

CHAPTER SIXTEEN

Is under-investment in public infrastructure an anomaly?

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Discovery commences with the awareness of anomaly, i.e. with the recognition that nature has somehow violated the paradigm-induced expectations that govern normal science.

Thomas Kuhn

The underinvestment anomaly

Conventional wisdom about urban land and public infrastructure in developing countries presents an anomaly to an economist trained in the neoclassical paradigm. The following three propositions contain the anomaly:

- (a) Much urban land lacks basic public infrastructure.
- (b) Provision of basic public infrastructure greatly increases the value of urban land, usually by much more than the cost of the infrastructure itself.
- (c) The difficulty of financing urban public infrastructure prevents its provision.

The anomaly implied by these three propositions puzzled me when I first worked for the World Bank on an urban land policy project. *Why is it so difficult to finance public infrastructure that increases the value of the serviced land by much more than the cost of the infrastructure itself?* If public infrastructure investment increases the value of the serviced land by more than the cost of the investment, the investment should, in theory, be self-financing. Yet throughout the developing world there is said to be such a shortage of serviced land that the lucky (or politically powerful) land-owners whose sites do receive public services reap great windfall capital gains. For example, many members of the urban population of Latin America have no piped water in their homes and, as a result, must rely on higher-cost forms of water supply, such as purchase from water trucks. Although truck delivery of water is more expensive than piped delivery, investment funds cannot be mobilized to pay for the cheaper piped-water supply, even in situations where it would immediately increase the value of the benefited land by far more than the cost of the investment.

In conventional neoclassical economic analysis, rational investors are assumed to seek to maximize the present net worth of their assets. If the present

discounted value of public infrastructure benefits is much greater than the cost of the infrastructure itself, why aren't these individually profitable and socially desirable public infrastructure investments being made? Do land-owners in developing countries simply not behave as neoclassical economists assume, I wondered? I did not ask myself this question under any delusion that if the conventional theory's predictions fail to fit the facts, I should consider the theory falsified and should try an alternative (perhaps a Marxist?) theory. After all, how many theories in land economics have been discarded simply because their predictions do not fit the facts?

Quite aside from its rôle as a *positive* theory that can be used to *predict* economic outcomes, neoclassical economics is also a *normative* theory that can be used to suggest what one *should* do to achieve desired economic outcomes. That is, if one *wants* to maximize wealth, or to use increases in land value to finance infrastructure, then neoclassical land economics theory can suggest how to do it.¹ It was in this normative spirit that I approached the problem of trying to discover the reasons for the anomaly of widespread failure to invest in highly profitable public infrastructure. I simply assumed that there was some market imperfection (i.e. the world failed to fit the theory rather than the other way around), and within the conventional neoclassical framework I sought a solution to the problem of underinvestment in public infrastructure.

A conventional neoclassical solution: special assessments

In the neoclassical paradigm, special assessments (also called benefit assessments) are a long-established public-finance mechanism that seems ideally suited to financing any infrastructure investment that increases the total value of benefited property by more than the cost of the public investment. A special assessment is a levy to pay the cost of public improvements in a defined area, with the levy apportioned among the benefited properties according to the benefits they receive. The special assessment is limited to paying the cost of the public improvement, so if the increase in total property value exceeds the cost of the public improvement, and if the cost is apportioned among properties according to the increase in property value, every property's increase in value should exceed its special assessment. Therefore, every property owner should be better off as a result of the *combined* effect of the public improvement and the special assessment that finances it. If so, property owners even in areas of fragmented ownership should be willing to pay for any sort of public improvement that costs less than the resulting increase in the total value of their neighbourhood. In this sense, a special assessment district is a sort of compulsory club of property owners formed to pay for a neighbourhood public improvement that benefits them all.

