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Abstract

This paper proposes a reform of Punjab's urban residential property tax, of which the key features are: taxing land area alone, removing differential treatment of rented- and owner-occupied properties and at least partially dismantling size-based tax exemptions. We estimate the distributional impacts of the proposed reforms by conducting revenue-neutral simulations of three versions of a pure land-tax: (1) no distinctions are made by property band or occupancy status and all exemptions are discontinued; (2) properties in higher valuation bands are taxed at higher rates, but distinctions by occupancy status are discontinued, along with all exemptions; (3) tax rates as calculated in (2) are applied, but social exemptions and size-based exemptions for the lowest two valuation bands are retained. We recommend the third version but with an upper cap of Rs4,000 on tax increases and to maintain revenue neutrality, a lower limit of Rs10,000 on tax reductions. For this variant, we find that 21.4% of properties receive a tax reduction, 26.8% experience no change, 48.5% face an increase of Rs2,000 or less and only 3.2% face an increase of Rs2,000-4,000. For those that will be capped, we propose that caps are removed over time as properties change owners.

JEL Classification Codes (Keywords): H71 (Local Government Taxation); R51 (Urban Finance); H41 (Public Goods).

Introduction

Urban immovable property taxes are an important component of sub-national taxation in developed countries, but less so in developing ones. Property taxes contributed an average of about 1.1 percent of GDP in OECD countries in 2019; in the U.K., their share was 3.1 percent. By comparison, they contributed 0.22 percent in Turkey, 0.2 percent in India (in 2016) and 0.032 percent of GDP in Pakistan (in 2021).[1,2] Urban property taxation is potentially a fruitful source of revenue for Punjab but it remains underutilized, possibly because of political economy reasons, and because of administrative limitations and weak incentive structures for tax collectors.

Government taxes are levied in many forms and for varying reasons. Some, such as value-added taxes and customs duties, are primarily employed for revenue generation without invoking equity considerations. Some others, such as income tax, are better suited for raising revenue from individuals and households based on their ability to pay. An important rationale for property taxes is that they fund the provision of local public services. For this reason, they are referred to as "benefit taxes" (Bird and Slack 2004; Fischel 2001). This rationale applies equally to commercial and residential property. Another rationale is that external factors, as will be discussed in the following section, play an important role in the appreciation of property values and can thus be taxed without any efficiency loss or distributional consequences. Although not a focus of this paper, property taxes have other allocative implications as well and this gives rise to additional possible considerations for and against utilizing them.

First, they represent taxes on the ownership of property. For business property, this translates into a tax on stocks of capital while for privately-owned residential property, it translates into a tax on household wealth. Second, they represent taxes on the use of property: a tax on residential property represents a tax on the consumption of housing services while a tax on business property represents an input tax on commercial and industrial activities.

As with all taxation, there are two components to property taxation, a tax base, and a tax rate. The tax base for property taxation varies across countries. In some countries, the tax base is land, in others it is structures, but in most countries the base includes both land and buildings. To arrive at the tax base, tax exemptions also have to be factored in. These exemptions are provided on various grounds (e.g., if the property is government owned, or if it is used for charitable or religious

[1] The figure for Pakistan is for Urban Immovable Property Tax using revised budgetary figures and does not include other property-related taxes such as fees and taxes for transfer of property.

[2] Source: 1. OECD Revenue Statistics 2021, "The Initial Impact of COVID-19 on OECD Tax Revenues", Available at: https://www.oecd-ilibrary.org/taxation/revenue-statistics_2522770x. 2. Awasthi, Rajul and Mohan Nagarajan, 2020, "Property Taxation in India: Issues Impacting Revenue Performance and Suggestions for Reform", Discussion Paper, No. 5, April 2020, Governance Global Practice, World Bank. 3. Author's calculations for Pakistan based on data on Property Tax/Urban Immovable Property Tax for the provinces of Punjab, Sindh, Khyber Pakhtunkhwa and Balochistan as given in their Annual Budget Statements (Revised or Accounts) for financial year 2020-21, and GDP (market prices) data as given in the State Bank of Pakistan Annual Report FY23.

purposes). "Once the taxable base has been determined, the next step is to determine the value to which the tax rate is to be applied. In general, two distinct assessment methodologies are used for property taxation: area-based assessment and value-based assessment, with the latter being divided into capital and rental value approaches." (Bird and Slack, 2002, P. 15). The capital value is the market value of the property and, in theory, should equal the present value of net rental of the property. The tax rate is then applied to the capital value or rental value of the property.

In Pakistan, property taxation is in the provincial domain and provinces can choose different bases for property tax purposes, but the colonial legacy of applying a tax rate to the using rental value of property as a tax base is common to all provinces. The recurrent property tax on immovable property in urban areas in Punjab is levied under the Punjab Urban Immovable Property Tax Act 1958 (UIPT).[3] As amended by the Punjab Finance Act of 2014, the tax is currently levied at the rate of five percent of the gross Annual Rental Value (ARV) of both buildings and land.[4]

ARV of land and buildings is assessed separately. While the assessment takes into account a number of characteristics of each property, as we shall discuss later on, the base is always square yards of land and square feet of covered area.

In practice, the Punjab government notifies a valuation table that provides ARV for both land and covered area (buildings/structures) for seven separate area bands or locations (Band A, B, …G). Properties in area-band A are valued most highly, followed by area-band B etc. The ratio between ARV for land and buildings in the notified valuation table is the same for all area bands.

The UIPT provides exemptions to several categories of property owners including widows, retired government servants and those owning small properties; buildings owned and administered by federal and provincial governments, government-owned schools and hostels; mosques, churches and other places of public worship (for full details of these and other exempt categories, see UIPT Act, 1958, Section 4).[5]

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[3] In Punjab there are several other taxes on property including taxes on its ownership and transfer (see Piracha, 2022, Chapter 1).

[4] Strictly speaking it is the "annual value of land" and not the "gross ARV" to which the tax rate is applied. Annual value of land is explained in the Punjab UIPT Act 1958 (as amended up till August 7, 2020) as follows: "The annual value of any land or building shall be ascertained by estimating the gross annual rent at which such land or building together with its appurtenances and any furniture that may be let for use or enjoyment with such building might reasonably be expected to be let from year to year, less: [i] any allowance not exceeding twenty per centum of the gross annual rent as the assessing authority in each particular case may consider reasonable rent for the furniture let with any such building; and [ii] any land revenue actually paid in respect of such building or land, provided that in calculating the annual value of any building or land under this section the value of any machinery in such building or on such land shall be excluded." Source: The Punjab Urban Immovable Property Tax Act 1958. Available at: http://punjablaws.gov.pk/laws/79.html

[5] Collier *et. al.* (2018) note the significant loss of revenue resulting from similar exemptions in the context of sub-Saharan African cities. While we do not enter into the debate around whether the costs of these exemptions outweigh their social benefits, our empirical exercise includes both scenarios incorporating and those excluding the current set of exemptions in studying the distributional impact of our proposed reforms.

A lot has been written about the underutilization and under-performance of the property tax in Punjab and more generally in Pakistan. A host of issues have been identified. These include: outdated valuation tables, long gaps between revaluation of properties and notifying new rating areas, differential tax rates by occupancy status (Abbas *et al*., 2023; Nabi and Shaikh, 2011; Piracha, 2022; Wani *et al*., 2020); widespread area-based exemptions, high exemption floor (Abbas *et al.*, 2023; Nabi and Shaikh 2011; Wani *et al.*, 2020); ARV being a poor proxy for true annual rental value (Abbas *et al*., 2023; Wani *et al*., 2020).

Additional reasons cited for poor performance of the property tax include a weak and cumbersome bureaucracy, an abundance of loopholes, rent seeking by local staff and ineffective enforcement (Piracha, 2022; Wani *et al.*, 2020); differential tax rates by use, rate discounts for larger properties, shared rate-setting powers between provincial assembly and local government, citizens' poor understanding of the tax system (Abbas *et al.*, 2023); lack of cooperation among the three-tier system of government (provincial, district and tehsil governments)[6] because of misaligned incentives and responsibilities, and absence of strong political pressure to increase expenditure on service delivery (Piracha, 2022).

The proposal of this paper is to simplify the tax base so that the tax rate is applied to land area alone. Although there is a long-standing tradition for economists to advocate land-based property taxation, for reasons we shall discuss below, our own motivation for this advocacy arises from one of the factors behind under-valuation discussed above, namely control of information by lower levels of the tax administration hierarchy. To assess a property's ARV, the Punjab Excise and Taxation (E&T) department relies on tax inspectors who go house-to-house verifying properties' details. This gives inspectors wide discretion in recording and reporting property characteristics (e.g., rented or owner-occupied/owner-operated, residential or commercial, exempted or non-exempted, size of covered area, etc.) and allows considerable scope for collusion between taxpayers and tax inspectors, at significant cost to the provincial government in the form of lost property tax revenue. The long-run cost is even greater because the unfairness and arbitrariness in tax implementation results in low tax morale and overall decline in the culture of tax compliance.

In detailed case studies centred on the Punjab Excise and Taxation Department, Piracha and Moore (2015, 2016) and Piracha (2022) discuss a number of ways in which local tax inspectors are able to exploit their intimate knowledge of the individual properties within their own jurisdictions in order to collude with property owners in disguising true value. They identify a number of incentive, information, administrative and resource constraints that lead to a low-level equilibrium around property tax collection by inspectors, and lax enforcement by their supervisors. It is our contention that the complexity of the present tax structure plays a significant, albeit not exclusive, role in this under-performance of property taxes.

Another study, Khan *et. al.* (2016) reports results from a Randomized Controlled Trial in Punjab that show that when three person teams of property tax collectors in 'treated' tax circles were given

[6] This is specific to the property tax regime that was enforced through the 2001 Local Government Ordinance. It was replaced by Local Government Act 2010 in Balochistan and local governments acts in the other provinces in 2013. Malik and Rana (2019).

bonuses for tax collection above a historically-predicted benchmark, the growth in collection increased by 46 percent over those 'control' tax circles where such bonuses were not given. The authors show that this was predominantly because of increase in assessed value of property rather than through increased recovery or changes in exemptions granted. They also find that the increase in tax revenue was not accompanied by any decline in a typical taxpayer's perception about the quality of service of the tax office. The increase in the value of the assessed property in any one year implies not only an increase in that year but in all subsequent years. Thus, the potential benefit of incentive payments is spread over several years.

In a separate study, Khan *et al.* (2019) considered non-monetary benefits in the form of postings to preferred locations. The authors find that the promise of performance-based postings substantially raised revenues. The revenues were higher in treatment groups than in control groups by 41 percent in the first year of the incentive scheme and by 30 percent in the second year.

Notwithstanding the potential revenue benefits, rewarding tax inspectors for correcting past under-valuation of properties is a questionable governance principle considering that such undervaluation is mostly a consequence of their own corrupt practices. Some of the limitations of performance-related bonus scheme as proposed in Khan *et al.* (2016) are noted by Piracha (2022, Chapter 7), who also points out that the Government of Punjab did not implement the financial incentive scheme beyond the experimental stage.

