Vertical Inequity in Unimproved Value System: Evidences from Suva City

Abdul Hassan

Abstract

This paper examines the inequity in the present local government tax (rate) system in Fiji. Property rate has been the major source of revenue for local councils since the colonial period. It accounts for more than fifty percent of the revenue of municipal councils. Over much of its history the tax has not been critically scrutinised. Vertical assessment equity is a fundamental requirement of valuation for rating purposes. This paper examines the rating system in Suva City, and finds that the unimproved value system is vertically inequitable.

Introduction

This paper examines the issue of inequity in property valuation systems used by local governments. The main focus is to test whether the Unimproved Value system, commonly known as the Unimproved Capital Value (UCV) system, provides a fair distribution of rates for property owners. The hypothesis is that the system does not result in an equitable sharing of the financial burden since sites with considerable building development and with land uses benefiting from various types of municipal services, are levied at the same rate as vacant or underdeveloped lands.

It is important to maintain fairness in the rate system, so that property owners pay rates in proportion to the development and the services they enjoy from local councils. The International Association of Assessing Officers (IAAO, 1997) reports that property rate can be stable and economically efficient revenue base for local councils if the rate structure provides the highest possible degree of equity among the ratepayers.

Local Councils

Metropolitan areas in Fiji comprise two cities and ten towns. The major urban centres are classified as cities or towns under the *Local Government Act* (Cap. 125) and are administered by councils elected by the eligible population residing within proclaimed boundaries. The Ministry of Local Government has overall responsibility over municipal governments. Each local council is required under the *Local Government Act* to do all such things lawful and expedient to promote the health, welfare and convenience of the inhabitants of the municipality and to preserve amenities. Specific functions of the local councils that are elaborated in the Act include public utility services, purchase of land and dealings in land, housing schemes to provide dwellings for persons of small means, streets and drainage. Under these broad provisions, councils undertake a large variety of developmental works and services.

The Unimproved Value (UV) system adopted in Fiji relates to the rates charged on the open market value of the land, excluding improvements. Property owners and registered lessees are required to pay an annual rate based on the percentage of the Unimproved Value of the land. S63 of the *Local Government Act* defines Unimproved Value as the

> capital sum which the land, if it were held for an estate in fee simple unencumbered by any mortgage or charge thereon, might be expected to realise at the time of valuation or revaluation if offered for sale on such reasonable terms and conditions as a *bona fide* seller might be expected to require and assuming that the improvements, if any, thereon or appertaining thereto had not been made.[1]

The definition for rating purposes gives the qualifier that in any valuation of land on which structures have been erected such valuation shall not take into account the actual use of the land, but the use for which the land is zoned under any existing planning scheme.

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[1] The Local Government Act (S63) uses the term 'Unimproved Value' and not 'Unimproved Capital Value'. For the purpose of this paper, both terms are used interchangeably. Though there is a crucial difference between the terms, the difference does not matter for the purpose of this paper.

Why UV Systems?

The International Association of Assessing Officers (1992) maintains that a common objective of taxation is neutrality, which should be designed so that it does not distort economic decisions. A uniform broad-based tax is supposed to be neutral and serves to improve economic efficiency. It encourages development, which in turn increases general welfare. High tax on one property shifts investment to others with lower tax. For example, a tax charged on an owner of an apartment building will be passed along to a tenant in the form of higher rents.

It is of interest to note that several countries use the unimproved capital value system. Becker and others argue that for a poor developing country to improve the existing economic situation, the best option is to introduce the Unimproved Capital Value rating system (1969: 242). The advantages of an Unimproved Capital Value (UCV) system are that the UCV system encourages development of land and stimulates construction work. Under a UCV system, property owners will get the benefits but they would not undertake expenditure or expend effort to account for the enhancement in values. The UCV rating method is also supported because the rate is levied on an unearned increment; through the tax, revenue is raised, income is redistributed and economic decisions are not affected. Sales of unimproved land still take place and could easily be used to establish UCV for developed sites. In many developing countries, decisions on land use show several values but not that which is reflected in the market. For instance, the sentiment attachment to a large subsistence holding may lead the owner to withhold the land from subdivision or sale. Taxing such a holding on the unimproved capital value system may force such a landowner to make a more rational decision on his holding. Of course this will cause resentment against policy makers and local authorities, but this would be the price for development.

