

Land Value Taxation in Conway New Hampshire:
A Simulation of Distributional and Spatial Impacts

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Research Question:

How would switching from property taxation to land value taxation impact distributional tax levies and spatial development in Conway NH?¹

Introduction

Over the last two years, inflation has ticked up to its highest rate since the 1970s, with the yearly CPI averaging an 8+% year-over-year increase from 2021-2022 (Bernanke, 2022). While the Covid-19 pandemic, war in Ukraine, and global supply chain breakdowns have all contributed to this rising price level, these factors bear little blame for the surge in housing prices. And as of November 2022, inflation in housing prices, both mortgage, and rental, made up 32.7% of CPI rise (Moore 2022). Much of the surge in housing prices, both rental and mortgage, began in the years before the pandemic. By 2018, 47 percent of American renters were rent-burdened², while record amounts of prospective homebuyers reported pushing off their purchases due to unaffordability (Lowrey 2022). Lawmakers, activists, and policy researchers have proposed several structural remedies to the problem of housing affordability; these include (but are not limited to) expanded tenant rights, zoning liberalization, and expanded social housing development. While all these policy measures are worth exploring, this paper will instead focus on taxation, evaluating the possible costs and benefits of switching from a property taxation model (PT) to a land value taxation model (LVT).

¹ 'spatial impact' refers to property development rates and 'distributional impact' refers to the distributional impact of tax burden.

² The Federal Reserve defines 'rent-burden' as "spending more than 30% of income on housing"

While this paper specifically simulates land-use economic models in Conway New Hampshire, scholarly research, and academic work from outside the United States nonetheless informs the optimal design and modeling of land value taxation. Due to the lack of historical U.S. cases of LVT implementation, there have been few academic studies on American LVT impacts using contemporary econometric methods (Cohen and Fedele, 2017). This leads to a natural reliance on the few existing simulation studies and analyses from outside the U.S.

Discussing the realities of the American housing market in plain terms proves essential to contextualizing the political economy of land (and hopefully disentangling notions of land and ‘land improvements’). As mentioned earlier, housing has become exceedingly unaffordable for most Americans who do not own a fixed-rate mortgage. Whereas just about 1/3 of American renter households spent >30% of their income on housing in the 1960s, today over 50% of renters spent more than 30% of their income on housing (Molloy 2018). Likewise, 25% of mortgage owners now spend more than 30% of their income on housing, versus just 20% of mortgage owners in the 1960s (Ibid). Among the impacts presented by this long-term trend is an increase in displacement rates across the population. In expensive urban areas such as San Francisco, Boston, and New York City, where housing costs have increased by as much as 50% families across the income bracket are increasingly fleeing their communities in pursuit of affordable housing, thus eroding what associative bonds remain in contemporary society. Beyond separating families, rising housing costs likely contribute to the growing American ‘loneliness crisis’ by isolating individuals from friends and grounding connections (Caliyurt, 2022). The rising cost of housing also increases the homelessness rate, causing both a great deal of human suffering and a more general breakdown in the social order (Ibid). Furthermore, the opportunity

cost presented by housing price increases is vast. Few personal expenditures contribute less to the real productive economy than housing.³

A plethora of research points to constraints on housing supply as the primary culprit for skyrocketing housing costs, especially in urban areas (Sclar et. al.) Thus, much of the research on policy solutions to the housing crisis focuses on means of making new housing construction easier, namely zoning reform. While this research is important, zoning is not a panacea: other structural changes to the economic governance of housing and land ought to be explored. The taxation of housing, while playing a pivotal role in housing supply changes, often goes unexamined in academic discourse. Beyond impacting the housing supply, the taxation of land and property shapes the political economy of our society, informing everything from development patterns to municipal financing.

Since the 1940s, the American built environment has increasingly trended towards urban sprawl. Most construction and population growth has occurred via the expansion and creation of suburbs and ‘effective suburbs’ – urban areas with low population density. This development pattern, while somewhat reflective of ‘individual preferences’, is broadly shaped by not only zoning and housing policy but also taxation schema. Furthermore, the suburbanization of the American landscape devastates environmental stability and general quality of life. The car-centric mode of suburban development directly induces higher rates of co2 emissions which both pollute the air and exacerbate climate change. Sprawling development, by extending the built environment, especially in the form of roads and parking lots, encroaches on ecological preserves, thus threatening biodiversity and ecological stability. Sprawled living is also

³ This is due to land (not property) costs. The literature review will explore this further.

associated with decreased energy efficiency, increased traffic congestion, and commute times (Beghelli, Guastella, and Pareglio 2019). Thus, crafting tax schema that disincentives urban sprawl becomes ought to be a social and environmental imperative.

Literature Review

Perspectives on General Taxation

Labor economist Stephen Smith defines taxes as “compulsory payments, exacted by the state, that do not confer any direct individual entitlement to specific goods or services in return”, contrasting taxes with those fees, charges, or pricing schemes that the state operates through voluntary means (Smith 2015). For example, while a government may raise revenue by selling bonds or operating a state-owned enterprise, these behaviors rely on voluntary buy-in rather than formalized compulsion, thus contrasting them from taxation. Although the nature of democratic rule complicates this distinction, it nonetheless proves relevant to discussions of land-use policy which tends to distinguish the state taxation of land or property from the state-facilitated sale or rental of property. Contemporary narratives of taxation history tend to argue that while nearly all pre-modern⁴ governments taxed their population to some extent, before the industrial revolution tax obligations were typically minuscule by modern standards, with few pre-modern states ever taxing more than 5% of GDP (Kiser and Karceski, 2017). However, fundamental changes in socio-economic arrangements reduce the accuracy of applying modern economic statistics such as GDP to pre-modern societies. Although premodern states often lacked the bureaucratic heft to legislate, calculate, and administer taxation on the modern scale, nearly every pre-modern

⁴ Definitions vary, but a conservative cut-off year would be 1500.

society, even many of those lacking a formalized state, maintained compulsory taxation (Smith, 2015). Furthermore, many pre-modern states were, albeit temporarily, nonetheless successful at creating broad and accurate taxation regimes. This paper will later examine tax policy in 10th-11th century England as a prime example of pre-modern taxation bureaucracy. Recent scholarship suggests that the demand for taxation often created the mechanisms for the enforcement and administration of taxation, rather than the other way around. For example, ancient Incan society, which lacked written language and formalized currency, nonetheless maintained a complex taxation structure levied on natural resources such as gold silver, and cocoa (Yeakel 1983). These early taxation schemes in ancient societies tended to collect taxes 'in-kind' rather than via currency obligations, demanding a share of labor or resource production (Smith, 2015).

Pre-modern societies, while oftentimes (and like modern societies) tyrannical and arbitrary, did not merely justify taxation through some vague notion of absolutist right-to-power. Rather, theories of state legitimacy, communal obligation, and public goods, which scholars often credit as constructs of modernity, undergirded premodern tax schema (Wareham 2011). More pointedly, political, and philosophical debates shaped taxation policy long before the emergence of the modern state. In 877 the Frankish crown alienated elite landholders by introducing a variable land tax that exempted the peasantry and in the 990s, King Aethelred II of England established a general tax on land to finance military operations without threatening church holdings (Ibid). Wareham argues that the Anglo-Saxon adoption of land taxes is best understood as defense financing. This land tax was neither constant nor stable, fluctuating wildly between periods of war and peace. Nonetheless, defense spending, especially in the case of 10th century Anglo-Saxon England, which overwhelmingly financed defense rather than conquest, satisfies

Benthamite criteria of general welfare promotion (Schofield 2009). Thus, Aethelred II's land tax shares some philosophical DNA (so to speak) with the later land value tax of Georgist thought.

