, how can local infrastructure in poor neighborhood be financed? Do we need a progressive income tax system to compensate for a greater use of special assessments? Answers to these questions, Heim believes, will help policy makers make better use of this land value capture instrument.

Land Value Capture Instruments

Continuing Fainstein's discussion of using public leaseholds to capture land value, in chapter 6 John E. Anderson examines the experience of leasing public land in China. Specifically, he addresses the issues related to the adoption of a proposed ad valorem property tax within a public leasehold system. He also explores how long-term leases may affect the government's ability to capture land value increases.

Anderson argues that there is no technical problem of introducing a property tax in China. There are ample examples of Western governments collecting property taxes on public leaseholds. The challenge in China is that leasehold charges established through negotiation do not reflect the market value of land and thus are not useful for tax assessment purposes. With regard to the effects of long lease terms on the government's ability to capture land value, Anderson asserts that the Chinese government is giving up substantial amounts of revenue in order to retain the option to redevelop land at the end of the lease. To balance this tradeoff, the government could introduce more flexible lease terms and allow lessees to extend their leases for another term with payments of higher land rents or leasing fees. This may allow the government to capture a larger share of the increased land value over time.

Guanzhong James Wen raises two concerns about the Chinese public leasehold system. First, he argues that the coexistence of private and public land markets is a precondition for the success of public land leasing. The private land market provides land price data for setting leasehold charges and tax assessments. More important, it gives land users an option to exit from the public leasehold market if the government overcharges lessees for using land. The absence of an active private land market in China could lead to inefficiency there. Second, local governments in China depend on leasing fees to finance urban infrastructure and basic services. Wen asserts that this land-based public finance system has increased income inequity and social injustice. Property prices in major cities have skyrocketed and in turn have negatively affected middle- and low-income households. The financial impact is especially serious for those who have migrated to cities from rural areas for employment opportunities. Until recently, lease revenues collected by local governments have rarely been used to build affordable housing or provide other public goods for the poor.

In India, local governments have increasingly relied on town planning schemes (TPS) to influence urban growth and to finance affordable housing and basic infrastructure. TPS is a hybrid land readjustment system that requires owners of agricultural land on the urban fringe to transfer up to 40 percent of their land to the government for redevelopment. In return, they receive cash compensation for the land taken and retain the remaining 60 percent of their land, which is reconstituted as urban plots with public infrastructure. The landowners can either build new homes on these serviced plots or sell the plots to developers. The government builds roads and other public facilities on a portion of the land received from the landowners and reserves a portion to sell at auction to cover the costs of infrastructure development. In chapter 7, Bishwapriya Sanyal and Chandan Deuskar examine the use of TPS in Ahmedabad, Gujarat, and offer five observations.

First, TPS is an incremental approach to implementing urban planning and thus relies on master planning to guide the process of land redevelopment toward a long-term vision of the city. TPS does not replace master planning, but is instead only an instrument of urban planning and of the economic development strategy of the region. Second, only registered landowners are allowed to participate in the design of TPS. Poor renters and informal settlers are marginalized. As the authors admit, the Indian approach is not in accord with the spirit of conventional land readjustment, which emphasizes inclusion and public participation in the decision-making process. Third, despite the attempt to use TPS to speed up infrastructure development, the process remains slow due to bureaucratic procedures imposed by the state government. Without any authority to sanction plans, manage land auctions, or revise land use rules and regulations, local governments are not able to take advantage of TPS. Fourth, although TPS calls for the equitable sharing of profits between government and landowners, the latter receive the lion's share of the redevelopment benefits. In calculating the value of the land

returned to landowners, local authorities have the opportunity to ask landowners to return part of the acquisition compensation if the land value of the returned land exceeds the value of the acquired land. Local authorities, however, underestimate, and thereby fail to recoup, the increments in value. Fifth, although one of the major policy functions of TPS is to allocate land for low-income housing, few affordable-housing units have been built. Sanyal and Deuskar argue that this pro-poor component of TPS might only have been a strategy for gaining public support for this urban growth management program. In sum, there is room for improvement of TPS, but that will depend largely on the institutional feasibility of future policy revisions.