Ideally, the cost of a special assessment project is apportioned among the benefited properties according to the resulting increase in each property's value.

but in practice this ideal is impossible to achieve. Estimating property values is a difficult task, and estimating the increase in property values caused by a public improvement is even more difficult. Therefore, alternative *indicators of benefit conferred* are used to distribute the costs among properties, with the indicator depending on the type of improvement that is being financed. For example, for projects such as sidewalks, curbs, and street lights, where the cost is roughly proportional to the total length of the frontage served, the cost is usually apportioned among the benefited properties according to the number of front feet of each property abutting on the improvement. Secondly, for a project such as flood control, where the cost is a function of the total area served, the cost can be apportioned according to the number of square feet of the benefited property. Thirdly, for projects that benefit each property equally, such as sewer laterals leading to individual properties, the cost can be divided equally among the benefited properties (the "one-each" method). Fourthly, when all or almost all of the benefit from a public improvement accrues to one particular property, the cost can be directly assessed to that one property. Often a combination of different methods is used to allocate the different components of the cost of a project, but the aim in each case is to *apportion the cost of the project in proportion to the benefit received by each property*. Financing public investment by special assessment has administrative costs, but these soft costs are typically also assessed against the benefited properties, so no public subsidy is required.

Using special assessments to pay for public infrastructure is different from the more general proposition that the government should "recapture" betterment (increases in land value caused by government action) and redistribute it for the benefit of "the community". Rather, a special assessment is a pragmatic method of using betterment to finance public spending that specially benefits specific properties. A special assessment is simply a way to split the cost of a public project among the benefited parties in some fair way, and it is *limited to recovering the project's cost, even if the betterment created by the project is much greater than this cost*. If the special assessment is not motivated by the ideal that betterment created by society should be recaptured for society's use, however, it certainly contributes to that ideal. Also, a special assessment seems fairer than asking all taxpayers, including renters, to pay for public benefits conferred only on specific private land-owners.

A flaw in the conventional solution

Although, in theory, special assessments seem well suited to paying for public investments that increase property values, in practice they have the severe disadvantage that, because they are levied strictly according to a benefits-received principle of taxation, they ignore the taxpayer's ability to pay. In this century the idea that taxes should be related to the benefits the taxpayer receives has lost ground to the idea that taxes should be related to the taxpayer's ability to pay, and the special assessment seems almost unique among taxes in its total neglect of the taxpayer's ability to pay. It can be argued that if the benefited

owner's capital gain exceeds the special assessment, the capital gain itself should provide the ability to pay. The problem with this argument, however, is that the special assessment has to be paid when the project is undertaken, while the capital gain is not realized until the property is sold. Therefore, the *unrealized* capital gain created by the special assessment project at the time it is implemented does not provide the owner a cash flow to pay the special assessment.

Thus, even in cases where each benefited owner's gain in land value greatly exceeds the accompanying special assessment, the *cash-flow problem* can prevent residents who very much want a public improvement from voting for a special assessment to pay for it. The government can ameliorate the cash-flow problem by selling bonds and spreading the assessment payments over time, like a mortgage, but even the regular debt service can present a serious cash-flow problem for some owners, especially in lower-income neighbourhoods where the owners don't have a reliable and predictable cash income. Under such circumstances, property owners can be rightly suspicious of voting for a special assessment to pay for a neighbourhood public improvement if it means that they can later lose their homes to foreclosure if they can't pay the debt. This problem is especially severe in developing countries, where many property owners participate only marginally in the market economy and have no reliable cash income with which to pay taxes. Even if a special assessment is the *only* way to finance a greatly desired public investment, many owners would understandably resist any new tax that threatens the loss of a home by foreclosure. Although special assessments seem to be both a fair and an efficient way to finance neighbourhood public improvements, many voters will not support, and local governments are reluctant to impose, a tax that so completely neglects the taxpayer's ability to pay.

Removing the flaw: deferred special assessments

Special assessment is in theory a sensible, fair way to finance public investment that benefits specific land-owners, but in practice the land-owners' cash-flow problem impedes the use of special assessments. This cash-flow problem seemed to me to be the source of the anomaly of an inability to finance profitable investment in public infrastructure. To solve this cash-flow problem associated with the use of conventional special assessments, I made a proposal in my World Bank research. *The proposal was to allow owners of benefited property to defer paying their special assessment, with accumulated interest, until they sell their property*. The local government would, in effect, offer to lend the benefited owners the money to pay their special assessments for as long as they continue to own their property. Owners could repay all or any part of the debt at any time before they sell their property, but any remaining debt, plus accumulated interest, would be due at sale. If owners pay the market rate of

interest on the deferred assessment debt, the present discounted value of all future payments equals the initial special assessment, so the government loses nothing by the delay. Thus the timing of payments entirely at the owner's option distinguishes a deferred special assessment from a conventional special assessment.

