The Opportunity for Land & Property Taxes in Scotland

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Abstract

This paper lays out the efficiency advantages of land and property taxation over other tax instruments, but also discusses the political economy barriers to a large scale change in tax policy towards such taxes. Widespread dissatisfaction with the Council Tax and an apparent openness on the part of the Scottish Government to consider reform of local taxation, presents an opportunity for small steps in the direction of land and property taxes. We evaluate the impact, in terms of the rates required, the distributional changes induced, and the potential constituency that should be in favour, of a revenue neutral switch in taxes. This is conducted in a static, microsimulation framework, with no impacts upon house prices or upon economic activity, which is appropriate for such a small change. The conclusion reached is that such a change is progressive in that it narrows the net equivalised household income distribution, and that the property tax rate required for a revenue neutral change, approximately 0.7%, is such that there are more winners than losers.

Key words: Property tax, land value tax, council tax, optimal tax
JEL Classification: H21, H22, H23, H24, O18, Q15, R14, R21, R31, R51

1. Introduction

The Council Tax was introduced throughout Great Britain[1] in 1993 to replace the Community Charge, also known as the Poll Tax, which had obtained a high degree of political unpopularity. The Council Tax is a charge on residential property, levied at the local authority level and based upon the valuation band the property was assigned to (in Scotland) as of 1st April 1991[2]. The Council Tax is levied upon the occupants of a property rather than the owners. Discounts and exemptions are available for empty properties, second homes and holiday homes, and for single occupancy. Council Tax Reduction is also available, and is paid to poor households[3] to help with their Council Tax bills.

The Council Tax has always been criticised for the relatively low spread of charges between the tax levied on the most and least valuable properties. In Comerford and Eiser (2014) it is shown that an increase in Council Tax rates is regressive in that a uniform rise in the average Band D rate set by local authorities (with corresponding impact upon the other bands) causes an increase in the GINI coefficient of net equivalised household income. This is because Council Tax payments are a larger proportion of household budgets for households in the lower and middle income deciles than they are for those in the upper deciles (even allowing for Council Tax Reduction). In addition to the regressive nature of the Council Tax, the use of 1991 valuations makes the levied charges increasingly arbitrary and unrelated to any rational basis for taxation. It is therefore no surprise that discussions and proposals to reform or replace the Council Tax are a feature of the political landscape.

In Scotland the moves to reform or replace the Council Tax have taken on a more concrete form with The Commission On Local Tax Reform[4] established jointly by the Scottish Government and the Convention of Scottish Local Authorities (COSLA). This body is surveying opinions and evidence on local taxation, which should inform future policy changes. This paper is a contribution to this debate. It in no way tries to be comprehensive on the subject of the philosophy around

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[1] Northern Ireland retained the older domestic rates system.

[2] Newly constructed properties are also assigned a notional 1991 value.

[3] Council Tax Reduction is a passported benefit in that eligibility for DWP benefits triggers eligibility for Council Tax Reduction.

[4] http://localtaxcommission.scot/

local taxation and the (many and varied) structures that such consideration of the issues could imply. For example, the tax could be seen as: a charge for local services; part of redistributive fiscal policy because some level of redistribution is desireable; or as a fee for the monopoly use of a particular location. The level of decentralisation or cross-subsidy and risk-sharing are also an issue that has to be determined. Each rationale, and the particular level of government at which the tax is levied, would imply a particular tax structure. Instead, this paper focuses on the arguments for land and property taxation purely in terms of economic efficiency, and then further looks at the redistributive effect and the balance of winners versus losers from a policy change. The arguments from economic efficiency support the case for such a tax in principle, whilst the distibutional effect of the change is considered purely to assess the political feasibility of the implementation of such a policy.

The paper is structured as follows. Section 2 discusses the economic arguments in favour of land and property taxes in terms of their efficiency enhancing properties[5]. The distributional and political economy arguments are reviewed in Section 3. The considerations in this section moderate considerably the conclusion implied by Section 2 and make the case for a relatively revenue neutral implementation of a land or property tax as a replacement for the Council Tax - indeed moves to reform the Council Tax possibly present a one-time opportunity for the introduction of efficiency enhancing land or property taxes. Such a revenue neutral implementation also makes an analysis of the impact of this policy change easier since it can be legitimately conducted in a static (partial equilibrium) framework. Section 4 conducts these analyses, showing the rates that would be required in order to implement a revenue neutral policy change, and the consequent distributional impacts and political economy calculations. Section 5 concludes.

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[5]Land and property taxes are, in the main, treated together. This is reasonable to the extent that a tax on property values is a tax on land values and vice versa, because the land value contributes to the property value. At times it is important to distinguish between taxes on land or property values, and this will be made clear at that time.

2. The Efficiency Impacts of Land & Property Taxes

A suite of policy interventions is efficiency enhancing if it raises the overall level of economic activity. There are two ways for policy to boost efficiency: by boosting static efficiency and by boosting dynamic efficiency. Static efficiency enhancement refers to using the current inputs to production in such a way as to produce more than under the previous policy regime, whereas dynamic efficiency enhancement refers to boosting the growth rate of productivity and boosting the future stock of inputs to production. This section considers the impact of land and property taxes upon these modes of economic efficiency relative to current policy in which there are some particular features of current taxes which are distortionary, and in which the major part of the tax burden is via labour taxes. If a suite of policy interventions is efficiency enhancing, then it can be expected to benefit average incomes. Naively then, we might expect the democratic process to prioritise efficiency enhancing proposals since, *ceteris paribus*, the average voter (if not the median) should benefit. We consider the distribution of winners and losers, and hence the likely political support for land and property taxes in Section 3.

The case for a shift towards property and land taxation being efficiency enhancing rests upon three main mechanisms which will be considered in turn: (1) the fixed (inelastic) supply of land means that its taxation is not distortionary, and these revenues could be used to reduce other distortionary taxes; (2) the impact of land and property as investment, consumption, and intermediate goods; and (3) the impact of home ownership upon labour mobility.

The fixed supply of land

Perhaps the most obvious difference between land as a factor of production as opposed to labour or capital is that land is simply there: if it is not used then the owner gets nothing, but the land is still there, albeit now unpaid. Labour on the other hand has other things to do (leisure), and capital (whether buildings, physical machinery, or human capital in the form of skills) degrades and depreciates if it is not given the incentive for its futher supply. Land taxes therefore do not affect the supply of land, and to the extent that demand is unaffected, land taxes upon land owners therefore do not affect the rental rates for land. They do of course affect who receives these rents,

diverting some or all of the rents to the state. This therefore affects the private value of land and property, since these values are the capitalised value of future rents that accrue to the owners.

This stylised characterisation of land taxes must be qualified by noticing that the land supply is not perfectly inelastic; as well as the applicability of these arguments to property taxes in addition to land taxes.

The Invariance of Incidence proposition states that the legal incidence of tax liability[6] has no bearing upon the economic incidence[7]. Given a perfectly inelastic supply of land and property, the incidence of tax falls entirely upon the owners rather than upon those who rent their property, irrespective of whether the government charges tax to occupants or to owners. Relative to laissez-faire, levying land tax upon owners does not affect rent levels at all, whereas levying land tax upon renters lowers the rent by the level of the tax. The net of tax rent received by owners, and the gross of tax rent paid by renters is therefore independent of the legal incidence. The economic activity that is undertaken with land is undistorted by levying land taxes, compared with its use under a zero-tax laissez-faire scenario. Levying land taxes relative to no taxes causes large losses to land-owners, but the land continues to be used for the same economic activity, at an unchanged gross rental rate. The loss of spending power by the land owner is a gain in spending power by the government without any direct impact upon the supply of the factors of production. The level of economic activity is unchanged in the land tax scenario relative to the zero-tax laissez-faire scenario.

However, the legal incidence of land taxes falling upon occupants can lead to a system in which land is not supplied inelastically. If there is no occupant, then perhaps the government provides an exemption for this tax bill. This is in effect a description of the current system of land and property taxes. Under Council Tax and Non-Domestic Rates (business rates), second homes, under-occupied homes, unlet business premises, derelict commercially owned land, etc pay less tax than main homes or let premises. Therefore, in contrast to a properly implemented land tax being relatively non-distortionary, the current system of property taxation is distortionary in a way that is damaging to economic activity. There is effectively a tax subsidy to remove land from the market

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[6]Who the government charges the tax to.

[7]Who ends up bearing responsibility for the tax in the taxed equilibrium relative to the laissez-faire equilibrium once prices have adjusted and markets have cleared.

i.e. the current system says to the owners of a valuable and potentially productive asset, that one of the most privately profitable uses of this asset might be to simply not use it. Given that society as a whole could be made better off if this asset was used in production, or if the empty house was used by someone who needed a house, this framework is clearly efficiency destroying. To be efficiency enhancing, a reformed property or land tax should not provide incentives to withdraw land from supply. This can be done by attaching the legal liability to pay the tax to the ownership of the land or property, and making the amount to pay depend upon its market value, with no exemptions for how it is to be used[8].