Bipasha Baruah suggests two ways to avoid having the pro-poor objective of TPS turned into tokenism. First, she argues that local governments should recognize the legitimacy of informal land transactions so that more poor people will be eligible to participate in TPS. Because notarization of land transaction documents is expensive and inaccessible to the poor, any quasi-legal documentation of land ownership should be accepted as proof of ownership. This would give many poor households an opportunity to voice their concerns and to appeal unfair compensation and displacement. Second, civil society organizations can monitor local governments' commitment to reserving up to 10 percent of the pooled land for low-income housing. These two changes could preserve and help enforce the well-intentioned pro-poor housing provisions of TPS.

In examining the practicality of using property taxes to capture land value in the United States, Lawrence C. Walters found that the annual property tax is an effective value capture instrument. His results are reported in chapter 8. He found that a 1 percent increase in the property value estimated by the cash flow approach can lead to a 0.27 percent increase in property tax revenue three to five years later. More important, this captured value is sufficient to pay for public transportation investments during the study period of three to five years. These results were surprising to the author because there have been widespread efforts to restrain property tax assessments and to limit levy increases in almost all U.S. states. In addition, infrequent tax reassessments might have led to a severe underestimation of the property tax base.

Walters proposes three ways to refine and extend his method of evaluating the performance of the property tax as a value capture instrument. First, since one justification for value capture is that public investments and community actions enhance private land values, it is important to refine the cash flow approach to estimate just land value increases. This approach would also require the total property tax revenue to be disaggregated into revenue from taxing land and revenue from taxing improvements. Second, it is critical to distinguish between investments that result in net increases in value and those that simply move value around. In other words, a less aggregate (metropolitan) level of analysis is needed. Third, the cash flow approach should be tested in less developed countries where data are available.

Jay K. Rosengard suggests two additional extensions in his commentary. First, the estimate of the captured value may be compared with local government

budgets instead of public transportation investments. This proposed indicator would allow analysts to assess whether the value captured by the property tax could help municipalities weather the current fiscal storm. Second, he argues that the author should recognize the complex relationships between the property tax and other property-related taxes and fees. Underreporting of property values to avoid paying inheritance and capital gains taxes, for example, could affect the value captured by annual property taxes.

In chapter 9, Laura Wolf-Powers discusses how community benefits agreements (CBAs) enable community organizations and special interest groups in the vicinity of a development project to negotiate with developers for affordable housing, public facilities, and job opportunities. In return, the groups offer their support of the project. She specifically evaluates the CBAs for Cherokee Denver's redevelopment of the former Gates Rubber factory site.

Although CBAs can help developers remove the uncertainty of public opposition, this approach is controversial for three reasons. First, although CBAs are similar to development impact fees and exactions that are used to mediate negative externalities generated by development projects, it is unclear whether the same principle can be applied to achieve the objectives of poverty reduction and income redistribution. Second, there are issues related to the representation and definition of community interests. Activists may bargain for their own interests in CBAs instead of broader community benefits. Third, CBAs may duplicate other mechanisms that local governments use to capture land value. The implications of CBAs for other value capture instruments are unknown. Wolf-Powers speculates that the resolution of these issues depends on a clearer definition of the CBA as a tool to mitigate negative externalities or an instrument to pursue redistributive goals.

In response to Wolf-Powers's ideas, Julian A. Gross argues for a clear distinction between public and private CBAs. He asserts that all planning and public participation processes involve some sort of agreement between public agencies and developers for the benefit of the community. In such projects, many community stakeholders weigh in through public forums and private lobbying to shape the agreements, which Gross says should be called public CBAs. He argues that they differ from private CBAs in two significant ways. First, a public CBA is generally not legally enforceable by the affected community stakeholders. Second, a public CBA does not deviate from the public participation processes and project approvals that would exist without the CBA. In contrast, private CBAs are made outside the formal planning processes and are stand-alone contracts between community groups and developers. Any discussion of CBAs should make these distinctions to avoid confusion about the functions and effectiveness of this instrument.

Specific Applications

Some value capture approaches are tailored for specific development projects. For instance, the science park has become a popular form of town-gown partnership used to boost local economic development. In chapter 10, Michael I. Luger

and Justyna Dabrowska examine the extent to which land value increments created by this type of joint venture can be recouped to defray investment costs. In most cases, universities and public agencies are not investors and thus do not expect to profit from these undertakings. Hence, the developers normally retain the land value increments. Yet cities and universities can benefit indirectly from a science park. Growth in economic activities and employment stimulated by the park can increase local income and property tax revenues.

