Regulating the Skyline: Evidence from London's Protected Vistas*

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Abstract

Using London's Protected Vistas policy as quasi-random variation, this paper examines how height restrictions affect building heights, property prices and welfare in the city. The policy's sightline-based boundaries reduce the typical boundary endogeneity concerns. A border discontinuity design reveals that while average heights are unchanged, buildings over 18 meters within Protected Vistas are about 6% shorter, especially in areas with stricter limits. Post-WWII and commercial buildings are most affected, while residential and pre-WWII structures are not. Property prices within Vistas are 2.6% higher. A spatial model suggests lifting restrictions would shift local development toward commercial use, increase local employment, and raise aggregate welfare by 0.2%.

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1 Introduction

Cities often regulate the built environment to preserve visual qualities that are difficult to measure but widely valued—beauty, skyline coherence, architectural character, and the experience of iconic views. Whether rooted in heritage, design ideals, or civic identity, these aesthetic goals are typically pursued through planning instruments that constrain what can be built and where. However, such constraints may also limit the flexibility of urban form, restrict floor space supply, and affect who can access those high amenity places and at what cost. This creates a fundamental tension: how should cities weigh the desire to protect their visual and aesthetic fabric against the economic implications of doing so? While this trade-off lies at the heart of urban planning, its consequences remain only partially understood.

London offers a particularly rich setting in which to study this trade-off. Like many global cities, it faces an acute housing affordability crisis, prompting growing interest in understanding how planning policies shape the supply and use of urban space. At the same time, the city is subject to a dense and overlapping set of regulatory constraints aimed at preserving and enhancing urban amenities. Some of these policies—such as open space requirements, design guidelines, and protections for parks and gardens—reflect broader efforts to promote livability, visual quality, and environmental well-being. Others are more heritage preservation driven, including over a thousand conservation areas, four UNESCO World Heritage Sites, and several protected views. Together, these regulations define a planning environment where the ambition to safeguard urban character coexists with mounting pressure to accommodate growth. Among them is the Protected Vistas, which restricts building heights along designated sightlines to preserve views of key landmarks from designated viewpoints. This paper uses that policy to examine how the height restrictions it imposes interact with urban development in a high-demand, highly regulated city.

This paper uses a quasi-experimental setting derived from the London Protected Vista policy to study the causal effects of height restrictions on building heights and property prices, and to quantify the general equilibrium effects and welfare implications of height regulation. This policy requires that specific landmarks remain visible from designated viewpoints throughout the city, effectively restricting building heights within these view corridors. Since the placement of these restrictions is exogenous to local attributes, determined by sightline alignments rather than neighbourhood characteristics, this setting allows the study of the causal effects of vertical regulation on local housing market conditions. This paper builds on the logic of the "inconsequential units approach" introduced in Redding and Turner (2015), where some neighbourhoods are unintentionally subject to regulation; in other words, they get accidentally treated.

To identify these effects, this paper employs a boundary discontinuity design (a geographic regression discontinuity design with boundary fixed effects), leveraging the clear boundaries of the protected view corridors. The running variable is the distance to the border, the window considered is of 200 meters, and the treated buildings are those within the protected vistas, and the controls are those outside. I also apply a quantitative spatial model along the lines of Ahlfeldt et al. (2015), which allows me to explore mechanisms further, evaluate broader welfare implications and assess the general equilibrium effects of prices under alternative regulatory counterfactual scenarios.

The reduced-form results show that the policy has no statistically significant impact on average building height. However, when restricting the sample to taller buildings (defined by the GLA as those exceeding 18 meters), I find that buildings within Protected Vistas are approximately 6% shorter than comparable buildings just outside the regulatory boundary. The share of tall buildings is not significantly different across treatment and control groups, indicating that the policy operates primarily through the intensive margin. This effect is stronger in areas with more restrictive permissible height limits, suggesting heterogeneous treatment intensity. I also find that the policy disproportionately constrains post-WWII and commercial buildings, with a 7% and 5% height reduction, respectively. In contrast, no significant effects are found for residential or pre-WWII structures. This is consistent with the fact that pre-war buildings were typically constructed with technologies that resulted in lower heights that fall below the binding range of the policy. Regarding prices, properties within the Protected Vistas are 2.6% higher than those outside it, consistent with a possible market valuation of lower density or enhanced aesthetic amenities of lower buildings.

To interpret these findings' welfare and spatial implications, I calibrate a quantitative spatial model for London following Ahlfeldt et al. (2015). In a counterfactual scenario that removes the Protected Vistas constraint, I increase floor space to match the causal height differential from the reduced form results and reduce local amenities to align with the price differential observed in the reduced form. The model predicts that lifting the height restrictions would lead to a localised decrease in floor space prices with an increase in the share of commercial floor space, an increase in employment and wages and a decrease in residents in the areas treated by the policy. Citywide, general equilibrium effects are fairly small, with prices and the share of commercial floor space decreasing slightly. Overall, the model suggests a slight net increase in aggregate welfare—approximately 0.2%—with most gains coming from easing supply constraints in the PV rather than changes in local amenities.