The benefits of deferred assessment from the property-owner's point of view are clear. They can obtain desired neighbourhood public improvements without any cash-flow problem or fear of foreclosure. Also, where land values are already high, and where public improvements raise property values even further, the increased property value can be used to pay the deferred assessment due at sale. Of course, there is nothing to stop owners from paying in full the deferred assessment at any time before sale. Indeed, this is likely in cases where real incomes are rising ~~and above the rate of interest~~. In either event, deferred assessment offers security of repayment to the lender and property borrower. By definition, a deferred assessment can never result in foreclosure for non-payment by the borrower because it will not be due until a property is sold. Because the terms of a deferred assessment specifically exclude the possibility that an owner will ever be evicted for non-payment, a deferred assessment should be more popular than other taxes that are a lien on property.²

The benefits of deferred assessment from the government's point of view are also clear. If owners pay a market rate of interest on assessment debt, offering owners the option to defer payment until sale requires no public subsidy. Because deferment eliminates the cash-flow problem caused by conventional special assessment, deferred assessment can encourage neighbourhood self-help improvement without using scarce general public revenues. Local governments run little risk of borrowers' defaulting on deferred assessments because the owner has the cash available from the sale of the property when the assessment is due. If land values are high, and if public investment raises them further, all owners should have more than sufficient equity to repay their initial assessments plus interest at sales, if they have not already voluntarily paid before sale to avoid the interest expense accumulating at a market rate.

The security of deferred assessment tax liens on individually benefited properties has a special importance in the context of international lending for urban investment projects in developing countries. Foreign lenders can now with good cause doubt the ability or willingness of developing countries to repay debt incurred to finance public investment if the only security for the loan is the national government's "guarantee" that the debt will be paid. International lenders would have much greater security of repayment for their loans if the debt were secured by individual tax liens on individually benefited properties. This decentralizing of the responsibility for repayment to the specific land-owners benefited by public infrastructure is both a fair and an efficient way to finance infrastructure. In addition, an important advantage of this "pointillist" method of public finance is that it should remove much of the risk of default on debt incurred to finance public infrastructure investment in developing countries and

should thereby increase international willingness to lend for these investments.³

Conventional approaches to easing the burden of paying special assessments often misidentify the cash-flow problem as one of low income. Doebele et al. (1979) report that in Bogotá, for example, special assessments are normally due within six months, but low-income owners are granted up to five years to pay in yearly instalments with no interest charges. This offer requires a large subsidy (one-quarter of the capital cost if the market rate of interest is 10 per cent per year), in effect shifting the cash-flow problem to the government. Nor does this wholly solve any owner's cash-flow problem, as it fails to offer the necessary flexibility to overcome the diversity of incomes, ages and family circumstances that are present in any low-income settlement. Not surprisingly, perhaps, the initial apparent success of assessments in Bogotá has now given way to the abandonment of this method of finance collection and cost recovery. Deferred assessments, on the other hand, could completely solve *every* owner's cash-flow problem and yet require no subsidy at all if the government charges a market interest rate on the debt.

If owners wait to pay their special assessments until they sell their properties, they have more money to spend in their community while they own their properties and less to take away from their community when they leave. In this sense, deferred assessment resembles Monty Python's proposal to solve Britain's economic problems by "taxing foreigners living abroad". And if homeowners tend to move to higher-income neighbourhoods as their own incomes increase, financing public improvements by deferred special assessment would tend to increase spendable income in lower-income neighbourhoods and, later, decrease wealth in richer ones. This *voluntary* redistribution of income through time (but not among individuals) requires no subsidy if owners are charged the market interest rate for the right to defer paying their assessments until sale.

Another important advantage of deferred assessment concerns the attitude of the elected local leaders who must impose special assessments. Even if a majority of property owners are willing to pay for improving their neighbourhood by conventional special assessment, the local government is still in the position of imposing on *all* owners, including the unwilling minority, a tax obligation that disregards the owners' ability to pay. The local council can impose a special assessment with a clearer conscience if assessed owners have the option to defer paying until they sell their property and realize their capital gains in cash. In this sense a deferred assessment is a "special assessment with a human face", and elected officials should be less averse to imposing a deferred special assessment than to imposing a conventional special assessment. Thus, by reducing the politicians' "guilt" associated with imposing a property tax lien that disregards the property owner's current income, offering the *option* to defer payment can significantly enhance the political will to finance public investment by special assessment on the benefited property owners.

