

**Betterment Levy: An Analysis of The Current And Potential  
Use of Pajak Khusus Penggantian Biaya Dan Pungutan  
Tambahan in Jakarta, Indonesia**

by

Hendi K. Sukarman

S.E., Economics  
University of Indonesia  
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Signature of Author \_\_\_\_\_

Department of Urban Studies and Planning  
May 20, 1991

Certified by \_\_\_\_\_

Paul Smoke  
Assistant Professor of Political Economy and Planning  
Thesis Supervisor

Accepted by \_\_\_\_\_

Phillip L. Clay  
Associate Professor, Chairman MCP Committee

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**ABSTRACT**

The purpose of betterment levy is to finance urban infrastructure investment. The levy uses differential benefits received to apportion the levy liabilities among landowners who benefit from the infrastructure projects.

The use of betterment levy in Jakarta has been very limited and has been considered unsuccessful. It has had a low collection rate which is primarily due to ineffective enforcement policy and the introduction of property tax. In contrast, Colombia has been successfully using this levy for many years to finance various urban infrastructure projects.

In line with rapid city growth, and the need for local governments to play a larger role in the provision of urban infrastructure, betterment levy has a great potential for use in Indonesia. Betterment levy serves as a cost recovery mechanism which would allow local governments to use it to pay for central government loans needed for urban infrastructure projects. This will avoid the irrational use of scarce public funds for infrastructure investment.

Before being extensively used, I recommend that the betterment levy structure should be improved, so that it becomes more acceptable and effectively enforced. To restructure it, the political issue of fiscal relations among the local governments, the Ministry of Home Affairs, the Ministry of Public Works and the Ministry of Finance should also be taken into consideration.

**Thesis**

**Supervisor:** Dr. Paul Smoke

**Title** : Assistant Professor of Political Economy and Planning

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I take full responsibility for all errors and omissions in this thesis.

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## **Chapter I**

### **Introduction**

#### **Background**

Until recently only a few cities in the developing world have used betterment levy to finance the development of urban infrastructure projects undertaken by local government. Most of these are in Latin America. Jakarta, the capital city of Indonesia, introduced betterment levy for the first time in 1974.

Unlike Latin American cities, where the uses of betterment levy are flexible, Jakarta limits the use of this levy to finance a fixed package of urban infrastructure projects in existing residential areas. The fixed package consists of road and sidewalk construction, electricity, telephone and drinking water connections, and the construction of open drainage and public parks.

The use of betterment levy in Jakarta has not been as successful as in Latin American countries. This situation raises interesting questions: What are the factors hindering betterment levy's success? Could this levy be potential for more successful in Jakarta in particular and in other cities in general?

## **Study Objective**

The main objective of this study is to explain why the use of betterment levy in Jakarta has not been as successful as in Latin American countries. Generally speaking, is it because the methods of determining the bases and rates for the levy are inappropriate? Is it because of ineffective payment collection and enforcement? After analyzing these issues, I will make recommendations as to whether the betterment levy has potential for more extensive use in Indonesia.

## **Methodology**

To accomplish my study objectives, I will analyze the use of betterment levy in Jakarta from the perspective of local public finance and administration theory. Although important, a detailed analysis of intergovernmental fiscal relationships, particularly between the Indonesian central government and Jakarta local government, is beyond this study. The levy will be evaluated on the basis of: a) the ease of administration, b) the suitability of methods for apportioning the levy liabilities, c) the economic efficiency impacts, d) the equity impacts, e) the collection record, and f) the political acceptability.

Throughout the analysis, I will compare the use of betterment levy in Jakarta with those in Latin American

countries, especially Colombia, the country most frequently cited for its successful use of this levy.

### **The Organization of The Study**

Chapter Two will discuss and evaluate the betterment levy theory. This includes the reasons for imposing this levy and the methods used to apportion the levy liabilities.

In chapter Three, part one, I will illustrate the use of this levy in some Latin American countries. In part two, I will analyze Jakarta's use of this levy. In the last chapter, I will present recommendations for the current and potential use of this levy in Indonesian cities.



## Chapter II

### The Conceptual Framework of Betterment Levy

#### Overview

The main objective of this chapter is to describe briefly the conceptual framework of betterment levy; therefore, the analysis will be largely limited to the context of public finance theory. A detailed discussion of the applications of this levy will be presented in the next chapter.

The primary source for this chapter is the study of Jorge Macon and Jose Manon.<sup>1</sup> Despite its focus on Latin American countries, their study, provides a thorough discussion of the betterment levy theory.

Public finance specialists define a betterment levy as a special levy imposed for benefits received, with the purpose of recovering for the public sector part of the value of the differential benefits that are generated through the construction of public works in the form of increases in the value of property.<sup>2</sup> This definition,

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<sup>1</sup>Macon and Manon conducted an extensive study of the use of betterment levy in 11 Latin American countries in the late 1970s (Macon and Manon: 1977).

<sup>2</sup>For instance, see Bahl (1975), Doebele and Grimmes (1977), Macon and Manon (1977).

however, is not fully accepted. Some public finance experts argue that the betterment levy is not a benefit levy, but rather a land tax. For instance, Harris (1972)<sup>3</sup> argues that the levy is equivalent to requiring a landowner to pay a land tax if his land value increases after the construction of a public works project.

Other experts argue that betterment levy is simply a user charge for public works projects (Bird and Oldman: 1990). Edwin Seligman (1969), whose work is commonly cited, states that:

"...the theory of betterment levy according to the benefits is very simple. It rests upon the almost axiomatic principle that if the government by some positive action confers upon an individual a particular measurable advantage, it is only fair to the community that they should pay for it. The fact may be in question, for it may happen that the particular advantage is only ostensible, or that the special benefit is not measurable. But the facts being given, the principle seems self-evident."<sup>4</sup>

After reviewing these different definitions, Macon and Manon (1977) conclude that betterment levy is neither a land tax nor a user charge. They argue that it is not a

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<sup>3</sup>Harriss, argues this issue on his study on land value increment taxation in Britain (Harriss: 1972).

<sup>4</sup>This statement is from his article, "Essays in Taxation", (Seligman: 1969) which I excerpted from Macon and Manon (1977).

land tax because it is related to a specific benefit received (from the construction of a public works project), and that it is not a user charge since it is not tied to the use of a specific service. In addition, they argue that betterment levy is based upon the benefit principle, so that the levy burden is imposed on the levypayers in relation to the benefits generated by the construction of a public works project.

The purpose of the betterment levy is to recover the differential benefits created by infrastructure development undertaken by the government and derived by the landowners in the form of increased land value. The term differential benefit is different from that of general benefit. An infrastructure project yields a general benefit to the entire community. It also yields a differential benefit, whereby some people benefit more than others as a result of differential circumstances, often derived from the physical proximity of their properties to the project.

The system of betterment levy is used by the public sector to recover only this latter type of benefit. This means that increases in value caused by the general growth of the community or by a rise in the general price level are excluded. In other words, the betterment levy is neither imposed on the increase in the total value of the property nor on relative increases in the value of real

property as compared to other assets. In theory, it is only imposed on the increase in the value of property resulting from a public works project relative to the increase in value of other real properties not benefitting from the project.

Does imposition of a betterment levy on the increased value of property mean there will also be compensation for any decrease in land value resulting from differential damages caused by public works projects? There are many cases in which the construction of public works not only creates benefits for a particular community, but also generates negative effects. For example, construction of a highway might increase pollution and disturb the quiet environment of adjoining properties, resulting in a decrease in land values. It is clear that adherence to the betterment argument would justify a compensation for negative effects, such as a subsidy or even a levy exemption. Compensation is also justifiable in cases when the government expropriates parcels of land for the construction of public works.

### **Income Distribution**

In many developing countries, land is often purchased without an immediate development aim for the purpose of hedging against inflation. Investors also anticipate an

increase in land value after a public works project is completed, and expect to earn an enormous profit from land speculation. Thus it is clear that the construction of public works can have a secondary effect, that of increasing the net worth of landowners through land speculation.

It is assumed that those engaged in land speculation activities are mostly high income people, which further exacerbates the inequality of income distribution. The betterment levy, if adequately designed to identify increases in land value generated by public works projects, can be a useful instrument for countries wishing to offset unequal income distribution.<sup>5</sup> Macon and Manon (1977) argue, however, that this impact is relatively small. Because the betterment levy is a less significant source of public revenues than, for instance, the income tax, they believe its ability to effect income distribution will be slight.

In discussing the distributive impact of betterment levy, Linn (1976) argues that the impact will depend on whether or not the betterment levy is complementary with or substitutes for other revenue sources and expenditure programs. Linn (1976) looks at four different scenarios in

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<sup>5</sup>For a discussion of the betterment levy and land speculation, for example, see Lindholm and Wignjowijoto (1979).

his treatment of betterment levy. First, the levy program may be complementary both on the revenue and on the expenditure sides and raises additional resources over and above what would have been raised without it. It also generates investment projects in addition to those which would have been carried out without it. The betterment levy program would then be regressive, neutral or progressive depending on how the program's benefits are distributed with respect to the existing income distribution. Second, the betterment levy program may generate additional resources which are used to carry out public works projects that would otherwise have been carried out from general resources. The distributive impact of the additional expenditures financed from the general resources and freed by the betterment levy program, may offset or reinforce the distributive impact of the benefit generated by the betterment levy program. Third, if betterment levy revenues substitute for general resources which would have been raised in the absence of the betterment levy, and projects financed by betterment levy would have been undertaken, the betterment levy is progressive or regressive depending upon whether the supplanted revenue source was more or less progressive than the betterment levy itself. Fourth, if betterment levy revenues substitute for other revenues, and lead to an expenditure program which is biased more or less

heavily in favor of high income groups, then the distributive impact of the betterment levy depends on the relative distributive impact of the displaced revenue sources and expenditure programs.

### **Betterment Levy and Other Taxes**

A user tax, such as a gasoline tax used to finance road construction and maintenance, represents a general application of the benefit principle because motorists are charged directly for the road construction and maintenance cost. However, a user tax is different from the betterment levy even though both are used to finance public works projects.

For example, a motorist pays a gasoline tax because he receives benefits from using the road. However, he might or might not own land adjacent to the road. If he owns a parcel of land, the gasoline tax will only by change approach a sum proportional to the increase in value of his property. On the other hand, if he does not own land, his share in the cost of the road, which corresponds to the benefits he receives, could be imposed on him only through the gasoline tax.

The other important difference is that the betterment levy is a one-time charge to recover the capital expenditures of public works projects, though the levy

payments can be made on an installment basis. User taxes, however, are not one-time charges. They are imposed each time a public works project is used. For example, the motorists pay a user tax every time they drive on that road.

The betterment levy, however, is not the same as the capital gains tax. It is often argued that the addition of betterment levy becomes redundant when capital gains taxes are already imposed on the increased value of real estate. Macon and Manon argues that there are important differences between the two. First, capital gains derived from real estate holdings are taxable only at the time of sale, and such transactions may be infrequent or may never take place. Second, the primary purpose of the capital gains tax is not to tax property value increases, but in general is used to complement the income tax. It taxes capital gains realized over many years in one particular year at a fixed rate. The realized gains might include the general increase of property value, which does not necessarily correspond to increases due to public works projects. In contrast, the betterment levy, is in theory, only applicable to land value increases that are the result of a public works project.