The clean results above about land taxes being non-distortionary do not apply to property taxes. To the extent that property values are reflective of buildings and structures, they are taxes on reproducible capital which *ceteris paribus* lower the rates of return available on these assets and so distort their supply. However, since land values make up a proportion of the total property value, a property tax is composed of a non-distortionary land tax combined with a distortionary capital tax, and so is not wholly distortionary. Also the current stock of property, like land, is (absent peverse incentives) fairly inelastically supplied and so its current supply is not distorted (static efficiency). The fact that property has low depreciation rates relative to other physical capital[9] further increases its "land-like" characteristics, although of course property is reproducible and so qualitatively differs from land. It seems from this point about distortions that any property tax is sub-optimal. However, in an optimal tax framework, many distortionary taxes will be used. Land tax, being entirely non-distortionary[10], should be used to its fullest extent, but the arguments presented so far do not say nothing about the extent to which taxes should be levied upon buildings and structures. Property taxes, which are composed of land taxes and taxes on buildings and structures, are not precluded by these arguments.

Taxes other than land taxes and lump sum taxes are distortionary, for example the combination of income tax, national insurance, and benefit withdrawal, on top of the extra costs incurred when working like commuting, child care, etc, may cause potential low earners not to seek employment

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[8]Within the class of uses for which it is zoned and therefore upon which the market value is conditional.

[9]See e.g. http://www.bea.gov/national/FA2004/Tablecandtext.pdf

[10]In a static efficiency sense, we come to arguments later in this section which show that land taxes are not entirely non-distortionary with respect to dynamic efficiency.

because they are no better off with a job compared with no job. High marginal rates on high earners are also distortionary in that they can induce activities which have zero social value like tax avoidance and tax evasion. To the extent that a shift in the tax burden towards land is used to reduce distortionary taxes levied in situations like these, we could see an increase in the real effective labour supply and so an increase in economic output from an efficiency enhancing shift towards land taxes.

The examples discussed above are all cases in which land taxes can enhance static efficiency. The case for enhancing dynamic efficiency as much less easy to make on an *a priori* basis. This is because part of the current value of land and property is due to the discounted expected value of some potential high value future use. Current land and property owners may have no use for the land or property in the present, but they may be reluctant to sell to those who do value the land or property for its current highest value use, because they are holding on to realise a potential future higher value from a future higher value activity. Speculatively holding land or property in this manner is akin to buying a call option: the holder obtains the right to use this land or property for some future activity whilst paying today's price; if the future activity proves to be sufficiently valuable, then the option will be exercised. Land and property taxes effectively raise the premium rate for this option, making it more likely that the land or property is brought into current use rather than being held for potential future use. Clearly this may preclude some higher value future uses being realised. Therefore, whilst the case for land (and to a lesser extent, property) taxes promoting static efficiency can be argued on logical grounds, whether or not land and property taxes encourage dynamic efficiency is an empirical question.

Oates and Schwab (1997) examined Pittsburgh's experiment with land taxation in 1979-1980 and found increased building activity. Clearly this result is consistent with both enhanced static and dynamic efficiency in that more land is supplied (increase in static efficiency) which then leads to a higher capital stock after a period of time (possible increase in dynamic efficiency) - though it's impossible to determine whether this increased building activity resulted in the highest value of land use for the land that was brought into production. Banzhaf and Lavery (2010) studied a number of land taxes implemented in cities in Pennsylvania which both increased the supply of

housing and increased density. Given the association between density and productivity in much of urban and spatial economics, associated with agglomeration economies, this is likely evidence of land taxes promoting economic growth (hence increasing dynamic efficiency) through a well known and understood channel.

It's not 100% accurate to say that no land is withdrawn from supply with high land taxes - it would certainly disincentivise land-owners from funding resource and mineral prospecting on their land which could be considered a form of "land creation" - see Gochenour and Caplan (2013). It also disincentivises land-owners from seeking land use re-designations (from agricultural use to residential use say), though it may encourage public bodies to proactively change land use designations in order to realise new revenue streams. And there are extreme hypothetical scenarios which can be constructed in which land taxes inhibit land creation e.g. land construction through building up from the sea-bed would be less profitable with land taxes and would open land taxes to the same critique as is usually levied at capital taxation. The point is though that these are second order effects and, to first order, land taxes can be considered as non-distortionary or at least much less distortionary than labour or capital taxation.

A further concern is the possibility that taxing land taxes the positive spillovers created by other private investment (your land value depends positively upon how attractive your neighbours' land is, and vice versa), and that land taxes may therefore reduce the supply of such investment[11]. Suppose two sites, $i \in \{A, B\}$, H_i is the value of development on site i in the absence of development on the other site, N_i is the additional value (spillover) of development on site i if the other site is developed[12], c_i is the cost of developing on site i, I_i is the initial (pre-development) value of site i, and L_i is the additional value of site i created by development on site j (spillover)[13]. We consider the situations in which there is no land tax (so the value of the land enters the developers' decision problem) and with full land taxes (the land tax is such that the developers have no interest in the land). The payoff matrices are shown in Table 1.

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[11]See Adam Ozimek in http://www.forbes.com/sites/modeledbehavior/2015/03/29/the-problem-with-100-land-value-taxes/ "Real estate developers who move into neighborhoods with high vacancies, low demand, and high crime are often hoping that positive spillovers from their investment will spur additional investments from others, which will in turn make their investment more valuable."

[12]Neighbouring developments affect the best use, and hence the market value, of development on i.

[13]Example taken from

<div align="center">No Land Taxes</div>

<div align="center">Site B</div>

		No Build	Build
Site A	No Build	(I_A, I_B)	$(I_A + L_A, I_B + H_B - c_B)$
	Build	$(I_A + H_A - c_A, I_B + L_B)$	$(I_A + L_A + H_A + N_A - c_A, I_B + L_B + H_B + N_B - c_B)$

<div align="center">With Full Land Taxes</div>

<div align="center">Site B</div>

		No Build	Build
Site A	No Build	$(0, 0)$	$(0, H_B - c_B)$
	Build	$(H_A - c_A, 0)$	$(H_A + N_A - c_A, H_B + N_B - c_B)$

<div align="center">Table 1: Payoff matrices for development with spillovers</div>

It is easily seen that the decisions facing the individual developers of A and B are independent of whether or not there are land taxes: in particular, the conditions for the (No Build, No Build) and (Build, Build) Nash Equilbria to exist are the same irrespective of whether or not there are land taxes[14]. However, the situation that should concern a potential land tax raising public authority is that in which $H_A + N_A - c_A < 0$ and $H_B + N_B - c_B < 0$ but $L_A + L_B + H_A + H_B + N_A + N_B - c_A - c_B > 0$ i.e. no private developer would develop either site in isolation, but if allowed to capture the increment in land values, a private developer would want to develop both sites as a single large development. Land taxes inhibit such development. This therefore is another area which modifies the policy conclusion that land taxes are entirely non-distortionary and should be levied to their fullest extent. However again, relative to the current staus quo this is also a second order issue.

Land & property as investment, consumption & intermediate goods

An efficiency promoting taxation system should not subsidise or tax one investment good relative to another: for example by subsidising investment in houses relative to shares, say. An efficiency promoting taxation system should not change the price of one consumption good relative to another, so as not to distort the choices made by investors or consumers: for example by charging

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http://noahpinionblog.blogspot.ch/2015/03/a-misguided-attack-on-land-value-taxes.html.

[14](No Build, No Build) is a N.E. if $H_i < c_i, \forall i \in \{A, B\}$, and (Build, Build) is a N.E. if $H_i + N_i > c_i, \forall i \in \{A, B\}$.

VAT on many consumer goods, but not housing services. An efficiency promoting taxation system should not tax intermediate goods used in the production of other goods, because this distorts the choice of the combination of inputs that businesses choose in making production decisions.

The current system of property taxation in Scotland and in the UK more widely, subsidises home ownership relative to renting a home. There are various ways in which the system does this including a capital gains tax exemption on a main residence, and no liability to pay tax upon the income that one pays as rent from oneself as tenant, to oneself as owner. To see that these constitute a subsidy, consider the same property either owned by the occupants or rented to different occupants. It could be that ownership relative to renting just changed the timing of paying for the housing services that the property provides (e.g. perhaps ownership is more expensive initially but cheaper later on), in which case there is no subsidy. However, in reality, the government earns more if the property is rented out: receipts of capital gains tax when the non-occupying owner eventually sells; and income tax on some of the rental income that this owner receives whilst in receipt of these rents. A situation in which government income is higher when the property is rented out, can equivalently be viewed as a situation in which government expenditure is higher when the property is owner occupied i.e. the government is paying a subsidy to home owners.