McCluskey, et. al., (1997) describe the land value basis of taxation as favourable because of its potential for improving the efficiency of urban land use. They argue that this form of taxation is straightforward if land alone is taxed; the owner will have an incentive to develop the land to its most effective use. They support Becker's argument that the site value system is most suitable for developing countries. Tricket proposes that the concept of UCV is the product of an unsophisticated economy (1982: 237). This view may also support the adoption of the UCV system in developing countries. Tricket argues that this was the reason for the UCV system to be adopted in most of the Australian States in the early stages of their development (1982: 237). The belief is that this system has

a particular philosophical attraction to those responsible for the development of a largely undeveloped state. The UCV rating system is seen as a positive step in encouraging development and settlement on land.

One problem with the UCV system, however, is in establishing the initial value of a new property. Where a reasonable number of unimproved or vacant sites are still being transacted, it is relatively easier to establish the UCV of new sites. However, if there is no such site, the estimation of UCV of a newly created site may not be totally exact

The Unimproved Capital Value system is a system that encourages development because it exempts improvements and taxes the 'community' created unearned increment (Mander, 1982: 240). However, the system disregards the owner's ability to pay and penalises properties tied to their older use in changing use situations. The UCV system does not have any degree of vertical equity. Vertical equity relates to the degree of difference in tax burden borne by taxpayers that are not similarly situated.

The definition of value upon which the rate is assessed in Fiji is cumbersome and confusing. Unimproved value is defined under S63 of the *Local Government Act*, as a capital sum which the land might be expected to realise if offered for sale in the market assuming that there was no improvement on it. 'Improvement' in the Local Government Act is defined as work done or materials used at any time on or for the benefit of the land by the expenditure of capital or labour or both. It could be for the benefit of the owner or occupier, and includes that done by or for the benefit of any predecessor in title. The benefit, therefore, is not exhausted at the time of valuation. If the State or statutory body has carried out the improvement, it is to be disregarded unless the owner or occupier contributed to it at the time of valuation. Any reclamation of land from the sea can not be deemed to be an improvement. Nor shall labour or capital used to provide streets, roads, drains, reclamation, levelling, cutting of filling or any other work done to make such land suitable for building purposes, be regarded as improvements.

Becker, et. al., list four incentives for the Unimproved Capital Value system of rating (1969: 38). First, the most important consequence of unimproved or land value tax in an urban area will be a sizeable stimulus to economic development and the use of land. Second, these incentives can help bring about much increased development because structures are exempted from tax. Third, investment funds, which may be required to acquire land, can be used to purchase larger sites or can be invested in improvements on a large scale. It has been established that the high cost of purchasing land for development or redevelopment has become a serious problem in developed countries even where credit is readily available.

Fourth, the unburdening effect gives an incentive for increased economic development and eliminates property tax obligation from the value of improvements.

The main disadvantage associated with the UCV method is that the tax is charged only on land. This produces reasonable revenue only charged at a high percentage rate. Excluding the value of improvements means a significant proportion of the value of property is effectively exempted from the tax. Two similar lots may have the same UCV but in terms of development, they may be producing different levels of income/profit for the property owners. It can, therefore, be argued that the UCV system is insensitive to vertical and horizontal equities and reflective of the taxpayer's ability to pay.

The Problem of Inequity

It is proposed in this paper that the UCV method of rating is insensitive to vertical equity. Vertical equity refers to the view that taxpayers with greater need of services ought to face higher tax burdens than those with lesser needs. Sunderman, et. al, claim that there are two examples of vertical inequity: progressivity and regressivity (1990: 320). Progressivity occurs when the tax rate rises with property values while regressivity occurs where the tax rate declines with increasing property values.

Given the fact that the UCV system of rating does not take into account the use to which the property is put, the UCV system produces an inequitable result in terms of tax burden. Equity is an important issue for taxpayers and essential for tax jurisdiction.

In view of the foregoing the following hypotheses are formulated for testing:

H_0: There is a significant level of difference in rates levied on different categories of properties under the Unimproved Capital Value System.

H'_0: There is an insignificant level of difference in rates levied on different categories of properties under the Unimproved Capital Value System.