The betterment levy is also different from land value increments tax. Holland (1976) argues that the land value



increments tax is a tax on land value increases which do not necessarily correspond to public works projects. On the other hand, the betterment levy is tied to a specific public works project.

Macon and Manon (1977) and many other experts on this subject contend that the betterment levy is different from the real estate tax or property tax,<sup>6</sup> the basic difference being that the purpose of the betterment levy is to recover the capital expenditures of public works projects. On the other hand, the property tax is used to not only recover the current expenditures of a public works project, such as maintenance costs, but also the general expenditures of public facilities, for example, fire and police protection, and education. Furthermore, whereas the betterment levy is only imposed on a one-time basis, the property tax is levied on a frequent basis, usually annually.

### **The Levy Determination**

Ideally, there needs to be good cadastral assessment records for the effective implementation of betterment levy. Needless to say, a well-designed cadastral system can simplify assessment procedures and reduce operation costs. A typical cadastral system may be divided into three

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<sup>6</sup>For these arguments, for example, see Davey (1983) and Bahl (1975).

separate components: physical, legal and fiscal characteristics (Macon and Manon: 1977).

The physical cadastre is a public registry of maps and surveys recording the location and size of properties along with other physical features, such as topography, boundaries, roads, productive uses and many others. This data serves to identify the properties subject to the levy and to determine the functional link of each property to the public works project to be financed; the link determines the increase in property value.

The legal cadastre is a system used to identify ownership and real estate rights and other relevant property laws. The legal cadastre may serve to identify persons liable for betterment levies in a given area and provide the basis for initiating court action whenever necessary.

Finally, the fiscal cadastre is a record of property values assigned to real estate holdings on the basis of their value components, for example, land, residential, or industrial structures and other forms of private real estate. The advantage of fiscal cadastre, for the purpose of the betterment levy, is that the assessed values it contains will be useful when prorating all or part of the cost of a public works project.

The apportionment of the public works project cost to each property owner, moreover, will depend upon the weights attached to the parameters selected as proxy indicators of property values and on the fiscal incidence of betterment levies imposed on estimated value increases. Indeed, for the fiscal cadastre to be useful for prorating the project cost, is that the parameters selected must be assessed at a fixed proportion of the market value.

To illustrate, suppose that two properties with equal market values receive equal benefits from a particular public works project. If one of the properties is assessed at 60 percent of market value and the other at 15 percent, the first owner will pay a betterment levy four times higher than the second owner.

### **Assessment Procedures**

The first job that needs to be done when assessing property is to determine the area receiving benefits from the public works project. This is equivalent to identifying the property owners who are subject to betterment levy. One can do so by using physical cadastre, legal cadastre and fiscal cadastre information.

The nature and size of the benefit area will vary according to the type of public works project. Sometimes the benefit area is not defined precisely, so that it

becomes necessary to select a cutoff point based on concrete considerations related to the betterment project. Initially, it is often necessary to select a large benefit to avoid the possibility of excluding some differential beneficiaries. Then, after the benefits received by each individual property are assessed, we exempt properties that receive benefits below a determined minimum level.

Once we determine the benefit area, we need to estimate the aggregate benefits received in that area in terms of increases in the property value (land value). Macon and Manon (1977), and Doebele and Grimmes (1977), state that countries with less experience in betterment levy need to set the proportion of the cost of the project that is to be financed by the betterment levy below the total estimated value of benefits to avoid damaging public confidence in the betterment levy.

After determining the benefit area and the percentage of the total project cost that will be recovered through betterment levy, we need to prorate the total cost among property owners within the benefit area. In this case we have to determine the variables to be used as the basis for prorating. Obviously, the most suitable variables are the actual benefits received, expressed in money terms of property (land) appreciation. However, this practice is administratively very difficult and costly. A practical

solution to this problem is to use proxy variables which in some way will be acceptable substitutes.

Macon and Manon (1977) suggest that total charges could be prorated on the basis of property values prior to the construction of the public works project. This method assumes that the benefits are to be proportional to pre-project values, that is, the greater the pre-project value, the higher the appreciation and the amount of the levy. The disadvantage of this method is that we ignore other factors which come into play in addition to the property value prior to a public works project. The nature of the benefit factors can be very diverse. For example, the benefits of a highway construction will depend on the distance of a particular property from the highway. Thus, there is a need to consider these factors when prorating the levy among property owners.

The method described above, however, assumes that the fiscal cadastre system has adequate land value information for the basis of prorating. In many developing countries, the fiscal cadastre information is simply not available. When this is the case, we need to use physical cadastre data which are more commonly available, such as the land foot frontage. However, the disadvantage of using this information is that the physical cadastre data do not contain any information about the land value.

If equity considerations are of importance, it is necessary to include additional factors which represent ability to pay, for example, the gross annual income of landowners.

If the previously described methods have a general acceptance among public finance specialists, the method by which the inclusion or exclusion of improvements are to be considered when prorating total project cost has no consensus. Macon and Manon (1977) argue that we should not include the improvements because the benefits received by a parcel, as a result of a public work project, are dependent on the functional link existing between the benefit and the project, generally manifested by its physical proximity. This functional link is based exclusively on location of the lot. In other words, the benefits received by a parcel are derived from its location.

Failure to include improvements might violate the principle of ability to pay, since the higher improvement value could represent a higher ability to pay. I would suggest that this problem should be considered on a case by case basis. For a country without prior experience in betterment levy, taking into account the improvement value when prorating the project cost might impede public

confidence in the betterment levy and discourage land development.<sup>7</sup>

To successfully implement the assessment procedure described above and prorate the levy to each landowner, it is necessary for a supportive legal framework to be in place. To be effective, the betterment levy law should clearly define the bases, rates, assessment procedures to be followed, and enforcement of payments. In many cases, the betterment legislation establishes over-simplified procedures for the determination of liabilities of each landowner. While such operational simplifications will decrease the cost of administration, they impede the use of betterment levy as a means for recovering the cost of public works projects in proportion to benefits.

In addition to a simplified procedure, many cases have shown that the enforcement of the betterment levy is weak. One cause of this weakness is the failure to set a definitive final payment date which leads to legal action. It is true that not having strong enforcement would favor

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<sup>7</sup>Lewis (1984), Bird and Oldman (1990), Bahl (1975), and Hicks (in Holland: 1970) argue that without the inclusion of improvement, betterment levy would have an income effect but no allocation effect, so that the levy would not alter the pattern of development that would otherwise have occurred. Their arguments are based upon the assumption that the inclusion of improvement will create excess burden to landowners. However, their premises would only be true if the supply of land is perfectly inelastic, and at the same time the supply of improvement is elastic (greater than one but less than infinite).

political considerations. Yet, political considerations should not be allowed to undermine the success of betterment levy. A balance of suitable procedures with an acceptable degree of enforcement should be made in accordance with a country's experience with betterment levy.



## Chapter III

### The Applications of Betterment Levy

#### Overview

The main objective of this chapter is to examine the application of pajak khusus penggantian biaya dan pungutan tambahan (betterment levy) in Jakarta, Indonesia. While illustrating this issue, I will analyze the problems which make the use of this levy unsuccessful. In general my analysis covers the administration of this levy, the methods of determining the levy bases and the rates, the collection performance and the payment enforcement.

Before explaining the use of betterment levy in Jakarta, I will look at the experiences some Latin American countries have had with this levy. The goal of doing this is to understand their methods for determining the levy bases and rates. Among these countries, I will focus particularly on Colombia, which is commonly cited as a country which has successfully used this levy to finance infrastructure development projects in urban areas. As research on this topic is limited, I will rely to large extent on the work of Macon and Manon (1977), Doebele and Grimmes (1977) and Bahl (1975).

## **The Experience of Some Latin American Countries<sup>8</sup>**

### **Argentina**

Argentina introduced the betterment levy in the late 1930s which has been used primarily to finance urban street and rural road projects. The present use of this levy to any significant degree is at the municipal level. However, this application is not a true betterment levy, but rather a cost reimbursement arrangement.

The distinction between a betterment levy imposed on land value increments with the assumption that these increments are caused by public works projects and the reimbursement arrangement is very subtle, but it has practical consequences for the assessment of levy liabilities. In betterment levy the liabilities are determined according to benefits received.

With the reimbursement method, the distribution of all or part of a public works project cost is spread evenly throughout the benefit area without taking into account the differential benefits received. The advantage of this method is that it is easy and inexpensive to administer. However, since this method does not take into account the differential benefits received in prorating project costs it violates the benefit principle. Levypayers receiving

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<sup>8</sup>These illustrations are excerpted extensively from Macon and Manon (1977).

differential benefits have to pay the same amount. Macon and Manon (1977) concluded that this situation has weakened the effectiveness of the reimbursement method as a means for efficiently financing public works projects.

### **Ecuador**

In Ecuador the betterment levy is used only at the municipal level. Unlike Argentina, Ecuador uses the benefit received principle to prorate the costs of public works projects. The betterment levy is used almost exclusively to finance the pavement of roads.

Ecuador defines the benefit area for pavement of roads as two strips of 5 kilometers (approximately 3 miles) on each side of the roads. After establishing the amount to be allocated from the total cost of the project and identifying the levypayers, the next step is to determine how to allocate the cost among the payers.

Ecuador uses a linear impact procedure for this purpose. Because fiscal cadastre data is not available in Ecuador, the linear impact uses physical cadastre data based upon a point scale that reflects potential productive land uses. The points applied for the overall classification of the land within 5 kilometers of the road are allocated to each of the five pairs of 1-kilometer

strips on the basis of the following percentages (see Table 1).

**Table 1**

Strip (km.)	Percent	Fraction Terms
0 to 1	33.33	5/15
1 to 2	26.67	4/15
2 to 3	20.00	3/15
3 to 4	13.33	2/15
4 to 5	6.67	1/15

Source: Macon and Manon (1977).

From the above Table, we can see that these proportions decrease linearly, which implies that the farther away the productive land is from the public works project, the fewer the benefits received, thus lowering the levy liabilities. The levy liability assigned to each landowner is then multiplied by factors representing the type of soil of the property, ranging from 0 to 1. The value of 0 is used for completely unproductive land, such as desert land.

The betterment levy in Ecuador has not been very successful (Macon and Manon: 1977). One major reason is that often landowners are notified of levy liabilities after the completion of the public works project. Macon and Manon (1977), and Doebele and Grimmes (1977), argue that politically it is much easier to enforce levy payment

before the construction of the project rather than after its completion.

### **Guatemala**

Guatemala introduced the betterment levy in 1973, which was administered by municipal governments. The application of betterment levy in this country, however, only occurred for a short period, and since no evaluation has ever been made, it is difficult to say whether or not it had been used successfully (Macon and Manon: 1977). This case is interesting, however, because Guatemala only used land market values for apportioning the betterment levy.

The use of betterment levy in this country was very flexible, financing various urban infrastructure projects, such as highways, drainage and sewerage. In using this levy, the municipal government imposed a ceiling on all types of public works projects which limited the use of betterment levy to 70 percent of the costs of development.