This is a regressive subsidy as it is disproportionately paid to the wealthy who are more likely to own their property. But it also distorts the market by subsidising investment in housing relative to investment in other assets, and this damages efficiency. One way in which it might do this is by shifting the portfolio choices of individuals: for a given level of savings, in the absence of this subsidy, an investor might choose to rent their home and hold these savings in a diversified portfolio of assets; but when home ownership is subsidised, the savings are instead used as the down-payment to obtain a mortgage. This distortion in asset allocation decisions has two obvious costs.

The first is that investors are more likely to put themselves into a leveraged position by taking out a large debt that is fixed in nominal terms and secured against a volatile asset (the value of the property). The gross value of the debt is likely many times the net asset position (e.g. 20 times

for a 95% mortgage). This has macroeconomic consequences by encouraging individuals to behave in a pro-cyclical manner i.e. it increases the correlation between individual behaviour (everyone experiences similar house price movements) such that everyone feels wealthier at the same time (when house prices rise but mortgage debt stays constant) or poorer at the same time (when house prices fall but mortgage debt stays constant). To the extent that consumer spending is related to net wealth, this means that economic activity becomes much more cyclical, with all the costs that come with boom and bust cycles. At the moment the government is subsidising home ownership and could therefore be seen as encouraging these cycles, many may feel that it should instead be taxing home ownership and discouraging these cycles. Similar dynamics pertain for land used for commercial purposes: the cyclical movement of real estate values affects business solvency, and business investment via its use as collateral, all of which adds to the pro-cyclical impact of land values.

The second cost is also related to risk and diversification, but at a less coordinated macroeconomic level. For many locations, especially those with weakly diversified local labour markets (or even a single large local employer), there may be strong correlations between local business activity levels and local house prices. The present value of future wages constitutes a large component of an individual's implicit net worth. An optimal portfolio choice for such an individual is to invest in assets which are not correlated with their future wages, so that when one asset performs badly, the other performs well to provide some compensation. If local business activity falls, perhaps leading to an unemployment event for this individual, then not only are their present value of lifetime earnings damaged, but they also experience strong negative effects from their exposure to local property values. Investing in local property is a particularly bad investment decision in the case of a weakly diversified local labour market. It can be argued that it is irresponsible for government policy to subsidise and encourage such sub-optimal portfolio choices[15].

It may also be the case that a policy framework which subsidies home ownership and hence shifts the composition of household savings towards land and property, crowds out the absolute level of investment in productive capacity for the economy. This need not be the case (when party

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[15]A similar argument pertains against government subsidy of schemes which encourage investment in one's own employer's shares.

A buys land from party B, party B has to do something with the proceeds, perhaps starting a business or building a factory), but it could be the case if those in receipt of funds from the sale of land and property are disproportionately likely to consume rather than to invest. This could be the case if it were the old selling to the young and using the proceeds to fund consumption in retirement. This is the mechanism underlying the argument in Weale (2007) in which rising house prices reduces the need to save for retirement, which reduces overall savings, which lowers the rate of investment in productive capital. Deaton and Laroque (2001) show that this issue arises in a general overlapping generations macroeconomic model: the introduction of land crowds out productive capital formation.

The current tax framework in the UK distorts the consumption bundles that consumers choose by changing the prices of some goods relative to one another via the choice to levy VAT on some goods but not others. In particular, VAT is not charged on the flow of "housing services" that consumers purchase. This differential tax treatment of alternative consumer goods changes relative prices and distorts consumer demand in the direction of housing: house prices are "too high" as a result. To remove this distortion, an equivalent tax should be levied on housing services. This could be done in two ways: one is simply to levy VAT on the buildings component of the value of new-build houses[16], and the other is to levy a tax on the buildings element of the total property value at a rate which charges housing services at the approximate VAT rate[17][18].

Consumers and the household sector should pay some property tax then in addition to land taxes. However this does not apply to businesses. The conditions for production efficiency, see

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[16]This method has the distributional (rather than efficiency) consequence of effectively giving a windfall to existing home owners who acquired their property pre-tax, and which would go onto the property market against new-build properties which would enter the market post-tax.

[17]The rental rate is around 4% - 5% (see http://www.ons.gov.uk/ons/rel/regional-analysis/housing-statistics-portal/housing-summary-measures/rft1.xls: for English & Welsh data, the arithmetic average across local authority districts in 2014 of $12 \times$ median monthly private rent / median house price, is 4.1%. Therefore, if the property value was entirley due to the buildings and structures (zero land value) then the annual rate to be applied to the property value to be equivalent to a VAT rate of 20% is 0.8% - 1.0%. Note however that if the tax on housing services consumption is implemented in this way then, to prevent double taxation, it should really be possible to reclaim the VAT on expenditures on improvements, renovations and maintainance to their properties since the tax due on these will be paid in the property tax.

[18]Taxing the consumption of housing services via a property tax would be expected to lower house prices by eliminating the excess demand caused by the current VAT-induced distortions in consumption decisions. Adding VAT to new-build properties would also reduce demand, but would likely lead to increased prices because the bill for the present value of the flow of taxes on future consumption of housing services would effectively be incorporated into the purchase price.

[Diamond and Mirrlees](1971), require that there be no taxes on intermediate goods[19]. Buildings and structures are an intermediate good into production for a business and should not be taxed. The land taxes reflects efficient, non-distortionary user-charges that businesses should pay for monopoly rights over the use of the land. However, an efficiency promoting tax structure would not tax the buildings and structures component of business premises. This is contrary to current practice: in Scotland business premises currently attract Non-Domestic Rates of 48% of "Rateable Value" (which is an estimate of the market rent at the last valuation date[20]). Since the rental amount will be based on both the land and the buildings that are being rented out, it is clear that the current system taxes intermediate goods. This is inefficient because it distorts the choice of the combination of inputs that businesses choose in making production decisions, and it is also double taxation, in that VAT is then levied upon the final goods output.

Labour mobility & Homeownership Rates

Low (and high) labour mobility is a self-sustaining equilibrium and can be thought of as a circular process: an agent has a potential move, a job offer in another location; if the economy is in a state of low labour mobility then it is likely that the number of potential homes near this new job are relatively low (low mobility means that their current occupants are also less likely to move); but this lack of availability means that the agent is less likely to take up this opportunity, rather they will stay where they are; and this decision to stay itself contributes to a lack of mobility. Low mobility means that people are less likely to do the jobs for which they are most suited because they are more constrained by location. To the extent that they are less productive in the jobs in which they are constrained to stay, this has an economic efficiency cost. A particularly egregious example of such an efficiency loss is where your present state is unemployment, and low mobility means you stay in a location where no jobs are available, see [Blanchflower and Oswald](2013).

High levels of home ownership, and high land values, damage labour mobility. One way it does this is through differential land values. If the entire land value were taxed away, then a home of

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[19]This principle is incorporated into the UK tax system to the extent that VAT paid by a business is reclaimable, and the only VAT that ends up being paid to the government is that paid by final consumers.

[20]Currently 1st April 2010. See https://www.mygov.scot/business-rates-guidance/how-your-rates-are-calculated

equivalent build specification and quality would cost approximately the same, independently of its location. This means that an agent with certain expectations and requirements based on their current home, when offered a better job in a new location (such that the new wage net of land tax is greater than the old wage net of land tax) need not mean much of a change in your housing costs: the sale of the current house should fund the purchase of a new house of approximately the same specification. Without the land component of the property price being taxed away however, property values in productive locations are likely much higher. If the better job offer is in a more productive location, then the sale of the current house does not fund the acquisition of a new house. Comparing like with like, the new wage net of what would have been taken in land tax is greater than the old wage net of what would have been taken in land tax, but this higher wage only allows the more expensive land to be purchased if there are no credit frictions and if capital markets work perfectly. This is not necessarily the case, and if it is not then agents face a trade-off: move to the better job but take an effective pay cut because they cannot replicate the current housing amenity they enjoy; or stay put. Many will stay put, labour mobility has been lowered by differential land values.

Home ownership also damages labour mobility via higher transaction costs. The costs of buying and selling a property (especially when including transactions taxes like the Land and Buildings Transaction Tax in Scotland), whether measured in monetary, time or stress terms, are greater than the costs of exiting and entering rental lease agreements. The benefits of moving therefore don't have to simply be greater than zero, they have to be bigger than some positive value that represents all the moving costs. This can be seen in commuting patterns: according to Oswald (1999), home owners commute more and further than renters, which as well as being a direct cost to the commuter, can also be associated with negative externalities like increased transport congestion and environmental pollution.