This study combines several granular data sources. Information on the London View Management Framework (LVMF) is obtained from the Greater London Authority, which details the XYZ coordinates of the viewpoints and landmarks. Buildings characteristics come from the Digimap Ordnance Survey and Verisk Digimap Collections. At the same time, property transaction data comes from the UK Land Registry's Price Paid dataset and from the Domestic Energy Performance Certificates (EPC). High-resolution built-environment images are sourced from DEFRA's 2022 LiDAR data, providing height measurements at a 1-meter by 1-meter scale. Additionally, demographic and socioeconomic information is drawn from the 2021 UK census. The study focuses on 13 protected corridors: nine centred on St. Paul's Cathedral, three on the Palace of Westminster, and one on the Tower of London - including sightlines such as the one from King Henry VIII's Mound in Richmond Park, which extends over 16 kilometres and is dating back as far as 1710. Furthermore, given the varying elevations of viewpoints, a three-dimensional treatment approach is developed to assess the intensity of the treatment areas and to identify places where height restrictions are more relevant.

This study aims to contribute to the ongoing research on the economic impacts of urban regulation (Anagol et al., 2021; Blanco and Sportiche, 2024; Kulka et al., 2023). Many studies face the challenge of boundary endogeneity, given that zoning lines often coincide with the targeting of transport infrastructure, administrative boundaries or are a product of political divisions. Due to the nature of our policy, which accidentally restricts height on the neighbourhoods it passes by (Redding and Turner, 2015), the border segments I consider are as close to a random treatment in an urban setting, therefore providing a nice causal elasticity of regulation to height and prices.

This paper adds to the literature that assesses construction constraints coming from regulation and geographic features, such as Saiz (2010) in the US or Hilber and Vermeulen (2016) in the UK, by using the changes in the height regulation in contrast to the elevation of the ground to assess the intensity of the height restriction. I focus on London and study within-city variation at a granular level instead of the previously mentioned studies that focus on the country level. Finally, this paper will be related to the literature that assesses the general equilibrium effects and the welfare implications of urban regulation on urban outcomes, such as Turner et al. (2014), Anagol et al. (2021) and Parkhomenko (2023).

The remainder of the paper is structured as follows. Section 2 provides background on London's urban planning system and details the Protected Vistas policy. Section 3 introduces the theoretical framework. Section 4 outlines the empirical strategy, including the border discontinuity design and data sources. Section 5 presents the reduced-form results on building heights and property prices. Section 6 calibrates the spatial model and explores counterfactual scenarios to assess the broader welfare implications of the policy. Finally, Section 7 concludes with a discussion of the findings and their relevance for urban policy and planning.

2 Background

2.1 Urban Planning System in London

London's urban planning system operates under a discretionary model, where development decisions are evaluated on a case-by-case basis rather than strictly determined by predefined zoning laws. This system introduces friction for developers, as local councils must review planning applications, often with significant negotiation and uncertainty. The planning system involves multiple institutional actors. The Greater London Authority (GLA) oversees strategic planning, including the London Plan, which provides guidelines for development across the city (Mayor of London, 2021). Local Authorities (LAs), comprising London's 32 boroughs and the City of London Corporation, hold primary responsibility for granting or denying planning permissions. The Mayor of London can intervene in significant, strategically essential developments, while advisory bodies such as Historic England influence decision-making to protect the city's heritage and architectural character (Historic England, 2020).

Several policy instruments regulate height explicitly and implicitly; in the following two subsections, I will expand on some of them. First is the London View Management Framework (LVMF), the policy studied in this paper, which explicitly limits building heights within protected view corridors to ensure the visibility and appreciation of key landmark. Second, other norms and policies, such as conservation or opportunity areas, also affect height by promoting or preserving certain heights, often subject to the surrounding height.