The benefit area is determined by the characteristics of the public works project. For example, with road projects, the benefit area is a wide zone alongside and equidistant from the central road.

The apportionment of the betterment levy is made on the basis of the land market value after the completion of

the projects by using the following formula:<sup>9</sup>

$$d_x = D \frac{A_x V_x}{A_1 V_1 + A_2 V_2 + \dots + A_n V_n}$$

where  $d_x$  is the differential benefit per unit or levy per unit received by land  $x$  (per square meter);  $D$  is the total differential benefits or total levy within a particular benefit area (70 percent of total project cost);  $A_x$  and  $V_x$  are the area and the market value of land  $x$  per square meter;  $A_1, A_2, \dots, A_n$  represent land area in square meter;  $V_1, V_2, \dots, V_n$  represent land market value per square meter.

This method implies that the apportionment of betterment levy is weighted by using the market value of a particular plot relative to others within a benefit area. The major disadvantages of this method are that it is difficult and expensive to assess land value increases due to the projects. To be fair, we must be able to assess increases in land value that result from the construction of public works projects, not other unrelated factors.

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<sup>9</sup>See Macon and Manon (1977)

## **Mexico**

The national tax code of the United State of Mexico defines the betterment levy as a special levy imposed to recover differential benefits accruing to individuals as a result of a public works project.

The betterment levy in Mexico is occasionally imposed by all levels of government to finance various public works projects. For instance, it has been used to finance a large urban development project comprising waterworks and sewerage and primary and complementary road networks. The apportionment of betterment levy among levypayers in Mexico involves determining the ability to pay of levypayers.

In determining the levy base, Mexico uses various criteria that differ in accordance with the characteristics of the project and of the benefit area. These criteria include:

1. characteristics of the specific area, including estimates concerning proximity to the road and land use;
2. ability to pay, represented by a landowner's gross annual income;
3. probability of payment, calculated on the basis of a ratio of liability to gross annual income prevailing in the area.
4. levy credits, which may be partially credited to income taxes under provisions governing income taxes.

In general, the use of betterment levy in Mexico includes the following procedures: (1) publication of the decree-law subjecting the project to the betterment levy; (2) establishment of a property owners' council; (3) execution of project appraisal and cost studies, determination of benefit areas, and assessment of the quotas or application of the differential benefit calculation; and, (4) notification of decisions and of levies to be imposed.

The establishment of a property owners' council involves selection of owner representatives, appointment of a technical supervisor, and the formal creation of the council. The duties of the council include evaluating the project and levy liabilities.

### **Venezuela**

The use of betterment levy in this country has been very limited. So far local governments in Venezuela have used this levy only to finance road constructions. The Venezuelan experience with the betterment levy as a way to finance road construction, however, is different from other Latin American countries.

Assuming that road construction enhances land value in its surrounding area, landowners do not receive compensation for land expropriations related to road



constructions. This practice, which could be considered as a betterment levy collected in kind, neglects the fact that some landowners benefit from a road construction project but are not subject to any kind of expropriation. Thus, it violates horizontal equity considerations.

### **Colombia**

In this section the illustration of the uses of betterment levy in Colombia will be limited to the capital city, Bogota, which has been commonly cited as a successful experience. There are no studies available to illustrate in detail the uses of betterment levy in other Colombian cities.

Colombia has found diverse uses for the betterment levy, though road constructions are by far the most common type of project.<sup>10</sup> The idea of the betterment levy (valorization) began with the Article 3 of National Law 25 of 1921 which defined it as:<sup>11</sup>

"...a contribution from the real property which is benefitted by the execution of works of local public interest, such as the cleaning and channelization of the rivers, the construction of dikes to prevent flooding, the drying of lakes, swamps and wet lands, irrigation other analogous purposes,

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<sup>10</sup>Loc. cit.

<sup>11</sup>Quoted by Doebele and Grimmes (1977).

which contribution is to be exclusively designed to meet the costs required by said works."

The National Law No. 1 of 1953 extended the scope of the betterment levy to include all public works projects which result in an increase in land value. This law also gives municipalities freedom to determine the methods by which benefits should be calculated and the form of administration they will use. In addition, this law requires that the landowners affected by public works projects must have representatives who oversee all the landowners' complaints. The representatives receive 0.15 percent of the total project cost.

Traditionally, the betterment levy was administered by a department within the Bogota Special District.<sup>12</sup> In 1972 through a legislative decree No. 19 of 1972, the administration of the betterment levy was shifted to a new semi-autonomous Institute of Urban Development.<sup>13</sup>

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<sup>12</sup>Doebele and Grimmes (1977) explain that "...as is often the case with capital cities, Bogota enjoys a special status. Known technically as the Distrito Especial de Bogota, it has many powers of a departamento (or province). Its present boundaries include almost all of the urbanized area, with room to spare, except at a few points at its northern and southern extremities where urban growth has overspilled its limits to a minor degree."

<sup>13</sup>In Medellin the agency is called the Departamento de Valorization, a name referring to the increase in property values generated by the construction of public work projects.

This agency is under the jurisdiction of the National Betterment Directorate (Direccion Nacional de Valorizacion) in the Ministry of Public Works. The duties of this agency are to calculate the levy on the basis of legal provisions, and to ensure that the local public works projects are selected and implemented in accordance with the national comprehensive plan.

The general procedures for using the betterment levy to finance public works projects might be illustrated as follows. First, the public works projects should be in accordance with the national plan. The projects must be approved by the Board of Directors of the Urban Development Institute (UDI) and the Directorate of Betterment Levy in the Ministry of Public Works. Afterwards, UDI will be responsible for carrying out the projects. Once the projects are underway, UDI will raise 30 percent of the total project cost from landowners near the project site (including the administration cost). The remaining 70 percent will be paid in monthly installments (as will be explained later).

Second, while preparing the project plan, UDI will determine the benefit area of the project. Third, once the benefit area has been determined, UDI will survey the

potential levypayers. In general the survey covers land location, gross annual income, and proximity of the land to the project. Fourth, UDI will request the identified levypayers to elect their representatives. Their function is to participate in the preparation of the budget for the project and in a study to determine the distribution of benefits and the amount of the levy on the basis of the expected increases in land values. In this regard the representatives will also negotiate with the government for land compensation in cases where land expropriations for the public works projects are unavoidable.<sup>14</sup>

The representatives have a voice but no vote, and consequently cannot halt the implementation of the projects. Finally, UDI will issue levy notification letters to the identified levypayers. The levypayer has a right to review and appeal his levy liability before paying it. The payments are made either in cash at a discount or in installments to which interest is added. For the installment payments, there is no adjustment for general price changes.

In determining the levy amounts, Bogota limits the liabilities to direct project cost, including the administration cost. This implies that the total project

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<sup>14</sup>In many cases land compensations are made by exempting part of the betterment levy.

cost is a proxy to the quantified money value of benefit received by the landowners. This method has avoided the complexities of measuring benefit received before and after the completion of public works projects.

Calculating benefits received based upon before and after assessment would be very troublesome, as we need to estimate the land value before and after the completion of the project. While estimating land value before the project is less troublesome, estimating the value after the project is completed is very difficult.<sup>15</sup>

The procedures used in applying the betterment levy in Colombia are well known for their flexibility. Contrary to the situation existing in other Latin American countries, where fixed methods allowed by law are applied or where there are regulations defining the ways in which levypayers are identified and their levy liabilities are determined, Colombia has no such limitations. As previously mentioned, levy liabilities are determined according to the general guidelines.

Colombia has no legal limitations of a geographic nature on defining the benefit area (for example, in a road construction the benefit area is defined as a strip of a

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<sup>15</sup>Doebele and Grimmes (1977) and Macon and Manon (1977) argue that it is difficult to isolate the impact of a public works project on land value from other factors, such as a general land price increases.

certain width that is parallel to the road). This will avoid problems where the benefit area is interrupted by various factors. For instance, the benefit area of a road construction might be interrupted by a river which will create a problem provided the benefit area is defined strictly in geographic terms.

In determining the levy amount to be imposed on each landowner, Colombia uses plot size as the basic variable for prorating the levy. Difficulties arise because plots sometimes have widely different values, and different plots of equal value receive differential benefits from the project according to their functional relationship with the project, often determined by their physical proximity to the project. In order to avoid these problems, the area of each plot is weighted using factors that assign a greater or lesser weight to plot size in accordance with the elements that affect their intrinsic value and those that determine the plot's functional relationship with the project.

Macon and Manon (1977), and Doebele and Grimmes (1977), state that the area weighted in this way is conventionally known as a virtual area. Mathematically this can be illustrated as follows:<sup>16</sup>

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<sup>16</sup>For more detail see Macon and Manon (1977).

$$V_i = (F_1, F_2, F_3, \dots, F_n)_i A_i$$

where  $V_i$  is the virtual area of plot  $i$ ,  $F_n$  represents the different factors, and  $A_i$  is the physical area of plot  $i$ . In order to determine the average value of the virtual area, Colombia uses the following formula:

$$T = \frac{P}{\sum V_i}$$

where  $T$  is the average value of all virtual areas,  $P$  is the estimated total cost of the project, including administration cost.

The levy imposed on each plot will then be equal to the average value of all virtual areas ( $T$ ) times the virtual area of each property:  $C_i = TV_i$ . Where  $C_i$  is the levy applicable to plot  $i$ . Rearranging these above equations,  $C_i$  becomes:

$$C_i = \frac{P(F_1, F_2, F_3, \dots, F_n)_i A_i}{\sum (F_1, F_2, F_3, \dots, F_n) A_i}$$

This equation implies that the amount of levy applicable to each plot (virtual area) is weighted against the sum of virtual areas relevant for a particular project.

As mentioned before, each factor aims to express the functional relationship of each plot with the project, reflecting a greater or lesser benefit and thus a greater or lesser levy. The values around unity are commonly used for factor scales, so that factors in excess of one increase the levy. The nature of factors used to weight the physical area and change it into a virtual weighted area are extremely varied, and there are no fixed and compulsory rules mandating the use of specific factors. In such a situation subjective judgements are often used.