The authors specifically explain how cities, universities, and private investors successfully shared the increased land value in the Manchester Science Park. The three stakeholders formed a partnership in 1984 that developed the park and leased the office space to private companies. The authors estimated that the economic benefits of the park were capitalized into the land value and increased the value by about 10 percent by 2010. The park tenants pay rent and administrative fees to the managing company, which in turn pays the City of Manchester for the leased land and uses the fees to cover maintenance costs. No government subsidies are needed.

Weiping Wu raises three interesting questions with regard to the evaluation of the value capture performance of university science parks. First, she questions the reasonable time frame for a university to capture land value increments. More important, at what stage of the period should an evaluation be conducted? Second, what are the crowding-out effects of town-gown investments in a science park on private investments in terms of both the net amount and their spatial distribution? Last, but not least, given that the line between the academic and nonacademic activities of universities has become vague, when should governments treat university activities as tax exempt? The answers to these questions will affect the choice of instruments used to capture the increased land value created by town-gown investments in science parks.

In chapter 11, Richard P. Voith and Susan M. Wachter discuss the relationship between building durable affordable housing and land value capture, using inclusionary housing requirements and community land trusts (CLTs) in the United States and Britain as examples. In the United States, municipalities are facing a trade-off in their efforts to keep housing affordable for their constituents. Because cities rely on property tax collections to fund local public education and services, they need to boost home values. Yet this fiscal strategy runs into direct conflict with their objective of keeping housing prices low. Over the past 35 years, New Jersey and Massachusetts have adopted inclusionary housing programs to deal with this problem. Municipalities may grant developers density bonuses, reduce parking requirements, waive (or reduce) fees or taxes, allow reduced unit size or the use of alternative materials, and/or expedite review and approval processes. In exchange for these special treatments, developers are required to build a certain number of affordable-housing units and to sell them to qualified low-income households at below-market value. The ability to capture the value generated by a flexible zoning scheme is a precondition for the success-

ful implementation of inclusionary housing requirements. The major problem of inclusionary housing is that many of the units will eventually return to the market rate when the beneficiaries sell their homes after the expiration of the required affordability period.

Unlike inclusionary housing, CLTs can provide affordable housing into perpetuity. In principle, a CLT should be able to capture future land value increments by leasing to its members the land on which their homes are built. The members own the buildings, but not the land. Housing trusts in Britain even limit tenure to renting and thus are the sole claimants of all capital gains of their properties. The higher the housing price appreciation is, the more affordable the housing units are for low-income households. To achieve this affordability goal, the resale formula that a CLT adopts in pricing the transfer of its homes from one eligible party to another is critical. If a large part of the capital gains will benefit homeowners or be used to subsidize maintenance costs, the captured value may not be enough to keep units affordable in the long run.

Furthering the discussion on inclusionary housing requirements, Rachel G. Bratt states that policy makers have begun to recognize the importance of the affordability restriction period. For instance, in Montgomery County, Maryland, the original statute required only a 10-year affordability restriction. That restriction is now 99 years for rental units and 30 years for owner-occupied units. More important, if an owner-occupied unit is sold within the restriction period, the subsequent owner must keep it for another 30 years before she can sell it in the private market. Besides the resale limitations, Montgomery County provides funding to public housing authorities and nonprofits to purchase inclusionary units. Thus, there is no lack of government administrative policies for maintaining long-term housing affordability.

Transit value capture is another common project-based approach for capturing land value increases generated by public investment. In chapter 12, Jin Murakami examines this technique, which is used by major railway companies in Tokyo and Hong Kong to finance new town development. In these cities, transit agencies packaged railway investment and housing development together, so as to capture land value increments resulting from the rapid economic and population growth along the railway corridors and around major stations in suburban areas.

Murakami argues that three factors determine the success of this strategy. First, timing is crucial. The mixed-development approach may work only during rapid urbanization and in a booming economy. During a period of rapid growth, private entities in Tokyo and Hong Kong embarked on railway extension projects and were able to finance part of their undertakings with profits generated by their real estate investments. When the Japanese economy experienced a prolonged stagnation, public transportation companies were unable to self-finance similar projects. Second, land value capture takes time; thus transit-oriented development requires long-term property stewardship. Private railway companies in

Tokyo and Hong Kong are committed to long-term property investment. They continue to improve the net profits on their commercial and retail real estate businesses along the transit lines, so as to use the captured land value to cross-subsidize their railway operations. Third, the spatial strategy of transit-oriented development needs to be flexible in order to take changing economic and social conditions into consideration. For cities that are experiencing deindustrialization and an aging population, transit-oriented projects should focus on transportation connections to central business districts, satellite university campuses, and international airport terminals.