Deferred special assessment in practice

I initially proposed the use of deferred assessments in developing countries in a book published by the World Bank on urban land policy (Shoup 1983). It then occurred to me that I was guilty of exactly what I disapproved of in some of my academic colleagues. I had seen my colleagues propose for developing countries what I thought were unproved schemes that their own local city councils would probably reject as impractical, unworkable, and utopian. If deferred assessments were a good idea for developing countries, I thought, then why wouldn't they work just as well in poor areas of Los Angeles? Deferred assessment would obviously be much more persuasive for cities in developing countries if they could first be shown to work in California.

The University of California has a programme, the California Policy Seminar, to fund academic research projects that are of practical interest to legislators, and I was able to obtain a grant to draft deferred assessment legislation for California cities. As a result of this research, in 1984 the California legislature passed the necessary enabling legislation for cities to use deferred assessments, and I have since been studying how cities in California have implemented deferred assessment programmes. I have also published a monograph that explains the practice of deferred assessment and includes a case study of its use to finance restoration of the seriously decayed Venice Canals neighbourhood in Los Angeles (Shoup 1990).

The Venice Canals were developed at the beginning of this century by an entrepreneur who bought the land, excavated the canals, installed the infrastructure, and subdivided the land into building sites fronting on the newly created canals. The incentive for the developer to create this unusual residential amenity – housing sites on a romantic system of canals – was the resulting increase in land value, but after the sites were sold to individual owners, there was no mechanism to finance maintenance of the canal infrastructure, and they have been decaying ever since, with the problem of canal-front sidewalks sliding into the water facing many sites. The restoration of the canal infrastructure would greatly increase the attractiveness and value of the sites facing the canals, just as the creation of the canal infrastructure did initially, but the city of Los Angeles has been unwilling to allocate scarce general funds to a project that would primarily enrich a few private land-owners.

With no other funding source available, the owners of more than 75 per cent of the sites facing the canals petitioned for a special assessment project. Almost all of the 386 properties facing the canals are of exactly the same size, and except for corner lots and a few lots facing the Grand Canal almost all have a narrow 30-foot frontage on a canal. The total special assessment for restoring the canals by draining them, relining them, and rebuilding the banks, sidewalks and some bridges was \$2.7 million, but the large number of small sites with unusually narrow frontage means that the average special assessment was only about \$7,000 per lot.

Almost all the sites on the Venice Canals would benefit equally from the restoration project, but there is a great diversity of household income, household age structure, and housing quality in the neighbourhood. In the 1990 Census, 8 per cent of the families in the census tract had incomes below \$15,000 per year and 8 per cent had incomes above \$150,000 per year. Also, there is a great diversity in the assessed value of the canal sites for purposes of property taxation. Because of California's famous Proposition 13, properties are assessed for tax purposes at their purchase price, with subsequent increases in assessed value limited to 2 per cent per year, so in an inflationary period properties that have been bought recently have a far higher assessed value than do properties that have been owned by the same owner for a long time. In 1985, the assessed value of vacant lots that were otherwise identical except for the date of purchase ranged from \$11,000 to \$195,000, a ratio of 18:1. Since the canal restoration would benefit all lots equally, financing the cost by a property tax on assessed value would seem quite unfair, because some owners would be paying 18 times as much as others for the same benefit. At the same time, the high prices paid for the recently purchased lots demonstrates that there is a substantial equity in most properties that could be used to secure any deferred assessment for the restoration of the canals.