Beyond raising revenue for state activity, taxes serve the purpose of directing social behavior and defining property. At the most basic level, sin taxes such as those levied on cigarettes or alcohol seek to dissuade the public from engaging in behaviors that the state deems detrimental to their health. On a deeper level, taxation defines political-economic activity and the legal structure of modern societies. By taxing a particular form of labor, capital, or land, the state legitimizes said product, placing it within the domain of public protection from violence or seizure (Murphy and Nagel 2007). Private property, which is a legal convention, "is defined in part by the tax system... therefore, the tax system cannot be evaluated by looking at its impact on private property, conceived as something that has independent existence and validity" (Ibid). By taxing a thing⁵, a polity legitimizes it, regulates it, and brings it within the legal structure of property rights; even those things which are tax-exempt are explicitly clarified as such. Likewise, taxation serves to monitor and enforce notions of 'private property' – the common trope of prosecutors indicting mafiosos on tax avoidance charges exists because, to put it mildly, one tends not to pay taxes on criminal activity. Property taxation defines what property is private – the state generally does not pay property taxes on its own land (Swain, 2000). Comprehensively evaluating taxation policy thus requires a partial rejection of the post-war liberal consensus which restricts taxes to a simple technocratic layer of society. **Further, because taxation helps to both restrict and establish private property, evaluating the optimal social distribution of private and public property becomes essential to theorizing and implementing taxes.**

⁵ This usage of 'thing' is intentionally vague – services, labor, goods, land of all shades can fill this definition.

Murphy and Nagel's philosophical framework, which situates taxation at the center of property theory, will prove crucial to this paper's analysis of property and land taxation.

Land as property

Attempting to define private property remains orthogonal to the goals of this paper. Even if an easy definition existed (and it does not), property -- in terms of use, ownership, and rent -- exists across a spectrum of open access to full exclusion (Heller 1999). Further, states extracted tax revenues from property for millennia before the modern liberal notion of private property emerged. Analyzing the emergence of private land as overlapping with, but distinct from private property thus proves more relevant to the comparative analysis of property and land-value-taxation. While sometimes overlapping, legal, social, and economic conceptions of land and property are not mutually inclusive (Burrow et. al. 2018). More specifically, the emergence of private property often precedes that of private land – oftentimes the former emerges without the latter. Recent scholarship indicates that many of the earliest human societies upheld personal property while foregoing any land privatization. Although the “right to own land is squarely embedded in the Western liberal idea of the sanctity of private property”, much of the land in Western Europe remained at least somewhat communally operated into the 18th and early 19th centuries (Mei, 2011).

Adam Smith and John Stuart Mill, two of the foremost theorists of liberalism both made a clear economic distinction between capital profits and land rents (Dwyer 2014). Mill argued that while private profits are justified by productive contributions to society, economic returns on landowning are “unjust” because “no man made the land. It is the original inheritance of the

whole species” (Mei, 2011). Thus, even with the liberal tradition, distinctions between the philosophical nature of land and property ownership exist. In *Progress and Poverty* (1879), Henry George further breaks down the land-property relationship by distinguishing the legal control of land from the economic ownership of land. Before diving into a comprehensive analysis of Georgist economic philosophy, which distinguished legal control of land from economic ownership of land, it remains important to note that even more traditional notions of communal land ownership persist into modernity. Western Narratives of liberal hegemony, which typically paper over the diverse array of human social arrangements, ignore widespread contemporary communal land ownership and use, typifying land privatization as inherent to urbanization and modernization. In Ghana, nearly 80 percent of land, urban and rural remains a common holding in non-commodity terms (Obeng-Odoom 2015). ‘Heterodox’ and traditional arrangements of land management such as the Singaporean model of state control or Ghanaian indigenous social housing both efficiently stimulate local economic development (Ibid).

Land Taxation Versus Property Taxation

The property tax as we understand it today exists as a product of the late 18th century. As this paper has already mentioned, the taxation of land and natural resources dates back millennia, likewise, states have been taxing the ownership and construction of buildings for centuries. However, efforts to comprehensively tax the appraised value of a piece of property, including some combination of market value and productive output, only began in the last 250 years. Early land taxes often taxed land by quantity, not value. For example, the previously cited land tax of Anglo-Saxon England during the reign of Aethelred the Unready taxed land at the uniform rate of 12 dinars per 120 acres of land (Wareham, 2011). Other preindustrial land taxation systems

taxed land by productive output; for example, the Ming Dynasty taxed agricultural land as a percentage of rice production, leaving farmers the option to fulfill the tax obligation in rice or silver (Liu and Fei, 1977). Later, during the Qing dynasty, bureaucrats applied labor taxation to the existing land tax, helping to contribute to the development of the modern tax, which bundles together multiple metrics of value into one statute (Ibid).

By the turn of the 20th century, property taxation had emerged as the dominant financing strategy of municipal and provincial governments across the world. As is the case with most world-historical changes, there exists no single event or moment that heralded the shift from rudimentary land taxation to modern property taxation. The national land tax of Anglo-Saxon and early Norman England, termed the ‘Danegeld’ dropped out of use during the late twelfth century when taxation of agricultural and craft production became more profitable (Green, 1981). Although land taxation reemerged in English law during the early modern period, it took on a form resembling that of Imperial China or Ancient Rome, taxing land by output. Thus, the modern property tax appears to be an invention of colonial America with English common law bearing only limited influence (Waldo and Yoho, 1977). During the American Revolution, popular opposition to land-quantity taxation hastened the emergence of taxation based on the value of property (Greene and Pole, 2004, Fischer 2019). In 1796 only four states taxed property value at a uniform rate, but by the civil war property taxation comprised the bulk of municipal revenues throughout the nation (Ibid).

Georgist Thought

Influenced both by the classical British political economists and the specific historical-material circumstances of mid-19th century urban America, Henry George developed the theory of land-value-taxation as an extension, rather than a refutation, of classical economics. This is not to say that his ideas bear no overlap with heterodox peers such as Marx or later thinkers such as Keynes, but instead that understanding Smith, Mill, and Ricardo's theories of economic rent proves essential to contextualizing Georgism. Smith defined rent as the "price paid for the use of the land" which is "naturally a monopoly price" rather than a reflection of the landlord's improvements to the land (Smith, 1776). Although land is not a monopoly asset in the common use of the term as it typically has divided control, land rents resemble other monopolized assets in classical economics because their price is divorced from ongoing production and labor factors (Evans, 1991). Land rent has a production cost of 0, with pricing suggested by *potential* productive capacity and ultimately determined by the landowner's price-setting power (Ibid). John Stuart Mill argues that land rent is best understood as a monopoly price because "that land would supply its services whether or not a rent was paid and that...The payment [is]... similar... to the payment to a monopolist of a price which exceeded the 'true' cost" (Ibid). Ricardo built upon the observation that rent is the monopoly price of land asserting that "the rent of land is determined by the excess of its produce over that which the same application can secure from the least productive land in use" (George 1879).