In their studies, Macon and Manon (1977), and Doebele and Grimmes (1977), found that the most commonly used factors in appropriating the levy are:

a) Basic factor. This factor is established for an ideal lot measuring 10 meters of frontage and 25 meters of depth. It is called basic because it provides the initial basis for weighing. In using this method, the ideal lot is identified within a benefit area. This ideal lot is a lot that receives the highest benefit from the public works project. In practice, the benefits are related to the distance between the lot and the project, not in a straight line but through an existing road. The greater the distance, the smaller the benefit. The coefficient of 1 is assigned to the ideal lot.<sup>17</sup> For the least ideal lot, a

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<sup>17</sup>The coefficient itself is a pure number, not pesos.



coefficient of 0.05 is assigned. Moreover, for the rest of the lots within a benefit area, their coefficients are interpolated relative to the most ideal and the least ideal coefficients.

b) Shape of the lot factor. This factor is used to adjust for any lot not exactly 10x25 meters. The idea behind this factor is that lots with greater frontage have a greater benefit. The coefficient of form is determined through this equation:

$$I=3.9174*(F-1)^{0.144} p^{-0.404} \quad 18$$

where I represents the coefficient of form, F is the frontage and P is the perimeter of the lot.

c) Socioeconomic factors. Public works projects often benefit different population classes with different socioeconomic characteristics. Information on these characteristics, such as income, is determined through surveys. For low income groups, a coefficient of less than 1 is assigned. On the other hand, high income groups are given a coefficient of greater than or equal to 1. This practice is related to the ability to pay principle.

d) Zoning factor. In Bogota, the city is divided into three

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<sup>18</sup>See Macon and Manon (1977) and Doebele and Grimmes (1977).

different zones: high, medium and low densities. Given that land price in high density areas is higher than in low density areas, the high and low density areas are assigned respective coefficients of higher and lower than unity. Furthermore, in order to take into consideration the fact that high density areas are often occupied by low income residents, the coefficient is then multiplied by the socioeconomic coefficient. The result of the two offsetting coefficients depends on the magnitude of the socioeconomic coefficient. For instance, if the zone factor coefficient is 1.25 and the offsetting socioeconomic factor is 0.10, the density effect will be offset by the low income weight.

e) Change in potential land use factor. It often happens that a public works project, if it is fairly large, might change the use of land, for example, from residential to commercial, making it more valuable. In this regard, factors are applied to adjust the levy as a consequence of the possible change.

f) Institutional factor. To deal with cases where levy exemptions are unavoidable, a coefficient of zero will be assigned. In many instances, the Colombian government assigns a zero coefficient for public welfare institutions, educational establishments, and charitable organizations.

g) Quality of the land factor. This factor, which affects the levy in accordance with the quality of land, is

particularly important in agricultural areas, where the quality of land is decisive for agriculture production.

h) Change in distance from the business center factor. It often happens that a public works project decreases the time required to reach the business center of town, for example, the construction of a highway. This will result in an increase in benefits. To deal with this situation a coefficient of above unity is assigned to the benefitted lots.

As a result of the relatively sophisticated methods for appropriating the levy, the use of betterment levy in Colombia has been very instrumental in permitting the city to construct public works projects at a more rapid rate than would otherwise have been possible (Doebele and Grimmes:1977). Doebele and Grimmes also conclude that the middle and upper income groups have undoubtedly benefitted more directly from the betterment projects than the poor. This is due to the application of the ability of an area to pay principle as a criterion for the selection of betterment projects, which automatically limit them to middle and high value sections of the city.

In contrast to the medium and high income groups, the low income groups have indirectly benefitted from the city's having betterment projects. For instance, arterial street projects improve accessibility to work and housing.

In their study, however, Macon and Manon (1977) found that primary benefits received by the low income group come from local street paving projects.

There are two legal provisions which govern the method of payment (Doebele and Grimmes:1977). First, the payment period varies in accordance with the levypayer's income (see Table 2).

**Table 2**

If gross annual income is <50,000 pesos and the charge is	Payment must be made within
10% or less of annual income	6 months
20%	12
30%	18
40%	24
50%	30
.	.
.	.
.	.
90%	54
More than 90%	60

Source: Doebele and Grimmes (1977).

Furthermore, if gross annual income is more than 50,000 pesos a year, payment schedules are as follows (see Table 3). In both cases above, if the charge exceeds 100 percent of gross annual income, a 20-month extension period will be given. Second, in motivating levypayers, a 10 percent discount is granted to landowners who pay their liabilities

in full before the end of the payment period schedules (see Tables 3).

**Table 3**

If gross annual income is >=50,000 pesos and the charge is	Payment must be made within
10% or less of annual income	2 months
20%	4
30%	6
40%	8
50%	10
.	.
.	.
.	.
90%	18
More than 90%	20

Source: Doebele and Grimmes (1977).

On the other hand, to penalize late payments, the payers will be charged 1.5 percent interest per month on overdue installments (in this case payers pay their liabilities on monthly installment basis). If by the end of period they have not fulfilled their liabilities (both for the cases of installment and lump sum payments), they will be charged 1 percent interest per month on the entire outstanding liabilities. If they still fail to pay their liabilities, the government will eventually expropriate their land.

Due to strong enforcement and acceptable payment schedules,<sup>19</sup> collection of betterment levy in Colombia is quite successful. The only major problem is that it is not easy to collect betterment levies from land owned by state-owned enterprises.

Although Colombia has no serious problem with the collections, the sophisticated methods used for appropriating the levy are not perfectly designed to deal with cases where the benefit areas receive more than one public works projects (one coming after the other). For instance, many cases have shown that landowners are liable for betterment levies for more than one public works project with different degrees of benefit in their areas. Suppose, there are five projects in a particular area in which the first project provides the highest benefits and the fifth one provides the least benefits. If every project has a maximum payment period of 3 years, a landowner in this area has to pay betterment levies up to 15 years consecutively. This might create tension and impede the collection of betterment levy payments.<sup>20</sup> To deal with such a situation, an advanced method aimed at determining a cut-off point for projects that provide relatively fewer

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<sup>19</sup>Acceptability is enhanced because the payment schedules have been discussed with the landowners' representatives.

<sup>20</sup>Gakenheimer (1982).

benefits will be beneficial in reducing the total levy payment period.

### **The Indonesian Experience**

The Indonesian experience with the betterment levy (pajak khusus penggantian biaya dan pungutan tambahan) has been very limited. Only used in the capital city, Jakarta, this levy was introduced in 1974 by Perda (Jakarta Special District Law) No. 1 of 1972. The approvals for this Perda were from the Ministry of Home Affairs (Decree No. 56 of 1973) and the Jakarta Local Government Assembly (Decree No. 8 of 1972). The Perda defines betterment levy as:<sup>21</sup>

"...contributions from landowners who benefit from a package of small-scale public works projects: road and sidewalk constructions, street pavements, electricity, drinking water pipe and telephone line connections, street lightings, constructions of open drainage, and public parks in existing residential areas."

To date Jakarta has used this levy in thirteen existing residential areas: Tebet, Tomang, Cawang, Rawamangun, Slipi, Kemang, Cilandak/Cipete, Jelambar, Kebon Baru, Sumur Batu, Teluk Gong, Tanah Kusir, Pondok Bambu and Duren Sawit. The number of levypayers in these locations is presented in Table 4.

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<sup>21</sup>Jakarta Local Government Law No. 1 of 1972.

**Table 4**  
**The Number of Betterment Levypayers in**  
**Existing Residential Areas (1974-1988)**

	Number of Levypayers	Percentage
Tebet	6210	21.36
Tomang	9249	31.81
Cawang	1165	4.01
Rawamangun	8676	29.84
Slipi	445	1.53
Kemang	726	2.50
Cilandak/Cipete	765	2.63
Jelambar	1313	4.52
Kebon Baru	240	0.83
Sumur Batu	111	0.38
Teluk Gong	54	0.19
Tanah Kusir	7	0.02
Pondok Bambu	50	0.17
Duren Sawit	64	0.22
<b>Total</b>	<b>29075</b>	<b>100.00</b>

Source: DIPENDA, Jakarta.

### **Administration**

The betterment levy used in Jakarta is managed locally by the Jakarta municipal government. In practice, the Jakarta local government assigns DIPENDA (the Jakarta local government unit for revenue collection) to manage this levy. A DIPENDA sub-unit is responsible for administering the betterment levy. The administration includes: (a) selecting and estimating project cost, (b) identifying payers and sending payment notification letters, (c) collecting payments, and (d) enforcing payments.



This unit cooperates with other local government units to identify residential areas to be levied, and in enforcing levy payments. In identifying the areas, the betterment unit works with the local government city planning unit (Tata Kota). This unit plans the existing residential areas to be developed and provided a package of public works projects. Their planning is done in accordance with the Jakarta master plan guidelines. In addition, this unit gives the betterment levy unit cadastral information for the designated existing residential areas. Their information includes: land location, landowners' names, and land plots' frontage and depth.

In constructing packages of betterment projects, the betterment levy unit collaborates with the local agency of the Ministry of Public Works. After the Jakarta local government initiates a project, the local agency of the Ministry of Public Works finances and implements the construction process. Furthermore, the Jakarta local government is expected to collect the betterment levy and forward the proceeds to the Ministry of Public Works.

In enforcing levy payments, the betterment levy sub-unit cooperates with the local government unit that issues building permits. This unit will not give a building permit to a landowner to construct a building on his/her land if he/she has not paid off his/her liabilities. In cases where

there are land expropriations due to defaults on payments, the betterment unit works with local police office.

In managing this levy, the betterment levy unit head does not have independent authority to make decisions on: (a) changing levy bases and rates, (b) granting exemptions, (c) making land expropriations, (d) changing packages of betterment projects, and (e) selecting existing residential areas in which to impose the levy. These decisions are made only by the Jakarta Governor after receiving a request from the betterment unit head.

#### **Levy Rates and Bases**

The Perda uses three broad categories of existing residential areas: non-slum planned, non-slum unplanned, and slum planned. The non-slum planned areas are occupied by medium and high income landowners and have already been planned in conjunction with the Jakarta master plan for infrastructure development. The non-slum unplanned areas are occupied by the same landowners as in planned areas, but have yet to be planned for development. The slum planned areas are occupied by low income landowners.

The Perda states that the contribution recovered through the betterment levy from each landowner in these areas is limited to 60 percent of the total construction

cost of the betterment projects. If it is required to be repaid to the original source, the remaining 40 percent is defrayed by the Jakarta local government.

The Jakarta local government uses different bases for apportioning the 60 percent of the total construction cost. These bases do not include the value of the construction (the building). In non-slum planned areas the levy is based upon the frontage of a plot and its proximity to the adjacent and nearby streets.<sup>22</sup> In unplanned areas, the levy is based upon the area (in square meters) of a parcel relative to the total land area in this zone and proximity to the adjacent street constructed in the planned area. In slum planned areas, the levy is based upon increases in land price after a package of public works projects is implemented. The Jakarta local government assumes that the land price only increases because of the betterment projects.

#### **Methods For Apportioning The Levy Liabilities**

Mathematically, the general formulas used for apportioning the levy amount are as follow:

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<sup>22</sup>The streets are part of the betterment projects in planned areas.

In non-slum planned areas

$$BL_i = PCS \times LF_i \times SF \times FF_i$$

$BL_i$  = betterment levy liability of land i.

PCS = the betterment projects cost share.

$LF_i$  = the location of land i.

SF = street factor.

$FF_i$  = frontage of the land i (in meters).

PCS equals 60 percent of the total betterment project cost. If the land i is located directly parallel to the street in front of it,  $LF_i=0.70$ . If the land i is located indirectly parallel to a nearby street (1 block away),  $LF_i=0.30$ . However, if the land i is located both directly parallel to the street in front of it and indirectly parallel to a nearby street,  $LF_i=0.70+0.30$ . SF will be equal to 1 if the land i is located directly in the front of a public park.  $SF_i$  will be equal to 0.50 if the land does not directly front a public park (for a more detailed explanation see Appendix 1).<sup>23</sup>

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<sup>23</sup>The figures used as factors for apportioning the betterment levy liabilities are based on Perda No.1 of 1972. However, there is no available information explaining how these factors are determined.