Instead of incentivizing inspectors to arrive at a true valuation of property for tax purposes, we propose changing the tax base of residential properties from land *and* buildings to *only* land (more specifically land area), thereby allowing tax authorities to determine tax per property (by setting tax rate per square yard of land) to realize any given aggregate target revenue without requiring the services of tax inspectors.

As was noted above, tax inspectors enjoy powers of collusion with and coercion over property owners, and this power depends on the extent to which they can withhold information about property details from their supervisors (Piracha and Moore (2015). Since landowners have an incentive to register their ownership of land with the relevant land registry in order to prevent forfeiture, this means that the size of land holdings can, given appropriate information sharing between registry offices and tax authorities, be verified on the basis of registry data without necessitating property inspection by tax inspectors.

The same need not be the case with built-up areas as is the use of buildings for purposes other than for which they have been approved or recorded for tax purposes (e.g., rented or self-occupied). Thus, shifting the tax base to land area has the potential of reducing or eliminating the role of tax inspectors, at least at the stage of tax determination, with several associated advantages that we discuss in more detail in the next section.

As with all tax reform, there will be winners and losers as we move from the present tax system to a land-based property tax. The purpose of this paper is to shed light on the distributional impact of the proposed tax reform.

The outline of the paper is as follows. In section 2 we present additional arguments to support the case for a land-based property tax for residential properties. Section 3 presents the methodology and data. In Section 4 we consider three variations on a land-based tax and present their distributional implications. Section 5 provides a summary of the distributional comparison of the three taxes if these were implemented in Punjab. Some further ideas of tax reform are discussed in Section 6. The final section summarizes.

1. The case for land taxes

We noted in the previous section that it is a consequence of a land tax that tax inspectors are no longer in a position to collude with property owners and assess properties below their legal tax liability. It follows that unless the costs of non-compliance are small, the switch to a land-based property tax would lead to an increase in tax revenue. Also, as the scope for illegal bargaining shrinks, the time devoted to such activities can be channeled to more productive ones.

There are several other advantages of a land-based tax. From the taxpayers' point of view, the tax is very simple to compute, and they can easily cross-check the tax amount that has been invoiced. This transparency helps in building public trust in the tax system and contribute to tax compliance. From the tax collectors' point of view, not only is willful misreporting no longer a problem, but a land tax should also be administratively simpler to assess as well as enforce, given information available in land registries and cadastral databases. When improvements are included in the tax base, periodic inspections to verify the recorded characteristics of properties would be needed. The simplicity of a land-based tax is especially advantageous if local governments with their relatively less sophisticated administrations are to be in control of setting policy and administering property tax.

The economics literature has noted the following additional economic benefits of land-based taxes.

Unlike a tax on improvements, land taxes do not affect the economic choices normally available to taxpayers and in particular do not create any disincentive to build on the land up to its most profitable use. (Bird and Slack, 2002). A corollary to this argument is that the tax base for land taxes does not shrink as a result of increase in such taxes; this makes land taxes an ideal instrument from the point of revenue generation (Mirrlees *et. al.*, 2011, Chapter 16).

A second argument in favour of land taxes is that the value of a plot of urban land, unlike that of any structures built on it, is largely a product of external factors. These include the quality of public services: roads, streetlights, traffic management, waste collection, etc., available in the vicinity of the plot; they also include the quality of structures and improvements in the broader vicinity of a given plot. Bird and Slack (2002) argue that the consequence of such externalities is to create a bias in favour of owning land rather than improving it. A tax on improvements deepens this bias while a tax on land alleviates it.[7] "Since [a land] tax is borne proportionately more by owners of land and land ownership is unequally distributed, such a tax should be more progressive than a tax on land and improvements." (Bird and Slack, 2006, P. 9). If there is a pre-existing tax on land and improvements, the gains and losses may be unfairly distributed and managing this would be part of the challenge of a property tax reform.

A widely used argument against a switch to pure land taxation is that it is very difficult to assess the value of an individual plot of land when it already has a structure built on it, which is generally

[7] In the dataset made available to us, on average 16 percent of plots were recorded as having zero built-up area, which we interpret as indicating a vacant plot. This incidence was especially high in the most affluent Band A, in which 28 percent of plots recorded zero built-up area.

the case in urban areas. This argument applies to value-based tax systems. As such, it is moot for our purposes. Our objective in this paper is to simulate the consequences of a shift from the current area-based system which taxes both land and structures in Punjab, to an alternative area-based system which taxes plot size alone.

A less frequent argument against pure land taxation is that the public benefits rationale for property taxation is violated, especially in the presence of multi-storied apartment buildings. If tax assessments exclude building size, then taxpayers residing in multistorey buildings will receive disproportionately high benefits from services such as waste disposal, common recreational spaces etc., relative to their share of tax revenues. We shall address this issue in Section 6.

Finally, a real-world factor impeding pure land-based taxation is that any change in tax structure creates distributional effects. As is well known in political economy, losers are far more likely to resist the change than winners are to demand it. In the remainder of this paper, we use data from the Punjab UIPT database to investigate the distributional effects of shifting the tax base to pure land taxation in a revenue-neutral fashion, i.e., using the current property tax revenue as a starting point, we calculate a tax rate per square yard of land that leaves total tax revenues across a given tax jurisdiction unchanged.

2. Methodology and data

Following George (1879) and Vickrey (1999) our benchmark proposal is to end the tax on structures and improvements and shift entirely to land-based taxation. Our main interest is to analyse the distributional implications of such a move. While we study a number of ways in which such a move can be achieved, in each case, we first compute the difference between the proposed tax and the baseline tax and then graph the distribution of gainers (whose tax demand decreases) and losers (whose tax demand increases). More specifically, letting:

X_i^j = Tax demand for property *I* under the j^{th} tax.

Y_i = Tax demand for property *I* under the baseline tax regime. It is taken to be the 'net demand' or 'gross demand' net of any tax exemptions and rebates.[8]

$\Delta_i^j = X_i^j - Y_i$ = Difference in tax revenue under the proposed tax *j* and the baseline tax.

We graph Δ_i^j (on the horizontal axis) against the relative frequency of observations on Δ_i^j (on the vertical axis).

We study the monetary value of the difference, Δ_i^j, instead of the proportionate difference, Δ_i^j/Y_i, for two reasons: (1) the proportionate change cannot be calculated when properties are fully tax-

[8] Tax exemptions can be full or partial. In our sample only a handful of properties – a total of 12 – received partial tax exemption but almost two-thirds of all properties were fully exempt from property taxation. When properties are fully exempt from property tax, net demand is zero; with partial tax exemption, net demand can be positive.

exempt under the base-period tax regime, which is the case for about two thirds of the properties in our sample, and (2) when the baseline tax is small, the proportionate change is very large and may be a misleading metric for decision making.

We first consider a pure revenue-neutral land tax without making any distinction by location, ownership status or plot size and by ignoring all tax-exemptions (Tax 1). Our interest in this tax is hypothetical rather than practical, as it represents a quasi-utopian possibility in which all urban land is the same in terms of underlying value, *i.e.* there are no external effects on land values.

We next consider a land tax that allows for distinction based on property band, with higher tax rates on plots located in the relatively more upscale bands, and with revenue neutrality imposed within each area-band (Tax 2).

The final version of property tax (Tax 3) we consider is a variation of Tax 2. Tax 3 uses the area-based tax rates calculated in Tax 2 but (i) restores social exemptions, and (ii) exemptions for small plots (5-*marla* or less) in the low rated Bands F and G, and (iii) imposes an upper cap (of Rs4000) on any increase in tax on properties over their current tax. Because the tax rates in Tax 2 were calculated to generate revenue neutrality without exemptions and caps, introducing these will create a revenue shortfall. What Tax 3 does is to calculate a cap on how much any single property can *gain* in terms of a reduction in its tax demand, such that overall revenue neutrality is maintained.

The Urban Immovable Property Tax (UIPT) in Punjab is assessed and collected by the Excise and Taxation Department, Government of Punjab. Our analysis of UIPT of residential properties in Punjab is based on a sample taken from the entire data on property tax assessed for residential properties in Punjab in 2019.

The total number of properties that are treated as residential properties for purposes of UIPT in Punjab at the time our sample was collected was 3,020,380. There were several categories of residential properties, and we drew a proportionate stratified sample of 39638 (rounded to 39640). A brief description of these properties and their sub-categories follows below.

As was mentioned in Section 1, UIPT categorizes properties in several dimensions. First, urban residential areas are allocated into one of seven bands: A, B, C, D, E, F and G, depending on property values and the municipal facilities available in the area, with the highest tax rate applicable to properties located in Band A, followed by properties located in Band B etc. In each band, residential properties are further distinguished by their residential status: (i) self-occupied, (ii) rented, (iii) mixed (i.e. part self-occupied and part rented) and (iv) open plots (i.e. land in residential areas with no buildings or structures). Some further distinctions are made, such as between large and small plots and covered areas above and below a given threshold, with higher values assessed as having a lower marginal ARV.

ARVs of residential and commercial properties are separately calculated from the valuation table (see Appendix). As seen from the table, land and buildings are valued differently (e.g., in category A, a land parcel of 500 square yards is multiplied by Rs120 to obtain the annual rental value of land, while buildings of up to 3000 square feet are multiplied by Rs120 to obtain the annual rental

value of buildings. The values of land and buildings are added up to obtain the annual rental value of the property. A uniform tax rate of 5% is applied to the annual rental value.

For drawing a proportionate stratified sample, we considered the following additional three residential categories distinguished by plot size: (i) Small – up to 5-*marla*,[9] (ii) Medium – exceeding 5-*marla* but up to 10-*marla*, and (iii) Large – exceeding 10-*marla*.[10]

To draw a sample, the population of residential properties was stratified into 84 cells (= 7 × 4 × 3; where 7 is the number of bands, 4 is the number of categories by residential status, and 3 is the categories by plot size of the residential units). Of these 84 cells in which the population is stratified, the cell with the smallest number of residential properties has 381 observations. It is the cell with the following characteristics: Band G, mixed, and above 10-*marla*. Let's refer to this as cell k. The sample size n was chosen with the consideration that cell k must have a non-negligible representation in the total sample but small enough to keep the sample size from exploding.[11] We decided on the sample size from cell k to be 5 ($n_k = 5$). Then n (sample size) is determined by the equation: $\frac{5}{n} = \frac{381}{3020380}$ where, as noted earlier, 3020380 is the total number of taxable residential units in the population. This gives n = 39638, which was rounded up to 39640 The sample sizes for other strata were obtained by multiplying the sample size by the ratio of the observation in a stratum (N_i) to the total units in the population (N = 3020380), i.e., $n_i = n\left(\frac{N_i}{N}\right)$.

Once the data had been generated, some extreme observations were detected. At the low end there were a few hundred residential properties with plot size smaller than 20 square yards and at the high end there were as many as 17 properties with plot size of 5000 square yards or more – a total of 479 properties that could be regarded as very small or very large. Administering tax on properties this small is costly and impractical, even if the current exemptions on 5-*marla* or less properties were to be lifted;[12] therefore it would be sensible to exclude these from the analysis.