George takes these prior assumptions to their logical endpoint, arguing that land rents, which represent monopoly pricing rather than capital that exists as a product of labor, ought to be taxed at full value while improvements to land ought to be untaxed (Ibid). George's assertion that the single tax "does not add to prices" because land cannot be produced and thus production

costs, and ultimately supply, remain undistorted by taxation stands up to empirical scrutiny (Plummer, 2010). Contemporary reinterpretations of Georgism generally discard his idea of the 100% LVT as a ‘single tax’, instead taking the more moderate position that land value taxation should exist alongside other contemporary taxes. Critics of George often argue that because land typically supports alternative uses and multiple prospective owners, rent falls outside the strict definition of a monopoly. While this criticism is *technically* true, “the fact that the supply of land is inelastic... means that even where land ownership is diffuse, land rent still involves a monopolistic element not characteristic of the price of capital good” (Andelson 2003).

Adopting George’s first principle – that taxing land is more efficient than taxing both land and improvements – does not necessitate a wholesale adoption of his economic beliefs, many of which fall apart under modern scrutiny. Most obvious, his contention that industrialization within a land-scarce economy leads to a falling rate of profit and declining living standards has proven broadly false over the last ~150 years. George’s use of Malthusian and racist arguments detracts from his reputation as an ethical thinker; however, neither ideology proves essential to upholding his central theory of land value taxation. The philosophical assumptions supporting his economic assumptions centrally concern the legitimacy, or lack thereof, of land privatization, which George hyperbolically compares to chattel slavery (George, 1879).

Economists from across the political spectrum overwhelmingly concur with George’s argument that land value taxation does not distort land value (Smith, 2015). However, taxing land at high rates tends to diminish land values by reducing the profitability of land ownership and speculation (Ibid). George asserted the benefit of this impact, stipulating that through the

falling rate of rents, a 100% LVT would abolish the economic privatization of land⁶. Georgism, while existing within the liberal tradition, continues to influence Socialist, and broadly leftist, political economy. This proved especially true in the United Kingdom where Georgists such as George Bernard Shaw helped found socialist organizations and political parties including the Fabian Society and the Labor Party (Jones, 1988). Although Georgism *definitionally* supports entrepreneurial capitalism, the communal economic access to land allows the ideology to complement several strands of contemporary left-wing thought such as those pioneered by Thomas Piketty. Piketty's thesis that the increasing rate of return on capital relative to growth stimulates increasing wealth inequality, in both absolute terms and in relation to income, reflects several economic trends including skyrocketing land rents, which are now worth more than 160% of gross domestic product in the United States (Florida, 2015). Land value taxation, which is a type of wealth tax, thus, in a limited capacity, serves the role of a general wealth tax in Piketty's framework.

Contemporary Land Value Taxation

While property taxation of the modern variety dominates contemporary public finance, several nations, provincial governments, and municipalities have implemented land value taxation or split property/land taxation. By the same token that a tax on buildings incentivizes landowners to avoid taxation by foregoing development, a LVT theoretically stimulates the productive use of land as landowners seek to maximize the productivity of their land. Because an LVT lowers the cost, both relative and absolute, of property improvement ownership, while

⁶ this is problematized by Yang (2018) who finds the opposite to be true.
<https://www.sciencedirect.com/science/article/abs/pii/S1051137716302868>

increasing the cost of land ownership, land value taxation incentivizes property development (George 1879, Bowman and Bell 2008). The tax incentives of land value taxation thus tend to increase the capital-land ratio, which is strongly correlated with mitigating urban sprawl and revitalizing communities (Ibid, Dye and England 2010). Thus, governing bodies often implement land value taxation with the explicit goal of encouraging land development.

After achieving independence from the Soviet Union, Estonia instituted a nationwide LVT to stimulate the productive use of formerly state-owned land which had been restored to private use (Hughes et. al. 2020). Wenner (2018) finds that Estonia's LVT broadly increased the capital-land ratio in cities such as Tallinn, by increasing the construction of multi-family housing. Wenner notes that Riga bucks this trend, having seen general property de-concentration and lower building rates when compared to the rest of the nation. He attributes this to the lacking regularity of land assessments, exemptions for certain owner-occupied units, and onerous building laws (Ibid). While generally understood as success, the Estonian example highlights the need to maintain the administrative apparatus of land assessment and taxation to ensure LVT efficiency.

In the 1990s, fifteen cities in Pennsylvania switched from property taxation to split taxation (SRT), where one rate applies to property and the other solely applies to the unimproved value of land. Hartzok (1997) finds that those cities which switched to the split tax saw the decreased relative cost of construction reflected in higher rates of urban development. In Harrisburg PA, adoption of SRT contributed to an ~88% decline in vacant structures between 1982 and 2001 and an explosion in downtown commercial activity (Vincent, 2019). Taxation of land values proved less successful and popular in Pittsburgh, where faulty and inconsistent

appraisals fomented public opposition and the eventual repeal of the municipal SRT (Dye and England 2010).

Land value taxes often target specific socio-economic conditions beyond general inequality and land use. For example, in 2004 Namibia introduced a land value tax on commercial farmland to reduce widespread racial inequality in land ownership (Hughes et. al., 2020). Intended to discourage individual ownership of multiple farms, the Namibian LVT increases based on the number of properties owned. Widely understood as successful at decreasing land-ownership inequality, especially along the lines of race, the Namibian case provides a useful example of LVT alleviating specific social problems (Ibid).

The Land Appraisal Question

Taxing land rather than property necessarily requires an extra step in the appraisal process, where improvement value is deducted from the net parcel value. Rather than merely assess land values via deducting improvement value, Georgist theory argues that land values must be appraised based on ‘highest and best use (HABU)’. By taxing land based on HABU, LVT encourages the optimal use of land by reducing the economic viability of land speculation and inefficient land use (Lyons, 2005). However, deriving a parcel's HABU value requires a detailed assessment apparatus, which many municipalities lack. In Estonia, the only nation that taxes property solely via LVT, a dedicated national price registry maintains a detailed record of land assessments via market transaction records (Hughes et. al., 2020). In Queensland Australia "valuations are ideally based on comparable land sales of ‘vacant or lightly improved land’”; however, a lack of vacant land transactions has led to the use of property transactions with improvements deducted after the fact (Ibid, Mangioni 2016). This ‘direct comparison’ method is supported over other methods because ‘actual sales prov[e] a more reliable indicator of market

values than estimates based on prospective earning capitalization' (Ibid). In the absence of sufficient vacant land sales, polities often use the 'summation method' of land valuation, which bears accurate data when "improvements are relatively homogenous" (Ibid).

American land value appraisals typically lack transparent methodologies; furthermore, in municipalities that lack a LVT or SRT, the 'optional' nature of calculating unimproved land values as distinct from property values may deprioritize land appraisal, lowering the accuracy of appraisals even unrelated to the lack of HABU assessment. The accuracy of land valuations tends to increase in the process of implementing a LVT, thus supporting the notion that administrative design proves a more substantial barrier to land value taxation than theoretical constraints (Andelson, 2000).

The Political Feasibility of Land Value Taxation

Given that land value taxation is more economically efficient and likely more spatially advantageous than property taxation, its lack of widespread adoption ought to prompt reflection among its most ardent supporters. Novelty is one likely culprit for LVT's lacking popularity. The well-documented bias towards the status quo proves especially strong in political economy -- long-standing dominant political systems often take on institutional inertia. This is due to human aversion to political change, termed the 'status quo bias' -- social security numbers, which are universally understood as outdated and inefficient compared to ID systems in most modern European nations serves as a good example of this phenomenon (Samuelson and Zeckhauser 1988). In the contemporary American city, bureaucratic bloat, and the expansion of local

‘democracy’⁷, which Demsas (2022) terms “the power of yelling loudly” have made changes to municipal governance especially difficult, further entrenching property taxation. Demsas notes that this model of ‘community input’ tends to reduce net participation in local decision-making by favoring older, whiter, and male(r) people. However, status-quo bias and distinctively American political systems do not entirely explain the rarity of LVT. Deeper political-economic realities also play a role.

