From Stagnation to Growth: Critical Thresholds and Land Value Tax

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"If any two men desire the same thing, which nevertheless they cannot both enjoy, they become enemies." [1]

Once the beating heart of a mighty empire, Rome by the fifth century stood as a hollowed-out remnant of its former glory. What had once been the backbone of Roman governance, the tax system, had grown both exploitative and ineffective, and local elites evaded their duties, with the poor left to pick up the burden. Revenues collapsed, public services withered, and the state could no longer afford to maintain its armies. In 476 CE, the Western Roman Empire fell quietly when

the child-emperor Romulus Augustulus was deposed by the Germanic general Odoacer, leaving Rome emptied of power.

As Rome crumbled, a group of refugees seeking safety found sanctuary among the shifting mudflats and salt marshes of the north Adriatic. These early settlers had no grand city to inherit, only unstable ground, brackish water, and a shared need to survive. Lacking both a ruler and natural defences, they relied on remarkable cooperation, staking timber into the mire, mastering the lagoon, and building a society from the water upward, plank by plank. What rose from this improbable beginning is today a maritime republic of astonishing endurance and ingenuity: Venice.

Here we have two examples, one in which a city was created out of nothing and the other where a city was destroyed out of everything. Distinguishing the two is how they tackled collective action, particularly the challenge of delivering public goods, resources that once provided everyone can use without exclusion and without competition. For Rome this was national defence, and for Venice the very infrastructure on which the city would stand. Public goods are vital for large-scale social organisation and can act as powerful engines of progress for both the preservation of prosperous regions and an opportunity to transform lagging ones [2]. This article focuses on transport, a public good which stands apart through its ability to generate and then redistribute economic and social prosperity [3] [4].

In terms of how transport can generate growth within regions, take, London; its success in collectively funding and operating urban transit systems since the mid-19th century has been central to its transformation from an industrial centre to a service-led global power [5] [6]. For spreading growth between regions, the Severn Bridge, opened in 1966 to connect the lagging economy of South Wales with the London–Bristol corridor, offers a compelling example. By the early 1980s, studies attributed a net gain of approximately 18,000 manufacturing jobs and a 10% increase in tourism directly to the improved connectivity the bridge provided [7].

Targeted transport through expanding market access and improving resource mobility can unlock growth in lagging regions, yet, like Rome, some fail to deliver it, and many more are discouraged from even trying [8] [9]. Within regions, Leeds Supertram stands out: citing unclear benefits it was scrapped after 14 years of planning and £40 million spent, leaving Leeds the most congested UK city and the

largest in Western Europe without light rail. In terms of connecting regions, the Humber Bridge, hoping to link Hull with Lincolnshire is seen as a failure, relying upon large tolls and unsustainable debt [10] [11].

Provision in principle and practice

Exploring the economics, each public good requires a level of active density, a critical threshold, below which provision is inefficient or unviable. For example, placing a high-capacity, high-cost system like the London Underground in a spread-out city like Milton Keynes would lead to underuse and unrecoupable costs. With economies of scale and high fixed cost, a higher threshold often leads to a more efficient outcome. As such, the more concentrated the population, the greater the opportunity for higher-quality public goods. In London, for instance, low-density Bromley is served mainly by buses; more compact Croydon has trams; and dense Camden boasts six Underground lines. This presents an opportunity for planners, not just to encourage provision, but to ensure it reaches the highest feasible threshold for that context.

Fulfilling this in practice requires meeting two conditions: the ability to proportionately raise funds from those who benefit (demand side), and the capacity to identify, design, and deliver the corresponding good (supply side). When demand-side barriers arise, only less efficient, lower critical threshold, goods may be delivered or provided at disproportionate cost. On the flip-side, supply friction raises the required threshold unnecessarily, forcing more users to share rising costs. What can drive such frictions stem from the nature of the public goods themselves, their susceptibility to ‘free riding’, whereby individuals can benefit from provision without any incentive to help fund them. This is well captured by Samuelson’s (1954) analogy of fireworks: one person pays for the display, while everyone within sight enjoys it for free [12]. This self-interest fuelled Romes collapse and for the regions straddling the Humber and the city of Leeds, continues to hold back their regional potential.

We therefore have a paradox in place, while a higher population increases the potential for high-threshold public goods; with the complexity and scale it also amplifies demand and supply side friction. Venice harnessed this, whilst Rome, along with its empire, succumbed. At the heart of public good friction lie property rights: economic constructs that determine ownership and use; divided into ‘stock’ (rights to use, exclude, alter, and transfer) and ‘flow’ (returns from

ownership, personal or economic utility). In Rome, stock rights were concentrated among the elites, who manipulated flow returns for private accumulation rather than public benefit. By contrast, the early settlers of Venice had little to exploit, their environment offered minimal returns and no pre-existing concentration of power. Stock rights were jointly reclaimed, incentivising flow returns to be collectively shared.