At the other end, the differential tax impact of our tax proposals on large property owners could be politically unfeasible. To avoid any debate on the tax-analysis presented in this paper being side-tracked by the disproportionate tax-impact on some large property owners, we have decided to exclude them from our analysis (residential properties of 5000 square yards and above). These property owners can be treated as a special category for a transitional period or for a longer

[9] A 5-*marla* in the province of Punjab converts into 125 square yards if the property is situated within the Lahore municipal limits and 150 square yards if situated outside Lahore. Similarly, a 10-*marla* plot is equivalent of 250 square yards, if situated within Lahore and 300 square yards if situated within Punjab, but outside Lahore.

[10] For tax purposes, UIPT distinguishes properties by land area (up to 500 square yards and above 500 square yards) and by covered area (up to 3000 square feet and exceeding 3000 square feet).

[11] With the chosen sample size, we could conveniently conduct our analysis and simulation using Excel spreadsheet.

[12] The relevant section in the UIPT Act 1958 states that the property tax shall not be leviable in respect of: "One residential house or vacant plot, measuring an area not exceeding 5-*marla*, used or to be used for residential purpose except a residential house or vacant plot with annual value of more than five thousand rupees situated in a part of a rating area and categorized as category-A area."

duration or not at all.[13] These decisions we defer to policy makers and focus our analysis on properties that exclude excessively large and excessively small properties.

3. Analysis of variants of land tax

In this section we consider three different land taxes. All three taxes are revenue-neutral in the sense that the revenue generated under any of them is the same as it is under the current tax regime (Tax 0). For all three taxes, we study the distributional effects of the tax reform.

The first of these three taxes (Tax 1) is the simplest of all and calculated by dividing any revenue target by the taxable land area. Under the tax there are no tax exemptions, and the same tax rate is applied irrespective of location of property, land size and ownership status.

Tax 1 represents a polar-opposite benchmark to Tax 0. It eliminates not only the potentially distortionary taxation of improvements on land but also the differential treatments of rental versus owner-occupied properties, properties located in different neighbourhoods, and exemptions based on social and political considerations. Its main advantage would be administrative simplicity: a single tax rate per square yard applied to all plots, regardless of any other considerations. However, it would not only be clearly inequitable and hard to sell politically, but it would also be allocatively inferior to a value-based land tax that taxes more valuable plots of a given size at a higher rate per square yard than less valuable plots of the same size.

The reason for this is, as noted in Section 2, that land value is largely a result of locational externalities: a square yard of land in a neighbourhood of more desirable properties and better public amenities should be taxed at a rate that reflects its higher market value thanks to these external benefits. Tax 1 does not; hence we consider Tax 2, which retains most of the features of Tax 1, but allows for variations in tax per square yard based on the existing banding systems. Tax 2 thus attempts to capture locational variation in land values caused by the externalities discussed above.[14]

Tax 2 is calculated by dividing the existing level of revenue collected under Tax 0 *within* each band by total land area *within* that band. This way, the tax is revenue-neutral within each property band and is, therefore, revenue-neutral overall. Tax 2 makes a distinction between properties based on their location, but, like Tax 1, it does not differentiate between properties based on plot size or occupancy status. The reasons for not making such differentiating are discussed below.

[13] Since the salient rationale for the reform is to reduce the reliance on tax inspectors, leaving a small number of properties being assessed via the present inspector-reliant scheme would not be a big issue as monitoring their assessments will be quite easy.

[14] Our version of Tax 2 captures locational variations in the value of land only imperfectly. This is because the tax rates that we compute per square yard of land in each band reflect current levels of tax assessments for those bands. Given that these assessments are themselves based on outdated and inaccurate valuation tables, our Tax 2 will inherit their limitations. It nonetheless comes closer than Tax 1 in capturing locational externalities.

In the case of plot size, the present UIPT assigns a lower marginal ARV once either plot or covered area exceeds certain thresholds. This leads to a lower average tax rate on large plots and buildings than on smaller ones. There is not much economic justification for this discrepancy and a compelling equity-based reason against it.[15]

With respect to occupancy status, an equity-based argument could be made that owners of rental properties are wealthier than those of self-occupied ones and therefore a higher tax rate on rental properties is justified. This argument is specious. It is a standard result of economic theory that the incidence of a tax on the buyer (of rental services) or the seller (of rental services – property owner) depends on the relative elasticity of demand and supply of the good/service and not on who is liable for the payment of the tax. Thus, owners can shift part of the tax onto tenants in the form of higher rents. Research on the determinants of housing tenure shows that renters are, on average, significantly less wealthy than owner-occupiers of similar properties (Edelberg *et al.,* 2021, Waters and Wernham 2023).[16] Thus, if the incidence of the tax is passed substantially on to renters this would invalidate the equity-based argument for taxing rental properties at a higher rate. In any case, a differential of 5:1 between rented and self-occupied property would be hard to justify even without any shift in tax incidence. For these reasons, we calculate Tax 2 without any distinction being made on grounds of occupancy status.

As in Tax 1 we eliminate all exemptions in Tax 2. Although we do not incorporate social and political exemptions in our distribution analysis of taxes, we discuss the revenue implications of these exemptions.

In Tax 3 we use the band-wise tax rates of Tax 2 but incorporate social exemptions and exemptions for 5-*marla* or less properties in the relatively poor locations (Bands F and G). We also impose an upper cap on how much a single property's tax demand can go up following our proposed reforms. To allow for revenue-neutrality to be maintained in the face of these concessions, we calculate a cap on how much a single property's tax can decrease while these concessions are in force. The idea is that over time, as properties are sold or bequeathed, the exemptions and caps at both ends can be lifted.

We turn now to more detailed discussions of the three taxes.

[15] At present, the UIPT assigns a lower marginal ARV to properties beyond certain thresholds of both plot size and covered area size. A possible economic justification for this might be that the use of certain public services, such as street lighting and access to roads, is not proportional to the size of a property. Countering this is the consideration that larger properties might house more residents who benefit from the available services. In addition, services such as waste removal, water consumption (wherever not subject to user charges), would very much depend on size, particularly in the case of buildings. The economic rationale for lowering the marginal tax rate on large properties is, therefore, ambiguous at best, while an equity-based argument can be made against it.

[16] These papers cover the US and UK housing markets respectively. Given that these countries have more developed markets for financing home ownership than Pakistan their findings are likely to apply even more strongly in the latter country.

Tax 1: Uniform revenue neutral land tax

More specifically**:** *(1) Uniform revenue-neutral tax on land area. (2) No distinction by: (i) property band, (ii) rental status or (iii) plot size. (3) No tax exemptions.*

Tax 1 is calculated by dividing the total revenue from property tax in our sample by the total land area of the properties in our sample. This gives tax rate in terms of rupees per square yard of land. The tax is administratively the simplest form of residential property tax.

Key features of Tax 1 are that: (1) it eliminates the tax on covered area completely, and (2) all residential properties will be brought under the tax net and the currently exempt and taxable properties will pay the same tax per square yard of land area.

Its main disadvantages are that some of the equity considerations that take the form of tax exemptions are disregarded, and that, by eliminating property bands, it will effectively lead to cross-subsidization from relatively lower rated bands to relatively higher ones. The tax is inequitable in that property owners who live in lower rated bands and receive lower quality of services than those in higher property bands will pay the same tax per square yard of property; they are also likely to be poorer than those in higher bands. For these reasons, our discussion of this tax is intended mainly to create a hypothetical benchmark and not to seriously advocate its adoption.

Distributional implications of Tax 1

Since the proposed tax is a land tax and not on covered-area, the tax on covered-area also must be recovered from taxing land because of the requirement of revenue neutrality. This will tend to increase the tax per square yard on land area for the existing taxpayers. On the other hand, because tax exemptions are eliminated, the tax is spread over a larger number of units and over more land area, which will tend to lower the tax per square yard on existing taxpayers but increase it for those who are currently tax exempt. Then there is the impact from removing the distinction by property band, rental status and plot size, which will tend to decrease the tax respectively on properties that are located in upscale residential areas, are rented, and have smaller plot sizes and tend to increase it respectively for those located in less expensive neighbourhoods, are self-occupied and have larger plot size. Which of these various tendencies will dominate for the existing taxpayers, cannot be established a priori. In other words, for the properties that are not tax exempt under the baseline tax regime, Tax 1 can increase, decrease or remain unchanged relative to the baseline tax, but for the properties that are currently tax exempt, the tax will increase under Tax 1.

The implications of the tax reform for the sample of 39,161 property owners (see Section 3) are presented below.

Table 1: Relative frequency of Δ^1 (Tax 1 - Tax 0) as percentage of total number of properties

Δ_1 = Tax 1 - Tax 0	Exempted	Taxable	Grand Total
-100000 - -8000	0.00%	2.13%	2.13%
-8000 - -4000	0.00%	2.81%	2.81%
-4000 - -2000	0.01%	3.07%	3.07%
-2000 - 0	0.01%	7.26%	7.28%
0 – 500	17.87%	3.39%	21.26%
500 – 1000	52.22%	4.05%	56.27%
1000 - 1500	0.87%	2.55%	3.41%
1500 – 2000	0.77%	1.23%	2.00%
2000 – 4000	0.21%	1.20%	1.42%
4000 +	0.05%	0.30%	0.34%
Grand Total	**72.02%**	**27.98%**	**100.00%**

Table 1 provides the distribution for exempted and taxable properties and their aggregates.[17] Chart 1 plots Table 1. The interpretation of a typical row, say, row 6 in Table 1, is as follows: Of the 39,161 properties in our sample, 52.22% are: (i) currently tax exempt, and (ii) experience an increase in tax ranging between Rs500 and Rs1000 annually. Another 4.05% of the total properties are ones that are: (i) currently taxable, and (ii) experience an increase in tax ranging between Rs500 and Rs1000. In total 56.27% of properties will pay an additional tax between Rs500 and Rs1000.

Table 1 also shows that a large majority of properties (about 93%) will either face a relatively small increase (up to Rs1000 per annum) or a decrease in their property tax. Only 0.34% will experience an increase of over Rs4000. The average tax per square yard would be about Rs6.5. The table also reports extreme values in terms of tax reduction or additional tax as a result of moving from the existing tax regime to the land tax. The maximum tax reduction will be about Rs83000 and the maximum additional tax is about Rs32000.

Table 2 is similar except that relative frequency of an exempted property in any typical row is taken with respect to the total number of exempted properties instead of total number of properties, and similarly, the relative frequency of taxable properties is taken with respect to the total number of taxable properties.

We note from Table 2 that over 97% of the properties that are currently tax-exempt will pay a tax between zero and Rs1000 and only 0.06% will pay a tax above Rs4000 under the proposed land

[17] Note that exempted properties include fully exempt and partially exempt properties. This explains why there are non-zero entries under the column titled 'Exempted' corresponding to $\Delta_1 < 0$. Also see footnote 8.

tax regime. Of those who are currently taxable, about 54.6% will experience a decline in their property taxes, about 44.4% will experience an increase between zero and Rs4000 and only about 1% will face a tax increase of Rs4000 and above.