To statistically analyse the difference in the means of several groups a number of tests can be employed, of which a commonly used one is Analysis of Variance (ANOVA). ANOVA has been adopted as there are more than two groups of samples; this research intends to assess the level

of differences (significant/insignificant) among the means of these groups. Having conducted a one-way ANOVA the research would continue with additional specific tests; such action is known as post hoc investigation. The post hoc analysis helps to understand the true pattern of the population means. Several post hoc tests are available; among the commonly used ones are the Scheffe test and Tukey test. In the present study the Scheffe test has been used. Under this test the means of two groups at a time are compared, using all possible combinations. Like ANOVA, in the Scheffe test the critical value is obtained from the tables having decided on the level of significance, while the F-ratio is calculated from the data. The Scheffe statistic is used to test for significance in categories in the sample.

The Case from Suva City

Suva is the capital city of Fiji. The data on which this paper is based is for the period 1995-99. During this period, there were 10,461 rateable properties in Suva City, of which 8,786 (84%) were zoned residential. Of those properties in the residential zone, 606 properties, comprising 7% of the total Suva City residential stock, were included in the sample for this test. The number also corresponds to the total number of sales transactions in the 1995-1999 period.[2]

When undertaking mass appraisal for the purpose of a government rating revaluation every six years, it is accepted practice to adopt an averaged five-year analysis period. Obviously there is expected to be some movement in values over such a time frame, but relying on a five-year analysis horizon ensures that non-systematic market variations do not adversely influence the data set.

Data over a five-year period (1995-1999) for residential properties within the Suva City Council area was collected from the Lands Department. The data included the number of units in each building and the capital value (sales price) of the sample properties. Residential properties were taken as the prime study focus, given that the social and political impact on rating equity is most significant in this sector. Commercial and industrial properties represent only 8% and 4% of property stock, respectively, albeit, that individual property occupation may vary significantly. Other types of rateable properties, such as civic, recreational, educational and special uses, will not be so much affected because of the rate conces-

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[2] In view of the unavailability of more sales transactions, a sample of 606 properties provides the best case for a meaningful analysis of data for this research.

sion and exemption provided by the Council on these. Figure 1 shows the number of rateable properties for each category of occupation. Table 1 shows that rates comprise over 50% of the total income for the Suva City Council.

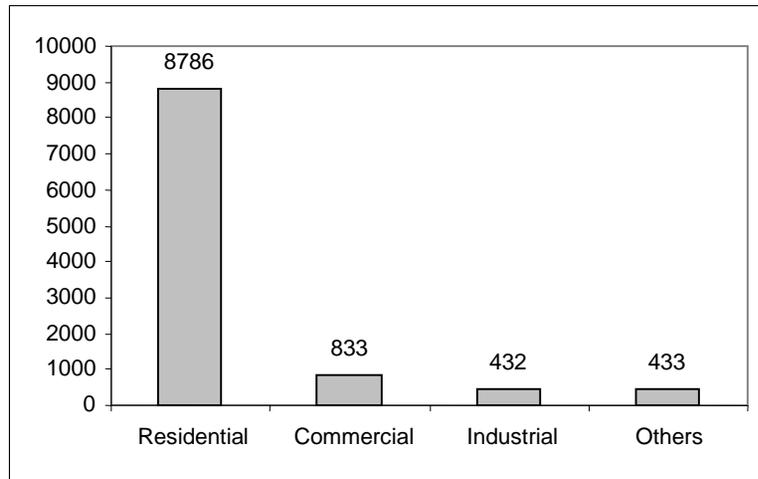**Figure 1: Property Types in Suva City, 1995-1999**

Table 1: Sources of Revenue for Suva City, 1995-1999

	1995	1996	1997	1998	1999
Rates (% of total)	60.20	60.40	56.81	61.07	55.73
User Charges (%)	27.14	30.02	34.11	29.14	27.38
Interest (%)	1.84	1.55	6.12	2.49	1.86
Others (%)	10.90	8.04	2.94	7.31	15.03
Total Collected ($m)	10.66	10.82	10.93	12.63	14.30

(Source: Suva City Council)

The identification number allocated for rating purposes by the government valuer identified each property. The capital value for each property was derived from the sales information obtained from the Lands Department. This was matched with the identification number on the valuation roll kept at Suva City Council. The Unimproved Capital Value

adopted in the research to assess rate was the actual figure fixed by the government valuers during the revaluation of Suva City in 1999. The rate on each property, obtained from Suva City Council, was 1.85 cents in the dollar of unimproved value for the years 1995-1996, and 2.4 cents in the dollar for 1997-1999.