In his commentary, Zhirong Jerry Zhao suggests two additional research directions for this topic. First, among many global cities, only Tokyo, Hong Kong, and Singapore were able to use the method to finance transit development profitably without any government subsidies. He argues for a careful identification of the preconditions for adopting this value capture approach. Second, explanations of different market redistribution patterns, value generation, and value capture outcomes for the Asian models may also be useful for policy makers who have shown an increasing interest in the potential of value capture as a supplemental funding source for transit development.

Airports also may use land value capture as a funding source for infrastructure improvements. In chapter 13, Anming Zhang explores the questions of how positive externalities generated by airports should be internalized and what value capture mechanisms could be applied to this specific context. One source of revenue to cover infrastructure-related costs is taxes on airfare. In 2004 the total effective tax rate of the four types of taxes imposed on airline tickets was approximately 16 percent. Another source of revenue is airport improvement fees, called passenger facility charges (PFCs) in the United States. Since 1992 U.S. airports have collected PFCs of up to $4.50 for each departing passenger. These charges fund FAA-approved projects that enhance airport infrastructure and repay debt related to infrastructure development.

Aside from these direct charges, Zhang asserts that it is difficult for airports to recoup other benefits enjoyed by the region. Unlike the expansion of subway or light-rail lines, which produce benefits just for adjacent landowners, an airport can create positive spillovers that extend to a large hinterland. Hence, it is difficult to identify which relevant parties should pay for the positive externalities. According to Zhang, the only value capture mechanism that airports can use is concession fees for a wide variety of nonaeronautical services. Available land that is not essential for airport operations may be rented at full commercial rates for shopping centers in order to generate revenue to support airport infrastructure investment.

Jeffrey P. Cohen cautions that airport improvement fees are distortionary and thus may not be the most efficient approach for raising revenue. One viable alternative, he argues, would be to tax takeoff and landing slots. Because the supply of slots is perfectly inelastic, such a tax would not generate a deadweight loss. To determine the value of these slots, airport authorities could auction them off.

A sealed-bid, second-price auction could help airports determine the true value of the slots and capture the airlines' entire surplus to help defray infrastructure improvement and maintenance costs.

Potential Extensions

There has been a prolonged debate on whether local governments should grant nonprofit organizations tax exemptions for owning real property. At the core of this debate is an issue related to value capture. On one hand, like all property owners in a city, nonprofits enjoy the public goods provided by the municipality; thus they should pay for these services. On the other hand, some nonprofits perform functions that have community benefits and in turn lower the fiscal costs of public goods provisions. In this case, property tax exemptions are justified. In chapter 14, Joseph J. Cordes argues that there is insufficient evidence to show that many recipients of property tax exemptions provide community benefits that diminish the fiscal burdens of cities. Hence, he suggests that nonprofits should receive direct-cost subsidies instead of property tax exemptions. Alternatively, nonprofits may be asked to make annual payments in lieu of taxes (PILOTs), which are determined based on an agreement between the nonprofits and the city.

H. Woods Bowman argues that nonprofit property tax exemptions are related to wealth redistribution, because shortfalls in tax revenues are covered by imposing higher tax rates on other property owners. Exemptions become a fiscal problem only when rates are statutorily fixed. Bowman also thinks that it would be hard to find a standardized solution that could be implemented across all the states, for three reasons. First, property tax legislation is a state matter, and having all 50 states agree on one approach is unlikely. Second, not all states are significantly affected by nonprofit property tax exemptions. Third, tax-exempt entities established prior to the enactment of general laws on taxation and exemption would be grandfathered.

The use of land value capture to finance investments in state trust land is another potential extension of the concept. Traditionally, state trust land has been leased to private companies and individuals for mining, forestry, and cattle grazing. In chapter 15, Susan K. Culp and Dan W. Hunting argue that in Arizona, where much state trust land is in close proximity to urban areas, significant revenue could be generated if potential land value increments created by the future conversion of agricultural land to urban uses could be captured. Using other examples from the Southwest, the authors illustrate the feasibility of applying varied land value capture mechanisms to these cases.