Table 1: Relative frequency of Δ^1 (Tax 1 - Tax 0) as percentage of total number of properties

Δ_1 = Tax 1 - Tax 0	Exempted	Taxable	Grand Total
-100000 - -8000	0.00%	2.13%	2.13%
-8000 - -4000	0.00%	2.81%	2.81%
-4000 - -2000	0.01%	3.07%	3.07%
-2000 - 0	0.01%	7.26%	7.28%
0 – 500	17.87%	3.39%	21.26%
500 – 1000	52.22%	4.05%	56.27%
1000 - 1500	0.87%	2.55%	3.41%
1500 – 2000	0.77%	1.23%	2.00%
2000 – 4000	0.21%	1.20%	1.42%
4000 +	0.05%	0.30%	0.34%
Grand Total	**72.02%**	**27.98%**	**100.00%**
Benchmark tax rate (Rs per square yard)			**6.55**
Maximum value of Δ^1 (in rupees)			31689
Minimum value of Δ^1 (in rupees)			-82966

Chart 1: Δ^1 as percentage of total properties

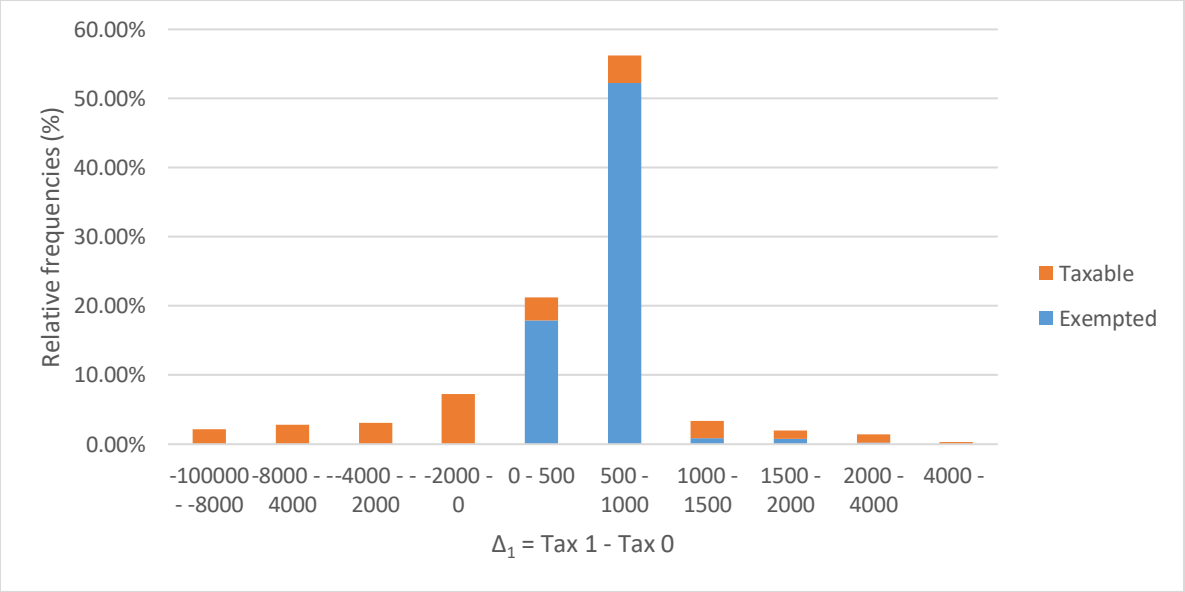


Table 2: Relative frequency of Δ^1 for the currently exempted properties and currently taxable properties (% of total number of exempted and taxable properties respectively)

Δ_1 = Tax 1 - Tax 0	Exempted	Taxable
-100000 - -8000	0.00%	7.60%
-8000 - -4000	0.00%	10.04%
-4000 - -2000	0.01%	10.96%
-2000 - 0	0.02%	25.97%
0 - 500	24.82%	12.10%
500 - 1000	72.51%	14.47%
1000 - 1500	1.21%	9.10%
1500 - 2000	1.07%	4.39%
2000 - 4000	0.30%	4.30%
4000 +	0.06%	1.07%
Grand Total	**100.00%**	**100.00%**

To summarize, from the sampled population we infer the following outcomes of the proposed tax for the residential property owners in Punjab excluding, as discussed previously, owners of very small or very large properties:

1. Two thirds of all properties are currently exempt from property tax; all these exempt properties are taxable under the proposed tax. A vast majority of them (over 97%) will pay

a tax between Rs0 and Rs1000. Another 2.6% would pay a tax between Rs1000 and Rs4000. A small percentage (0.06%) would pay a tax above Rs 4000.

2. Among the existing taxpayers about 55% would experience a fall in their tax demand with over 7.5% who would have their tax demand fall by Rs8000 or more per annum. At the other extreme, among the currently taxable property owners, about 1% will experience an increase of more than Rs4000. We also note that because of these disparities at the two extremes of the distribution, a policy of capping extreme changes can be feasibly implemented with either Tax 1 or Tax 2, which we will elaborate below in the context of Tax 2.
3. On further analysis of properties that pay an additional tax of Rs4000 or more, we note that these are properties that typically have large plot size (above 1000 square yards) or those whose plot size is not very large but have a low tax liability under the existing tax regime because of relatively modest covered area.

Tax 2: Uniform revenue-neutral land tax by property band

Specifically: (1) *Properties are distinguished by bands/locations, and then within each band a uniform revenue-neutral land tax is levied, which is specific to that band. (2) No distinction is made by: (i) rental status, or (ii) plot size. (3) No tax-exemptions are allowed.*

Tax 2 is identical to Tax 1 except that it retains a distinction based on the bands assigned to properties in the existing tax regime. The current regime classifies properties into seven property bands: properties with the highest rental value per square yard are rated as A, the next highest are rated as B, and so on. Like Tax 1, Tax 2 eliminates the questionable distinction between rented and owner-occupied properties, or between big plots and small, nor does it allow any exemptions based on plot size or other considerations.

Tax 2 varies by property band and is calculated for each property band by dividing the total tax revenue in that property band by the total land area of properties in that band. The tax thus mimics Tax 1, but with the taxable base restricted to one property band at a time. Imposing revenue-neutrality within each property band automatically leads to overall revenue neutrality.

As noted in the introduction, a rationale for property tax is that it is a form of payment for local public services. If the more high-end neighbourhoods have better provision of infrastructure and municipal services relative to the low-end ones, then applying a uniform tax rate across all properties, as in Tax 1, amounts to cross subsidizing from residents with poorer municipal services to residents with better services. By allowing tax differentials based on property bands, Tax 2 can avoid the problem of such perverse cross-subsidization and better approximate the notion of "benefit tax".

Had we not imposed the constraint that the overall revenue raised from each band under our proposed Tax 2 remains the same as it is under the present tax regime, then we could have based the rate differential across property bands on the relative rental-value of land between property

bands as notified by the Punjab E&T department.[18] However, the two conditions: (i) overall revenue-neutrality, and (ii) rate differential based on the relative rental values of land, have the unpleasant consequence that the total tax burden by property band shifts in perverse ways, i.e., the total tax revenue generated within each property band decreases for high end properties, specifically property Bands A, B and C, but increases for low end properties, namely property Bands D to G. This is one of the reasons for imposing revenue-neutrality within each property band (which also ensures overall revenue neutrality) and deriving a rate structure based on this constraint. More formally, the tax (rupees per square yard) for a property band under this tax regime is calculated as:

$$T_i^2 = R_i/N_i$$

Where T_i^2 is the tax rate per sq yd on property band i, R_i is the total tax demand from band i and N_i is total land area in band i $(i = A, B \ldots G)$.

The other reason for not basing our analysis on the relative rental values that could be derived from the official valuation table is that these are poor proxies for the true differentials in land value across the different property bands. As Abbas *et al.* (2023) note: "Using presumptive rental values is effective in contexts where a high proportion of properties are rented, and data is easily available on these properties. However, this is not the case in Punjab where there is no centralized database of rental contracts and only a small proportion of properties are declared as rented in the official record." (P. 36).

In our sample, the average tax in property Bands A to G (in rupees per square yard of land) is respectively, 27, 19, 10.7, 6.3, 3.7, 2.8 and 1.1. This desirable feature of higher tax rate on high-end properties relative to the low-end properties is a property of the data and not an intrinsic property of the rate structure itself.

[18] Based on the Punjab Excise & Taxation department's valuation tables (published on June 26, 2014), the relative weights of land across property Bands A to G are respectively, 1.0, 0.739, 0.609, 0.478, 0.357, 0.283 and 0.174 (i.e., Band G has a land value that is 0.174 of the land value of an equal plot of land in Band A). These weights are consistently applied across all distinctions: rental, self-occupied, below 500 square yards, above 500 square yards. Using these weights, the tax rate (on Band A) that would give overall revenue neutrality is given by:

$$\acute{T}_A^2 = \frac{R}{\left(\acute{N}_A + 0.739\acute{N}_B + 0.609\acute{N}_C + 0.478\acute{N}_D + 0.357\acute{N}_E + 0.283\acute{N}_F + 0.17\acute{N}_G\right)}$$

where R is the tax revenue target and N_i' $(i = A, B \ldots G)$ is the total square yards of taxable property in band i. This implies a tax of Rs15.8 per square yard on Band A. The corresponding rates (in rupees per square yard) on Bands B to G would be 11.7, 9.6, 7.6, 5.6, 4.5, 2.8 respectively. These rates are lower for Bands A-C and higher for Bands D-G than those arising from band wise revenue neutrality, leading to the regressive impacts outlined above. These comparisons raise the possibility that the current ARV assessments might be under-valuing high-band properties and over-valuing low-band ones.

Distributional implications of Tax 2

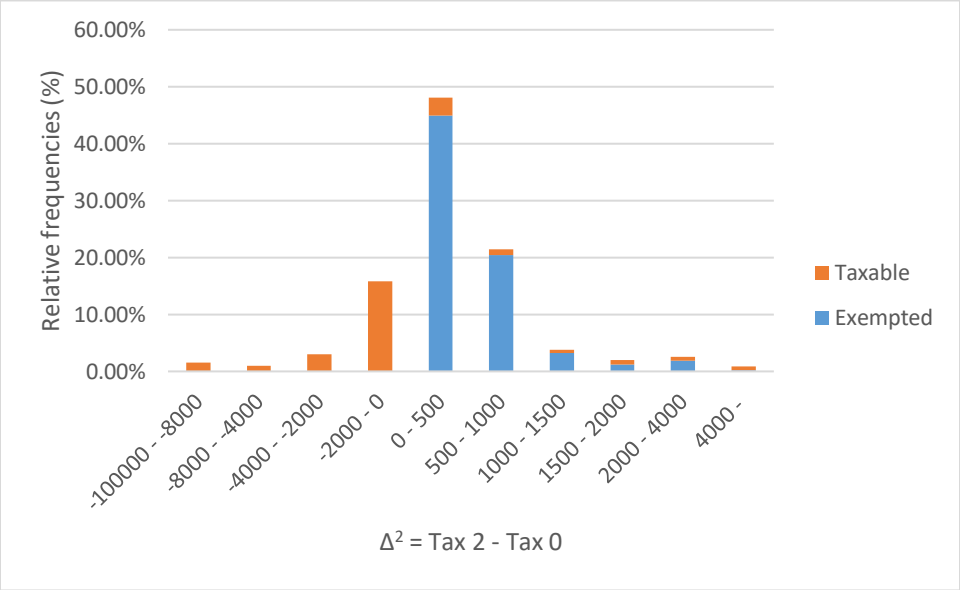
The distribution of Δ^2 (the difference between Tax 2 and Tax 0) is given in Table 3 and is plotted in Chart 2. We note that under this reform about 79% of properties will pay some additional tax but 69% of the properties will experience a relatively small increase of up to Rs1000, and less than one percent will pay more than Rs4000 as additional property tax. About 21% of the properties will experience a decline in their tax liability. The maximum additional tax from any single property under this tax reform is about Rs130,000 and the maximum reduction in tax revenue from any single property is Rs68,000.