Appraising the HABU of land parcels requires establishing a more comprehensive land assessment regime, which, for the reasons discussed earlier in this section, proves especially difficult in the contemporary American city. Among those municipalities, regions, and nations which have implemented an LVT, Estonia serves is the only one that pursues something resembling HABU estimation (Hughes, 2020). Without a proper HABU calculation, land value taxes sacrifice their efficiency and political viability. Also relevant is the question of reevaluation, “For [a] tax to be based on land or property values, regular revaluations are important, especially for urban land and property where values are higher, more variable and more volatile” (Ibid). Beyond reducing the effectiveness of an LVT the lack of regular revaluations jeopardizes the practical feasibility of land value taxation. Thus, the successful implementation of LVT requires creating an administrative regime capable of specific, regular, and consistent assessments.

⁷ Demsas argues, in line with recent scholarship, that this ‘local democracy’ – expanded permitting rules, town meeting systems, and barriers to political action – make municipal decision-making slower and, paradoxically, less democratic and participatory.

Literature Summary

While optimal taxation theory provides a useful methodological framework for designing public policy, ‘optimal taxation’ exists only in abstract theory. Murphy and Nagel (2007), Marx (1894), and George (1879) illustrate how taxation does not merely finance the state and obligate society, but rather structures the political economy, by legitimizing and defining boundaries of private property. In the status quo, the uniform tax applied to property artificially removes the real economic differences between land and land improvements, the latter of which is a form of capital. Just as we tax labor and capital differently, we ought to tax capital and land differently.

The conflation of land and capital is by all accounts a recent development. While pre-classical scholars and policymakers did not define economic production in those terms, they also did not tax property values. Rather premodern ‘property taxes’ were either land-quantity taxes like those seen in Anglo-Saxon England or taxes on a given land parcel’s yearly production, as was the policy in Imperial China. Taxes on buildings, when they did exist (which was rare), existed as separate from land taxation, regardless of form. Thus, the emergence of the contemporary property tax in the late 18th century United States represents a profound break with historical political economy. Although the classical 18th and 19th-century British economists nearly all argued that society ought to treat land differently from property, no comprehensive policy proposal existed to reflect this precept until Henry George’s 1879 publication of *Progress and Poverty*. While George’s argument for the complete abolition of private land presents philosophical and social challenges outside of this paper’s scope, his thesis that we ought to tax land differently from property has fallen into broad popular irrelevance despite decades of scholarly analysis supporting his findings.

Accurate and effective Land Value Taxation requires careful, thorough, and measured land assessments. Merely taking existing municipal land appraisals at face value would doom a LVT plan to its immediate political deathbed. While the ideal land valuation methods require a detailed account of vacant-land sales, other means, such as the summation method, remain accurate provided the creation and maintenance of an administrative apparatus dedicated to land assessment by way of comparative transaction data. Although the success of land value taxation has been mixed, LVT failures have remained similar across the globe. In terms of both political viability and economic efficiency, failed LVT systems have nearly all suffered from inaccurate and inconsistent assessment systems. In contrast, when assessment methods have been transparently and comprehensively maintained, as is the case in Harrisburg PA, and parts of Estonia, land value taxation has sustained both popular support and clear economic benefits, especially concerning development rates and rent stabilization.

Hypotheses:

Quantitative analysis and testing will indicate that switching to a LVT at the same rate as the current PT in Conway will decrease municipal revenue, thus requiring the implementation of a revenue-neutral LVT pegged to a higher base rate than the existing property tax. This revenue-neutral LVT will likely increase the tax burden on vacant properties and stimulate development.

Methodology: Towards a Neo-Georgism

This paper hopes to determine how switching from property taxation to land value taxation would impact spatial development, wealth distribution, and municipal revenue in

Conway New Hampshire. As indicated in the literature review section, analysts of land value taxation draw from many frameworks and ideological perspectives, making the practice of LVT irreducible to one specific philosophical justification. However, this paper, which specifically deals with distributional tax incidence, and urban development, does not aim to ‘solve’ longstanding questions regarding the ethics of private land ownership or normative development practice. Thus, like most contemporary analyses of land value taxation, this study diverges from predominating neoclassical economic models by treating land as a separate production factor from capital. Furthermore, this paper does not seek to merely discuss *theoretical* implications of land value taxation but rather determine the design and impact of explicit implementable policy. Thus, political feasibility will ultimately be considered after questions of economics and urban development.

This paper’s framework is best described as ‘Neo-Georgism’. Building upon the theoretical work pioneered by Georgist scholar and Christian theologian Robert V. Andelson, this Neo-Georgist methodology abandons a 100% LVT in favor of a more malleable schema of land taxation and economic development (Andelson, 1979). As with most 19th-century totalizing economic theories, Orthodox Georgism falls apart under modern scrutiny. Neither George’s thesis that “all devouring rent” would suck up most capital nor his theory that the national government could finance all public expenditure through Land Value Taxation have proven accurate. On the other hand, contemporary statistical research has further supported his central theory that Land Value Taxation is more efficient than Property Taxation. No major study 21st-century study of land value taxation has managed to correlate Land Value Taxation, even at a rate of 99% with economic inefficiency⁸. Although the literature is slightly murkier when inequality

⁸ Economic inefficiency is defined as warping the tax base/real economy.

and social optimality are substituted for efficiency, Schwerhoff, Edenhofer, and Fleurbaey (2022) find that although “optimal land value taxation depends on the co-variance between total wealth (as a proxy for the social welfare weight) and wealth in the form of land... [it] is difficult...to construct a case where it is not optimal to tax land value fully”. Neo-Georgism, rather than demanding dogmatic adherence to George’s work applies Georgist principles to existing methodologies and ideological frameworks. **This paper defines Neo-Georgism as the belief that land rents ought to be more equitably distributed across society to promote the general welfare.** Though this term has fallen out of use since the 1970s, Obeng-Odoom’s (2023) “adapted Georgism” bears significant similarity to this paper’s “Neo Georgism”. Obeng-Odoom argues that Georgism ought to play a key role in development critique as both a compliment and alternative to more popular Marxian and Post-Keynesian methodologies. While the study of wealth distribution and urban development in New Hampshire shares little with post-colonial political economy, Obeng-Odoom’s insights into the wider applicability of Georgist thought remains useful to this paper; specifically, his formulation of land value taxation as a means to both return surplus to the commons and protect natural rights.

This Neo-Georgist ideological framework takes a broader view of the general welfare than a pure dollar-as-util approach. Beyond impacting distributional tax burdens, shifting from PT to LVT will likely change patterns of spatial development and land use by reducing the profitability of vacant land ownership and penalizing more general idle uses of land. The Neo-Georgist framework thus treats land use, which shapes homelessness rates, rent burdens, and quality of life, as central to maximizing the general welfare. Even under a strictly monetary approach, the Neo-Georgist methodology takes a long-term view distinct from many contemporary interpretations of utilitarianism. Policies that may ‘increase rent’ in the short term,

but nonetheless incentivize development and thus increase the housing stock may very well ‘pay for themselves’ by reducing long-run rent increases, and thus benefit the general welfare.