2.2 Protected Vistas in London

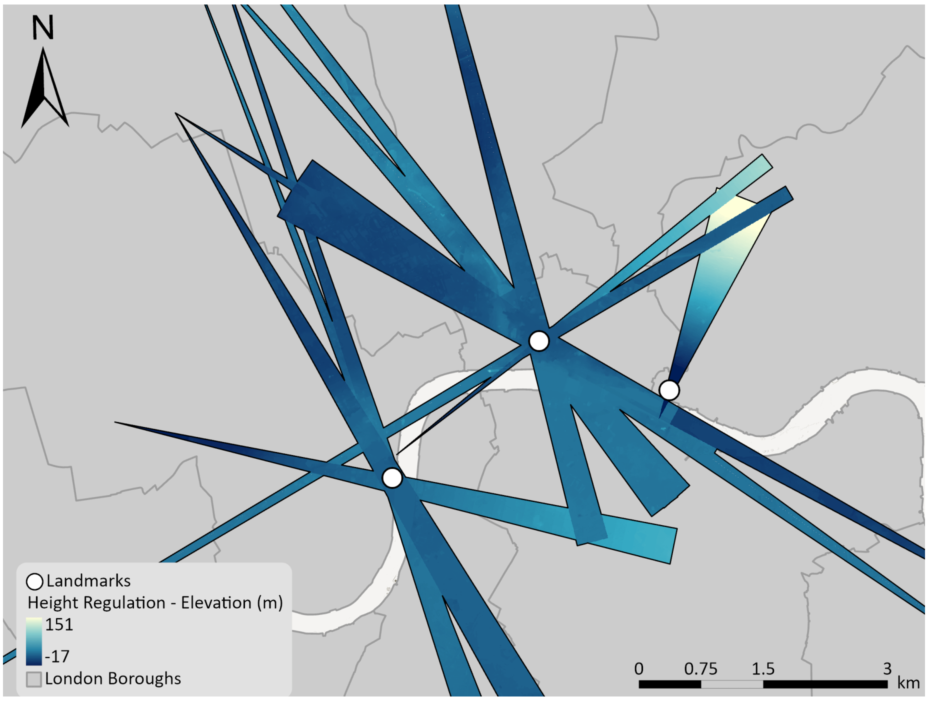
The London View Management Framework (LVMF) is a distinctive height regulation mechanism that protects views of significant landmarks, including St. Paul's Cathedral, the Palace of Westminster, and the Tower of London, from designated viewpoints throughout the city (GLA, 2021). The framework establishes two protection categories: View Corridors and Wider Setting Consultation Areas (WSCAs). Both define height limitations through computational modelling of sightlines and topography. View corridors enforce mandatory compliance and often require substantial design modifications; WSCAs apply less restrictive regulations, allowing for some flexibility on the height as long as they enhance the viewing experience while avoiding a "canyon effect" around protected corridors. Despite these regulations, exceptions occur within London's discretionary planning system, with projects like The Shard receiving approval through negotiations and political considerations.

Figure (1) shows two maps of the policy. Panel (a) is a zoom to the centre of London where the policy treats the most surface area. The white circles are the landmarks, and the asterisk-shaped figures that centre on the circles are the protected vistas. Inside the treated areas, there is a gradient of colour, from darker to lighter blue, which indicates the intensity of the treatment, which is the differential between what the regulation allows to build in meters over sea level and the elevation of the ground, also in meters over sea level. It shows that there is substantial variation in the permissible space to built allowed by the regulation in practice. I sketched how the policy behaves in practice in Figure (2 to fix concepts. In simple terms, this intends to illustrate that, given the differentials in elevation in the city, the regulation becomes relevant in places closer to the ground, which tend to coincide with the city's centre, but not exclusively. For instance, the PV focusing on the White Tower (east of the map) presents the highest allowable heights.

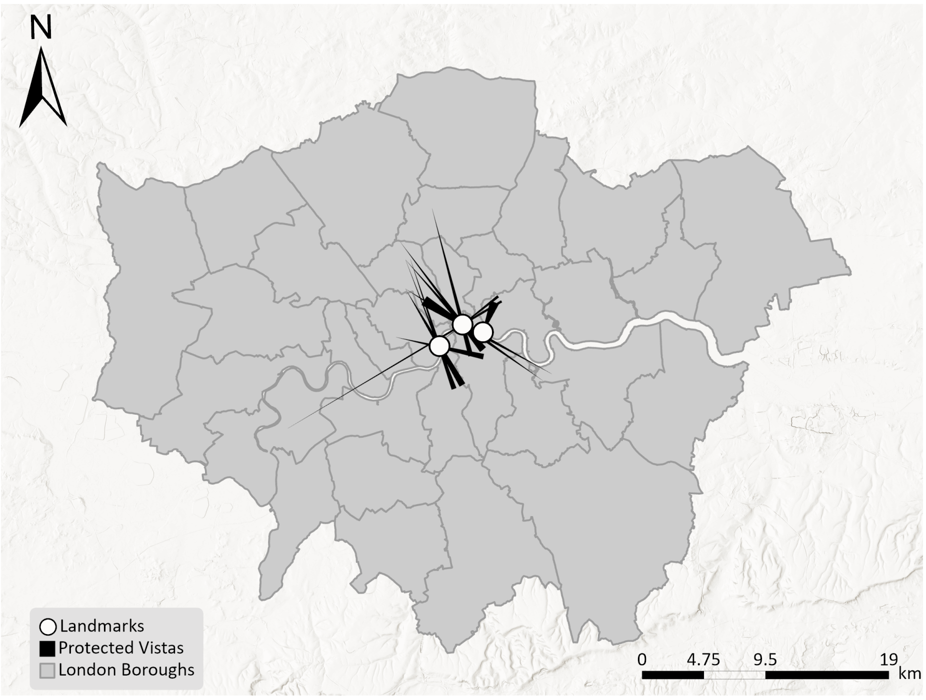
Panel (b) illustrates the location of the PV within London, which is central and does not cover a great extent of the city. Realizing this is especially important for the counterfactual exercises, as this policy could be understood as a locally affecting policy. However, because it affects the city's centre, it can potentially have interesting and significant general equilibrium effects on the city.