Table 3: Relative frequency of Δ^2 (Tax 2 – Tax 0) as percentage of total number of properties

Δ_2 = Tax 2 – Tax 0	**Exempted**	**Taxable**	**Grand Total**
-100000 - -8000	0.00%	1.51%	1.51%
-8000 - -4000	0.00%	1.00%	1.01%
-4000 - -2000	0.01%	3.05%	3.06%
-2000 - 0	0.02%	15.77%	15.79%
0 - 500	44.95%	3.08%	48.03%
500 - 1000	20.45%	0.97%	21.41%
1000 - 1500	3.25%	0.52%	3.77%
1500 - 2000	1.26%	0.71%	1.97%
2000 - 4000	1.93%	0.64%	2.56%
4000 -	0.16%	0.73%	0.89%
Grand Total	**72.02%**	**27.98%**	**100.00%**

Benchmark tax rate (Rs per square yard)	
Maximum value of Δ^2 (in rupees)	130735
Minimum value of Δ^2 (in rupees)	-67965

Chart 2: Δ^2 = Tax 2 - Tax 0



Tax Capping

Properties that would be subject to large changes can be insulated from such changes by the authorities placing limits at both ends on the magnitude of change. Depending on the magnitude of the limit at each end, such a policy could be self-financing.

As an example, we considered a scenario in which the authorities limit any single property's tax increase to Rs4000 and "finance" that by limiting tax decreases to -Rs8000. The combination of these two limits leads to an increased revenue of Rs3,806,540 in our sample of properties. Scaling this up to all residential properties in Punjab would lead to an increase of about Rs 294 million in net tax revenue.

In this way, political fallout can be addressed by capping Tax 2 at both ends with a positive net impact on government revenue.

Caps need not be permanent, *e.g.* a rule that lifts the ceiling on tax increases whenever a property is sold or transferred through inheritance, would create new funds which could be used to relax the floor of -Rs8000 at periodic intervals.

In addition, caps *should* not be permanent. One consequence of capping increases and decreases in tax will be that some of the properties subject to the floor on tax decreases might end up paying a higher tax per square yard than similar or even larger properties that started with a lower baseline tax and thus are less, or not at all, affected by capping. For example, one of the properties in our sample is on a plot of 125 square yards, while another property is on 128 square yards. Both are subject to the floor on tax decreases, but the former started with a much higher baseline tax due to

having a much larger covered area. With a floor on tax reductions, the former would be charged Rs19013 on 125 square yards while the latter would be charged Rs7842 on 128 square yards. Clearly such an imbalance cannot be made permanent, so it is all the more imperative that any policy of capping is presented as a temporary situation that allows properties at both ends to adjust to large changes in tax assessments.

Social exemptions

One key feature of Tax 2 (as well as Tax 1) is the removal of tax exemptions, but the removal of all tax exemptions would be a difficult decision to implement. There are several categories of exemptions, but overwhelmingly these are exemptions because of small property size (most plots of up to 5-*marla* – see footnote 12). Other exemptions include 'social exemptions' such as for widows and retired government and army officers. The bad optics of removing 'social exemptions', or at least some of them, could be an obstacle to removing them, but the overall revenue impact of these exemptions is relatively small. We estimate the revenue loss, in the aggregate, from providing such social exemptions to be Rs220 million.[19] If the change in taxes is capped above at Rs4000 and below at -Rs8000, then it possible for the revenue authority to retain 'social exemptions' and still make a revenue gain of about Rs80 million.

Dealing with backlash from currently exempt property owners

Another strong opposition could come from currently tax-exempt property owners with small plots whose tax liability under the new tax is on the high side. If Rs2000 were such a cut off, capping the tax for this group during a transitional period, could cost as much as Rs230 million annually.[20] A part of this cost of Rs230 million (possibly less, see footnote 20) can be met from the saving of

[19] In our sample of 39161 properties, after removing very small and very large properties, there were about 28000 properties with plot size of 5-*marla* or less and about 11000 properties with plot size of more than 5-*marla*. There were 780 properties that were both tax-exempt (under the current tax regime) and had a plot size of greater than 5-*marla*. These properties are beneficiaries of 'social exemption'. The revenue loss of extending the tax exemption to these properties under Tax 2 was estimated to be Rs1.24 million for our sample of properties. Projecting for all taxable properties (or rated-properties) in Punjab that are not too small or too large, we estimate a revenue loss of about Rs100 million if social exemptions are allowed under Tax 2 for properties that are currently tax-exempt and have a plot size greater than 5-*marla*.

To estimate the revenue loss from properties of 5-*marla* or less on grounds of social exemption, we estimate: (1) properties with plot size of 5-*marla* or less in the population that are socially exempt - about 212,000 (2) average tax revenue per property for plots of 5-*marla* and less in the population (assumed to be the same as in the sample) – Rs557. The revenue loss in the population for properties of 5-*marla* or less is then the product of (1) and (2), or about Rs120 million.

The total revenue loss from providing social exemptions to properties that are above 5-*marla* and those that are 5-*marla* or less, is the sum of Rs100 million and Rs120 million or Rs220 million.

[20] This figure will be adjusted downwards if the tax liability of some of the socially exempt properties is above Rs2000 because the cost of tax-capping for them is already accounted for in the social exemption cost of Rs220 million.

Rs80 million that the revenue authority can realize from overall capping of additional taxes (above at Rs4000 and below at -Rs8000) and after allowing for the cost on social exemptions.

There is some tension, however, between removing the caps on gains and losses and thus realizing the full potential of Tax 2 over time and using the extra revenue these caps generate to retain exemptions. If caps are removed over time, the revenue basis for continuing exemptions will itself be eroded. Thus, our proposals for capping and using the additional revenue that such capping generates for retaining some forms of exemptions, are best considered temporary.

Tax 3 below analyses a scenario which reconciles capping of losses and retention of certain exemptions (until the sale or bequest of an exempted property) with the principle of revenue neutrality.

Tax 3: Band-wise revenue-neutral land tax with (i) caps on tax increases and decreases, (ii) social exemptions and (iii) exemptions for small properties in Bands F & G

Tax 3 retains the tax rates of Tax 2 but accommodates the socio-political concerns that follow from taxing owners (i) who are exempt on social grounds, or (ii) own small plots in the poorest Bands F and G, or (iii) via a steep rise in their tax demand. Tax 3 restores exemptions to the first two types of owners and imposes a cap of Rs+4000 on increased tax demands. Since Tax 2 was revenue-neutral without such considerations, admitting them would lead to a revenue shortfall. In order to maintain revenue-neutrality we therefore also cap *gains* that accrue to property owners who benefit from a reduction in their tax demand.

To be specific, we calculate a uniform cap X on gains from implementing Tax 2 tax rates, such that (i) all socio-political considerations as outlined above are met; (ii) no property benefits by more than RsX in its tax reduction and (iii) the resulting reform is revenue-neutral. The precise value of X that we find is -Rs10,198. However, for reporting purposes, we round this off to a slightly tighter cap of -Rs10,000. Given this cap, the result is a modest surplus of Rs95,997.

Distributional implications of Tax 3

Table 4 provides the breakdown of gainers and losers from Tax 3, by the size of their gains and losses. While the overall proportion of losers (78.6%) is greater than that of gainers (21.4%), 91% of properties experience small changes of +/- Rs2000 in their tax demand. Among losers, 89% will see their tax demand go up by no more than Rs1000. Thanks to the capping policy, no property will experience more than Rs4000 increase.

Table 4: Relative frequency of Δ^3 (Tax 3 – Tax 0) as percentage of total number of Properties

Δ_3 = Tax 3 - Tax 0	Exempted	Taxable	Grand Total
-100000 - -8000	0.002%	1.512%	1.514%
-8000 - -4000	0.002%	1.004%	1.006%
-4000 - -2000	0.008%	3.049%	3.057%
-2000 – 0	0.018%	15.773%	15.791%
0 – 500*	45.497%	3.080%	48.577%
500 - 1000	20.224%	0.968%	21.192%
1000 - 1500	3.166%	0.518%	3.684%
1500 - 2000	1.221%	0.707%	1.928%
2000 - 4000	1.882%	0.636%	2.518%
4000 **	0.0%	0.733%	0.733%
Grand Total	**72.02%**	**27.98%**	**100.0%**
*Includes properties with zero change			
**Exactly Rs4000			

4. Comparison of the three taxes

We have analysed the distributional consequences of three versions of a land-based tax. The first, Tax 1, is levied at a uniform rate across all properties without allowing any exemptions or distinctions based on location, plot size, covered area or rental status. Our distributional analysis suggests two main consequences. First, two thirds of properties were previously tax-exempt and these are all taxable under the proposed tax. A vast majority of them (over 97%) will pay a tax between Rs0 and Rs1000. Another 2.6% would pay a tax between Rs1000 and Rs4000. A small percentage (0.06%) would pay a tax above Rs4000. Second, among existing taxpayers, about 55% would experience a fall in their tax demand. At the other extreme, only about 0.34% will experience an increase of more than Rs4000.

We next considered Tax 2 that allows for the tax to vary by location (or band) with a higher tax rate on properties located in areas with higher land valuation. This distinction accords both with the notion that property tax is a benefit tax and with the argument that since the value of land is largely due to locational externalities, properties in higher bands should pay more tax. The tax rate in this case is obtained by calculating the ratio of revenue within each band under the present tax regime to the land area within the band. We note that under this reform about 79% of properties will pay some additional tax but 69% of the properties will experience a relatively small increase of up to Rs1000 and less than one percent will pay more than Rs4000 as additional property tax.

About 21% of the properties will experience a decline in their tax liability. Again, the absolute changes are modest for most properties in this group, 74% will receive a reduction of Rs2000 or less.

To avoid strong opposition from property owners who face large tax increases, which we have defined as increases of over Rs4000 per annum, Tax 3 places limits on the increase in tax liability above Rs4000. For similar reasons, Tax 3 also restores certain exemptions that are being granted under the current system. To "fund" these concessions, Tax 3 caps tax reductions at Rs-10,000.