In non-slum unplanned areas

$$BL_i = \frac{PCS \times LF_i \times LA_i}{TLA}$$

$BL_i$  = betterment levy liabilities of land i.

PCS = betterment projects cost share.

$LF_i$  = the location of land i.

$LA_i$  = the area of land i (in square meters).

TLA = total land area in non slum unplanned zone (in square meters).

PCS equals 60 percent of the total betterment projects cost.  $LF_i$  will be equal to 0.60 if the land is located up to 75 meters parallel from the street center built in the non-slum planned area (the street is part of the betterment projects in the planned area).

$LF_i$  will be equal to 0.40 if the land is located between 75 and 150 meters from the street center. TLA is related to the location of land i: thus if the land i is located 75 meters from the street center, TLA is the total land area within this distance (see Appendix 2).<sup>24</sup>

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<sup>24</sup>Again, there is no available information explaining how these figures are determined.

### In Slum Planned Areas

$$BL_i = PCS * CLP_i * 0.50 \quad ^{25}$$

$BL_i$  = betterment levy liability of land i.

PCS = betterment levy project cost share (60 percent of the total betterment projects cost).

$CLP_i$  = is the increase of land price in two years following the construction of betterment projects.

The landowners in these areas are not obliged to pay betterment levy if: a) in two years following the construction of the betterment projects their land value does not increase by at least 300 percent, and b) the landowners do not sell their land, irrespective of whether or not their land value has increased by 300 percent. For example, within two years following the construction of the betterment projects, the price of parcel X increases from Rp.100,000 to Rp.500,000. If the owner sells it, he will pay betterment levy equal to  $Rp.400,000 \times 0.60 \times 0.50$  or Rp.12,000.

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<sup>25</sup>There is no available information explaining how the 0.50 figure was determined.

### **Exemptions and Cost Reimbursements**

There is no exemption on the basis of a landowner's ability to pay. The betterment levy exemptions are made only with respect to land use. Perda No. 1 of 1972 exempts land used for the following activities: charitable, education, religious, non-profit central and local government, and hospital.

With respect to cost reimbursements, the Jakarta local government reimburses a landowner when part of his/her land parcel is taken for the betterment projects.

### **Payment Methods**

Betterment levy is only imposed once and for all, and it statutorily falls on landowners. There is, however, no regulation preventing the owner from shifting his/her liabilities to the renter. Levy payments can be made on a quarterly installment basis up to a maximum of three years after a package of public works projects is constructed.

When landowners demonstrate that they are financially unable to pay off their liabilities in three years, the Jakarta local government grants them a one year payment extension. Approval for payment extension is awarded directly by the Jakarta Governor.

Upon requesting levy payments, DIPENDA, through post offices, sends notification letters to levypayers. The

letters consist of information that includes land location, frontage and depth, and levy amount. After receiving this letter, a landowner must confirm the accuracy of this information by sending a letter back to DIPENDA.

Before confirming his levy liabilities, a landowner has to make sure that the DIPENDA's information is accurate. If it is not, a landowner will request that DIPENDA re-examine his/her land location, frontage and depth. In this case, an officer from DIPENDA will visit him/her.

After confirming a notification letter, DIPENDA sends a payment request letter. Upon receiving this letter, a landowner is required to make a payment. The payment is made directly to DIPENDA.

### **Enforcement**

In enforcing levy payment, Perda No. 1 of 1972 states that:

- a. if a landowner does not pay his/her liabilities for two consecutive installments (two quarters), he/she will be penalized by paying an additional 25 percent of his/her unpaid liabilities;
- b. if he/she does not pay his/her liabilities for four quarters consecutively, he/she will be fined by paying an additional 50 percent of his/her unpaid liabilities;



- c. if he/she does not pay his/her liabilities for six quarters in a row, he/she must pay all his liabilities at once. No more extensions will be given in this case;
- d. in the first three cases, DIPENDA notifies the Jakarta local government unit responsible for issuing building permits not to give a building permit to the delinquent levypayers if, for example, they want to construct a house on their vacant land);
- e. under the first three cases, if a landowner refuses to fulfill his/her liabilities, DIPENDA will eventually expropriate his/her land.

### **The Analysis of The Use of Betterment Levy in Jakarta**

In this section I will evaluate the structure and performance of the municipal government's betterment levy. My analysis will focus on the current weakness of the betterment levy. The main issues that I will examine are: the appropriateness of the bases, the degree of success in collection and enforcement, and the issue of how betterment levy relates to the property tax.

From Table 5 we can observe that betterment levy is not a major source of revenue for the Jakarta municipal government. The three major local taxes in Jakarta are: motor vehicle, motor vehicle ownership transfer, and business development. These taxes together, on the average

Table 5

The Ratios of Betterment Levy and Other Local Taxes Revenues To The Total Local Tax Revenue (1974-1988)

Year	Betterment levy	Motor vehicle	Motor Ownership transfer	Animal slaughter	Deve- lopment	Radio	Foreigner	Enter- tainment	Adver- tising	Dog	Alcoholic beverages	Non mo- tor vehicle	Others	Total
1974	0.146	27.497	49.363	0.239	7.349	0.164	2.512	11.634	0.528	0.001	0.041	0.009	0.664	100.000
1975	0.134	30.390	44.132	0.231	8.967	0.102	1.726	11.893	0.640	0.000	0.041	0.010	1.868	100.000
1976	0.150	37.659	33.089	0.229	11.806	0.103	1.625	12.331	0.798	0.000	0.070	0.006	2.284	100.000
1977	-	38.149	32.566	0.201	10.194	0.091	2.346	13.115	0.752	0.000	0.047	0.008	2.532	100.000
1978	0.145	33.287	34.204	0.143	10.614	0.056	2.199	16.170	0.841	0.000	0.046	0.006	2.433	100.000
1979	0.325	30.211	37.965	0.135	12.398	0.040	1.327	16.161	0.756	0.000	0.036	0.007	0.982	100.000
1980	0.256	25.774	46.179	0.135	11.473	0.021	1.176	13.936	0.670	0.003	0.030	0.006	0.588	100.000
1981	0.232	24.562	50.003	0.118	11.335	0.013	1.504	11.167	0.705	0.004	0.028	0.003	0.559	100.000
1982	0.222	26.193	48.827	0.105	12.266	0.008	1.440	9.877	0.626	0.004	0.035	0.003	0.616	100.000
1983	0.222	31.174	44.214	0.096	12.481	0.006	1.134	9.597	0.686	0.004	0.028	0.004	0.576	100.000
1984	0.169	34.021	43.835	0.088	10.975	0.003	0.969	8.683	0.695	0.004	0.023	0.004	0.700	100.000
1985	0.111	36.358	40.758	0.082	11.840	0.002	0.879	8.150	0.715	0.005	0.018	0.000	1.192	100.000
1986	0.031	36.521	41.822	0.073	11.506	0.002	0.691	7.082	0.621	0.004	0.020	0.000	1.656	100.000
1987	0.012	39.439	42.822	0.065	8.588	0.001	0.509	6.474	0.728	0.004	0.017	0.000	1.352	100.000
1988	0.009	38.504	40.552	0.058	11.315	0.001	0.424	6.690	0.830	0.004	0.013	0.000	1.611	100.000

Source: Dipenda, Jakarta.

contribute, more than 60 percent a year to the total local tax revenue. In contrast, the betterment levy contributes on average less than 0.20 percent a year to the total local tax revenue.<sup>26</sup> Furthermore, Table 6 shows that the collection rates of this levy are low, especially considering the small number of households subject to it.

**Table 6**

**Target and Realization of Betterment Levy Revenue  
in 13 Existing Different Residential Areas 1974-1988  
(in millions of Rp.)**

	Target (A)	Realization (B)	(B)/(A)
1974	n.a	25.3	-
1975	n.a	27.6	-
1976	60.7	37.7	0.621
1977	n.a	n.a	-
1978	82.7	50.9	0.615
1979	200.0	142.2	0.711
1980	226.0	165.3	0.731
1981	268.0	189.8	0.708
1982	283.0	209.3	0.740
1983	330.0	247.1	0.749
1984	304.0	219.1	0.721
1985	278.0	156.2	0.562
1986	114.0	53.1	0.466
1987	78.0	24.3	0.312
1988	64.0	20.1	0.314

Source: Dipenda, Jakarta.

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<sup>26</sup>The Jakarta municipal government does not have betterment revenue data for each residential area, so that this number is based upon the total revenues in 13 residential areas.

From this Table we can observe that the realized revenue of this levy averages only 60 percent of the target. The low collection rates of this levy imply that the Jakarta municipal government cannot fully recover the expected 60 percent of the total costs of public works projects constructed in existing residential area.

There are a number of important factors that cause poor collection rates. A key issue is that the bases of this levy may not be perceived to be acceptable, so that levypayers are unwilling to pay. The bases of betterment levy used in Jakarta are, in fact, very simplistic. These bases assume that (a) each parcel in planned non-slum residential areas receives benefits from a package of betterment projects that vary with its frontage; (b) each parcel in non-slum unplanned areas receives benefit in proportion to its area relative to the total area in the zone where it is located; and (c) for each parcel in slum planned areas, the benefit received is based upon the difference between land price before and after the projects are implemented. The unwillingness of landowners to pay the betterment levy is also caused by the low reimbursements from the Jakarta local government for part of their land parcels taken for betterment projects.

The simplistic nature of these bases, however, has some advantages. Administratively, assessment is easy to

determine, as it does not require a complex mathematical formulation and it can be determined quickly. Given the low administrative capacity of the local DIPENDA officers, the easily applied methods used for determining the bases may be considered appropriate. Local officers do not require a long training process to understand this method. These advantages reduce the administration cost.

Another advantage of the methods used to determine the levy liabilities is that the bases do not include the value of construction (the building). As explained in chapter 2, Lewis, Bird and Oldman, Bahl, and Hicks argue that such a betterment levy has an income effect but not allocation effect. For example, A owns vacant land and he has to pay a betterment levy. Because the betterment levy only falls on his land, he/she is not discouraged from constructing a house on his/her land as he/she does not have to pay a levy related to the construction.

Although it has administrative advantages, the betterment levy assessment methods currently used in Jakarta have other problems. In a number of respects it is not very equitable. First, it ignores levypayers' ability to pay. For instance, two landowners in the same non-slum planned existing residential area who have the same frontage will have the same levy liabilities, even if one is richer than the other. Second, it largely overlooks the

differential benefit received by land parcels from locational factors. For instance, if two land parcels in a non-slum planned area have the same frontage, but the first is near a commercial area, such as a shopping center, and the other is not, they will receive a differential benefit from, for example, a road project. Another example is that when two land parcels have the same frontage, but the first is on the bus route and the other is not, the latter will receive less benefit from a road project.<sup>27</sup>

Another problem related to the low betterment levy collection rate is that the Jakarta municipal government does not have true autonomy to enforce levypayment. Even though Perda No.1 of 1972 gives the Jakarta municipal government autonomy to administer this levy, the Jakarta Governor needs to consult with the Ministry of Home Affairs when he wants to use enforcement powers. This reality is important as the Ministry of Home Affairs appoints the Governor. From his perspective, the Minister of Home Affairs may perceive that coercing betterment levy payment through a process that results in land expropriations is a sensitive political issue. Accordingly, he will not be willing to employ a strict enforcement policy. The other problem with enforcement policy is that its effectiveness

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<sup>27</sup>The road is part of the betterment projects in this area.

is hampered by the dishonesty of local officers. It is very common in Jakarta to negotiate settlements with the officers instead of paying the liabilities.