The combination of all these mechanisms means that we should expect to see a negative relationship between the level of homeownership and economic performance. Figure 1 shows that this is indeed the case: across countries, high home ownership is associated with poor macroeconomic performance - Spain and Italy have far higher levels of home-ownership than Switzerland or Ger-
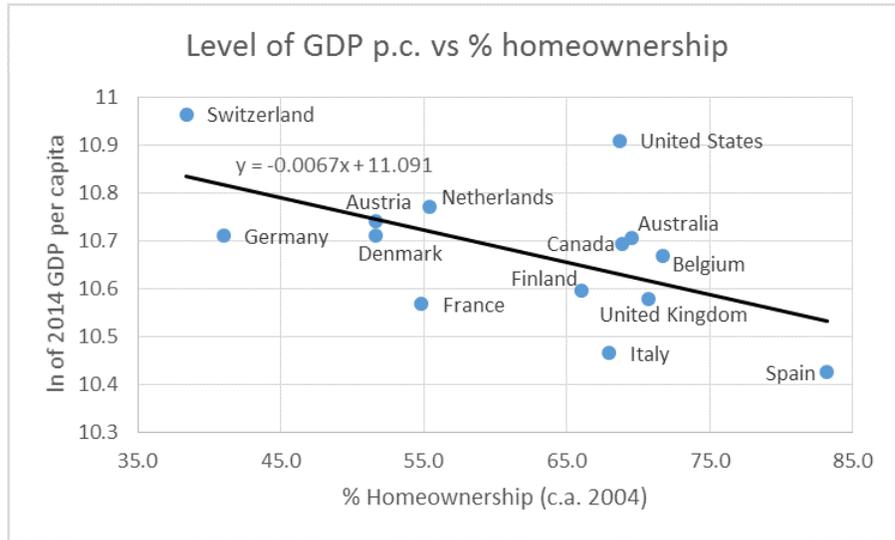
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Figure 1: Scatterplot of ln GDP per capita from OECD, against rate of homeownership from Andrews and Sanchez (2011)

many - with a best fit elasticity that corresponds to a 1% higher rate of home-ownership being associated with a 0.67% lower rate of GDP per capita[21].

Policy Conclusions

This section presented arguments in favour of a shift towards land and property taxes. To promote efficiency, so that the costs of keeping land and property out of supply are high, the legal responsibility to pay these taxes should be upon the owner of the land and property. This would eliminate tax subsidies currently paid to unused land and property. Land taxes should ideally be at a level to tax away much of the private value of land since this is a fairly non-distortionary tax, though there are arguments that say that the entire private value of land should not be taxed away.

Tax subsidies that favour home-ownership, such as the asymmetric treatment of capital gains, and the asymmetric exclusion of rents from taxable income, should be eliminated. Business rates should not include taxes on buildings and structures which are an intermediate good into production, but residential property should attract some tax on the buildings and structures element of the total property value so as to eliminate the tax subsidy towards housing services implied in the

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[21]It also seems to be associated with higher levels of inequality, see Appendix A.

current system which levies VAT on some other consumer goods. The tax treatment of land used for both commercial and residential prurposes should be equalised, but the buildings and structures element of the property tax on commercial and residential property should be different. The Land and Buildings Transactions Tax should be scrapped. Most of these policy conclusions are revenue raising[22] so the revenues could be used to reduce other distortionary taxes. Alternatively public spending could be raised if it is less than its socially optimal level. These conclusions are consistent many of the recommendations made in the volumous analysis undertaken in the Mirrlees Report (see Mirrlees et al. (2010) and Mirrlees et al. (2011)).

The proposal implied by this section can be approximated as: eliminate the Land & Buildings Transaction Tax; introduce Capital Gains Tax on primary dwellings; add imputed rent to taxable income; eliminate business rates on the buildings and structures component of commercial property value, but attach the liability to pay the remaining land tax component of business rates to the land owner and eliminate any and all exemptions; charge a land value tax to the land value associated with residential property at the same rate as in the business rates (currently 48% of rental value); charge a buildings tax to the building value associated with residential property at the same rate as VAT (20% of rental value); attach the liability to pay the combined (land and buildings) residential property tax to the property owner and eliminate any and all exemptions. This translates to an average total property tax to be applied to residential property values of approximately 1.2%[23].

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[22]The exceptions are the elimination of the buildings and structures element of business rates (which had total revenues, much of which will be related to land, of £1,927m in 2013-14) and the elimination of the Land and Buildings Transaction Tax (which replaces the Stamp Duty Land Tax which had revenues of £385m in 2013-14) - see Government Expenditure & Revenues Scotland http://www.gov.scot/Publications/2015/03/1422.

[23]Assume rental rate of 4.5% (following Footnote 17), and land value proportion of total property value of 24% (from Wightman (2010)), then property tax rate of $4.5\% \times (48\% \times 24\% + 20\% \times (1 - 24.2\%)) = 1.2\%$ of the market value of the property. But this is the average tax: properties in areas with high land values would see a tax rate approaching the $4.5\% \times 48\% = 2.2\%$ rate implied by business rates, whereas properties in low land value areas would see a tax rate approaching the $4.5\% \times 20\% = 0.9\%$ implied by VAT.

3. The Distributional Effects and the Political Economy of Reform

The previous section argues that tax reform towards land and property taxes are efficiency enhancing. Therefore a revenue neutral shift in tax policy towards land and property taxes and away from other distortionary taxes should be a positive sum game, which should be supported by the median voter even if it was associated with no redistribution, because we would expect average incomes to be higher under this policy than under the status quo.

Recent figures released by Scottish Government and ONS have shown that the distribution of property wealth (GINI = 0.64[24]) is more unequal than the, already skewed, distribution of income (post tax and transfer GINI = 0.30[25]). Therefore, the median voter should support a revenue neutral shift in tax policy towards land and property taxes[26] and away from labour taxes even if it were associated with no efficiency gains. Given that such a policy is both efficiency enhancing and implements redistribution, it should garner high support.

In steady state, the only people who should prefer the status quo over an alternative with the burden of taxation shifted towards land, are children of the very wealthy for whom the inheritances of land and property outweigh any efficiency losses. But we cannot jump from one steady state to another, and the transition from the status quo to the proposed policy regime, mitigates against its implementation. In particular, a majority of the population[27] are from households who own their own home, and these households will be adversely affected if property values fall. They may benefit on net - in that the present value of their gains from higher future economic growth, from future business cycles that are less extreme, and from more affordable housing in the future, outweighs the losses from the fall in house prices - but the losses will be immediate and the benefits will accrue over time. We know from behavioural economics that such a pattern of immediate certain losses and future expected but uncertain gains is undervalued in reality relative to the value that a rational calculation would put upon it. There may also be adverse macro-economic consequences

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[24]http://www.gov.scot/Publications/2015/03/2333

[25]http://www.gov.scot/Publications/2015/06/7453/23

[26]Or at least towards net wealth taxes: the property wealth GINI relates to the distribution of net wealth such as housing equity rather than gross value of housing that is owned.

[27]According to Eurostat data, see Figure 3 in Appendix A, the homeownership rate in the UK in 2013 was 64.6%.

if households see their gross asset position hit, without any relief on their mortgages. Funding mortgage relief would add a large cost to the implementation of a shift to land taxes, and may prevent this shift being used initially to reduce other taxes (instead the land tax revenue would be needed to repay the bonds that were issued to fund the mortgage relief).

Some parts of the proposal outlined in the previous section can be eliminated quickly on practical grounds: the Scottish Parliament, even under the powers proposed in the Smith Commission and Scotland Bill 2015-16, does not have power over Capital Gains Tax, or the power to change the definition of taxable income. The political economy of the change further mitigates against this proposal: although property ownership is concentrated in net value terms among the wealthy (with a GINI coefficient of 64%), home ownership itself is widespread, which makes the political economy of the implementation of a shift towards land and property taxes difficult.

What then is a practical proposal? The desire to reform the really-not-very-proportional-at-all council tax, provides an opportunity to implement a tax levied in proportion to property wealth which goes part of the way towards the previous proposal. Further aiding this change relative to the full proposal is the fact that it is easier to calculate rates to pay, and it is easier to explain to those being taxed the basis of the taxation, under a flat rate tax on property values. If implemented on a revenue neutral basis, such that the rate is set so that the revenues from the property tax are equal to the current council tax revenues, the political economy in favour of such a policy shift can be maintained. This is demonstrated in the next section.

4. Replacing the Council Tax in Scotland with a Property Tax

This section conducts a quantitative exercise examining the replacement of the Council Tax in Scotland with a Property Tax that is a flat rate applied to the property value. First of all we estimate the distribution of property values in Scotland from recent property transactions data. The distribution is examined at Postcode sector level, to see how property value apparently varies with median household incomes, local authority, and with the number of properties of each council

tax bands that exist in that location. We then impute a property value onto a representative sample of Scottish households in which we can observe household income, local authority and self-reported council tax band. The replacement of the Council Tax with a tax applied to the property value can then be conducted, the distributional impact assessed, and crucially the number of winners from this policy change compared to the number of losers.

Transactions Data: Registers of Scotland

We use a confidential dataset from the Registers of Scotland[28] obtained from the Commission on Local Tax Reform[29], of all house sales in Scotland with "Application Date" between 1st April 2010 and 31st March 2015. This data records the "Consideration price", "House Type" (unallocated, detached, semi-detached, terraced, and flats), and the postcode. There is not enough data within each postcode to make valid inferences of the contribution of each postcode to the sale prices. Instead postcodes are aggregated up to postcode sector level (e.g. G14 9 or EH4 7 etc) of which there are 875 in Scotland[30].