Figure 1: Treatment Maps

(a) Treatment Intensity (Zoom In)

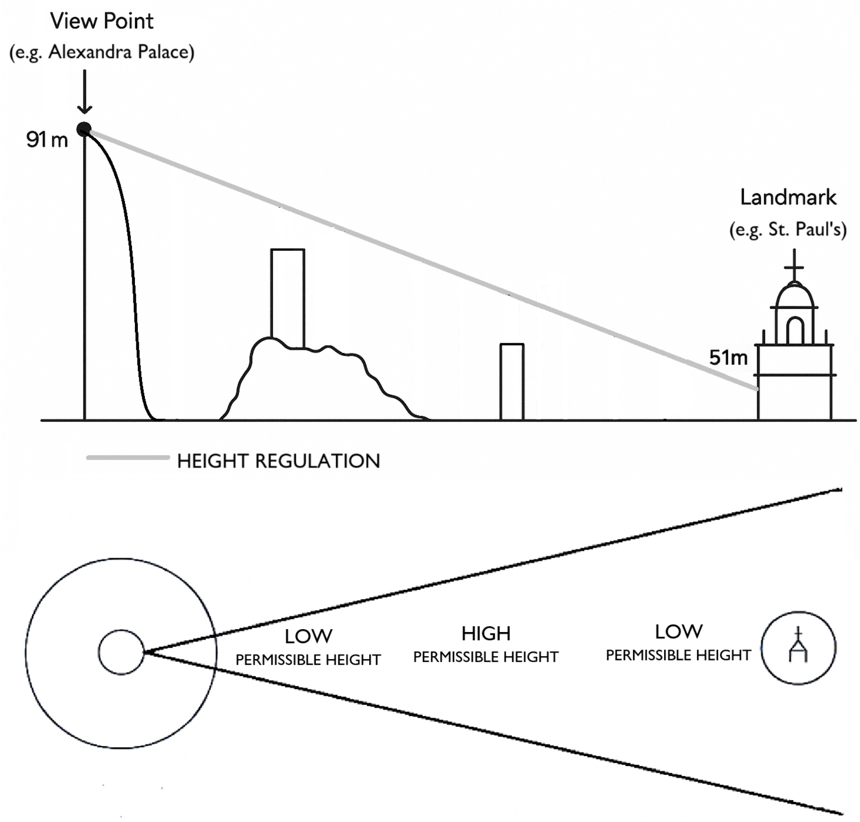


(b) Location of PVs in London (Zoom Out)



Notes: The figure shows two maps of the Protected Vistas. Panel (a) whos a close up to the Protected Vista which shows in varying color the different permissible heights allowed to build in meters, darker colors allow little space and brighter colors allow for more. Panel (b) illustrates the location of the PV in London.
Source: Own elaboration.

Figure 2: Treatment Sketch



Notes: The figure shows a sketch that explains the 3D nature of the policy, with first a horizontal cross-section view of the policy and then a bird-eye top-down view.
Source: Own elaboration.

2.2.1 History of Protected Vistas

The protection of long-distance views in London, particularly those of St Paul's Cathedral, has evolved through a layered history of informal practices and formal planning policies. The earliest significant step was the 1938 St Paul's Heights Policy, an informal agreement by the City of London Corporation to limit building heights and preserve the cathedral's visibility. This local initiative laid the groundwork for broader regional policies. In 1976, the Greater London Development Plan (GLDP) introduced the first formal recognition of strategic views, including those from Greenwich, Primrose Hill, and Hampstead. These views were later incorporated into the City of London's 1989 Local Plan, which also introduced protections for the Monument and acknowledged the importance of the backdrop to St Paul's. The 1991 Regional Planning Guidance 3a (RPG3a) marked a turning point by defining ten strategic views with formal viewing corridors, wider setting consultation areas, and background areas—elements that were adopted into the City's Unitary Development Plans in 1994 and 2002. With the creation of the Greater London Authority in 2001, responsibility for strategic view protection shifted to the Mayor of London, leading to the development of the London View Management Framework (LVMF), first embedded in the 2004 London Plan. The 2007 LVMF introduced the concept of Protected Vistas, including 13 formally defined views with precise geometries and the first appearance of Background Assessment Areas, marking the beginning of formal backdrop regulation. These protections were refined in the 2010 LVMF and formalized in the 2012 Supplementary Planning Guidance, which introduced threshold planes and mandatory referral procedures for developments impacting protected views. A 2015 erratum corrected technical aspects of these calculations, reinforcing the framework's precision. Throughout this evolution, the view from King Henry's Mound to St Paul's stands out as a historically designed and rediscovered sightline, blending 18th-century landscape planning with modern statutory protection.