Table 5 provides a comparison of the distributional impact of Tax 1, Tax 2 and Tax 3. The table shows the distribution of Δ^i – the difference between Tax *i* (*i*= 1, 2, 3) and Tax 0. The entries in Column II – IV are the frequencies of properties as a percentage of all properties, while columns V and VI are percentages of properties that are taxable and exempted respectively under Tax 0. The rows of Table 5 correspond to the signs and magnitudes of the difference between Tax *i* and Tax 0. The first row is the percent of properties whose tax demand would decrease under each proposed tax, while the remaining rows are the percent of properties whose tax demand would increase by the stated range of magnitude.

Table 5: Distributional comparison of different land taxes: Frequency of Δ^i (i = 1, 2, 3) as percentage of all properties and frequency of Δ^3 as percentage of taxable and exempted properties

Δ^i = Tax i – Tax 0	**Tax 1 (Percent of total properties)**	**Tax 2 (Percent of total properties)**	**Tax 3 (Percent of total properties)**	**Tax 3 (Percent of taxable properties)**	**Tax 3 (Percent of exempted properties)**
Less than zero	15.29	21.37	21.37	76.26	0.04
0 – 2000	82.94	75.18	75.38	18.85	97.34
2000 – 4000	3.42	3.45	2.52	2.27	2.61
4000 and above	0.34	0.89	0.73*	2.62*	0
Grand Total	**100.00%**	**100.00%**	**100.0%**	**100.0%**	**100.0%**
***=4000 due to cap**					

Effects by occupancy status

All three taxes eliminate differential rates arising from occupancy status. This is expected to lead to an increase in tax assessed on self-occupied properties and a decrease in tax on rented properties. On aggregate this does happen, as can be seen from Table 6 below. The aggregate tax demand for self-occupied properties increases by approximately Rs12-13 million (about 43 - 46 percent of the revenue generated under Tax 0 – see note at the end of Table 6) in the case of Taxes 1 and 2 and

the tax demand on rented and mixed-occupancy properties decreases by the same amount. Because of the capping of large changes under Tax 3, these figures roughly halve at each end.

Table 6: Net impact on aggregate tax demand by occupancy status (Tax i – Tax 0) (in million Rupees)

	Self	Rented	Mixed
Tax 1	12.56	-8.04	-4.52
Tax 2	11.88	-7.94	-3.94
Tax 3	6.95	-4.24	-2.61

Note: The net tax demand (i.e., tax demand after exemptions/rebates) was Rs44 million in our sample, of which Rs27.5 million was from self-occupied properties, Rs10.9 million from rented properties and Rs5.7 million was from properties that were 'mixed (self-occupied and rented). Our sample was of about 40,000 properties from an aggregate of about 3 million properties.

Having noted this effect, it has some accompanying features that suggest that it will not have such a great impact when undertaken as part of an overall reform, especially if Tax 3 (or something close to it) is chosen by policymakers.

1) Because of the large number of self-occupied properties (35,489) relative to rented (2,733) and mixed-occupancy (939) ones, the impact on individual self-occupied properties is relatively small. On average, the tax increase for self-occupied properties under Tax 3 will be Rs196, while the decrease for rented ones will be Rs1,553 and mixed-occupancy ones will be Rs2,778. Even under the uncapped Tax 2, the corresponding figures would be still relatively modest: Rs335, Rs2,904 and Rs4,194 respectively.
2) Because the proposed changes to tax structure affect more than just occupancy status, as can be seen from Table 7 below, a non-trivial proportion of even self-occupied properties will experience a *decrease* in their net demand: 13.6% of them under Tax 1 and 20.2% under Taxes 2 and 3. By the same token, a *majority* (67% - 68%) of rented and mixed-occupancy properties will face an increase in tax demand but for the most part, this will be of less than Rs4,000. For the handful of properties (less than 1%) that would face an increase of more than Rs4,000 under Tax 2, this increase would be capped under Tax 3.

Table 7: Distributional comparison by occupancy status

Δ^i = Tax i – Tax 0	Tax 1 Self (% of all Self)	Tax 1 Rented and Mixed (% of all Rented and Mixed)	Tax 2 Self (% of all Self)	Tax 2 Rented and Mixed (% of all Rented and Mixed)	Tax 3 Self (% of all Self)	Rented and Mixed (% of all Rented and Mixed)
Less than zero	13.6	31.95	20.2	32.6	20.2	32.6
0 – 2000	84.5	67.8	76.3	64.1	76.6	64.2
2000 – 4000	1.5	0.2	2.5	3.24	2.5	3.16
4000 and above	0.4	0.05	0.97	0.08	0.80	0.03
Grand Total	**100.00%**	**100.00%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
***=4000 due to cap**						

The broad conclusions from a comparison of the three taxes are the following:

(1) Under Tax 1, 15.3% of the properties will experience a decrease in their tax liability as determined by Tax 0. This percentage is about 21.4% for Taxes 2 and 3. Restricting attention to properties that are currently taxable, 76.3% of these would receive a tax reduction under Taxes 2 and 3 (a lower, but nonetheless significant 54.6% would receive reductions under Tax 1). A few (total = 12 which constitute 0.04% of those receiving exemptions) of currently "exempted" properties will also receive a tax reduction under Taxes 2 and 3, while under Tax 1, the number would decline to 10. These are all presumably facing partial exemptions under the present system.

(2) Under all three taxes, a very large percentage (between 75% and 83%) of properties will experience a relatively small (Rs0 – Rs2000) increase in tax liability. In each case, these include both currently taxable and at least some of the currently exempted ones. For Tax 3, 18.9% of currently taxable properties and 97.3% of currently exempted properties will experience this level of increase. The latter group consists of small plot owners located in Bands A-E.

(3) A relatively moderate increase of Rs2000-4000 will be experienced by approximately 3.4% of property owners under Taxes 1 and 2, and 2.52% under Tax 3 (2.27% of the taxable group and 2.61% of the exempted group under Tax 3). An increase in tax liability of Rs4000 (or more, under Taxes 1 and 2) will be experienced by a fairly small percentage of the property owners under all three taxes: 0.34% for Tax 1, 0.89% for Tax 2 and 0.73% for Tax 3 – 2.62% for the taxable group under Tax 3.

(4) The three taxes have roughly similar impacts on tax changes based on occupancy status, save for the fact that the large changes in tax demand are ruled out under Tax 3 due to the capping policy.

Of the three versions, Tax 2 is the one that comes closest to best practice based on economic principles. The tax is calculated by dividing a band-specific revenue target by the land area in that

area band. Thus, it is as simple as Tax 1 but has the added advantage that it allows a higher tax rate on properties located in high-end neighbourhoods that benefit from better municipal services and therefore higher land values. In this sense Tax 2 incorporates both of the main rationales which justify property taxation.

The tax eliminates all tax exemptions, bringing in an additional 28204 properties, or 72% of the total rated properties, within the tax net. This spreading of the tax over a very large number of properties allows a reduction in the tax burden for about 21% of the property owners, and for those property owners that experience an increase in tax, the additional tax burden in almost all cases is either small (up to Rs2000) or moderate (between Rs2000 and Rs4000). The tax is excessive (more than Rs4000) for less than 1% of the property owners.

Nonetheless, Tax 2 might involve serious disruptions for some owners either because it leads to large increases in their tax bills, or because they do not hold enough liquidity to afford a sudden imposition of a new tax, or because they own properties in very poor localities where municipal services are correspondingly poorly provided. Tax 3, with its retention of certain exemptions and its caps on large changes might be politically more practical in the short run. But Tax 3 should be seen as a starting point for a process which, by lifting exemptions and removing caps as properties are sold or bequeathed or appreciate by better provision of public amenities, eventually moves the system towards Tax 2. But, with Tax 3 as well as Tax 2, there are some further issues that will need to be considered. These are discussed below.

5. Issues and further ideas for tax reform

In simulating the distributional effects of a tax reform that shifts the tax base to area-based land taxes, we have also included reforms that address some other anomalies affecting the current tax system: large differentials based on occupancy status, treatment of large plots and overly generous exemptions that leave a large proportion of properties out of the tax net. However, there are other considerations that we have not addressed, either because we do not have enough information to address them adequately or because we are not sure if there would be sufficient buy-in from policymakers should we take a firm position on them.

These include the possibility that in conducting our revenue-neutral tax simulations band-by-band, we might be proposing to let better-off owners, both within and across bands, off too lightly and that policymakers might consider setting higher caps on tax increases in high-rated bands, along with exploring ways to tax more valuable plots within each band at a higher rate. There are also the issues of how and whether to tax multistorey buildings on the one hand and vacant plots on the other. Finally, how long should exemptions continue for small plots in Bands F and G? These issues are discussed below.

Band-wise effects and progressive caps

Table 8 below reports the distributional effects of Tax 3 by property band.

Table 8: Distributional comparison by property band for Tax 3 (% of properties in a band)

Property Band	**Gainers**				**Losers**					
	Rs8k to 10k	**Rs4k to Rs8k**	**Rs2k to Rs4k**	**Rs0 to Rs2k**	**Rs0 to Rs0.5k**	**Rs0.5 to Rs1k**	**Rs1kto Rs1.5k**	**Rs1.5k to Rs2k**	**Rs2k to Rs4k**	**Rs4k**
A	10.22	1.96	7.92	21.89	6.56	4.60	4.77	17.29	9.03	15.76
B	5.60	0.65	5.00	15.64	3.84	7.08	11.29	10.64	37.62	2.64
C	3.21	1.02	7.45	8.18	6.84	27.72	34.63	9.61	0.70	0.64
D	1.67	1.42	4.55	12.09	28.75	50.66	0.25	0.09	0.30	0.23
E	0.85	1.14	2.21	15.47	51.13	28.66	0.24	0.08	0.17	0.05
F	0.39	1.16	1.70	19.58	76.01	0.87	0.15	0.07	0.06	0.02
G	0.05	0.29	0.77	19.33	79.45	0.11	0.01	0.00	0.00	0.00
All	1.51	1.01	3.06	15.79	48.58	21.19	3.68	1.93	2.52	0.73

Interestingly, while the lower rated Bands D-G display relatively low incidence of large gains and large losses, the most affluent Band A shows a different pattern: 10.2% of properties in that band receive a tax reduction of 8000-10,000 (the upper limit comes from capping or it would be higher), 15.8% would face an increase capped at Rs4,000, while only 6.6% face an increase of Rs500 or less. The corresponding frequencies for Band F are 0.39%, 0.02% and 76% respectively and for G are 0.05%, 0% and 79.5% respectively.

On the specific issue of properties that benefit from the upper cap on tax increases, Table 9 reports their incidence by band. There are 348 properties that benefit, of these 210, or 60%, belong to Band A alone, and a further 126 (about 36.2%) fall in Bands B-D. The lowest three bands account for only 3.5% of beneficiaries. Indeed, because the caps are imposed in a way that respects overall but not band-wise tax neutrality, Band A ends up with a reduction in its tax demand by the amount -Rs286,595, which is approximately a reduction of 2.5% from its tax demand under Tax 0.