The first step is then to run a simple regression of log house sale values on postcode sectoral dummies, year of sale dummies, and house type dummies. This allows us to generate a variable, $AreaValue$, equal to the predicted value of the log of sale price for a detached house in 2010 in each postcode sector.

$$
\begin{aligned}
\ln Price_i \;=\; & \alpha_0 + \alpha_1 \times year2011_i + \alpha_2 \times year2012_i + \alpha_3 \times year2013_i + \alpha_4 \times year2014_i \\
& + \alpha_5 \times flat_i + \alpha_6 \times semidetached_i + \alpha_7 \times terrace_i + \alpha_8 \times unallocated_i \\
& + \beta_j \times PostcodeSector_{ji} + \epsilon_i, \quad j \in \{1, ..., 874\} \\
AreaValue_j \;=\; & \hat{\alpha}_0 + \hat{\beta}_j
\end{aligned}
$$

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[28] https://www.ros.gov.uk/

[29] www.localtaxcommission.scot

[30] The number of observations (house sales) per postcode sector has mean 416, standard deviation 312, the minimum number of observations in a postcode sector is 1 (but there are also 4 postcode sectors which seem to have had no sales in these 5 years of data), and the maximum number of observations is 1953.

An obvious problem with inferring house values from this simple regression is that the impact of house type may differ in low and high value areas, and the impact of house price changes over time may differ in low and high value areas. To deal with this we drop the 874 postcode dummies and use the $AreaValue$ in a further estimation that allows for interactions between the $AreaValue$ and the other dummy variables.

$$
\begin{aligned}
\ln Price_i \; = \; & \alpha_0 + \alpha_1 \times year2011_i + \alpha_2 \times year2012_i + \alpha_3 \times year2013_i + \alpha_4 \times year2014_i \\
& + \alpha_5 \times flat_i + \alpha_6 \times semidetached_i + \alpha_7 \times terrace_i + \alpha_8 \times unallocated_i \\
& + \alpha_9 \times AreaValue_i + \alpha_{10} \times AreaValue_i * year2011_i + ... \\
& + \alpha_{13} \times AreaValue_i * year2014_i + \alpha_{14} \times AreaValue_i * flat_i + ... \\
& + \alpha_{17} \times AreaValue_i * unallocated_i + \epsilon_i
\end{aligned}
$$

The results are shown in Table 2. The inclusion of the interaction terms does improve the Adjusted R^2 slightly (but only from 0.4913 when interactions are not included to the 0.4939 in Table 2) and we can see that their estimated coefficients are all significant[31].

Housing Stock Data: Scottish Neighbourhood Statistics

This gives a set of coefficients relating postcode sectors and house types to house prices. These can be applied to the data on the entire housing stock in Scotland to estimate the house value distribution. To do this we use data from Scottish Neighbourhood Statistics[32]. This has data on the number of houses of each type (unallocated, detached, semi-detached, terraced, and flats), and of each council tax band (A - H), by datazone. Datazones can also be aggregated up to Postcode sector level. The regression coefficients derived from the Registers of Scotland data are applied to the Scottish Neighbourhood Statistics data to create a house value distribution for the stock of housing in Scotland. The Scottish Neighbourhood Statistics data also directly gives us an estimate

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[31]The 4 unobserved postcode sectors are just given the average coefficient of the observed postcode sectors in the same postcode district.

[32]http://www.sns.gov.uk/

ln Price	Coefficient	t-statistic
year2011	-0.17706	-2.19
year2012	-0.64732	-8.06
year2013	-1.10077	-14.30
year2014	-1.81418	-23.88
flat	-2.73132	-37.96
semidetached	-1.40220	-15.17
terrace	-3.16762	-37.42
unallocated	-0.02169	-0.13
AreaValue	0.80633	121.79
AreaValue * year2011	0.01329	2.02
AreaValue * year2012	0.04976	7.61
AreaValue * year2013	0.08758	13.99
AreaValue * year2014	0.14904	24.12
AreaValue * flat	0.15769	26.99
AreaValue * semidetached	0.07916	10.50
AreaValue * terrace	0.20872	30.23
AreaValue * unallocated	-0.03716	-2.68
const	2.37997	29.24
No. Obs	397,300	
Adj R^2	0.4939	

Table 2: Registers of Scotland Data - Results of regression with interaction terms. AreaValue * 'Dummy' refers to the interaction of the AreaValue variable with the 'Dummy' variable.

of the total council tax liability, shown in Table 3, which also shows that this estimate agrees well with the detailed Council Tax figures from the Scottish Government[33].

The main part of this exercise is to estimate the rate of Property Tax that must be charged in order to replicate the revenues currently obtained from the Council Tax, and to examine the distributional effect and political economy of eliminating the Council Tax and charging a Property Tax at this rate. For this, it is necessary to look at a representative sample of the Scottish population - we use the Understanding Society dataset[34] run through a microsimulation model of Scottish households built using the liam2 platform[35]. This model has been constructed to replicate the income tax, national insurance and Council Tax revenues from Government Expenditure &

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[33]Scottish Local Government Financial Statistics 2013-14: http://www.gov.scot/Resource/0048/00481380.pdf, and Government Expenditure & Revenues Scotland http://www.gov.scot/Publications/2015/03/1422.

[34]https://www.understandingsociety.ac.uk/

[35]http://liam2.plan.be/pages/about.html. Scottish microsimulation model built in conjunction with colleagues David Bell & David Eiser at University of Stirling.

Data Source		No. Dwellings	Council Tax (£bn)
SLGFS 2013-14 (1)	Total Dwellings	2,540,330	
SNS 2013 (2)	Total Dwellings	2,532,119	2.782 (7)
SLGFS 2013-14 (1)	Chargeable Dwellings	2,427,805	2.534
SLGFS 2013-14 (1)	Council Tax Reduction (4)		0.351
SLGFS 2013-14 (1)	Dwellings Exempt (5)	112,525	0.249 (8)
SLGFS 2013-14 (1)	Partial Exemptions (6)		0.202 (9)
	Total Dwellings		2.782
	Council Tax Reduction		0.351
	Council Tax Exemptions		0.450 (10)
SLGFS 2013-14 (1)	Net Council Tax		1.981
GERS 2013-14 (3)	Net Council Tax		1.941

Table 3: Council Tax Data -
(1) Scottish Local Government Financial Statistics
(2) Scottish Neighbourhood Statistics
(3) Government Expenditure & Revenues Scotland
(4) The CRT is a subsidy paid to low income households
(5) 43,137 unoccupied exemptions (unoccupied and unfurnished (first 6 months), undergoing major repair, condemned/due for demolition, householder in care/hospital/prison) and 69,388 occupied exemptions (occupants are students, under 18s, or have severe mental impairments). The SLGFS figure for Total dwellings is the sum of chargeable dwellings and dwellings exempt.
(6) 953,612 properties eligible for 25% discount for single occupancy, 27,879 Second homes, 31,884 Long Term Empty (empty over 6 months) & 2,802 Occupied entirely by disregarded adults
(7) Calculation based on SNS data
(8) Difference between calc figure based on SNS, and SLGFS figure for chargeable dwellings
(9) Difference between SLGFS figure for chargeable dwellings and the sum of SLGFS figures for net council tax and CTR
(10) Sum of dwellings exempt and partial exemptions figures

Revenues Scotland[36] and it then agrees well with the net equivalised household income GINI coefficient reported by the Scottish Government[37]. To conduct our exercise, we need to add property tax calculations to this model.

The first problem in doing this is that property values are not given in the Understanding Society dataset. We do observe household income, Council Tax band, and (because we are using additional confidential information from Understanding Society) local authority. We also have information on whether the household owns or rents their home: 64% of Scottish households in the sample, containing 67% of the adult population, own their home - these figures seem reasonably

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consistent with the 64.6% UK figure from Eurostat. We need to estimate the contribution that income, Council Tax band, and local authority makes to the property value of a household.

First of all we examine how the estimated total property value in each postcode sector in the Scottish Neighbourhood Statistics data, responds to the make up of the housing stock by Council Tax Band. The total property value at postcode sector level[38] is regressed on number of properties in each postcode sector in each council tax band. The results are shown in Table 4.

$$Total\_Property\_Value_i = \alpha_J \times No\_Band\_J_i + \epsilon_i \quad, \quad J \in \{A, ..., H\}$$

Total Property Value	Coefficient	t-statistic
Number in Band A	38,420	7.67
B	56,032	8.06
C	119,276	10.68
D	195,660	11.28
E	209,662	10.85
F	233,048	7.51
G	414,586	12.84
H	1,386,541	11.00
No.Obs	875	
R^2	96.4%	

Table 4: Coefficients can be interpreted as the incremental increase in total property value in a postcode sector as a new property of each band is added i.e. this is an estimate of the average value of property for each CT Band.