George’s chief disagreement with the orthodox utilitarians lies in his staunch defense of natural rights: “taking a stab at Jeremy Bentham”, George claimed that “the existence of such rights was so obvious as to not necessitate defense” (Dawsey, 2015). To George, the state derives both its purpose and legitimacy from the Lockean natural rights of life, liberty, justice, and equality. (George, 1883). George augments the classical rights by adding “the rights to access to land to work on, to fair payment for labor, and to a just distribution of wealth (Pullen, 2013). Although this philosophical framework resembles Benthamite utilitarianism, George takes a proto-Rawlsian approach by rooting state obligation in a defense of natural rights over maximum utility when the two come into conflict (Ibid). Because land values are produced by the collective, land value taxation returns the value of land rents to the society which produced them. Further, a 100% LVT provides every individual with equal *economic* access to the land, thus protecting and supporting natural rights (Ibid, Dawsey, 2015). The neo-Georgist framework extends the orthodox Georgist full LVT to a limited LVT in both economic and philosophical justification. Even a low land value tax helps distribute land rent back to the collective society which retains a foundational right to said land rent.

Method:

Seeking to determine how a shift from property taxation to land value taxation would affect revenue, inequality, and spatial development in Conway NH requires multiple experimental designs. Conway NH conveniently provides public datasets of property and land

appraisals segmented by property type. This forms the base data for my experiments. However, before calculating the anticipated results of a PT to LVT switch at a revenue-neutral rate, this paper presents a table of summary statics like that in Bowman and Bell (2008). Before moving on to impact calculation, I will discuss the general trends presented in the summary table on land use in Conway.

The experimental design follows Bowman and Bell (2008) and England and Zhao (2005), who estimate the distributional impacts of land value taxation by splitting residential properties into three brackets based on property valuation: a bottom 30th percentile, middle 40th percentile, and top 30th percentile. This bracketing follows the reasonable assumption that property values provide a general analog to wealth (Ibid). While this design differs from more standard models of progressivity via tax incidence (see Oates and Schwab 1997), they are consistent with the standards of professional assessment models (Cohen and Fedele 2017, Eckert 1990). The model then multiplies Conway's aggregate 2022 land value by its 2022 net property tax.⁹ Multiplying this rate of .01708 across the town's land, which is valued substantially below total property including improvements would slash municipal revenue. To maintain current municipal revenue, I then determine the revenue-neutral rate of land taxation of .04909 and multiply it across the three brackets of residential parcels, first in all residential property classes, and second solely in single-family residences.

Next, I analyze how Land Value Taxation would impact Conway were it applied to other property classes such as rental-residential, vacant land, and commercial. For the above-stated reasons, calculating the precise distributional effects when taking rental-residential and

⁹ For clarity's sake the combined 15.5% of net property taxation in Conway which goes to the town and county government was included in all calculations.

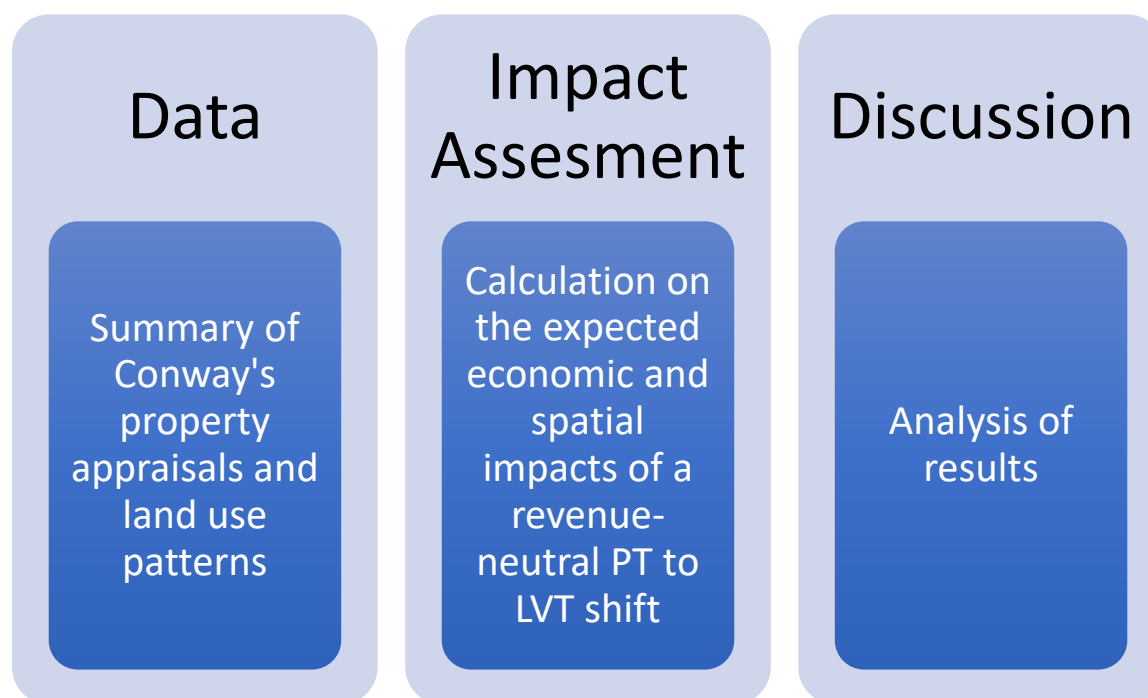
commercial land into account becomes difficult when incorporating non-SFR property classes into the experimental design. Nonetheless, this approach presents some important findings, especially concerning the question of land value taxation and spatial development.

This paper will strictly analyze the impacts of shifting from PT to LVT in residential housing. While such a shift would undoubtedly shift spatial development and inequality via altering the taxation of corporate property, such a change lies outside the scope of this paper. Like the correlation between wealth distribution and residential property ownership, the direct connection between commercial land management and distribution undoubtedly exists. However, modeling the distributional and spatial impacts of a municipal land value tax via commercial land proves difficult without a vast and diverse dataset. Corporate landowners who are also business owners can respond to changing tax structures by altering prices at their firms (Plummer 2010). Likewise, business owners who do not own their land may respond to a change in rent induced by the introduction of a LVT by altering prices. In both cases, modeling these impacts requires a set of methodologies distinct from those presented in this paper. Similarly, this report's model of land value taxation assumes that existing tax exemptions will be maintained. Including tax-exempt property in analysis would expand the data array on one side of the model while leaving it intact on the other, thus reducing experimental validity. Thus, tax-exempt land, like commercial land, will be omitted from both the presentation of summary statistics and the experimental model.

This paper's presentation of summary statistics will differ from Bowman and Bell (2008), England and Zhao (2005), and Plummer (2010) by including some vacant residential properties. Providing descriptive statistics of vacant residential land helps illuminate how implementing a LVT would incentivize development, as those properties would see the steepest percentage tax

increase. This applies both to land classified as ‘developable’ and land classified as ‘undevelopable’. While increasing the tax burden on undevelopable land will likely not spur short-term development, it would still impact aggregate wealth distribution and aggregate land use by forcing the sale of said land into either private or public hands. The experimental models will also not account for the impacts of LVT on land evaluations. As discussed in the literature review, switching from a PT to LVT system would likely impact land values; however, this study lacks the requisite data to estimate such precisely calculate this. Furthermore, attempting to model revaluation would likely exacerbate the problems wrought by murky evaluation data calculated below both HABU and market rate.

Method Steps



Data

Initial Discussion of Data

This paper will analyze the distributional and spatial impacts of land value taxation via experimental research using Conway New Hampshire's property assessment rolls. Unlike Plummer (2010) this paper will not use a multi-year sample of property and land assessments. While using multi-year data set typically would generally increase accuracy and statistical significance, the Covid-19 pandemic's disruption of municipal bureaucracy renders this difficult. Conway's land and property assessments are missing for both Fall and Spring 2020, thus forcing a multi-year sample to compare pre-and-post-pandemic housing data. The pandemic's seismic impact on the housing market in New England resort towns such as Conway effectively divides the town's pre and post-pandemic housing market in two, making any unified conclusions difficult. Thus, this study will use Conway's 2022 assessment dataset.