2.3 Other Height-Affecting Policies

London employs multiple regulatory frameworks governing building heights, balancing urban densification with historic preservation. The London Plan promotes high-density development in designated Opportunity Areas like Canary Wharf and Nine Elms while protecting the city's historic skyline (GLA, 2021). Development proposals undergo a rigorous planning appeals process involving public inquiries and extended deliberations (DCLG, 2012).

Beyond the LVMF, additional height constraints exist through over 1,000 conservation areas that restrict modifications to historic neighbourhoods and could limit high-rise development (Historic England, 2020). World Heritage Site buffer zones provide further protection around landmarks such as the Tower of London and Westminster Abbey. At the same time, listed buildings and scheduled monuments receive protected status, affecting nearby development. These restrictions often overlap (even with the PV), creating zones of varying regulatory intensity and allowing the study of heterogeneous effects of height restrictions on urban development outcomes. Furthermore, planning policies aim to prevent "canyon effects" where tall building clusters could visually dominate historic landmarks or disrupt sightlines, so there are potential spillover effects to consider.

The LVMF provides a quasi-experimental setting for evaluating height restrictions, which creates exogenous variation in development constraints. However, potential spillover could complicate empirical findings, as urban planners may deliberately shape surrounding areas of the treatment to prevent high-rise clustering. Methodological refinements such as wider buffer zones or spline-based approaches will be important to capture skyline formation dynamics accurately. Also, London's discretionary planning model, as opposed to a zoning base one like in the USA or other European cities, could raise external validity concerns. Because London is a high-demand city, I argue that this setting is equivalent to a high-friction one, which means that our estimates may represent a lower bound of the effect of regulation on heights.

3 Framework

The framework of this paper is the one developed in Ahlfeldt et al. (2015).[1] This model is considered a closed-city model, with a set of discrete locations indexed by i, in this case, LSOAs, which are endowed with K_i units of land. Construction firms combine land and capital to produce floor space L_i, and floor space is optimally allocated between residential and commercial use within location i. Workers maximize utility, firms maximize profits, all markets are perfectly competitive, and there is a single final good which is costlessly traded.

3.1 Workers - Residential Floor Space Demand

Workers have the following indirect utility function:

$$U_{ij\omega} = \frac{w_j B_i z_{ij\omega}}{d_{ij} P_i^{1-\beta} Q_i^{1-\beta}} \tag{1}$$

For worker ω living in i and working in j is more attractive if: Wages w_j are high, Local amenities B_i are high, i.e. it is nice to live there T_i, House prices Q_i are low, and commuting costs d_{ij} are low. Also, workers have drawn a positive shock $z_{ij\omega}$ for this commute, drawn from a Fréchet distribution; it includes features at residence, workplace, and along the route.

From the worker's problem, I obtain the following demand for residential land for worker o working in block j

$$l_{ijo} = (1-\beta)\frac{w_j}{Q_i} \tag{2}$$

[1] Description of the model are primarily based on the Teaching Toolkit of the Ahlfeldt et al. (2015) paper (`https://github.com/Ahlfeldt/ARSW2015-toolkit`), and the Supplementary Material Appendix.

3.1.1 Commuting Flows

The probability that a worker chooses to live in location i and work in location j is given by:

$$\pi_{ij} = \frac{\left(\frac{B_i w_j}{d_{ij} Q_i^{1-\beta}}\right)^{\epsilon}}{\sum_{r=1}^{S} \sum_{s=1}^{S} \left(d_{rs} Q_r^{1-\beta}\right)^{-\epsilon} (B_r w_s)^{\epsilon}} = \frac{\Phi_{ij}}{\Phi} \tag{3}$$

Where w_j is wage at workplace and Q_i is rent at residence. Conditional on living in location i, the commuting probability is:

$$\pi_{ij|i} = \frac{\left(\frac{w_j}{d_{ij}}\right)^{\epsilon}}{\sum_{s=1}^{S} \left(\frac{w_s}{d_{is}}\right)^{\epsilon}} \tag{4}$$

the probability of commuting to block j conditional on living in block i depends on the wage (w_j), and commuting costs (d_{ij}) of employment location j in the numerator ("bilateral resistance") as well as the wage (w_s), and commuting costs (d_{is}) for all other possible employment locations s in the denominator ("multilateral resistance").