We also have median household incomes by postcode sector from the Scottish Neighbourhood Statistics data, and of course we know the local authority of each postcode sector. Therefore as a second stage, we use the results from Table 4 to generate a new predicted property value for each postcode sector, and we regress the log difference between this value and the actual total property value on local authority dummies and on the log deviation of the median income in each postcode sector from the Scottish average. The results of this are shown in Table 5.

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[38]i.e. the empirical house price "data" - the inferred house values derived by imputing the sales data from ROS onto the SNS data.

$$\ln\left(\text{value\_difference}_i\right) = \alpha_0 \times income\_deviation_i + \alpha_j \times LADummy_{ji} + \epsilon_i \quad , \quad j \in \{1, ..., 32\}$$

Representative Sample of Households: Understanding Society

We assign a house value to each household in the Understanding Society dataset by looking at their reported Council Tax band and assigning the value from Table 4, then adjusting this value by the percentages given in Table 5 based on their deviation of net household income[39] from the median, and based upon their local authority. This Implied Value, V_i, is further adjusted using parameters β and γ, to obtain Imputed House Value, H_i, which is distributed over the Understanding Society data such that it has the same mean ($M = £138,381$) and standard deviation ($\Sigma = £79,554$) as the house value distribution of the Scottish Neighbourhood Statistics data.

$$H_i = \beta V_i \exp\left(\gamma \ln\left(\frac{\beta V_i}{M}\right)\right)$$

The parameters required to match the mean and standard deviation from the Scottish Neighbourhood Statistics data, are $\beta = 0.966$ and $\gamma = -0.192$. The Scottish Neighbourhood Statistics data and the distribution of house prices imputed to the Understanding Society data are shown in Figure 2[40].

The total residential property value summed over the Understanding Society dataset for Scotland is $£305.3bn$. This compares with an estimate of total domestic property value of $£316.5bn$ in Wightman (2010)[41], and Net property Wealth in Scotland in 2010-12 from the ONS of $£227.5bn$[42]

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[39]Not net equivalised household income - the assumption is that households spend some proportion of their net income on housing, so larger households which have lower equivalised income for same net income don't cut back in this regard.

[40]We fit a lognormal distribution to the empirical house price "data" (i.e. the inferred house values derived by combining the ROS regression coefficients from Table 2 with the SNS data on postcode sector and house type) by choosing the best fit lognormal parameters to minimise the sum of squared errors between the "actual" and modelled proportion of properties in $£5000$ bins. The derived parameters are $\mu = 11.69$, and $\sigma = 0.53$.

[41]Calculated as "median of each band at 1991 uprated using house price inflation to 2009 values"

[42]http://www.gov.scot/Publications/2015/03/2333

Total Property Value	Coefficient	t-statistic
income deviation	0.107	1.88
Aberdeen City	0.254	8.06
Aberdeenshire	0.188	6.76
Angus	0.061	1.65
Argyll & Bute	0.014	0.41
Clackmannanshire	-0.110	-1.90
Dumfries & Galloway	-0.039	-1.27
Dundee City	0.035	0.85
East Ayrshire	-0.178	-4.97
East Dumbartonshire	-0.110	-2.79
East Lothian	0.136	3.16
East Renfrewshire	-0.102	-2.06
Edinburgh City	0.207	9.35
Eilean Siar	-0.015	-0.24
Falkirk	-0.168	-4.31
Fife	-0.055	-2.14
Glasgow City	-0.201	-9.93
Highland	0.062	2.85
Inverclyde	-0.182	-3.72
Midlothian	0.138	3.03
Moray	0.144	3.43
North Ayrshire	-0.175	-5.09
North Lanarkshire	-0.223	-7.21
Orkney	0.125	1.19
Perth & Kinross	0.002	0.04
Renfrewshire	-0.205	-5.37
Scottish Borders	0.069	1.85
Shetland	-0.164	-1.27
South Ayrshire	-0.172	-3.64
South Lanarkshire	-0.201	-6.52
Stirling	-0.055	-1.12
West Dunbartonshire	-0.205	-4.18
West Lothian	0.007	0.14
No.Obs	875	
R^2	44.25%	

Table 5: Coefficient on income deviation is the elasticity of property value to the variation of income from median, and coefficients on local authorities can be interpreted as percentage change induced by being in each local authority.

(which if grossed up using UK figures for gross property values and aggregate mortgage debt yields a figure for Scotland of £292.6*bn*)[43]. This total property value immediately allows us to determine
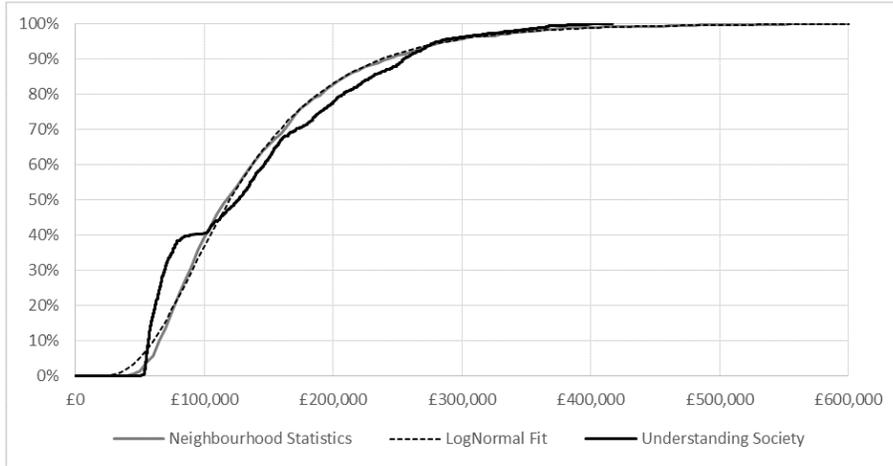
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[43]

Figure 2: The SNS House Value distribution, the best fit lognormal cumulative density to this SNS distribution, and the House Value distribution imputed into the Understanding Society dataset.

Property Tax rates needed to replicate Council Tax revenues. The rate required to replicate the net council tax revenues in 2013-14 of £1.981bn is 0.65%[44], whilst the rate required to replicate the net revenues plus the expenditure on Council Tax Reduction of £2.332bn is 0.76%.

Two offsetting errors make these calculations reasonable. The first error is that the £305.3bn total property value is an underestimate of the total property value (and hence 0.65% is an overestimate of the revenue neutral property tax rate) as there are many fewer households implied by the Understanding Society dataset (2.2m) than there are properties implied by the Scottish Neighbourhoods Statistics dataset (2.5m)[45]. Offsetting this is fact that there is no guarantee that the houses that have been bought and sold over the past five years are representative of the whole housing stock. In particular the methodology adopted will be assigning values from private transactions onto the stock of social housing, so overvaluing this stock, and undervaluing the revenue neutral rate. Detailed work to value the stock of property in 8 local authorities in Scotland was conducted in Leishman (2015). This found that the rate required for a revenue neutral property tax that replaced the council tax is 0.59%. Repeating the calculation above that produced 0.65% for the whole of Scotland, for only these 8 local authorities produces a revenue neutral rate of 0.60%[46]. Therefore we can have some confidence that the results are in the correct region, and

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[44]Appendix B analyses the impact of this by local authority.

[45]The total property value applying the coefficients from Table 2 directly to the Scottish Neighbourhood Statistics housing stock data is £352bn.

[46]See Appendix B.

if anything they very slightly undervalue the stock of housing, so overvalue the rate which must be charged to households. The methodology also implicitly assigns the taxes that should be paid from vacant properties, to the households in the sample. The political economy calculations that follow therefore are a conservative basis for assessing the constituency that should be in favour of this change.

Microsimulation Results

With house values added to the Understanding Society data, the microsimulation model can evaluate a Property Tax. We subtract the council tax liability and add the property tax liability and look at the distributional impact (what is the impact on the net equivalised household income GINI, and 90:10 ratio), and at the percentage of the adult population who come from households that benefit from this change (i.e. see a gain in net equivalised household income) and so can be expected to vote for this policy to be implemented. The results are shown in Table 6.

	Result 1 Straight Switch	Result 2 Accounting for Rented Properties	Result 3 Property Tax Benefit
Prop Tax Rate	0.65%	0.65%	0.71%
ΔNet Revenue £m	0	0	0
ΔHousehold Net Income £m	0	-80	-40
Property Tax Benefit £m	0	0	200
ΔGINI	-0.0	-0.0	-0.2
$\Delta 90 : 10$ ratio	+0.03	+0.03	-0.03
% vote FOR policy	58%	65%	68%

Table 6: Results of imputing property taxes and eliminating Council Taxes

Result 1 shows that charging a property tax rate of 0.65% on the value of property on all properties will replicate the revenues of the current council tax net of exemptions and council tax benefit. The effects upon inequality are small: despite the property tax being a more progressive tax than the Council Tax because of the spead of property values; there are many cases in which the property tax bill is greater than the net council tax bill, especially for low income households in receipt of the council tax reduction. This means that the effect on the GINI coefficient, whilst there is a very small reduction in inequality, is zero to the accuracy that we quote. The effect on the

90:10 ratio also reflects this: despite the small fall in inequality across the net equivalised household income distribution, the ratio of net equivalised household income at the 90-th percentile to that at the 10-th percentile widens because some low income households have seen their local tax bills increase. The policy is popular however with 58% of the voting population from households which see an increase in their net household income.