Ostrom

Replicating Venice's collectivism is difficult, particularly on a regional scale whereby lagging regions already face institutional frictions and limited funds. Though the question has attracted Nobel-level attention, no conclusive, one-size-fits-all solution exists. Elinor Ostrom's framework remains the most conclusive for understanding how collective action can be overcome organically, emphasising local trust, shared norms and decentralised governance [13]. When this is translated for policy, however, Ostroms model has faced criticism for its limited scalability and descriptive elements, leaving little scope for practical solutions, especially at a regional level [14]. Nonetheless, Ostrom offers valuable insight; if a platform allows for mutual interaction, shared incentives, and awareness of externalities, the conditions for collective action can be met.

Applying to spatial public goods, like transportation, we must explore the nature of the core property rights underpinning provision, land ownership. For landowners, flow returns stem from both their own actions and the surrounding area's land value [15]. In urban areas in particular, it is this external value that is the dominant determinant of flow returns, whilst also being significantly changeable spatially and temporally [16] [17].

Yet these 'flows' are almost exclusively taxed through property taxes on capital, neglecting these external sources of value. When it comes to public goods, their localised and externality-based nature makes the cost of internalised property flows particularly apparent. In the UK, HS2 exemplifies this, delays, soaring costs, and route cuts stem not just from inflation and ground issues, but persistent land market barriers [18]:

On the supply side, proportionate and targeted funding becomes difficult to achieve, with those in proximity to provision paying the same rate as those on the periphery. Further, because land assembly for public goods is both indivisible and

predictable, landowners can then also strategically hold out, significantly raising transaction costs. This is clear in HS2, where London Euston alone misses out on £1.4bn in potential land value uplift, while over £500m in extra costs stem from 2,446 ongoing compulsory land purchases on the first two legs [19].

On the demand side, active density is determined by both development and user-sorting, yet there is often a similar tendency to 'holdout'. Going further, every public good creates asymmetries in benefit, and those who perceive themselves as losers may mobilise politically, heightening administrative and political barriers. More indirectly, government incentives are often secondary to provision, leaving scope for corruption, rent seeking and lobbying.

Again, standing as a testament, HS2, with surrounding development stagnating, particularly around Euston where 3,000 flats are being built through slow and costly, compulsory acquisitions[20]. Further beset are the £9.2 million in legal challenges and protest from those losing out from provision, with white elephant and regional neglect claims helping to consume 1,300 hours of parliamentary time [21] [22] [23].

Land Value Tax

One potential solution lies in targeting the 'stock' rights associated with landownership, yet to do so would require contextual sensitive and a significant undermining of investment incentives. A more viable route is to target the 'flow' returns from landownership, shaping individual behaviour toward cooperation. In Venice this came because individualistic exploitation of 'stock' rights would have brought little 'flow' return, discouraging individualism.

To align flow returns with communality, charges must dynamically reflect the externalities landowners generate, whilst adapting to shifting urban contexts over time. In practice an economically simple but politically convoluted solution may already have presented itself, Land Value Tax (LVT).

The brainchild of Henry George, who, writing in Gilded Age America, blamed deepening inequality on the exploitative and monopolised control of land. Seeing land as a shared asset whose worth comes from collective efforts, he proposed a tax that would target such value. By linking tax to surrounding land value, returns would flow toward collective benefit, while preserving the core 'stock' rights

needed for urban growth. As Henry George himself said: *“We may safely leave them the shell, if we take the kernel. It is not necessary to confiscate land; it is only necessary to confiscate rent.”[24]*

Applying to public good provision; on the supply-side, landowners near new public goods can be charged through their increased flows, offering a targeted way to recover costs, even prior to physical provision, with anticipation being enough to begin such uplifts. For holdouts, incentives are flipped, with those standing in the way of provision paying the opportunity cost of doing so. On the demand side, respective burdens encourage development and sorting, pushing land toward its ‘highest and best’ use in line with the public good, increasing active density. Opposition is then softened, with those who lose out from provision having burdens fall in line with lost amenity. Indirectly, decision makers have success and ability for provision more directly align with the quality of the good itself, reducing scope for potential rent-seeking.

Land Value Tax may not resolve all the collective action challenges that arise from urban proximity, but it does provide the mechanisms for Ostrom’s principles of collectivism that are notably absent in the current land ownership design. Whilst this may not have saved Rome, it certainly would have curbed the individualistic exploitation that hastened its decline. Ultimately, LVT can help minimise associated critical thresholds alongside responsive and proportionate active demand, opening up new possibilities for sharing urban costs.

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