The commuting market clearing condition equates the number of workers employed in location j with the measure of workers choosing to commute to block j for work

$$H_{Mj} = \sum_{i=1}^{S} \frac{(w_j/d_{ij})^{\epsilon}}{\sum_{s=1}^{S} (w_s/d_{is})^{\epsilon}} H_{Ri} = \sum_{i=1}^{S} \pi_{ij|i} H_{Ri} \tag{5}$$

The formulation of workers' commuting decisions implies that the supply of commuters to each employment location j is a continuously increasing function of its wage relative to other locations.

Expected worker income conditional on living in block i is equal to the wages in all possible employment locations weighted by the probabilities of commuting to those locations conditional on living in i:

$$E[w_j|i] = \sum_{j=1}^{S} \frac{\left(\frac{w_j}{d_{ij}}\right)^{\epsilon}}{\sum_{s=1}^{S} \left(\frac{w_s}{d_{is}}\right)^{\epsilon}} w_j = \sum_{j=1}^{S} \pi_{ij|i} w_j \tag{6}$$

Therefore, expected worker income is high in blocks with low commuting costs (low d_{is}) to high-wage employment locations.

3.2 Production - Commercial Floor Space Demand

A single final good, which serves as the numeraire, is produced under conditions of perfect competition, constant returns to scale, and zero trade costs with a larger economy. The production function for this good is given by:

$$y_j = A_j \left(H_{Mj}\right)^{\alpha} \left(L_j\right)^{1-\alpha}, \quad 0 < \alpha < 1, \tag{7}$$

where H_{Mj} denotes workplace employment, L_j represents the total floor space, and θ_j is the fraction of floor space allocated to commercial use. Under the assumptions of profit maximization and zero profits, the commercial bid rent is derived as:

$$q_j = (1-\alpha)\left(\frac{\alpha}{w_j}\right)^{\frac{\alpha}{1-\alpha}} A_j^{1/(1-\alpha)}. \tag{8}$$

3.3 Construction sector

I assume that the construction sector has the following Cobb–Douglas production function (Combes, Duranton, and Gobillon, 2014)

$$L_i = M_i^{\mu} K_i^{1-\mu} \tag{9}$$

M_i is the capital, K_i is the land endowment, and μ is the share of non-land inputs in floor space production. The corresponding dual cost function for floor space is $\mathbf{Q}_i = \mu^{-\mu}(1-\mu)^{-(1-\mu)} P^{\mu} R_i^{1-\mu}$ where $\mathbf{Q}_i = \max\{q_i, Q_i\}$ is the price for floor space, P is the common price for capital across all blocks, and R_i is the land price.[2]

3.4 Land Market Clearing

3.4.1 Residential Floor Space

Residential land market clearing implies that the demand for residential floor space equals the supply of floor space allocated to residential use in each location: $(1-\theta_i)L_i$. Using utility maximization for each worker and taking expectations over the distribution for idiosyncratic utility, this residential land market clearing condition can be expressed as

$$(1-\theta_i) L_i = (1-\beta)\left[\sum_{s=1}^{S} \frac{(w_s/d_{is})^{\epsilon}}{\sum_{r=1}^{S} (w_r/d_{ir})^{\epsilon}} w_s\right] \frac{H_{Ri}}{Q_i} = (1-\beta)\frac{E[w_j|i]H_{Ri}}{Q_i} = E[l_i]H_{Ri} \tag{10}$$

[2]Commercial floor space price is q_i and residential floor space price is Q_i; which serve is higher will determine the optimum land use.

This equilibrium depends on the population residing in block i and the expected worker income $E[w_j|i]$, composed of the conditional commuting probability $\pi_{ij|i}$.

In this model, the regulation is imposed exogenously. The developer's decision is mechanical; either they produce the optimum floor space L_i^* that comes from the land market clearing condition described in Eq. (10), or, in case the restriction is binding, then the developer would produce the next best thing which is $\bar{L}_i$. In case the level of floor space produced is $\bar{L}_i$, then residential floor space prices Q_i would be higher than those under the optimum floor space level due to the downward slopping residential demand curve (Eq. (2)).

3.4.2 Commercial Floor Space

For the equilibrium in the commercial floor space, supply must equate with demand:

$$\theta_i L_i = \left(\frac{(1-\alpha)A_i}{q_i} \right)^{\frac{1}{\alpha}} H_{Mi} \tag{11}$$

3.4.3 Total Floor Space

When both the residential and commercial clearing conditions are satisfied, the total demand for floor space equals the total supply

$$(1-\theta_i)\, L_i + \theta_i L_i = L_i = \varphi_i K_i^{1-\mu} \tag{12}$$

I refer to $\varphi_i = M_i^{\mu} = \frac{L_i}{K_i^{1-\mu}}$ as the density of development (since it determines the relationship between floor space and land area) and χ as a constant.