There is a conceptual problem with Result 1 in terms of its treatment of households who rent their home. As discussed in Section 2, with inelastic supply, the incidence of property taxes falls entirely upon landlords. This means that the rental rates observed in the data are an estimate of the laissez faire rental rates less the net council tax liabilities. When the policy change is implemented, the tenant loses the liability to pay their net council tax, and the landlord gains the liability to pay the property tax. We would therefore expect rents to rise by the net council tax liability. Result 2 implements this. The 36% of households (with 33% of the electorate) who rent their home see no change in their net household income relative to the Base council tax result (though we claim that they support the policy change because of its wider benefits[47]). To the extent that rented properties are less valuable on average than the owner-occupied stock, landlords benefit from the previous net council taxes (whose economic incidence fell on the landlords) being greater than the new property tax (whose economic incidence also falls on landlords). Landlords implicitly benefit by £80m when comparing Result 2 to Result 1 and so total household income is actually lower in Result 2 than in the base Council Tax result and in Result 1[48]. Despite this, the policy is even more popular than in Result 1, with 48% of the electorate from owner-occupied housing, representing 32% of the total electorate, supporting it, for a total constituency in favour of 65%. Result 2 attracts more support than Result 1 because those renting households who have a property that

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[47]As discussed in the Conclusions, the policy change is associated with several medium term changes which benefit renting households: the reduction in demand (caused by e.g. the removal of the Single Person Discount in the Council Tax framework which currently provides an incentive to underuse property), and increase in supply (caused by e.g. the elimination of tax relief on rental voids, second homes, and vacant properties), should lower rental rates; and increased levels of economic activity imply higher incomes for these renting households. Another reason for claiming that these households support the change is the fact that the supply of property is not perfectly inelastic, but the change from Council Tax to Property Tax should make it more so. This means that more of the incidence of the Council Tax falls on renters than does the incidence of the Property Tax, and so net incomes for renting households should be slightly higher as supply moves from "pretty inelastic" to "very inelastic".

[48]For a fair comparison, this £80m should really be redistributed to households - but it is not clear how to do this. Simply lowering the rate would implicity redistribute in propertion to property wealth i.e. many households in the middle of the distribution would be given extra income when in fact it should only be those households who own buy-to-let property or shares in housing companies that should benefit.

attracts a property tax liability greater than their net council tax liability now also support the policy change.

There remain many low income households who lose out from this change though. It is perfectly feasible to maintain a system of benefits to low income households in conjunction with a property tax[49]. Result 3 pays homeowners the minimum of the previous entitlement to Council Tax Reduction and the new Property Tax liability[50]. Property Tax rates have to go up to 0.71% to pay for this benefit[51]. This Property Tax Benefit is much lower, at approximately £200m, than the £351m Council Tax Reduction, because it is not paid to tenants and it is reduced for those claimants with a property tax liability less than their council tax liability. Maintaining the low income benefits associated with the council tax in conjunction with the property tax, highlights the property tax's progressivity. The GINI coefficient falls in Result 3 relative to the Base Council Tax result, by 0.2 - in the context of the analysis of Comerford and Eiser (2014), this is a substantial decrease in inequality for a revenue neutral tax change: equivalent to that which was found to be induced by raising the upper rate of income tax by 3%[52]. The 90:10 ratio also falls. With low income owner-occupied households now behind the policy change, support rises to 68%, including now a majority of adults from home-owning households.

As can be seen from these results, a revenue neutral policy change from council tax to a property tax, likely makes the majority of the population better off and so can be expected to gain support.

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[49]Though it should be designed carefully so as not to incentivise consumption of housing over other goods by changing relative prices and so replicating some of the flaws of the current system. In particular, minimally-distortonary low income benefits should be financially means-tested lump sum benefits, with the recipients free to spend the proceeds however they choose. This is not the scheme modelled here - which looks distortionary and sub-optimal, but is merely used to illustrate the progressivity of the property tax on a more equal footing with the Council Tax.

[50]We maintain the assumption from Result 2 that renting households see no change in their net income. Note that the Invariance of Incidence proposition and the inelastic supply of property implies that Council Tax Reduction to renting households is purely a subsidy to owners.

[51]Which reduces the landlord gain from net council tax liability ¿ property tax liability for rented properties to £40m.

[52]See Comerford and Eiser (2014), Table 3: with "Behavioural Effect", a 1p rise in the Upper Rate lowers the GINI coefficient by 0.068.

5. Conclusion

This paper has outlined the arguments in favour of land and property taxes in terms of their ability to promote economic activity and growth. A distributional analysis is then conducted to show that a revenue neutral replacement of the council tax with such an efficiency enhancing property tax, which requires an annual tax rate of approximately 0.7% of the market value of the property, is a progressive, inequality reducing policy, that passes the political economy test of creating more winners than it does losers. This is therefore a rare opportunity, in the face of widespread homeownership which mitigates against this policy, to make such a change.

In the medium term, such a policy change will have effects that go beyond the static analysis conducted here. In particular, we can expect effects upon house prices, economic activity, and homeownership rates. Since the policy is revenue neutral, no aggregate change in the tax on residential property is implied. But the policy does come with distributional changes in where this tax burden falls: with gains to occupied and fully-used property because more of the tax burden falls upon vacant and under-used property; and gains to households in low value property and consequently a greater burden upon high value property.

At the margin, the policy change is likely to be associated with falls in house prices. However, the reveneue neutral implementation of the policy means that this is likely to be a small effect. Rosenthal (1999) estimated that the removal of the old rates system in the UK, and its replacement with the Poll Tax (a lump sum tax), may have increased house prices by around 15%. The policy proposed here on the other hand, is to replace one property tax with another in a revenue neutral manner, which should not be accompanied by house price impacts. However, to the extent that the proposed property tax is a "better" (and more transparent) tax on property, and removes a tax that was becoming increasingly arbitrary, we can expect house price falls at the aggregate level. The demand reducing (removal of incentives to under-use property) and supply increasing (increased costs not not supplying) properties of the property tax also contribute to rent and house price falls[53]. So long as the policy passes the political economy test, these rent and price falls are

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[53]Reduced demand and increased supply means we expect that rent falls in the medium term: this helps justify the support assumed (Table 6, Results 2 & 3) from the renting population, who are unaffected by the policy in the static analysis.

again a feature and not a bug, and will increase average well-being (though obviously they are a cost for some households because they change wealth endowments).

And the policy does pass the political economy test. It would not cause all property values to fall, at least in the short-run: currently a particular property attracts council tax and its value would only fall in the short-run if the property tax charge were higher than the council tax charge. The political economy calculation conducted in Section 4 is valid therefore: sufficient properties are associated with tax cuts that we would not expect to see immediate house price falls at the lower end of the market - these property owners can genuinely expect to benefit from the tax change[54] and so should rationally support the replacement of the council tax with a property tax.

Further mitigating any house price falls is the higher levels of economic activity that the increased supply of land and property should bring. This should increase incomes[55] and hence demand for housing, which provides support to house prices. In the long run, although we can say that housing should make up a lower proportion of aggregate wealth, we are unable to say whether the absolute value of the housing stock will be lower or higher, as it depends upon these growth effects.

Despite this policy more effectively taxing the consumption of housing services, and so reducing the distortions that currently push up demand for housing, it is not the case that this policy will necessarily be accompanied by a fall in the homeownership ratio. This policy does nothing to mitigate the subsidies that are given to owner-occupiers rather than buy-to-letters or property companies[56]. And this policy may even increases costs for buy-to-letters and property companies whilst not increasing costs for owner-occupiers, because rented properties are more likely to suffer vacancies, and so attract tax relief under council tax but not under property tax. Some of the the owners of currently rented properties may therefore choose to sell and shift their portfolio to other assets (and as discussed, shifting the composition of investment away from the secondary housing market is a feature, not a bug, of such a policy). However, if these sellers sell to previously renting

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[54]Though their house price growth in future may be muted by the "adverse" supply and demand dynamics induced.

[55]Increased incomes helps justify the support assumed (Table 6, Results 2 & 3) from the renting population, who are unaffected by the policy in the static analysis.

[56]Eliminating these subsidies requires levying Capital Gains Tax on primary residences, and adding imputed rents to taxable income.

households, then the policy could even be associated with an increase in homeownership rates.