Aside from problems with the Ministry of Home Affairs and the dishonesty of the local officers, the low collection rates are also caused by the lack of coordination between the Jakarta municipal government and the agency of the Ministry of Public Works in Jakarta. In the betterment projects, the local agency of the Ministry of Public Works is responsible for financing and implementing the construction process. The Jakarta local government only initiates the projects and is responsible for collecting the levy and forwarding the proceeds to the Ministry of Public Works. Since there is no direct monitoring from the Ministry of Public Works, the Jakarta local government is not actually held accountable for the collections.

Related to this issue, the local agency of the Ministry of Public Works often independently builds its own infrastructure projects in certain areas of Jakarta. In these cases, the Jakarta local government is not directly involved and the betterment levy is not used to recover the construction cost. This situation may have a negative impact on spatial economic efficiency, as it might

encourage people to move to the areas where they do not have to pay the betterment levy.

A final problem related to the low collection rate involves the issue of property tax. In 1985, the Indonesian government introduced the property tax. Unlike the betterment levy, this tax belongs to the central government. The Jakarta municipal government has a responsibility for collecting this tax in Jakarta, and they will receive a share of the tax revenue for doing this.

The introduction of this tax has confused the betterment levypayers as they consider the property tax and betterment levy to have the same base and purpose. This is not a valid perception. The property tax is based on the market value of both land (including vacant lots) and improvements. In addition, the purpose of property tax is to finance the general recurrent expenditures of public services on an on-going basis.

In contrast, the base of the betterment levy is measured by the differential benefits received from a public works projects, and the purpose is to finance the capital expenditures of public works investment. Moreover, unlike the property tax, the betterment levy is a one-time charge.

The misunderstanding regarding the property tax and betterment levy suggests that the Jakarta municipal



government has not clearly explained to levypayers the differences between these two sources of revenue. This problem has become even worse as some central government officers from the Ministry of Finance have stated informally in the local newspapers that levypayers are no longer required to pay their betterment levy liabilities because they are now obliged to pay the property tax. From Table 5 we can observe that after the property tax was implemented in 1985, the betterment levy revenue began to decline sharply. To overcome this problem, the Jakarta Governor has already sent a letter to the Ministry of Home Affairs and the Ministry of Finance. Unfortunately, his letter has yet to receive a response, so that politically it is difficult for the Jakarta Governor to counter publically the damaging statements regarding the betterment levy.

## Chapter IV

### Conclusion and Recommendations

#### Conclusion

The use of betterment levy in Jakarta has not been successful, as evidenced by its low collection rate and limited application. Since it was introduced in 1974, it has been only used in 13 neighborhoods, and the average annual collection rate has been roughly 60 percent of assessments. There are several reasons for this: a) the methods used for apportioning levy liability are not well designed, b) the betterment levy payment is not effectively enforced, and c) there have been misunderstandings regarding the joint use of the betterment levy and property tax.

The current betterment assessment methods used in Jakarta have some drawbacks that make them unacceptable to landowners, many of whom are not willing to pay their liabilities. The methods do not consider landowner's ability to pay, nor do they define clearly the link between levy liability and differential benefit received by landowners from the public works projects. The inherent difficulty in defining differential benefits is exacerbated by the Jakarta local government's use of betterment levy only to finance the construction of a fixed package of

small-scale infrastructure projects in existing residential areas. Also, the government apportions the liability for the levy based on a simplistic formula. The methodology, in planned non-slum areas, for example, essentially assumes that landowner demand for infrastructure projects varies in proportion to property frontage. As discussed in chapter 3, this assumption is not valid. Preferences for infrastructure projects are likely to vary across landowners, but a more sophisticated formula would be required to approximate this variation more accurately.

In such a situation, a landowner will not be willing to pay the cost of betterment projects if he/she does not receive benefits that are proportional to the money he/she is expected to pay for the betterment levy. Unwillingness to pay betterment levy is also caused by the fact that, when part of a land parcel is taken for a betterment project, the Jakarta local government does not reimburse the owner at the current market price.

The ineffective enforcement policy is evidenced by the fact that there is no definitive final payment date. No salary attachment or land expropriation has ever been made in cases where there is default on payments. The problems with this policy are primarily due to the fact that in Jakarta it is very common to negotiate an unofficial payment with local government officers to settle betterment

levy liabilities. Politically, it is also very difficult to pursue strong enforcement measures, such as a land expropriation policy.

To expropriate a parcel of land, the Jakarta Governor needs to secure permission from the Ministry of Home Affairs. From the perspective of the Minister, land expropriation is a very sensitive national issue. The Minister undoubtedly worries that the issue of land expropriation will be manipulated by politicians for their own interest. Given that Jakarta is seen as a strong root of national political stability, this is considered very dangerous, and some fear it could have a negative impact on the country. Under such circumstances, the Minister of Home Affairs is highly unlikely to allow the Jakarta Governor to expropriate land in default on betterment levy payments.

Another institutional difficulty is that the Jakarta local government and the local agency of the Ministry of Public Works are not well coordinated when constructing betterment projects in existing residential areas. In most cases, the local agency of the Ministry of Public Works finances and constructs the projects. The role of the Jakarta local government is usually to initiate the projects and to take responsibility for collecting the levy and forwarding the proceeds to the Ministry of Public Works. However, there is no requirement for the Jakarta local government to make an annual report on the collection

of this levy to the Ministry of Public Works, and there is no enforcement mechanism to ensure that the Jakarta local government actually collects this levy.

Related to this issue, the local agency of the Ministry of Public Works also independently initiates (i.e. without the participation of the Jakarta local government) the same small-scale infrastructure projects included in the betterment package projects. In such cases, lack of involvement of the Jakarta local government precludes the use of the betterment levy to recover the construction cost. Moreover, it is possible that the Public Works will not follow the Jakarta master plan. As explained in chapter 3, this situation could also have a negative impact on spatial economic efficiency because people might prefer to move to those areas where they receive services but do not have to pay the betterment levy.

Finally, the introduction of property tax in Indonesia in 1985 has confused some of the betterment levypayers, as no explanation has ever been offered by the Jakarta local government regarding the purposes of and the differences between these two sources of revenue. Many levypayers consider the betterment levy and the property tax to be essentially the same, a point of view that can easily be refuted. First, the property tax is used to finance recurrent expenditures of public works services and general administration. In contrast, the betterment levy is used to

finance the capital expenditures of urban infrastructure development. Second, the property tax is based on the value of land and the value of improvements. The base of betterment levy, on the other hand, is measured by the differential benefits received by landowners from infrastructure projects. Third, unlike the annually levied property tax, the betterment levy is a one-time charge (although it can be paid over time in installments). Thus, the base, use and time frame of the property tax and the betterment levy are significantly different. Moreover, the betterment levy is a local revenue source while the property tax belongs to the central government.

The misunderstanding regarding the property tax and betterment levy has worsened as government efforts to improve and enforce the property tax have intensified. Some central government officers have made informal statements in local newspapers announcing that betterment levypayers are no longer required to pay their levy liabilities because they now must pay the property tax instead. In an effort to counter these statements, the Jakarta Governor sent a letter to the Ministry of Home Affairs and the Ministry of Finance. Unfortunately, his letter has yet to receive a response, making it politically difficult for him to contradict these media statements in public.

It was demonstrated in chapter 3 that, as enforcement of the property tax improves, the yield of the betterment

levy decreases. In my opinion, it is not appropriate to allow this to happen for two major reasons. First, the property tax and the betterment levy are complementary. As emphasized earlier, the betterment levy and property tax clearly have different purposes and bases. Second, although some analysts have suggested that betterment levy can be strengthened after the property tax is better institutionalized, this is not likely to happen. Once the betterment levy loses its momentum, it will be difficult to revive it. I would suggest that the central government continue to use, improve and extend the betterment levy, even while the property tax is being developed.

In contrast to Jakarta, Bogota, the capital city of Colombia, has been successfully using a betterment levy for many years to finance various small-scale and large-scale urban infrastructure projects (mostly for the construction of roads and highways). There are several factors to explain Bogota's success. First, people in Bogota are used to paying for urban services, so that the use of betterment levy is neither a surprise nor unacceptable for them. Second, the betterment levy is not used to finance only a fixed package of urban infrastructure projects; there is considerable flexibility in its application. Third, the methods used for apportioning the betterment levy liabilities are considered more widely acceptable as they: a) take into account landowners' ability to pay, b) are

based on a well defined differential benefit received by landowners from a particular project, and c) consider both the current land use and potential changes. Fourth, Bogota has strong autonomy to administer this levy. There are no complicating or obstructive interventions from the Ministry of Home Affairs, the Ministry of Public Works or the Ministry of Finance.

### **Recommendations**

Given the rapid growth of Indonesian cities, betterment levy has great potential use in financing small-scale urban infrastructure projects in existing residential and commercial areas. The betterment levy, however, is not appropriate to finance these projects in new residential and commercial areas, as will be explained later.

Beginning in the early 1980s, the population of Indonesian cities has been growing more rapidly than the general population. This rapid urbanization has substantially increased the demand for small-scale urban infrastructure projects in residential and commercial areas in cities throughout the country. To date, the provision of these projects has not nearly kept pace with the increasing demand. There are many urban residential and commercial areas lacking adequate basic infrastructure, such as sewerage, drainage, drinking water and telephone line connections.



The major problem is that there is not enough money available to finance the construction of these infrastructure projects. Except for the trivial role of betterment levy in Jakarta, small-scale infrastructure projects in Indonesian cities are built by the central government with little attempt at cost recovery. Moreover, the Ministry of Public Works does not give local governments a significant role to play in the provision of these projects, although various efforts are underway to expand their role.

This centralized situation has administrative disadvantages. It will be costly for the central government to plan, finance and construct the majority of infrastructure projects in all Indonesian cities, many of which have significant revenue generation capacity of their own. Furthermore, because all decisions related to these projects must be made at the center, the decision-making process tends to take a long time. Finally, there is reason to be concerned that the centralization of the decision process might lead to a lessened ability to respond to the needs of local people.

To solve these problems, the central government should give more responsibility to local governments for planning and financing the provision of small-scale urban infrastructure investment in residential and commercial areas. The government seems to be moving in this direction

as it drafts a new law on central-local fiscal relations. The central government can channel down their money through the Ministry of Finance and request the local government to pay back the money through a cost recovery mechanism, such as a betterment levy. The cost recovery mechanism can lead to more efficient use of scarce funds for infrastructure investment and provide the foundation for a sustainable revolving fund to finance infrastructure development. In this scenario, the role of the Ministry of Public Works is largely limited to providing technical assistance on design, engineering and implementation matters.