The sample properties were divided into five categories based on the number of units available in each building. One unit is a household or living unit of a permanent nature contained within a single structure or development. As the unit/number increases the level of services required in each property also increases, with consequent flow-on effect on the burden of the Council and a strain on Council resources. Since all members residing in a local council area benefit from municipal services provided, the greater the number of people living in a property, the greater the level of service needs to be, vis-à-vis properties with fewer residents.

For this paper each category of property was identified with a code. The properties were divided into five categories with the codes given as 1, 2, 3, 4 and 5. Number 1 was given for a single unit residence whilst 2, 3, 4 and 5 represented two, three, four and multiple units, respectively. The categorisation of the buildings was based on the fact that a one-unit property would enjoy fewer services from the City Council than buildings with more units because of the potential number of occupants of respective households. 'Rate' is the amount payable by the property owners to the City Council and is the dependent variable. Unimproved Capital Value is the independent variables.

The analysis determines the means (that is, the arithmetic average of a frequency distribution), which is calculated for variables measured on an interval scale. For the analysis of variance the basic procedure is to derive two different estimates of population variance from the data and calculate a statistic from the ratio of these two estimates. A significant F-ratio shows that population means are not all equal. The significant differences in the means of subsets can be identified by post-hoc analysis.

Data Analysis

The city council determines the rate in $1.00 annually as part of the annual budget. The *Local Government Act* empowers the council to levy rates up to 10 cents per dollar of the UCV for the general rate, and up to an additional five per cent for loan purposes. As stated earlier, residential class represented almost 84% by number of the total rateable properties. Commercial properties accounted for 8% and industrial and others were 6% each.

During property revaluation in 1999 the total Unimproved Capital Value of the City was $554,540,026, of which residential properties represented 44% of the total, commercial 32%, and industrial and others each formed 12%.

Table 2 shows five categories of buildings used for analysis in this paper. Categories comprise the number of units in a dwelling, for example, category 1 represents a one-unit residence (single storey building), while category 2 contains two unit dwellings. In testing H_0 the mean and standard deviations are derived. This measure of variability shows the spread of means between different categories of properties.

Table 2: Means and Standard Deviations of Rates Payable under the UCV System in Suva City

Category	N	Mean ($)	Standard Deviation ($)
1	332	471.5783	212.3717
2	220	709.8327	548.6346
3	35	916.1143	416.4050
4	14	1261.7143	309.7945
5	5	1104.4800	247.5458
Total	606	607.2238	421.0054

Table 2 shows the typical or representative scores in the groups. This illustrates the means and standard deviation in testing Ho. The measure of variability shows the spread of means between different categories of properties. The difference in the means indicates that there is difference in the means between categories 1 and 2 but smaller differences exist amongst the other three categories.

The other important index of dispersion, standard deviation, is also shown in Table 2. Standard deviations show the extent to which rates in each category deviate from the mean.

Table 3 shows the analysis of variance for rates payable. The figures relate to the study characterised by a single independent variable (UCV), a single dependent variable (rate), five independent samples and a focus on means. Analysis of variance shows that ratio $F_{32.350}$ is more than critical $F_{2.57}$ casting doubt on the Ho null hypothesis. However the analysis at this stage, using one-way ANOVA does not reveal how many categories are paying the same rate.

Table 3: Analysis of Variance of Rates Payable Under UCV System

	Sum of Squares	df	Mean Square	F
Between groups	18997784	4	4749446.100	32.350
Within Groups	88235789.66	601	146814.958	
Total	107233574	605		

To arrive at a more specific result, the post–hoc test was conducted and the results are shown at Tables 4 and 5. As indicated above the post-hoc test was necessary because the ANOVA F ratio was significant (32.350). Also at the analysis of variance level it does not provide any specific insight into what caused the null hypothesis H0 to be rejected and alternative hypothesis to be accepted. However it was known from the test that all population means were probably not equal, but also revealed that not all means are identical. The post-hoc test probes the data to determine which of the possible non-null scenarios is most likely to be true.