4 Empirical Strategy

This study employs a sharp Border Discontinuity Design (BDD) to estimate the causal effect of the Protected Views policy on urban development outcomes. The policy imposes height restrictions within designated view corridors, creating a sharp spatial discontinuity in regulatory exposure. The BDD leverages this discontinuity by comparing units located just inside and just outside the policy boundaries, under the assumption that units near the boundary are otherwise comparable.

Let Y_{ib} denote the outcome of interest for unit i near border segment b, such as built height or property price. Define D_{ib} as an indicator variable equal to one if unit i is located within the restricted zone of border b, and zero otherwise:

$$D_{ib} = 1\{X_{ib} \leq c_b\}$$

Here, X_{ib} is the running variable measuring the geographic location of unit i relative to the boundary b, and c_b is the threshold at which the regulation applies (typically normalized to zero). Because treatment is deterministically assigned based on spatial location, D_{ib} reflects actual exposure to the height restriction.

The main estimating equation is specified as follows:

$$Y_{ib} = \alpha + \tau D_{ib} + f(X_{ib}) + \gamma_b + \epsilon_{ib}$$

In this specification, τ captures the causal effect of the height restriction. The term $f(X_{ib})$ is a flexible function of the running variable, allowing for smooth spatial trends in outcomes. The term γ_b denotes border segment fixed effects, which control for unobserved heterogeneity across different policy boundaries. The error term ϵ_{ib} captures idiosyncratic variation.

The inclusion of border fixed effects is essential, as the policy comprises multiple, non-contiguous view corridors. These fixed effects ensure that identification comes from within-border variation, isolating the local treatment effect at each boundary and avoiding bias from systematic differences across borders.

The validity of this design relies on two key assumptions. First, the continuity assumption requires that, in the absence of treatment, potential outcomes evolve smoothly with X_{ib}. This ensures that any observed discontinuity in Y_{ib} at the cutoff can be attributed to the treatment. Second, the no-manipulation assumption rules out precise sorting around the boundary, ensuring that treatment assignment is as good as random in a neighborhood around the cutoff.

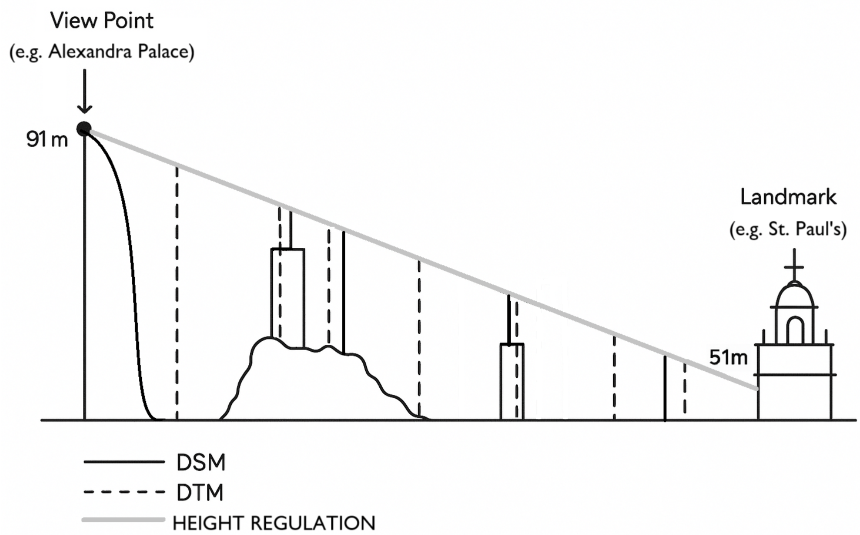
4.1 Data sources

The analysis integrates multiple data sources to evaluate the impact of height restrictions comprehensively. Information on the London View Management Framework (LVMF) is obtained from the Greater London Authority, providing precise delineation of the view corridors and the height restrictions imposed, which allows to map the mantle of the regulation as shown in Figure (1).

To examine built environment characteristics, the study leverages high-resolution LiDAR (Light Detection and Ranging) data from DEFRA (2022), which provides detailed 1-meter by 1-meter measurements of building heights and footprints across London. LiDAR is a remote sensing technology that uses laser pulses to measure distances between a sensor and the Earth's surface, producing highly detailed three-dimensional spatial data. A LiDAR system emits thousands of laser pulses per second; by calculating the time it takes for each pulse to bounce back, it determines the distance to the object hit. These measurements are combined with GPS and IMU data to create accurate georeferenced point clouds. LiDAR data are typically captured from aerial platforms such as airplanes or drones and are used to generate two key elevation models: the Digital Surface Model (DSM), which represents the Earth's surface including all objects like trees, buildings, and infrastructure, and the Digital Terrain Model (DTM), which represents the bare ground surface with all vegetation and structures removed. The elevation values in our LiDAR datasets are in AOD (Above Ordnance Datum), which is the height in meters relative to the mean sea level at Newlyn in Cornwall.