Before the betterment levy is used more extensively as a cost recovery mechanism, its administrative structure should be improved. In general, this includes a more clear definition of the purpose of betterment levy, and a reform of the methods used for apportioning the levy liability, the methods used for enforcing betterment liability payment, and the administrative linkages among the local governments, the Ministry of Home Affairs, the Ministry of Public Works, and the Ministry of Finance.

I recommend that the betterment levy should not be exclusively used to finance a fixed package of small-scale urban infrastructure projects in existing residential areas. This limits the applicability of the levy and assumes that people want infrastructure provided in such packages. In fact, there is no good rationale for the

current practice of excluding commercial areas, and landowners in different residential and commercial areas may have different infrastructure needs.

In my opinion, it is important to identify the various needs for infrastructure projects in the existing residential and commercial areas. I would suggest that the existence of landowner representatives can be helpful in identifying the needs of particular neighborhoods and commercial zones, a practice that has been very successful in Colombia.

After identifying areas that require specific types of infrastructure, a levy can be imposed on landowners to recover the construction cost of the specific project or projects they want provided. For instance, landowners in the sub-area X of the existing residential area Z need a street paving, and landowners in the sub-area Y of the same area Z need sewerage. The landowners in sub-area X would be provided with and charged for only the street paving project, and the landowners in sub-area Y for the sewerage project. Even in cases where more than one type of infrastructure is required, separately listing liabilities for each project makes people more aware of how the levy is being used.

Another required reform is to revise the simplistic methods for determining liability and to allow some degree of flexibility in their use. This is important because the

nature and extent of benefits received from different types of infrastructure project can vary widely. Benefits will depend on the type of infrastructure project, the location of a land parcel benefitting from the project, and current and potential land use.

I would suggest that the flexible methods used for apportioning the levy liabilities should also take into account the ability to pay consideration. This is important because every landowner who receives benefit from a particular project does not have the same ability to pay. I would also recommend that in recovering the infrastructure construction cost through betterment levy, we should not be overly optimistic and try to recover the total construction cost. People in Indonesia are not used to paying for urban infrastructure services. In order to avoid public distrust or rejection of betterment levy, it is sensible right now to settle for less than full recovery of construction costs. I would say that recovering 60 percent of the total construction cost, as is currently the case in Jakarta, will be adequate for the time being. Later, once people are used to paying for urban infrastructure services, the recovery rate can be raised.

Thus, in apportioning a 60 percent share of construction costs among landowners in sub-area X, consideration should be given not only to the frontage, but also to the distance of a land parcel to a road project,

the frontage, the parcel's area, the landowner's ability to pay, the current land use and potential land use changes. Likewise, to apportion the levy liabilities among landowners in sub-area Y, factors could be used to represent the landowner's ability to pay and the length of the sewerage pipe connected to a parcel from the main sewerage pipe.

Besides improving the methods used for apportioning the levy liabilities, I would also recommend that in penalizing late liability payments, the local governments should compound the unpaid liability balance using the market interest rate, so that a significant disincentive exists to keep delinquent levypayers from delaying their payments. The present method used in Jakarta does not require levypayers to pay a high penalty cost when making late payments.

Related to this issue, I would recommend that the government take steps to eliminate negotiable payment settlement practices between the levypayers and the local government officers. Perhaps the best way to do this is to require levypayers to make the payment of betterment liabilities directly to a bank, as is being done with the property tax. The present payment method used in Jakarta requires the levypayers to come directly to the local government office and to meet with local government officers. This creates opportunities for them to negotiate

a payment in lieu of meeting their betterment levy liability.

Betterment levy payment enforcement will be further enhanced if a final payment date is specified, after which the local government will take legal action, such as payroll attachment or land expropriation, against the delinquent payers. The final date should be related to the types of infrastructure project and landowners' ability to pay. The final date presently used in Jakarta is three years after the fixed package of small-scale infrastructure projects is constructed. This final date assumes that every landowner has the same ability to pay and the projects will be completed and must be paid for in three years. In reality, landowners have different abilities to pay, and infrastructure projects have different construction costs and periods, as well as different terms of loans used to finance them. Thus, there should be some flexibility in setting deadlines for betterment payment dates after which strong enforcement action will be taken.

In restructuring the administrative linkages between the Ministry of Home Affairs and the local governments, I would recommend that the Ministry of Home Affairs give local governments the authority to pursue payroll attachment or land expropriation proceedings in cases of default on betterment levy payments. This legal action is

important because it will force the betterment levypayers to take their liabilities seriously.

I would suggest that, if forced to resort to the extreme measure of expropriating a delinquent levypayer's land, the local government should buy the land at market price. Then, after deducting the unpaid liabilities payment the local government should give the rest of the money to the expropriated landowner. In my opinion, given that land prices in Indonesian cities are increasing rapidly relative to compounded betterment levy liabilities, this would reduce some of the political tensions involved in land expropriation. To implement this policy, the Ministry of Home Affairs should initially begin outside of Jakarta, where the issue of land expropriation is less sensitive relative to national politics.

In restructuring the administrative linkages between the local governments and the local agency of the Ministry of Public Works, I would recommend that the local governments be fully responsible for initiating and financing the small-scale infrastructure projects in existing residential and commercial areas.

The local agency of the Ministry of Public Works should be responsible only for providing technical assistance and carrying out the construction process in these cases. I would suggest that the Ministry should have sole responsibility for the financing and construction of

large urban infrastructure projects, as these projects are expensive and require a higher level of expertise. Given local governments' limited funds and lack of expertise, it is better to leave these projects in the hands of the Ministry of Public Works.

In contrast to the situation in existing residential areas where the betterment levy can be used to finance infrastructure investment provided by the public sector, the provision of small-scale infrastructure projects in newly developed residential and commercial areas is generally organized by private developers with Ministry of Public Works assistance.

The private developer is normally required to pay the construction costs up-front and directly to the local agency of the Ministry of Public Works. The developer cannot wait not to pay the government until new houses are sold to the homebuyers. Under such a payment method, the use of betterment levy is not required. No involvement of local government is necessary, except to ensure that the development is in accordance with the local master plan.

In restructuring the administrative linkages between the local governments and the Ministry of Finance, I would recommend that the Ministry of Finance loan funds directly to local governments for small-scale urban infrastructure



investment. The betterment levy could be used to pay back the money.

In channelling the funds to the local governments, the Ministry of Finance can use the Regional Development Account (RDA), a newly-instituted special account housed in the Ministry of Finance which lends local governments money, from the central government, to finance infrastructure projects. I would also suggest that the Ministry of Finance assist local governments in strengthening their administrative and financial capacity, so that they can better manage the betterment levy. Most local governments do not have a strong capacity to administer the betterment levy due to limited public finance and management expertise. While assisting the local government, the Ministry of Finance should also set up control procedures to prevent betterment levy leakages.

Finally, I would recommend that further research on intergovernmental fiscal relationships in Indonesia is needed to identify how local governments can mobilize general local revenue sources, and play a larger role in financing small-scale urban infrastructure project construction and operation. This research is important because the fiscal capacity of Indonesian local governments is currently very weak (more than 60 percent of all local governments' revenue comes from the central government in the forms of grants and subsidies).

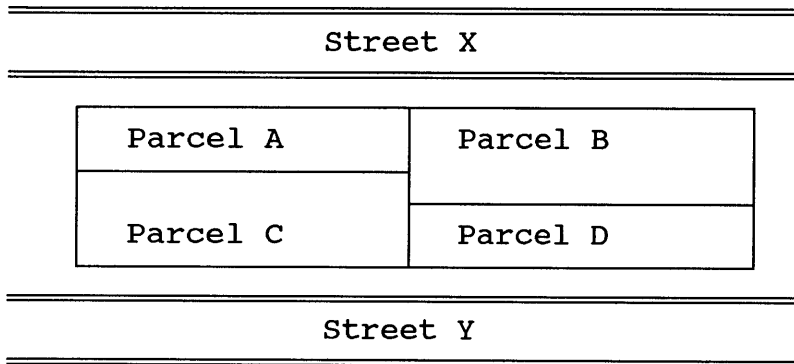
In my opinion, improvement of local sources of general revenue is important because the local government cannot use the betterment levy to finance all small-scale urban infrastructure projects. One of the main weaknesses of betterment levy is that it cannot be used unless project beneficiaries can be clearly identified. As an extreme example, betterment levy cannot be used to finance an anti-air-pollution project, as it will be difficult to identify clearly the beneficiaries of this project. Moreover, some types of infrastructure may not be self-financing. A strong local revenue base is required for local government to finance such projects.

## Appendix 1

### Determination of Betterment Levy Liability in Non-Slum Planned Residential Areas

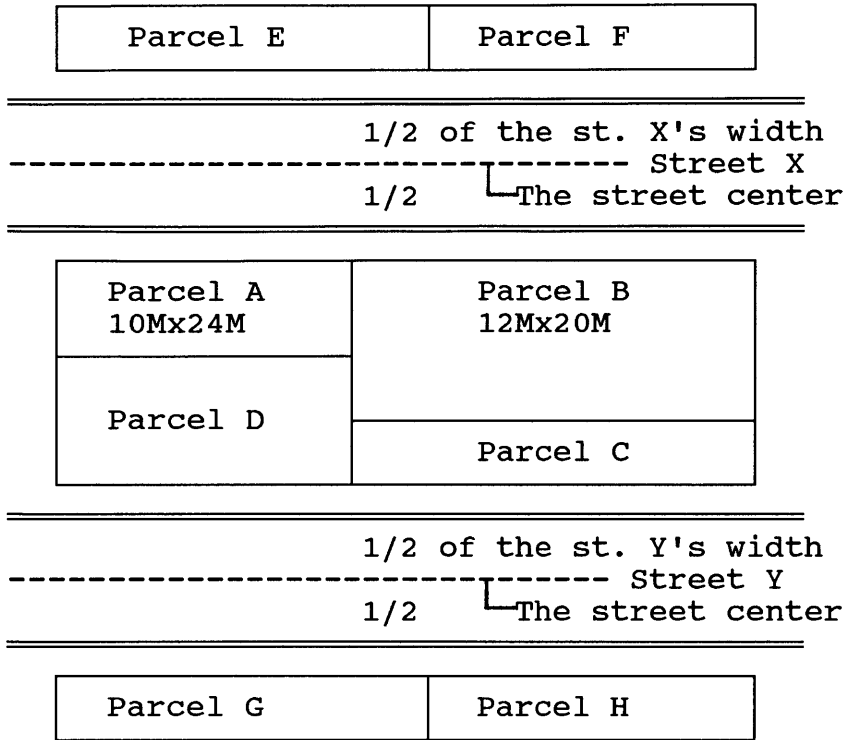
The non-slum planned areas are occupied by medium and high income landowners and have already been planned in conjunction with the Jakarta master plan for infrastructure development.

**Diagram 1**



Parcels A and B are located directly parallel to street X (in front of them), and indirectly parallel to the nearby street Y (1 block away from them). Likewise, parcels C and D are located directly and indirectly parallel to street Y and X.