The introduction of such a property tax in place of the council tax, given a fixed rate for the property tax, gives homeowners a stake in lower property values via their desire for lower tax bills[57]. This may, at the margin, reduce the constituency that resists further land and property taxes, and so ease the political economy constraints for future moves in the direction of the full policy proposal implied by Section 2 with consequent future efficiency gains and growth effects.

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[57]And makes the property tax an automatic stabiliser and so an instrument of countercyclical policy.

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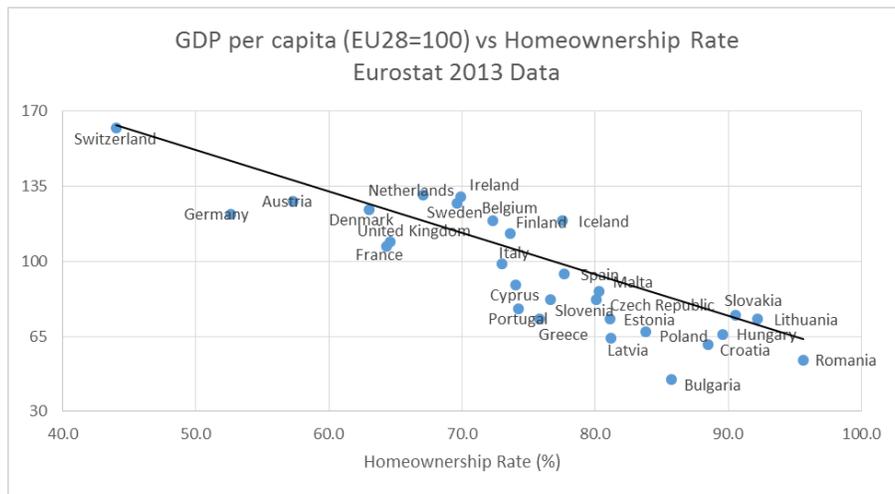# A. Appendix: More Home-ownership Graphs

Figure 3: Scatterplot of GDP per capita, against rate of homeownership from Eurostat. Though this has more up to date data, it was not used in main text because of the suspicion that the negative relationship is driven by high homeownership in former communist eastern Europe.
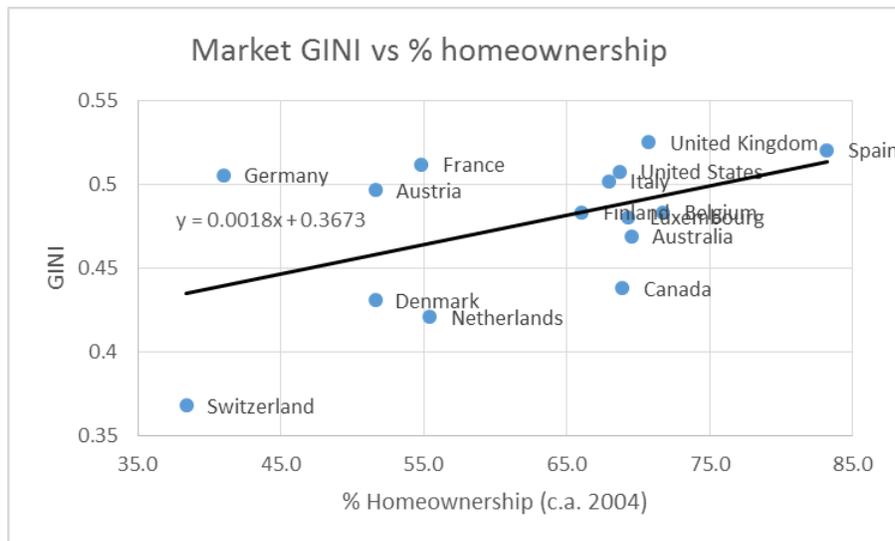

Figure 4: Scatterplot of Market GINI coefficient from OECD, against rate of homeownership from Andrews and Sanchez (2011)
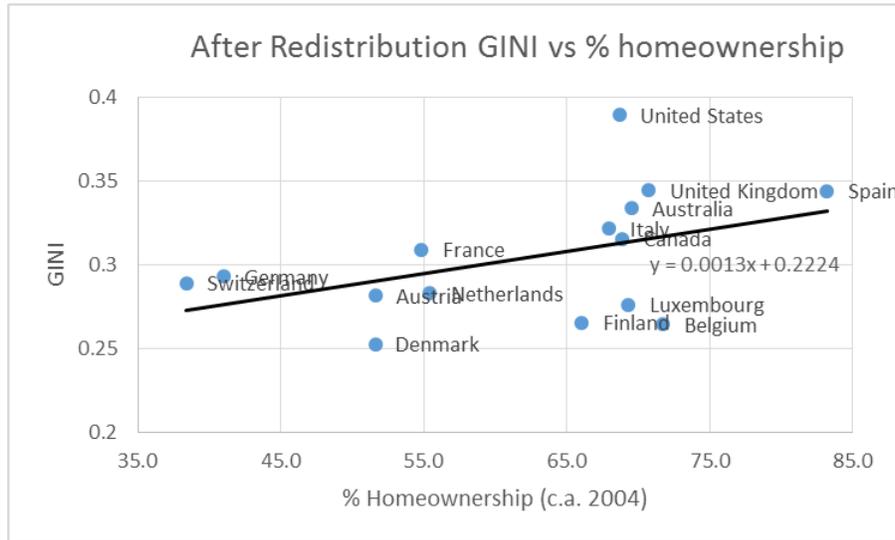
Figure 5: Scatterplot of After Tax & Transfers GINI coefficient from OECD, against rate of homeownership from Andrews and Sanchez (2011)

B. Appendix: Impact across Local Authorities

The Scottish Local Government Financial Statistics 2013-14 report[58] provides net Council Tax income by local authority. We can use the Scottish Neighbourhood Statistics data to split the property tax revenues, obtained through the revenue neutral rate of 0.65%, by local authority. Table 7 shows the impact of the tax change across local authority areas.

Table 7 shows that a property tax set at a uniform rate across Scotland, whilst being revenue neutral relative to the council tax across Scotland, causes large changes in local authority revenues from these taxes. Residents of areas where properties are valued more (less) highly than the current council tax would imply, find themselves over (under) funded relative to the council tax. To avoid providing incentives for local authorities with valuable (cheaper) housing stock to put rates down (up), the grant funding element of local authority finance would have to be altered along with this tax change. This is consistent with current practice in which a mechanism is in place to equalise out changes in the tax base[59].

Table 8 restricts this local authority view to only those 8 local authorities considered by Leishman (2015) and shows that the revenue neutral rate only considering these local authorities is

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[58] http://www.gov.scot/Resource/0048/00481380.pdf

[59] Annex   B   of   http://www.gov.scot/Topics/Government/local-government/17999/11203/LocalGovernmentFinance states that assumed council tax is part of the funding that is taken into account when allocating grant funding.

Local Authority	Council Tax (£m)	Property Tax (£m) at 0.65%	Tax Change
Aberdeen City	102.7	133.1	30%
Aberdeenshire	113.3	118.4	4%
Angus	41.4	54.9	33%
Argyll & Bute	42.1	43.5	3%
Clackmannanshire	18.1	23.4	29%
Dumfries & Galloway	54.8	58.7	7%
Dundee City	46.5	38.3	-18%
East Ayrshire	39.6	35.7	-10%
East Dumbartonshire	47.1	56.1	19%
East Lothian	41.6	54.3	31%
East Renfrewshire	40.9	53.2	30%
Edinburgh City	208.1	295.1	42%
Eilean Siar	9.1	8.5	-6%
Falkirk	51.9	50.9	-2%
Fife	131.3	116.4	-11%
Glasgow City	182.1	173.7	-5%
Highland	99.1	99.0	-0%
Inverclyde	26.5	22.7	-14%
Midlothian	33.4	34.4	3%
Moray	34.5	32.9	-5%
North Ayrshire	45.8	35.7	-22%
North Lanarkshire	97.8	72.2	-26%
Orkney Islands	7.6	7.9	4%
Perth & Kinross	67.1	60.0	-11%
Renfrewshire	63.5	45.7	-28%
Scottish Borders	45.2	38.9	-14%
Shetland Islands	8.3	6.5	-22%
South Ayrshire	45.3	33.7	-25%
South Lanarkshire	108.3	89.7	-17%
Stirling	40.1	28.3	-29%
West Dumbartonshire	29.4	22.2	-24%
West Lothian	58.3	36.7	-37%

Table 7: Estimated impact upon Local Authorities

0.60%.

Local Authority	Council Tax ($£m$)	Property Tax ($£m$) at 0.60%
Aberdeenshire	113.3	109.9
Argyll & Bute	42.1	40.4
Dumfries & Galloway	54.8	54.5
Dundee City	46.5	35.6
Edinburgh City	208.1	274.1
Fife	131.3	108.1
Inverclyde	26.5	21.1
Renfrewshire	63.5	42.4

Table 8: Estimated impact upon 8 Local Authorities