The use of Conway New Hampshire as the dataset provides several benefits. Whereas most other major studies on the topic have focused on suburban or more typical rural municipalities, Conway is a rural resort town, a community type that has been hit particularly hard by the recent housing affordability crisis while eluding scholarly analysis (Brockman 2022, Powell 2023). Furthermore, Conway's reporting of land and property assessments is distinctively robust with clear formatting of parcel type, total parcel value, land value, agricultural land value, and building value. Although the data does show some issues, most of these are endemic to American municipal land assessments and thus not significant or distinct enough to completely reduce the utility of the data or rather make the data less useful than any other city's dataset.

As discussed in the literature review, a ‘true’ LVT taxes land according to an appraisal of land value at ‘highest and best use’. However, the dataset for Conway NH appraises land via a deduction of improvement values. Thus, this paper’s analysis will calculate the distributional and spatial impacts of a revenue neutral LVT at existing appraisals rather than HABU. Under a Neo-Georgist methodology, even land data failing ‘orthodox’ Georgist standards, can contribute to understanding the implications of LVT. Even disregarding the lack of HABU appraisal, Conway’s land assessment likely suffers from the broader problems discussed in the literature review. For one, 2097 of Conway’s 7240 residential parcels lack any land value assessment, thus forcing this paper’s analysis to omit roughly 29% of Conway’s residential properties from its analysis. Furthermore, neither Conway’s assessment board nor its town government precisely describes their assessment methods. Conway's property and land assessments are neither calculated at full market value rate as a traditional land value tax nor at full HABU value. Beyond reducing the top-line land value tax returns, this likely artificially lowers property appraisals below property values, which are assessed closer to market value (England and Zhao, 2005).

Data Summary

Table 1
Description of Residential Properties by Land Use Classification (2022)

Land Use Category (State classification code)	Parcels (Percent of Total Residential Parcels with Land Assessment)	Mean Total Assessed Value (Std. Deviation)	Mean Value Ratio ¹⁰ (Std. Deviation)	Pearson Correlation Coefficient ¹¹
All residential parcels with land assessment	5144 (100%)	\$ 210,143.12 (\$156,156.051)	1.882 (1.543)	.612
Single Family homes (101)	3763 (73.15%)	\$250,194 (\$138,580)	2.752 (1.4865)	.464
Condominiums (102)	67 (1.3%)	\$25,497 (\$36,964.278)	0.1779 (.62648)	.999
Mobile Homes (103, 110)	189 (3.67%)	\$100,118.52 (\$40,446.943)	.87126 (.777204)	.5243
Multi Family Homes (104, 105, 111)	131 (2.55%)	\$279,776.34 (\$104,997.84)	2.794 (1.325)	.462
Accessory Buildings (106)	78 (1.52%)	\$62,903 (\$57,064)	.711 (2.518)	0
Multi-use and multi-property-single-lot residential (108, 109)	121 (2.35%)	\$385,052.07 (\$267,438.96)	2.879 (1.615)	.20896

¹⁰ The value ratio of a parcel is its assessed building value divided by assessed land value. Standard Deviation here refers to the standard deviation of said value ratio.

¹¹ The reported correlation coefficient is between total assessed value and the value ratio for parcels within a land use classification.

Undeveloped Developable Residential land ¹² (107,130)	602 (11.7%)	\$43,951.495 (40770.79)	na	na
Potentially developable and undevelopable residential land (131,132)	183 (3.556%)	\$8,046.99 (\$10,533.77)	na	na
Miscellaneous	10 (.19%)	na	na	na

Table 2: Summary of Property Values by Land Use Classification (without vacant land)

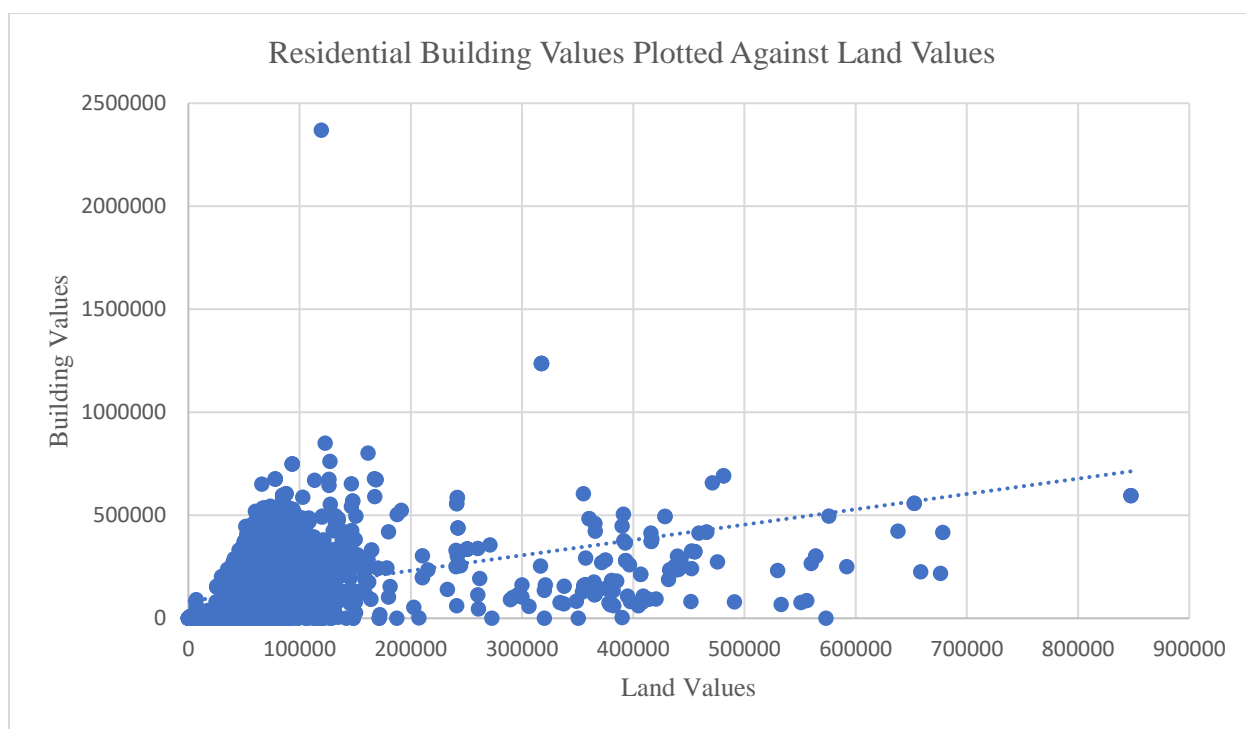
Land Use Category (State classification code)	Parcels (Percent of Total Residential with Assessment)	Mean Total Assessed Value (Std. Deviation)	Mean Value Ratio ¹³ (Standard Deviation) (CV)	Correlation Coefficient
All residential parcels with land assessment	4295 (100%)	\$244,931.57 (\$146,922.45)	2.2539 (1.42)	.4708
Single Family homes (101)	3763 (87.6%)	\$250,243.3 (\$138,565.56)	2.752 (1.4865)	.464
Condominiums (102)	4 (.001%)	\$155,660 (\$685.86)	na (sample too low)	na (sample too low)
Mobile Homes (103, 110)	189 (4.4%)	\$100,118.52 (\$40,446.943)	.8713 (.7720)	.5243
Multi Family Homes (104, 105, 111)	131 (3.05%)	\$279,776.34 (\$104,997.84)	2.794 (1.325)	.462

¹² Includes standard developable undeveloped residential land and land with transferable development rights. Also discards land which is listed as either 'undeveloped' or 'development rights' which nonetheless has a building assessment on property. These properties will be included in the null category.