In this sense, a uniform upper cap could be replaced by a sliding scale, with higher rated bands facing a higher upper bound, which is progressively tightened until Band G. Indeed, a similarly progressive scheme could be implemented for the cap on *tax reductions*.

Table 9: Capped properties by property band

	Property Band							
	A	**B**	**C**	**D**	**E**	**F**	**G**	**Total**
Upper Cap (Rs4000)	210	80	26	20	9	2	1	348

Multi-dwelling residential buildings

We now consider the treatment of multi-dwelling residential buildings, in particular multistorey apartment blocks. At one extreme would be the option of treating all dwellings on a given plot of land as a single unit for the purposes of paying property tax. Thus, each dwelling would pay only a share of the assessed land tax. The main justification for this option would be to encourage efficient use of land, as any tax that varies by the number of dwellings is indirectly a tax on improvements.

At the other extreme is the option to treat the floor space of an apartment as a plot of land (whether it is on the ground floor or higher floors), and the dwelling/apartment on that plot of land as a stand-alone unit. The owner of the apartment is then charged a property tax as any other property, which in our case is a land-based tax. This option could be justified on, at least, two grounds: first, that while land is the basis for assessing property tax, the incidence of that tax falls on the owners and/tenants of that land and, therefore, in order to preserve the property that owners/occupiers of equal property (approximated by land-area) bear equal tax, the definition of land has to be expanded to include floor area in the case of multistorey buildings; second, multiple dwellings create multiple demand for public services and thus it is only fair that multiples of the assessed property tax are charged for that plot of land, in proportion to the number of dwellings built on it.

The current property tax on multistorey buildings in Punjab is a variation of the second of these options. The tax is levied on both land and buildings. The land area of each apartment has a value assigned to it, which bears the following relationship with an equivalent land area on the ground floor: 90% of the value of land on the ground floor if the apartment is on the first floor, 80% if the apartment is on the second floor and so forth till the sixth floor, whose equivalent land area is

valued at 40% of the value of land on the ground floor; all equivalent land areas on higher floors are also valued at 40% of the land value on the ground floor. A similar declining scheme applies to covered area.

Under this option of treating each dwelling on a given plot of land as a single unit, information on land area on which the multistorey building is constructed would not be enough to determine property tax; other information, such as, the number of building floors, number of apartments per floor, floor space per apartment, ownership of apartments, etc., would also be required. This information could be collected by the tax department directly using services of tax inspectors or indirectly from the databases of other relevant government departments. Unless there is a mechanism for seamless data access by the tax department from other relevant departments, the services of tax inspectors would be required for recording or verification of the relevant details for tax purposes. Although tax inspectors will have some role in this case, their interaction will likely be limited to the management of the apartment blocks and not extend to individual owners of apartments.

It is understandable that the farther an apartment is from the ground level, the lower its assigned value of land because the market value of apartments may reflect this declining valuation, but a linear decline in value up to the sixth floor (and no change thereafter) may bear little relationship with the ground reality. Yet another interpretation of this linearly declining tax regime is that it is a form of tax incentive for constructing high rise buildings versus building equivalent number of apartments at the ground level, but given the low level of property taxes and the very high land prices in urban areas, the incentive effect of property taxes will make very little difference to the price of the apartments and the decision of an investor.

We have not explored in this paper the distribution implications of a property tax on land versus a tax on both land and buildings for multistorey buildings, but we can safely say that provided we stay with the current treatment of land in multi-storied buildings, the distribution impact of moving from a tax on land and building to a tax on land tax alone would be small. This is because apartments in multi-storied buildings are far more likely to have a closer correlation between land area and covered area than houses/bungalows, and if this correlation is sufficiently strong then a revenue neutral shift in the aggregate from one form of tax to another will have low distributional effect. While houses and bungalows have flexibility in terms of number of floors (typically ranging from 1 – 3 floors, depending on building regulations) and how much of the land area to build on (with greater flexibility for houses with bigger land area), apartments in multi-storied buildings do not have the same flexibility – apartments typically have one floor and there is limited scope for having open spaces (spaces with no roof that are excluded from covered area).

Efficient use of land is discouraged not only by a tax on buildings and structures but also by the existing building regulations. Due to these regulations, typically houses in Punjab do not exceed 2-3 floors. If efficient land use is to be encouraged, then these regulations would have to be relaxed in tandem with tax changes.

Vacant plots

Out of a total of 39161 properties in our sample (after excluding extreme values), 6268 or 16% had a zero entry for covered area, which we take as indicative of vacant plots. Band A has the highest ratio of vacant plots, 28%. Vacant properties generated a total revenue of Rs2.76 million, or 6.3% of the total, under Tax 0. Under our proposal for Tax 3, vacant plots would yield close to Rs6 million, which represents a 216 percent increase in tax yield. This increase is not only the result of shifting to a land tax, but also because Tax 3 brings 5-*marla* properties in Bands B-E into the tax net. Significant proportions of vacant plots in these bands were, in our data, receiving 5-*marla* exemptions.[21]

As for distributional effects, most vacant plots (3413 to be exact) would face an increase in tax liability. These plots are all in Bands A-E, partly because of the effect of bringing 5-*marla* properties into the tax net and partly because Tax 3 represents a more progressive tax structure than Tax 0 (see below).

A small number (597 to be exact) of plots, all but one of them in Bands D-G, would benefit from decreased tax demands. The reason that vacant plots in less affluent bands can benefit from the proposed reform, despite the radical shift in the tax base, is that the relative tax rates calculated under Tax 2 (Tax 3 respects these rates while imposing caps on increases and decreases in individual tax demands) represents a more progressive tax structure than currently in place under Tax 0.[22]

In our simulation, vacant plots of land have been treated identically to built-up land. This could be questioned on the grounds that vacant plots are, by definition, not covered by the public benefits rationale for property taxation and thus taxing them at all seems unfair. However, as argued in an earlier section, vacant plots do benefit from local public services via the appreciation of land values. Thus, the externality effect of public services merits at least some taxation of vacant land.

As noted in the literature review, taxing improvements on land creates an incentive for owners to leave land undeveloped, as they accumulate gains from its appreciation through local externalities. A land tax discourages this sort of speculative behaviour. This is especially salient in economies facing a bubble in land prices combined with housing shortages, as seems to be the case in Pakistan.

An equity-based objection can also be raised against taxing vacant plots: the owners might lack financial wherewithal to build on the land. The counter-argument, from a public policy point of view, is that withholding land from development in the presence of housing shortage creates negative externalities for the rest of society. By inducing owners to offer it to sale to someone who

[21] Apart from Band A, in which no vacant plot receives 5-*marla* exemption, the percentage of vacant plots benefiting from 5-*marla* exemption ranges from 82% in Band C to 90% in B and G.

[22] Under Tax 0, the tax ratio of a square yard of land in Band G to Band A is 0.174:1; Tax 3 would lower this ratio to 0.09:1.

can build on it, a land tax can offset this externality while at the same time alleviating the original owner's liquidity constraint.

Nonetheless, if extracting tax revenues from illiquid owners of vacant plots is considered too drastic a measure or simply unfeasible, a halfway point would be to keep assessing the tax but defer its collection until such a time as the property is sold or passed on in inheritance (Collier *et al.*, 2018). To discourage owners from gaming the system of deferred enforcement, a mark-up in line with the rate at which land values appreciate could be added for each collection cycle over which the tax remains unpaid (see the section below on assessing relative land values).

Tax treatment of Bands F and G

Bands F and G represent the least affluent bands. Although they contain 13,904 or 36%, of 39,161 plots in our sample, they accounted for only 9.8% of taxes levied. This is because of low property valuations and a high proportion of exempted properties (approximately 70%) on grounds of plot size (5-*marla* or less).

Tax 2 treats all properties as taxable. Given the large number of small plot exemptions in Bands F and G, this means that 10,933 properties that lie in these two bands would experience an increase in their tax liability if Tax 2 were actually implemented.

Tax 3 applies the tax rates calculated in Tax 2 but removes from the tax net properties that are receiving exemptions on social grounds, regardless of their band, and those in Bands F and G that are receiving small-plot exemptions. Combined with the capping exercise, only a handful of properties, 569 in total, would see their tax bill rise in these bands and only one property, located in Band F would hit the upper cap in terms of tax increase.

The rationale for restoring small-plot exemptions in the two lowest bands was that these represent localities that benefit very little from public amenities and therefore neither of the two underpinning rationales for property taxes apply very strongly to them. In addition, from a practical point of view, it is unknown how many owners of currently exempt properties would have sufficient liquidity to afford an entirely new levy upon them.

The appropriate policy for these localities could very well be to prioritize their development and bring them in line with D and E, perhaps eventually eliminating the lowest two bands. Political economy, however, suggests that such development is unlikely to be delivered from on high. Citing the famous economist Joseph Schumpeter, Weigel (2020) argues that taxation and public services complement each other in a virtuous circle. Citizens that pay taxes feel entitled and indeed empowered to demand public amenities in return. Without such pressure from below, rulers are unlikely to deliver them.[23]

[23] The slogan "no taxation without representation" captures this symbiosis very well (Weigel, 2020).

Weigel (2020) reports the results of a randomized control trial conducted in Kananga, Congo in 2016. A treatment group of previously unregistered residents were first targeted for registration into paying property taxes and then followed up with in-person appeals by tax collectors to pay their tax on the spot. This not only significantly increased tax compliance by members of the treated group, from 0.1% by control group residents to 11.6% by treated ones, it also raised the latter's civic participation and engagement with local issues compared with the former. From this perspective, the case for exemptions on grounds of deprivation becomes weaker. Authorities might consider implementing a deferred collection system for these cases, along the lines suggested for vacant plots above.

Value-based taxation

One important economic principle that is not incorporated in our proposal is that Tax 2 is area-based, not value-based. Data on land value are not available nor can they be well proxied by capitalizing the annual rental value (ARV) of land/properties as notified by the E&T Department (Abbas *et. al.*, 2023; Wani *et. al.*, 2020). Abbas *et. al.* (2023) consider the current ARV-based valuation system both inappropriate and severely outdated, even relative to valuation data available elsewhere.

Describing the current system as a hybrid, points-based system in which area measurements (which include both land and covered area) are combined with certain other characteristics to assign an ARV to each property, the authors recommend replacing the ARV measure with a capital value one, which they suggest can be obtained from existing data sources. The reason for rejecting ARV is that rental values are hard to impute given the paucity of rented properties in urban Punjab.[24]

As for existing data sources to estimate capital value, Abbas *et al.* (2023) note that the Deputy Commissioner (DC), Lahore, publishes annual area-based property capital value assessments at different localities of the city.[25] These estimates are used for levying non-recurrent property taxes such as stamp duty, sales and capital tax but not for the recurrent property tax. While the authors find via comparison with actual sales data that DC assessments systematically under-estimate market value, they find that they correlate well with sales data in capturing relative values, and argue that DC valuations can be improved by matching them with better-quality data collected by the central Federal Board of Revenue (FBR) for federal tax purposes.