The *Scheffe* was used as the post-hoc-test. This test has advantages over the others because it can make both pair-wise and non-pair wise comparison. The outcome of the test is shown in Table 4, where the multiple comparisons on rates payable among various categories of properties have been completed.

In Table 4 each numerical entry is simply the difference between the means of the groups. The results place those categories of properties in the same column that have insignificant levels of mean differences. Each of these mean differences is evaluated to establish if it is larger than would be expected by chance.

The result of the post hoc test is summarised in Table 5. The results show where the significant differences/similarities lie among the five categories of properties in terms of paying rates to the City Council. The test reveals that there is no substantial difference in the means of the categories 2, 3 and 5. Also there is insignificant difference in the means of categories 3, 4 and 5. This allows the *null hypothesis* (Ho) associated with the comparisons to be rejected.

Conclusion

The analysis and tests carried out in this study reveal that under the Unimproved Capital Value system several categories of properties would be liable to pay the same rate. Specifically one and two-unit buildings are levied the same rate. Also buildings with two, three and multi-units have

Table 4: Multi Comparisons of Rates Payable under UV System

(I) Categ	(J) Categ	Mean Difference (I-J)	Standard Error	Significance	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
1	2	-238.2544*	33.3100	.000	-341.1765	-135.3323
	3	-444.5360*	68.0950	.000	-654.9378	-234.1342
	4	-790.1360*	104.5418	.000	-1113.1523	-467.1197
	5	-632.9017*	172.6418	.010	-1166.3353	-99.4681
2	1	238.2544*	33.3100	.000	135.3323	341.1765
	3	-206.2816	69.7284	.069	-421.7304	9.1673
	4	-551.8816*	105.6131	.000	-878.2078	-225.5553
	5	-394.6473	173.2926	.270	-930.0917	140.7971
3	1	444.5360*	68.0950	.000	234.1342	654.9378
	2	206.2816	69.7284	.069	-9.1673	421.7304
	4	-345.6000	121.1672	.088	-719.9859	28.7859
	5	-188.3657	183.1876	.901	-754.3840	377.6525
4	1	790.1360*	104.5418	.000	467.1197	1113.1523
	2	551.8816*	105.6131	.000	225.5553	878.2078
	3	345.6000	121.1672	.088	-28.7859	719.9859
	5	157.2343	199.6241	.961	-459.5698	774.0384
5	1	632.9017*	172.6418	.010	99.4681	1168.3353
	2	394.6473	173.2926	.270	-140.7971	930.0917
	3	188.3657	183.1876	.901	-377.6525	754.3840
	4	-157.2343	199.6241	.961	-774.0384	459.5698

* The mean difference is significant at the .05 level

Table 5: Post-Hoc Analysis Under UCV System

Category	N	Subset for alpha = 0.05 1	2	3
1	332	471.5783		
2	220	709.8327	709.8327	
3	35		916.1143	916.1143
4	15			1261.7143
5	5		1104.4800	1104.4800

insignificant differences in the rates levied on them. Similarly buildings with three, four and multi unit residences are required to pay the same rate.

The purpose of rates and taxes in municipal councils is to recoup the expenditure for the services provided to individual property owners. Its achievements require, along with other things, an equitable distribution of rates to the property owners. Under the UCV system, property owners pay the same rate, irrespective of the level of services they enjoy. In-

creases in the rate between categories of properties are not proportionate to the corresponding increases in the services required. Unjust distribution should not emerge, or at least it should hardly be expected to assume high proportions as are seen from the analysis in this paper. Vertical equity is lacking in UCV system, as is currently used in Suva and other municipalities in Fiji. Ignoring this factor distorts the distribution of property rates, and fosters ratepayers' discontent and confusion. Disregarding the equity factor is a source of unfairness. Owners who need more services from the City Council should pay more rates. Failing to achieve a just distribution of rate raises the question of social justice.

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Abdul Hassan is Lecturer in Real Estate Valuation/Appraisal at the Department of Land Management, Faculty of Islands and Oceans, The University of the South Pacific. Phone: (679) 3232167; Fax: (679) 3231507. Email: hassan_a@usp.ac.fj