¹³ The value ratio of a parcel is its assessed building value divided by assessed land value. CV is the coefficient of variation.

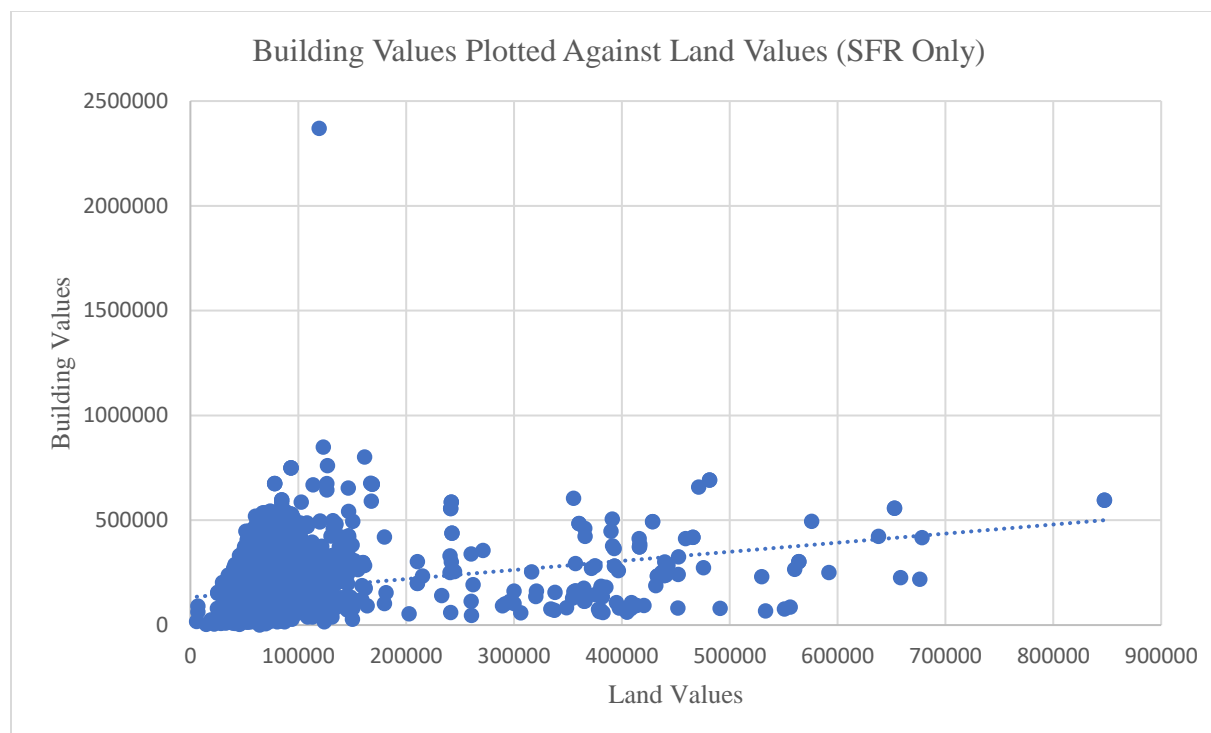
Accessory Buildings (106)	77 (1.79%)	\$62,812.99 (\$57,427.65)	.7202 (2.533)	-.13487
Multi-use and multi-property-single-lot residential (108, 109)	121 (2.8%)	\$385,052.07 (\$267,438.96)	2.879 (1.615)	.20896
Miscellaneous	10 (0.2%)	na	na	na

Chart 1



$R = .383$ $N = 5144$

Chart 2



$R = .259$ $N = 3763$

Discussion of Data Summary

As one will note from the ‘null’ category, several parcels fall outside simple classification. These include parcels with too few cases ($n < 30$) to generate statically sound summaries and parcels with significant assessment errors. The latter case includes two parcels listed under ‘development rights’ in the zoning code which nonetheless have appraised and constructed buildings on the property. While these parcels are counted under the ‘all residential parcels’ row, in Tables 1 and 2, they are ‘unsummarized’ in a specific row due to their mislabeled land-use listings. Furthermore, some zoning classifications are merged for the sake of concision and redundancy (in the case of two and three-family homes, the two mobile home categories,

etc.) The 1.822 value ratio across Conway's residential properties indicates that the town assesses the average building to be worth 1.822 times as much as the average land parcel it sits on. When regressed against mean total value, this ratio has a correlation coefficient of .61, indicating strong statistical significance. All other developed land parcel value ratios (excluding those in the miscellaneous category) prove moderately or significantly correlated except multi-use and multi-property parcels which are weakly correlated, and accessory buildings which are entirely uncorrelated. As is the case with any municipality, these total values prove much lower than market-rate values. Conway does not provide market-rate data. Thus, tables 1 and 2 provide the clearest overview of Conway's residential land and property values. The lack of statistically significant correlation between total value and value ratio for accessory dwelling units implies either that the category is poorly appraised, or that broader variance within the category prevents quantitative conclusions.

Comparing the two tables presents several relevant observations, especially relating to the concentration of vacant land in various property types. Although Conway does specifically classify most undeveloped land as vacant, much of the city's undeveloped land lies under other asset classifications. For example, sixty-three of the sixty-seven parcels listed under 'condominium' are currently vacant. This lends credence to the notion that while zoning restricts development, outside factors such as taxation bear much of the blame for Conway's relative underdevelopment.

Experimental Results on Distribution

The distribution modeling described in the method section will first explore the distributional tax-liability impact of a revenue-neutral LVT on all residential properties. This provides a broad, albeit useful, understanding of how the switch from PT to LVT would impact relative tax burdens in Conway NH. However, as Plummer (2010) points out, owners of rental properties could shift a tax burden to renters, thus delinking a tax's statutory incidence from its economic incidence. Plummer thus solely analyzes the distributional impact of LVT implementation on owner-occupied single-family properties. Unfortunately, Conway does not demarcate rental properties from owner-occupied properties. This study makes the reasonable assumption that single-family homes in a rural large town are generally owner-occupied. The analysis will thus also provide a secondary model narrowly focused on the distributional impact of LVT implementation on Conway's single-family residences as a conduit for owner-occupied properties. While this second model only evaluates the distributional changes to tax levies on single-family residences, it does not assume that an LVT would only apply to these residences. Thus, the base Conway aggregate tax rate of .1708 and the revenue neutral rate of .4909 will be maintained in the experiment.