While fixing the measurement and updating of property values would make the existing land+structures system more accurate, the problem of extracting land values from property values which include structures would remain. Nonetheless, as we shall argue below, a shift to a pure land tax based on capital value taxation would be desirable and would not require assessing absolute

[24] In our dataset, only 7% of properties were classified as rented and another roughly 2% were mixed occupancy.

[25] Similar assessments of property values are notified for other cities by the relevant DC offices.

land value and thus could be implemented by recording only a few, relatively fixed, characteristics of each plot.

The reason a capital value basis for a land tax is desirable is that it would obviate the need for classifying properties into discrete bands and, more importantly, it would correct the present implication that all plots belonging to the same band have the same market value per square yard.

The argument that capital value taxation of land does not require knowledge of absolute land value proceeds in three steps.

First, as shown by our revenue neutral calculations, given that a tax authority faces a revenue target, the average tax per square yard of land will simply be the revenue target divided by the total amount of land. In a pure area-based tax system, each plot will pay an amount equal to that tax rate times plot size. In a capital value-based tax system, the tax rate per square yard will vary around the average tax rate, according to the market value of each plot. But allowing for this variation requires information only on relative land values, not absolute ones.

Second, given that urban land is zoned for residential purposes, variations in the market value of such land will primarily depend on its location, a few physical and topographical characteristics and average property values in its surrounding neighbourhood (Planning Tank, 2024)[26]. The contribution of location to its value would in turn depend on proximity to transport infrastructure such as roads, and availability of civic amenities.

Third, changes in locational characteristics are unlikely to take place frequently so the need for frequent updating would be less than when improvements are included in the tax base and thus must be tracked through frequent valuation surveys.[27]

Thus, a baseline survey of property values (which cover both vacant and built-up land) can be used to estimate the marginal contribution of the (few) relevant characteristics of the plot itself that contribute to the overall value of a property, following the methodology of hedonic price regression (Rozen, 1974). Given these estimates, the relative value of different plots of land can be calculated by applying the estimated coefficients associated with each characteristic to each plot's own characteristics. The advantage of working with property characteristics is that it allows more frequent adjustment in relative market values and tax rates without having to wait for the outcome of a fresh property valuation survey. Needless to say, given the observation that changes in plot locational characteristics, although infrequent, can still occur means that comprehensive property valuation surveys will still be needed from time to time.

[26] Average property values would in turn depend on the level and quality of civic amenities generally available in the neighbourhood and the average quality of improvements made on surrounding plots.

[27] A plot might become closer to civic amenities such as street lighting or recreational spalce if urban development leads to an expansion of amenities.

6. Concluding comments

The quality of life in towns and cities are closely associated with the quality of municipal services that are available in these places. These services are typically the responsibility of local governments. Without a well-funded local government, there is little scope for quality provision of these services. Property tax is one of the few own-source revenues for local governments in Pakistan, but it is very poorly exploited. Tapping this source for greater revenue is one of the major challenges as the pressure on local government services increases with increasing population and urbanization.

The revenue generation through property tax in Punjab (as in other provinces in Pakistan) is undermined because of all manner of exemptions. Most of the exemptions are based on property size, but exemptions are allowed on several other grounds as well. The tax is based on rental value of property that takes into account both land and covered area. The tax distinguishes properties based on their locations, size of land and buildings, and occupancy status (self-occupied or rented) or use (commercial or residential). The rate structure is favourable for properties with larger land area and covered area and highly skewed against rented properties.

The various types of distinctions between properties for tax purposes allows tax inspectors with their intimate knowledge of properties in their jurisdiction to collude with property owners in disguising their true values. A land-based property tax suggested in this study for residential properties as an alternative to the present tax has the advantage that it is administratively simple, is transparent, reduces the role of tax inspectors and thus reduces or eliminates the collusive arrangements, removes the distortionary effects of taxing land improvements and also likely to be relatively more progressive if land is unequally distributed, at least after a period of transition during which there can be an unfair distribution of gains and losses, which we show are quite manageable in the context of Punjab.

The tax reform we have considered in this paper is a revenue-neutral land tax. We consider three variations on a land tax and focus on the distributional implications of each. The first of these variants is a hypothetical benchmark (Tax 1) that makes no distinction by property band, rental status or plot size, and removes all tax exemptions. The second variant (Tax 2) retains all the features of Tax 1 but distinguishes properties by area bands and imposes revenue neutrality within each band. This revenue neutrality allows a progressive rate structure with higher tax on properties in higher valued bands. The rate structure also ensures that as a result of the tax reform, there is no cross-subsidization from lower valued bands to higher valued bands. The third variation (Tax 3) is the same as Tax 2 but the increase in tax is capped, all social exemptions that are available under the current tax regime are retained and in addition area-based tax exemptions that are currently available in Bands F and G with relatively poor municipal services, are retained. Furthermore, to retain approximate revenue neutrality, the reduction in tax is also capped.

The distributional impact of the reform is studied based on a sample of about 40,0000 residential properties from a population of about three million residential properties in Punjab that are subject to tax under the Punjab Urban Immovable Property Tax (UIPT).

Our analysis has been focused on the distributional considerations of moving from one tax regime to another, and therefore we restricted ourselves to revenue-neutral tax reform, but the framework of analysis presented in this paper for Tax 1 (with overall revenue-neutrality) can be easily generalized to the case where a higher revenue target is set. The analysis of Tax 2 and Tax 3 that are based on revenue neutrality within property bands will have to be modified, e.g., instead of revenue neutrality, the additional targeted revenue can be apportioned between bands based on the ratio of the revenue raised from each area band; and the appropriate average tax rates can then be calculated for each band.

The distributional analysis provides an insight into the winners and losers of the tax reform. The strongest opposition to the reform can come from property owners who stand to lose the most in terms of additional tax. This is addressed in Tax 3 by capping losses at what appears a reasonable upper bound. Resistance to reform can also come from property owners who are currently tax exempt but would be subject to tax under our proposed reform. Our distribution analysis suggests that for a very large majority of such property owners the additional tax is quite small. However, any tax under the proposed reform may be hard to justify for those small property owners who live in areas with minimal municipal services. Tax 3 takes this into account and exempts small property owners in area Bands F and G. The tax also retains what are regarded as social exemptions because the financial cost of such exemptions is not very high, but optics of removing them are very poor and policymakers may be reluctant to undertake them. To maintain revenue neutrality, the extent of tax reduction is also capped at Rs10000.

A natural question that arises is how our proposed land tax would apply to multi-storied buildings and what would be the distributional implications. The benefit principle of property taxation would suggest that every dwelling/apartment in the building be treated as a stand-alone unit and the floor space of an apartment treated as a plot of land (whether it is on the ground floor or higher floors). The current tax system, broadly speaking, is based on this principle, with both land and covered area subject to taxation. In such a system in which each dwelling is treated as a stand-alone unit, an application of our proposal would replace a tax on land and buildings with a land-tax. We haven't studied the distribution implications of replacing the current tax with a revenue-neutral land-tax for dwellings in apartment blocks, but because there is little scope for leaving open spaces in apartment blocks, we expect a very close correlation between land area and covered area and, therefore, substituting a tax on land and buildings with a revenue-neutral land-tax is unlikely to have any major distributional impact.

One important economic principle which we have not incorporated is that land should be taxed in relation to its value, and not its measured area. We have argued instead that so long as the total revenues to be raised are subject to a target and the tax authority has sufficiently up-to-date information on variations in land value that depend on (fixed) characteristics such as proximity to roads and civic amenities, terrain, etc., a value-based land tax can be mimicked by an area-based one in which (i) the average tax is equal to the revenue target divided by the total land area in the jurisdiction but (ii) individual plot tax rates vary around the average based on these characteristics. Our proposed tax follows step (i) but given a lack of information we were unable to accomplish step (ii) at this point.

The reform we have proposed in this paper provides another perspective to the policymakers as they weigh the transition to an improved system of property taxation. Our reform is another form of a hybrid system that prioritizes taxation of land area, preferably in a way that respects variations in relative land values, over taxation of land and structures. The paper focuses on the costs and benefits of moving to such a system and how to transition to such a system, keeping in mind the political fallout of reform. Of course, given that the outdated valuations on which our proposed taxes are based will eventually have to be dealt with, tax authorities might consider implementing our Tax 3 as an interim measure, until such a time as a new set of valuations is obtained. By shifting to a land basis now, any new valuation exercise will only have to estimate relative land values, which can be done following the lines proposed in the previous section.

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Appendix: Property valuation table, Punjab, 2014

COMMERCIAL

Category		Rented				Self			
		Rate of Land Sq. Yd. (In Rs.)		Rate of Covered Area in Sq. Ft (In Rs.)		Rate of Land Sq. Yd. (In Rs.)		Rate of Covered Area in Sq. Ft (In Rs.)	
		Upto 500	Exceeding 500	Upto 3000	Exceeding 3000	Upto 500	Exceeding 500	Upto 3000	Exceeding 3000
A	Main	120	96	120	96	24	19.20	24	19.20
	Off	96	76.80	96	76.80	19.20	15.36	19.20	15.36
B	Main	80	64	80	64	16	12.80	16	12.80
	Off	64	51.20	64	51.20	12.80	10.24	12.80	10.24
C	Main	56	44.80	56	44.80	11.20	8.96	11.20	8.96
	Off	44.80	35.80	44.80	35.80	8.96	7.17	8.96	7.17
D	Main	40	32	40	32	8	6.40	8	6.40
	Off	32	25.60	32	25.60	6.40	5.12	6.40	5.12
E	Main	30	24	30	24	6.00	4.80	6.00	4.80
	Off	24	19.20	24	19.20	4.80	3.84	4.80	3.84
F	Main	20	16	20	16	4.00	3.20	4.00	3.20
	Off	16	12.80	16	12.80	3.20	2.56	3.20	2.56
G	Main	15	12	15	12	3.00	2.40	3.00	2.40
	Off	12	9.60	12	9.60	2.40	1.92	2.40	1.92

RESIDENTIAL

Category	Rented				Self			
	Rate of Land Sq. Yd. (In Rs.)		Rate of Covered Area in Sq. Ft (In Rs.)		Rate of Land Sq. Yd. (In Rs.)		Rate of Covered Area in Sq. Ft (In Rs.)	
	Upto 500	Exceeding 500	Upto 3000	Exceeding 3000	Upto 500	Exceeding 500	Upto 3000	Exceeding 3000
A	23	18.40	23	18.40	4.60	3.68	4.60	3.68
B	17	13.60	17	13.60	3.40	2.72	3.40	2.72
C	14	11.20	14	11.20	2.80	2.24	2.80	2.24
D	11	8.80	11	8.80	2.20	1.76	2.20	1.76
E	8.20	6.56	8.20	6.56	1.64	1.31	1.64	1.31
F	6.50	5.20	6.50	5.20	1.30	1.04	1.30	1.04
G	4	3.20	4	3.20	0.80	0.64	0.80	0.64