In a telephone survey of canal property owners, 85 per cent favoured the special assessment project. After it was explained to the respondents that a new California law authorized local governments to allow property owners to defer paying their special assessments until sale, slightly over half of them said that they personally would be interested in deferring payment, and 70 per cent of those interested in deferring payment said that the cash-flow problem caused by the special assessment would be the most important reason affecting their decision whether or not to defer payment. Finally, of those who were opposed to or were undecided about the special assessment project, 40 per cent said that the option to defer payment until sale would make them more willing to support the special assessment project. This last response suggests that the option to defer paying until sale can reduce the political opposition to a special assessment for public improvements. In addition, many respondents made unexpected but encouraging comments about the deferment option. Although the comments were informal, many owners said that they thought the deferment option was a good idea, not only because they personally might use it, but also because they knew of lower-income neighbours who they felt could benefit from it. And several owners said that their *only* hesitation in petitioning for the project had been their fear that it might impose an undue financial burden on their lower-income neighbours. That is, *it was not merely self-interest, but also concern for their neighbours that generated their support for the deferment option*. If this sentiment is widespread, it is another way that deferment would increase the political acceptability of using special assessments to finance public investments in older neighbourhoods with a diverse population, some of whom lack the ability to pay.

The special assessment was approved in 1991 and the canals are now being restored. When the special assessment bonds (10 years at 6.9 per cent) were issued to finance the project, the average special assessment necessary to retire the debt was only \$1,200 per lot per year, so instead of allowing all owners to defer their assessments it was decided to utilize the state's deferment programme, which allows citizens who are 62 years or older, or blind or disabled, and with a household income of \$24,000 or less to defer paying their special assessments until they move, sell their property, or die. All residential property tax bills include an invitation to eligible taxpayers to apply to defer paying their property taxes, and if they meet the income requirements the state controller sends them coupons that they can use to pay any or all of their tax bills. The property owner submits the coupons to the local government in lieu of the property tax payment, and the local government forwards these coupons to the state controller, who reimburses the local government and takes a lien on the property for the deferred taxes and accrued interest. The state charges interest on each year's deferred taxes on a rate based on the rate earned by the state's Pooled Money Investment Fund. In the history of the state programme there has never been a failure to repay the deferred taxes when an owner has died or sold the property, and 40 per cent of the deferred taxes have been repaid *before* the sale of the property or the death of the owner.

My methodological awakening: The Fitzwilliam Workshop⁴

I still believe that deferred assessments will be of great value in developing countries, especially Latin America where conventional special assessments are already familiar, where the infrastructure needs are much more extreme. If my analysis is correct, the cash-flow problem they cause for owners has impeded the use of special assessments, and the option to defer paying the assessment until sale will remove this impediment. And I hope that the case for deferred assessments has been strengthened by first demonstrating that they already work in low-income neighbourhoods in the USA. After all, a successful demonstration project seemed to me to be a pretty good methodology. Thus, I was delighted when I was invited to participate at the Fitzwilliam Workshop that has given rise to the present collection of essays on the methodology of land-market analysis. I looked forward to the Fitzwilliam meeting as an opportunity to come full circle by re-examining the use of deferred assessment to meet the public infrastructure needs of cities in developing countries.

The atmosphere of friendship and trust that prevailed at the workshop made it possible for everyone to exchange ideas, express opinions, and ask questions without any hesitation or fear of seeming ignorant or out of line. Thus I was quickly told, in the gentlest possible way, that what I thought was simply a pragmatic technical proposal was viewed by others as freighted with suspect ideology. What I thought was a method of public finance was viewed by others

as tantamount to the privatization of public infrastructure. I learned that I had made a lot of assumptions that I had not spelled out and that might not be met in developing countries. And my neoclassical economic paradigm was a trifle unworldly, even naive. In short, my paradigm faced more anomalies than I had counted on.

I confess that I am as subject as anyone else to the natural tendency to search for evidence that confirms rather than falsifies my paradigm. Methodologists call this tendency the confirmation bias. Fortunately, so much excellent research on the land market was presented at the Fitzwilliam Workshop that it provided me a sterling opportunity to exercise the confirmation bias. Therefore, I would like to conclude by citing evidence presented in the other seminar papers, some of which have been reproduced in this volume, that suggests both the feasibility and the desirability of using deferred special assessment to finance local public investment.⁵ I address this by posing some key methodological questions.

The first question to be asked is *are the assumptions in the neoclassical paradigm unrealistic?* One set of criticisms of the special assessment model of public finance centred on the lack of realism of the many unstated assumptions, such as: property lines are neatly drawn, there exists a complete cadastre, property rights are unambiguously established, there is a well functioning real estate market, the system of assessment is professional and fair, an elected local government undertakes public improvements, property owners are taxpayers, and people sell their homes.