Table 3

Change in Tax Liability for Developed Single Family Residential Properties with Land Assessments Ranked (assuming LVT of .4909)

Distributional Bracket	Median ΔTL in \$ (%)	Mean ΔTL in \$ (%)	Standard Deviation
Bottom 30 percent (n = 1129)	\$506.376	\$534.96	675.9
Middle 40 percent (n=1505)	-\$166.10	-\$265.855	937.52
Top 30 Percent (1129)	-\$1144.87	-\$1808.86	3960.37
All SFR (n=3763)	-\$202.31	-\$249.42	2371.14

Table 4

Change in Tax Liability for all Residences with Land assessments Ranked by Value (assuming LVT of .4909)

	Median ΔTL in \$ (%)	Mean ΔTL in \$ (%)	Standard Deviation
Bottom 30 percent (n = 1543)	\$817.74	\$937.81	\$937.81
Middle 40 percent (n = 2057)	\$45.18	\$83.97	911.89

Top 30 Percent (n = 1544)	\$-1527.47	\$-1,048.24	3,649.36
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Table 5:

Change in Tax Liability by Property Type (among Conway's primary property types)

	Median ΔTL in \$ (%)	Mean ΔTL in \$ (%)	Standard Deviation
Single-Family Homes (n = 3763)	-\$202.31	-\$249.42	\$2371.14
Multi-Family Homes (n = 131)	-\$854.44	-\$968.6	\$1483.22
Condominiums (n = 67)	\$480.15	\$414.43	\$231.46
Mobile Homes (n = 189)	\$1033.4	\$999.22	\$699.95
Accessory Buildings (n = 77)	\$964.71	\$1319.39	\$1724.48
Multi-use and multi-property-single-lot residential (n = 121)	-\$1081.28	-\$1061.81	\$3379.04

Experimental Results on Spatial Development

Table 6:

Change in Tax Liability for Undeveloped Land

	Median ΔTL in \$ (%)	Mean ΔTL in \$ (%)	Standard Deviation
Vacant parcels (n=849)	\$1300.89 (100%)	\$1669.78 (100%)	1858.97

Discussion of Results:

Distributional Impacts

This paper finds LVT implementation in Conway New Hampshire to be regressive both in the case of aggregate residential properties and in the narrower case of single-family residences. When accounting for all residential properties, switching to a revenue-neutral land value tax would increase the mean tax liability for the lowest 30% of properties by \$937.81 while lowering the mean tax liability for the top 30% by \$1,048. Implementing a revenue-neutral LVT of .04909 would lower the aggregate tax paid by single-family homes in Conway; however, the distributional effects would still be regressive. The mean tax liability on the bottom 30% of single-family homes would increase by \$534.96 and the mean tax liability on the top 30% of single-family homes would decrease by \$1,048.24. Conway's low capital-land ratio (see Table 1, Chart 1, and Chart 2) partially explains this phenomenon: when land values are low, but improvement values are high, Land Value Taxes tend to be regressive (see literature review).

This regressivity is also explained by the proliferation of vacant and underdeveloped land on the lower end of Conway's property value breakdown. 849 of the 1543 parcels in the bottom 30th percentile of the property bracket are undeveloped. The implications of this will be explored in the *Spatial Impacts* section below. Problems in the dataset also complicate any firm conclusions, as ~30% of Conway's properties lack land valuations.

One possible explanation for the low capital-land ratio in Conway's lower-value parcels and the following regressivity of LVT implementation lies in the town's status as a resort destination. As of 2000, approximately 30% of the town's housing stock was only seasonally used. The post-pandemic boom in seasonal housing purchases has been especially strong in New England, indicating that seasonal housing and second homes make up a higher share of Conway's housing stock than 30% (Boston Federal Reserve, 2021). In Conway, which is generally more affordable than many neighboring towns such as Jackson and Wolfeboro, many of these vacation homes are cabins or otherwise modest dwellings. This trend also helps to explain why so many of the town's 'residential buildings' have one (or fewer) bedrooms and are valued under \$20,000. This also complicates the assumption that home-value correlates with wealth in Conway. Broadly speaking, in areas with low land values and high property values – a low capital-land ratio – land values remain more uniform (or less stratified) compared to property values. Thus, shifting to a land value taxation proves regressive because owners of high-value buildings tend to own, in relative terms, low-value land, whereas owners of low-value property often own *relatively* higher-value land, especially when compared with property-owners in municipalities with a higher capital-land ratio (England and Zhao 2005, Kwak and Mak 2011). However, England and Zhao find that land value assessments broadly undervalue land when

compared to market pricing in New Hampshire, thus making land value taxation appear more regressive in models.

Spatial Impacts

The implementation of a revenue neutral LVT would increase mean taxation of undeveloped land in Conway by \$1669.78. For those properties which are deemed developable, this would likely spur development – the relative (and absolute) cost of holding idle land would increase while the relative cost of construction. Although the initial price of development would likely remain the same, the 0% tax on improvements would make ownership of improvements cheaper, thus reducing aggregate lifetime cost. Because Land Value Taxation generally intensifies development of vacant and under-utilized land (see Dye and England 2010, Andelson 1979) this effect would likely prove especially large in Conway which has vast amounts of vacant land. This effect is even larger due to the proliferation of vacant land already zoned for development. For example, the 67 vacant parcels already classified as condos would see significant tax increases which landowners could offset by developing their land. Developing condominiums on these plots would expand the availability of smaller lower-cost housing units in Conway and contribute to denser spatial development near the town's commercial district. This would both help stabilize rents and contribute to more sustainable spatial arrangements. Intensified development in Conway would also increase land values, thus making land value taxation increasingly progressive in the long run.

Conclusion:

Land value taxation does not distort the tax base; however, it does alter the built environment. Because the relative cost of owning vacant land would increase and the relative long-run cost of construction would decrease, land value taxation tends to spur housing development. Switching from Property Taxation to Land Value Taxation could prove an effective method for expanding the housing supply – one of the pressing issues of our time. In Conway New Hampshire, implementing a land value tax would dramatically increase the tax burden on vacant land zoned for residential use, thus triggering an increase in the town's housing stock. Beyond stabilizing rents, this would also increase the capital-land ratio and thus help generate higher tax returns in the long term. Although such a tax would be regressive when measured via property bracket tax liability, it would likely nonetheless promote the common good under a Neo-Georgist framework, both by encouraging development and by shifting the tax liability away from productive land uses. Furthermore, by incentivizing construction the revenue-neutral LVT would likely increase aggregate long-run land values, thus reducing regressivity.

Although this paper's models present clear results, data problems reduce the accuracy of any hard conclusions. Because ~30% of parcels in Conway lack land assessments, the total sample size does not perfectly represent Conway's aggregate land and property valuations. Furthermore, because Conway does assess land values neither at market nor HABU rate, the presented land values are artificially low, thus increasing the regressivity presented by impact models. Although Land Value Taxation is, in theory, efficient and redistributive, effective LVT implementation requires comprehensive and transparent land appraisal methodologies. Shifting from property taxation to LVT in both Conway and the United States more broadly would require municipal, state, or federal efforts to create a land value registry like that in Estonia. The

successful SRT experiment in Pennsylvanian municipalities presents an encouraging example of how such an assessment regime may be created and upheld. This paper contributes to broader scholarly research of land-use policy and economics by presenting clear findings on the distributional and spatial impacts of revenue-neutral land value taxation in Conway New Hampshire. The limitations of the data set, which stem from faulty land appraisal methods, suggest that future research ought to not only model the impacts of land value taxation but also investigate how smaller American municipalities might better assess land values.

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Appendix:

Full Overview of Statistical Summary for total value/value ratio correlation in residential properties

<i>Regression Statistics</i>	
Multiple R	0.611798
R Square	0.374296
Adjusted R Square	0.374175
Standard Error	123545.7
Observations	5144

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	4.69E+13	4.69E+13	3075.949	0
Residual	5142	7.85E+13	1.53E+13		
Total	5143	1.25E+14			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	93642.15	2716.562	34.47084	1.9E-234	88316.53755	98967.77	88316.54	98967.77
X Variable 1	61905.88	1116.201	55.46124	0	59717.65015	64094.11	59717.65	64094.11