The first step for the Arizona State Land Department to take in capturing the potential financial benefits of land development would be to invest in transportation, energy, and water infrastructure. Such investment would facilitate the development of open land on the urban fringes in a timely manner. This approach would require changes in long-standing legislation that safeguards against unscrupulous land dealings. It also would entail changes in

land managers' attitudes, which are currently highly risk averse and sensitive to controversy.

Culp and Hunting identify three areas of reform. First, trusts should be allowed to issue bonds to finance infrastructure projects. In Arizona, the state constitution prohibits any liens on state property, thereby limiting the bond financing option. Second, state trusts have a lot of land, but lack the capital and expertise to develop their assets. Joint ventures with the private sector may solve these problems in Arizona if the state constitution, which prohibits public-private partnerships in state trust land development, could be amended. Third, better long-term planning within state trust land departments to encourage active collaboration with local governments would enable trust land managers and local officials to develop this land. Without these changes, state land trusts may not be able to share in the financial gains of future land development.

Amy W. Ando proposes three additional options to maximize and capture the increased value of state trust land. First, she suggests using an overall optimal time path created by real estate economists to time land sales. Second, she supports the use of long-term leases to assign land rights under uncertainty to avoid any irreversible mistakes caused by selling the land as freehold. Land managers could use economic models to determine the optimal lease lengths and identify the optimal time to convert a long-term lease into a fee simple sale. Third, Ando asserts that the maximization of land value must include the conservation of open space within a development. She proposes selling selected unimproved land parcels to conservation groups first to increase the value of the remaining parcels. After the improved amenity has been capitalized into the land price, the other parcels can be sold for private development, which will allow the trust to capture the increased land value.

Conclusions

Land value capture is a topic of great interest among practitioners of local public finance—partly because of the recession-related decline in local government revenues and partly because of the need for new ways to finance local infrastructure. Value capture applies a tax or fee designed to return to the community some or all of the value added to land by community actions. Its application is particularly attractive when public regulation or investment—for roads, water supply, sanitation, or local amenities such as streetlights—increase property values. A wide range of approaches to value capture have been used internationally and in the United States.

Perhaps the broadest and most comprehensive application of value capture is in China, where municipalities buy adjacent agricultural land from farmers at agricultural use prices, service it with infrastructure, and sell it to developers as urban land with permits for urban development. The difference in price between the land's urban value and its agricultural value accrues to the municipality, provides a large share of local revenues, and pays for the installed infrastructure.

In Hong Kong and Tokyo, transit companies have used revenues from the codevelopment of residential communities and commercial areas around new transit stations to help finance costly transit projects. In Tokyo nonfare revenues account for 20–50 percent of total revenues for some transit lines. In both cities, ongoing revenues from property management are becoming more important than profits from development projects and provide a sustainable income stream.

Attempts to tax betterment values in the United Kingdom began with the 1909 Housing, Town Planning, etc., Act and continued in the 1947 Town and Country Planning Act, but implementation was impeded by administrative challenges, such as betterment valuation. Direct betterment levies were replaced by contracts with local authorities requiring developers to contribute to infrastructure and service provision, affordable housing, and other planning obligations. These contracts are evolving into community infrastructure levies, a betterment levy by alternative means. Following a very different historic path, France now has a similar local infrastructure tax on new development.

India has been experimenting with land pooling in its implementation of new town planning schemes that replace the old master plans. The practice is to have owners of undeveloped or haphazardly developed land pool their land for development and receive in return a serviced parcel or reconstituted space. Ahmedabad's TPS uses 15–20 percent of the taken land for roads and 15–20 percent for other amenities and auction to others, then returns 60–70 percent to the pool members.

The United States employs many specific policies that embody value capture. Special-assessment areas often include betterment charges. For example, community facilities districts (CFDs), also called Mello-Roos districts, apply fees paid by residents to retire bonds sold to finance developmental infrastructure. Business improvement districts (BIDs) and tax increment financing (TIF) use earmarked tax or fee revenues from a designated area to finance improvements. Privately negotiated community benefits agreements (CBAs) require developers to provide community facilities or economic benefits (such as construction employment) for local residents. Citywide development and impact fees that are used to finance infrastructure and related development projects are normally cost based, but succeed only where the betterment value exceeds the cost. Even property taxes have elements of a betterment charge when not subject to assessment or levy limits.

Most notable about the U.S. experience is that the terms *betterment levy* and *value capture* are rarely used, even though the principles are widely practiced. Moreover, the United States could learn some new value capture approaches from international experiences in this regard.

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