**Diagram 2**



Parcel A is located directly parallel to street X and indirectly parallel to the nearby street Y. Given its location the owner's liability according to the formula on page 47 is:

$$(60\% \times 70\% \times 1/2^* \times 10 + 60\% \times 30\% \times 1/2^{**} \times 10) \times \text{TCPI.}$$

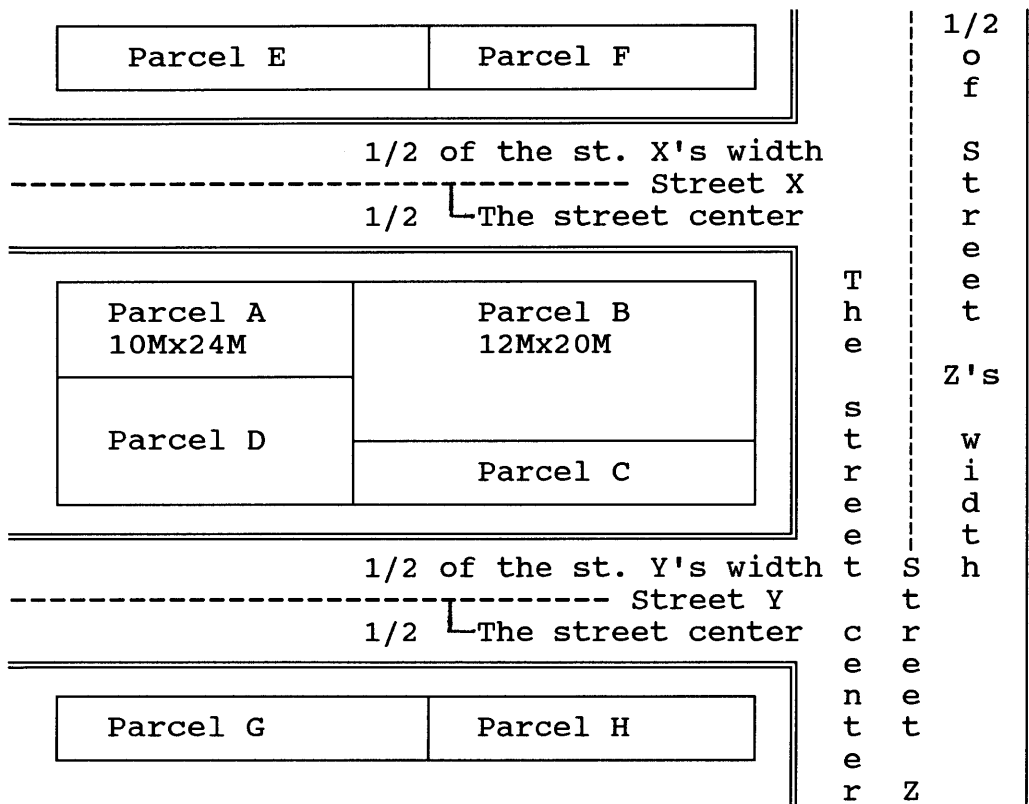
\*is for street X and \*\* is for street Y (streets X and Y have the same width). TCPI is the total construction cost of a package of public works projects. Likewise, the

liability of parcel B's owner equals to:  $(60\% \times 70\% \times 1/2^* \times 12 + 60\% \times 30\% \times 1/2^{**} \times 12) \times \text{TCPI.}$  \*is for street X and \*\* is for street Y (streets X and Y have the same width).

From these examples, it is clear that even though the area

of parcels A and B are the same, parcel B pays a higher betterment levy because it has a longer frontage (10 meters versus 12 meters).

**Diagram 3**

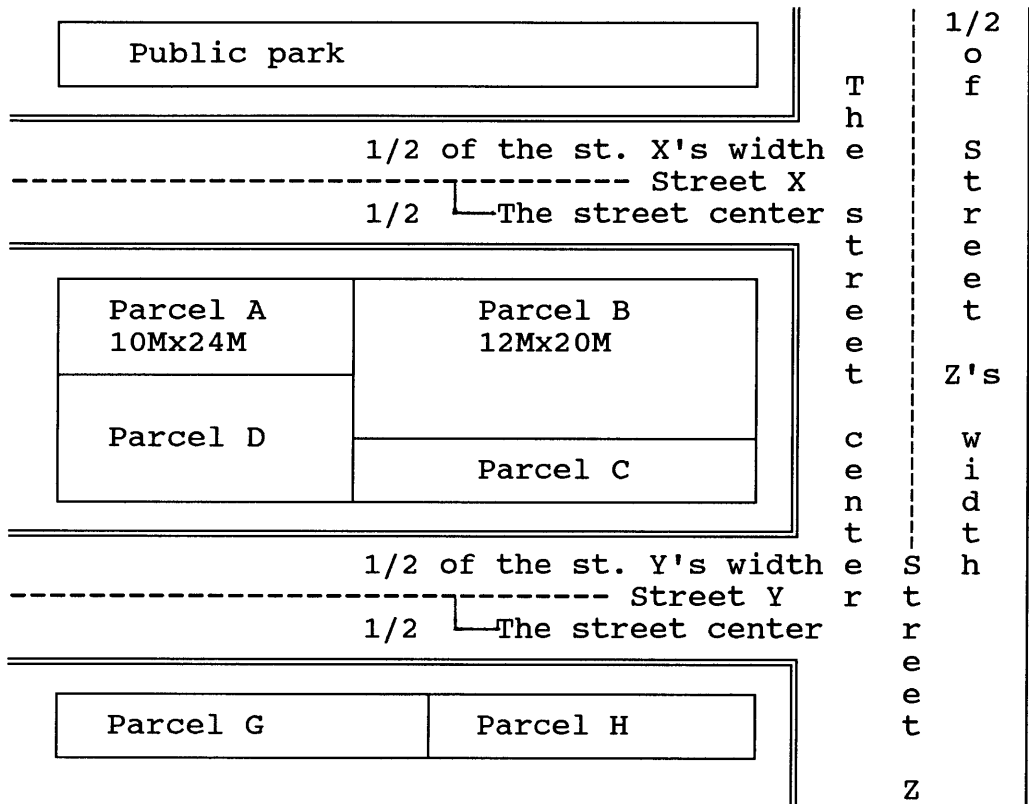


In this case parcel B is located directly parallel to streets X and Z, and indirectly parallel to the nearby street Y, so that the owner must pay betterment levy as determined by:

$(60\% \times 70\% \times 12 \times 1/2^* + 60\% \times 70\% \times 20 \times 1/2^{**} + 60\% \times 30\% \times 12 \times 1/2^{***}) \times \text{TCPI}$ . \*, \*\* and \*\*\* are for streets X, Z and Y. In contrast, as the parcel A is located directly parallel to the street X, and indirectly parallel

to the nearby street Y, the owner has to pay a liability given by:  $(60\% \times 70\% \times 10 \times 1/2^* + 60\% \times 30\% \times 10 \times 1/2^{**}) \times \text{TCPI}$ . \* and \*\* are for streets X and Y.

**Diagram 4**



In this case parcel B is located directly in the front of a public park, directly parallel to streets X and Z, and indirectly parallel to the nearby street Y. Given its location, the owner must pay his liability by:

$(60\% \times 70\% \times 12 \times 1^* + 60\% \times 70\% \times 20 \times 1/2^{**} + 60\% \times 30\% \times 12 \times 1/2^{***}) \times \text{TCPI}$ . \*, \*\* and \*\*\* are for streets X (because of its location the owner of parcel B

receives 100 percent of the road X benefit:  $1/2 + 1/2$ ), Z and Y. In contrast, as parcel A is only located directly in the front of the public park, directly parallel to the street X, and indirectly parallel to the nearby street Y, the owner's liability becomes:  $60\% \times 70\% \times 10 \times 1^* + 60\% \times 30\% \times 10 \times 1/2^{**}) \times \text{TCPI}$ . \* and \*\* are for streets X and Y.

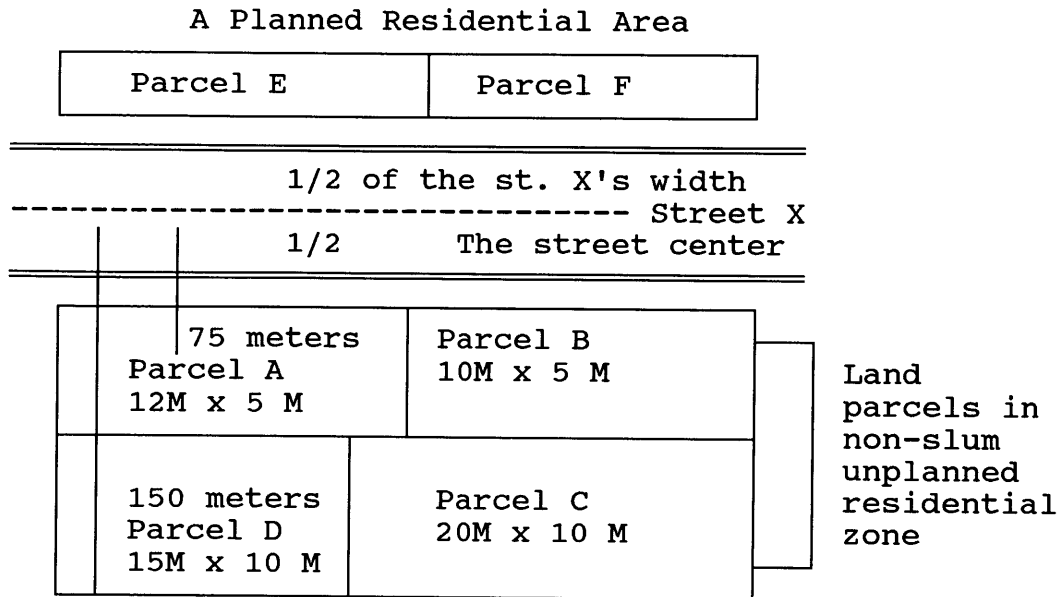
## **Appendix 2**

### **Determination of Betterment Levy Liability in Non-Slum Unplanned Residential Areas**

The non-slum unplanned areas are occupied by medium and high income landowners and have yet to be planned in conjunction with the Jakarta master plan for infrastructure development. There are two categories of these areas: areas that are located within 75 meters ( $\leq 75$ ), and greater than 75 meters but are less than and equal to 150 meters ( $75 < \leq 150$ ), parallel to a street center constructed in an adjoining planned residential area (see Diagram 5).



**Diagram 5**



Unlike in a planned residential zone, the betterment levy liabilities of each parcel in this territory is not determined by its frontage, but by its area (in square meters) relative to the entire unplanned zone's area (in square meters).

The liabilities of a parcel located up to 75 meters parallel to a street center is determined by multiplying the 60 percent of the total package of public works projects cost by 0.60 times its area relative to the entire area in this zone. According to the formula on page 48, the owner of parcel A must pay his/her liability as determined by:

$$\frac{60\% \times 60\% \times \text{TCPI} \times 12 \times 5}{12 \times 5 + 10 \times 5}$$

Likewise, the liabilities of a parcel located between 75 and 150 meters parallel to a street center, is determined by multiplying the 60 percent of the total package of public works projects cost by 0.40 times its area relative to the entire area in this zone. According to the formula on page 48, the owner of parcel D must pay his/her liability as determined by:

$$\frac{40\% \times 60\% \times \text{TCPI} \times 20 \times 5}{20 \times 10 + 15 \times 10}$$

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