Well, obviously not all of these assumptions are satisfied everywhere, but they must be satisfied in many places because conventional special assessments have long been used to finance public investment in much of Latin America. For example, Doebele et al. (1979) describe in great detail how special assessments are undertaken in Bogotá and report that in some years special assessment revenue has yielded almost half as much as total property tax revenue. Macon and Merino Mañón (1975) provide a thorough explanation of how special assessments are levied on benefited properties in several Latin American countries. In particular, Macon and Merino Mañón stress that special assessments are more successful when they are perceived as a price that owners must pay to receive public services, rather than as general taxes on land value increases. Moreover, many papers at Fitzwilliam made implicit or explicit reference to the well established or rapid development of the groundwork for special assessments.

In her exemplary research on the land market in Harare, Zimbabwe, Rakodi writes that: "Deeds to all freehold or leasehold land have to be registered and can only be transferred by means of registered deed of transfer. The register is open to public inspection and is a stand-by-stand record of transfers, giving stand number, size, ownership and amount paid at the time of each transaction."

This sort of land register is exactly the sort of mechanism necessary to enforce the payment of special assessments deferrable until sale. Thus, I would argue that the evidence suggests that there is a strong capacity for deferred

special assessment in at least some low-income countries in Africa and Latin America, and that deferred special assessments are at least feasible, even if one does not consider them a desirable way to pay for public infrastructure.

The second question to be asked was, *do public investments increase land values?* Another criticism offered by my colleagues was that it is unrealistic to assume that public infrastructure investments really do increase land values. Fortunately, one of the main topics of the seminar was how public investments affect land values, so there was ample opportunity to answer this criticism. Dowall's paper (Ch. 3) presents careful research on land values in Karachi, with data collected from real estate brokers, and show that the price of land in neighbourhoods where basic public infrastructure has been installed is twice as high as the price of land in similar neighbourhoods where no infrastructure has been installed. That is, providing infrastructure doubles raw land values, after holding constant for distance from the city centre.

Jones et al. (Ch. 15) also studied the effect of public spending on land prices in Mexican cities, using their ingenious "snapshot analysis" methodology. Although they studied six government projects, in only one of the six projects did they find evidence that public investment increased land values. However, what is interesting is that this project, the supply of water to the low-income settlement of San Rafael, appears to have been financed by a special assessment of US\$684 per plot. The study of the water supply project had the distinct advantage of providing data on land values before and after the public investment, and land values for a comparable control group of properties that did not receive the public investment.⁶

None of the other five public investments studied by Jones et al. (a bus depot, a public housing project, a facade improvement programme, a commercial decentralization programme) dealt with supplying basic infrastructure for the poor, or with the sort of public improvement that low-income land-owners (or perhaps any land-owners) would ever vote to finance by imposing on themselves a special assessment. And Jones et al. found little or no evidence that these public improvements increased land values. Indeed, they conclude that: "it also seems fairly clear that certain so-called improvements are regarded either as unnecessary by the settlement inhabitants or fail to produce sufficient change to induce a noticeable impact on land price." (p. 233).

From this observation one might reasonably draw the conclusion that financing public investment by special assessments, which must be approved by a majority of the supposed beneficiaries, would help to weed out some unnecessary and burdensome public spending, and would instead direct public spending to higher-priority projects that the inhabitants do regard as clearly necessary.

Jones et al. also observe that "valorization appears most likely to occur as the result of clear-cut externalities and at a time when the project is open or fully complete." (p. 233). If increases in land value do not occur until after a public investment is completed, this finding supports the argument that payment of any special assessments should be deferred at least until after residents are receiving

the benefits of the public investment. In another of their papers, Jiménez et al. note for two low-income subdivisions in Toluca: "Although the inhabitants were willing to pay for services, there was no provision of credit or public projects to deal with this situation". The option of a deferred special assessment to finance public services would give the inhabitants of these communities a self-help mechanism they could use to obtain services if they are willing to pay for the services out of the resulting increase in land value. But if infrastructure is financed entirely by higher levels of government, with no payment by the benefited owners, there is no opportunity for self-help, and many important public services do not get provided at all. Also, where infrastructure is financed by higher levels of government, there is ample opportunity for favouritism and corruption in allocating public investment. Jiménez et al. note that state governors "have used their posts to channel public resources into their own private developments" (p. 7). Further, for other private developers "the governors' intervention has been one of the key factors in the valorization of selective plots of land. . ." (p. 8). Similarly, Baross (1991: 60) says that:

It is not accidental that land-owners spend a considerable amount of energy and money to influence planning decisions which will result in "windfall" profits on their holdings. "Political manipulation" is the description most often used in the media and in research studies to account for favorable zoning changes or for the alignment of public infrastructure to serve the financial interest of land-owners.

Greater self-reliance through deferred special assessments would of course shift more decisions concerning public investment away from the governors and directly to the benefited inhabitants. This shift would reduce the opportunity for political corruption of public investment decisions, and would divert energy and money away from the wasteful "rent-seeking" behaviour that Baross describes and into productive payments for the infrastructure itself.

Jones et al. (1993: 21) also observe that under a public works programme known as PRONASOL, urban infrastructure is installed at a cost to inhabitants of only 10 per cent of the total cost. They write that: "The ability of low-income groups to petition for services through PRONASOL will therefore very much depend on the relationship of that settlement to the PRI [Institutional Revolutionary Party]". Thus, when a community has to petition for a subsidy, it has to go either as beggar or as briber. The resulting distribution of services has several undesirable results. For example, García writes that most of the public investment for tourist resorts has benefited private capital and does not produce any revenue for the government. Therefore, public investment is given *free* to private tourist resorts, while, as quoted above, it was made difficult to obtain or denied to low-income communities who were *willing to pay* if offered credit. Charging benefited land-owners for urban infrastructure by deferred special assessment will surely improve the government's cost recovery, at least when compared with a policy of giving public infrastructure away free to tourist resort owners.

The last question is *are special assessments regressive?* Another criticism was that I seemed to assume that taxes and benefits should balance out for individual taxpayers. Some proposed that I had apparently overlooked one of the major purposes of taxation systems, which is to redistribute income. This redistributive function is especially important in Latin America, where the differences in income and wealth are so great. However, although it may appear that low-income families would be harmed by heavier reliance on a tax that ignores ability to pay, it is not clear that special assessments are regressive when compared to local property taxation.⁷ Moreover, given the very disappointing record of all previous attempts to tax betterment in order to produce general revenue for redistributing income, it seems to me that the more modest goal of using betterment to finance public investment is far more important than mostly rhetorical and entirely ineffective attempts to redistribute land-value increases for the benefit of society. As Jones et al. (1991: 16) say: "Thus, to come clean, the real motive for policies aimed at capturing land valorization are really intended to strengthen government finance rather than redistribute the valorization gain."

To that, I would say, well, of course, why not? The proposal for deferred special assessments is specifically intended to strengthen the government's ability to finance public investment out of the resulting land-value increases, but in a way that is sensitive to the situation of the taxpayer. Deferred assessment would strengthen the government's ability to finance public investments that increase land values. Deferred assessment would not strengthen the government's ability to pay for the military, for grandiose public boondoggles, or for general social welfare. It might be argued, however, that, by recovering the cost of government spending for public infrastructure that increases private land values, deferred assessment would free up general government revenue to pay for genuine public purposes that have a more legitimate claim on scarce general revenue.

Many of the seminar papers assert that an important goal of urban land policy is to reduce the extreme difference in quality between rich and poor neighbourhoods. From the low-income resident's point of view, the lack of piped water, sewers, electricity, and telephone service would certainly be among the most important differences between poor and rich neighbourhoods, and using deferred assessments to finance infrastructure where it is now lacking is one possible way to reduce the most glaring differences between rich and poor neighbourhoods.

In any case, I would argue that special assessments are ideally suited to redistribute income where that is warranted. Some California cities, such as Santa Monica, exempt individual low-income property owners from paying special assessments (or rather, these cities use their general revenue to pay the assessments for the low-income owners). Thus, cities aid all low-income owners in the special assessment district, but all higher-income owners must pay their own assessments. Contrast this carefully targeted aid to low-income owners with the alternative policy of not imposing a special assessment on *any* benefited owner,

and instead paying for the infrastructure out of general revenue. In the first case, benefited land-owners (those with low incomes exempted) pay for public investment when they realize the associated capital gain, and in the second case, all taxpayers, *including renters*, pay right away for public investment that specially benefits only certain identifiable land-owners. Which is fairer? If the goal is really to aid the poor, and only the poor, rather than to aid politically powerful land-owners under the guise of aiding the poor, then deferred assessment with specifically targeted exemptions for low-income owners is far more efficient than paying for infrastructure out of general revenue. As a way to help the poor, using general revenue to pay for public spending that benefits specific land-owners is like spreading a banquet for everyone just in order to provide a few crumbs for the poor.

Conclusion

The research presented at the Fitzwilliam Workshop derived from a number of competing paradigms, but what united all the work seemed to be an agreement on the great value of careful, intelligent description of phenomena in the land market as a primary research method, with a special appreciation for the importance of learning how institutions operate. The findings reported were rich in material both to confirm any existing bias and to challenge any paradigm.

I began with a famous quotation from Thomas Kuhn about discovery commencing with the awareness of anomaly. I would like to conclude with another view of methodology. Aaron Wildavsky argues that you cannot fully understand a problem until you know the solution. Said another way, your approach to a problem, your understanding of it, and your research on it are all influenced by your own preferred solution to the problem. And when it comes to preferred solutions, many of us find it hard to change our minds. On some questions we seem to believe what we believe because we believe it, and we believe it fervently.

The solution I brought to the Fitzwilliam Workshop was deferred special assessments, and I realize that I tend to see the problem of underinvestment in infrastructure in the light of that solution. And I think I came to that solution by struggling with what seemed to me to be an anomaly in my paradigm. Why was it so difficult to finance profitable public investment?⁸ As I said earlier, if what I have to say about infrastructure finance has any value, it should have value in California as well as in developing countries, and the most convincing evidence I can present to show that deferred assessment will work in Mexico is that it already works in California. I hope that the evidence from California, together with the confirming evidence that I have selectively quoted from the research presented at the Fitzwilliam Workshop, will arouse interest in using deferred special assessments to finance public investment in poor neighbourhoods everywhere.

Notes

1. Similarly, even if an economic theory that assumes a firm's goal is to maximize profits fails to predict how firms will actually behave, the theory can still be useful to recommend how a firm *should* behave if it wants to maximize profits. And if enough business schools teach enough future managers how to maximize profits, perhaps a theory based on the assumption that firms do maximize profits will eventually come to predict economic outcomes accurately.
2. Lien refers to the right to keep legal possession of a property until a debt held by the occupant of that property is discharged.
3. The property value, not just the betterment created by the public investment, is the security for repayment of the deferred assessment, so the lender can lose only if the owner walks away from the property with nothing.
4. This section quotes from papers presented at the International Research Workshop, Fitzwilliam College, Cambridge. Two of the papers (Baross 1991, Jones et al. 1993) have been published elsewhere. The paper by Jiménez et al., entitled "Incorporation of private urban land into the private residential market: who and how", was presented at the Fitzwilliam Workshop but is not reproduced in this volume. The statement appears on page 4 of the original paper. The remaining papers have been substantially revised for this volume and are quoted here in their revised form.
5. In reading others' papers I have carefully noted anything that reinforces my own point of view. So if anyone feels that I have neglected contrary evidence in his or her own paper, I have to confess that this neglect is probably intentional but should not be taken personally.
6. In any case study that does not use a statistical technique like multiple regression analysis to normalize for other factors, a control group does seem essential. Because Jones et al. did have a control group in their San Rafael study, their finding of land-value appreciation due to investment in water supply is consequently very convincing.
7. Low-income families tend to live in lower-valued property and, therefore, pay a lower property tax per house, but they also tend to live at a higher density, so the burden in average terms may be higher. Because special assessment is paid on equity, the burden on current income is not the only measure of a family's ability to pay.
8. As one of my market-oriented colleagues in the economics department at the University of California, Los Angeles, explained it to me, I had discovered a "hole" in the capital market, not an anomaly in the paradigm.