An important feature of this study is that it deals with a three-dimensional treatment, so to manage the treatment straightforwardly, I convert the 3D city into a 2D city. I proceed to subtract the elevation information of the topography from the built environment, subtracting the DTM from the DSM, and from the information of the regulation, subtracting the DTM from the actual Height Regulation (see Figure (3) for an illustration of the overlays of these data). By doing this, I can first identify the height of buildings from base to top without considering the altitude they are placed on, for instance, if they are on top of a hill, and second, identify those places where the regulation is closer to the ground and by how much, providing a precise measure of permitted height.

Figure 3: LiDAR Data and Height Regulation Sketch



Notes: The figure shows a sketch that illustrates LiDAR data, DTM and DSM, together with the height regulation mantle in a horizontal cross-section view.
Source: Own elaboration.

Property transaction data comes from the UK Land Registry's Price Paid dataset from 1995 until 2022 and merged by Chi et al. (2021) with the Domestic Energy

Performance Certificates (EPC) data published by the Department for Levelling Up, Housing and Communities. This dataset contains transaction prices, geographical coordinates, and various property attributes, allowing for an assessment of market responses to height restrictions based on observed transaction prices.

The information on the characteristics of the building comes from the Digimap Ordnance Survey and Verisk Digimap Collections, such as the building shapefiles, the age, and land use, among others. Last, this study also considers demographic and socioeconomic information from the 2021 and 2011 UK Census from the Office for National Statistics.

5 Results

5.1 Reduced-Form

Table (2) presents the main results of the border discontinuity design defined in Equation (**??**) for those buildings and postcodes outside of conservation areas[3]; these are places where I expect local markets to be more responsive. This table considers a window of 200 meters from the boundary and controls for the running variable (distance from the border) and border fixed effect. The results in column 1 show a not statistically significant coefficient of the treatment dummy, indicating that being inside the Protected Vista does not, on average, affect height. This result is not completely surprising given that the average permissible height defined by the regulation is 44.5 meters, which is relatively large considering the average height of the buildings inside and around the Protected Vista is around 11 meters. For this reason, I expect the policy to affect taller building projects primarily. This study will define tall buildings as ”at least six stories of 18 meters”, defined by the Greater London Authority.

Column 4 shows the same regression as column 1, but only considering tall buildings. The coefficient of the treatment dummy is -0.06, suggesting the height of tall buildings inside the protected area is 6% shorter than outside. To complement this finding, I provide a non-parametric graph of this effect in Figure 2, which is the graphical representation of the smoothed residuals of the border fixed effect regression on height, plotted against the running variable (distance from the boundary). In this graph, there is a visible jump in the cutoff, which is the boundary of the PV.

To assess if the building composition is different between treatment and control, where there are fewer tall buildings inside the treated area, column 3 assesses a Linear Probability Model equivalent to the regression in column 1, but considering a dummy

[3]Results focusing on those areas inside conservation areas area consistently not statistically significant.

that takes the value of one if the building is taller than 18 meters instead of the log height. The treatment coefficient is not statistically significant, suggesting that both areas have a similar proportion of tall buildings. On the other hand, column 5 assesses the effects of treatment on log heights for buildings smaller than 18 meters and shows coefficients that are not statistically significant.

Lastly, regarding prices, column 2 in Table 2 shows the same specification as in column 1 but at a postcode analysis and considers log prices instead of log height as the dependent variable. This result indicates that prices in postcodes inside the PV are 2.6% higher than those 200 meters outside. This price differential and the smaller average height of tall buildings inside the PV (results in column 3) could be interpreted as a higher valuation for lower densities.

Table 1: RDD Results: Effects of PV on Heights and Prices (2022)

	(1) $\ln H$	(2) $\ln P$	(3) $\mathbb{1}\{\text{Tall}\}$	(4) $\ln H$	(5) $\ln H$
Inside PV	-0.00	0.026**	0.00	-0.06***	0.00
	(0.01)	(0.01)	(0.00)	(0.02)	(0.01)
Distance from PV boundary (m)	-0.00*	-0.00*	-0.00***	-0.00**	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Boundary FE	Yes	Yes	Yes	Yes	Yes
Observations	52,751	16,369	52,751	5,404	47,347
R^2	0.10	0.49	0.24	0.19	0.04

Standard errors in parentheses

Notes: The table reports OLS estimates of the elasticity of heights and prices on the treatment dummy, the running variable (distance from a PV boundary) and boundary fixed effects. Column 1 shows the results of the main specification, providing the results for log height, which focuses on those buildings outside a Conservation area within a 200-meter window of the cutoff. Column 2 considers the same areas in the city as in column 1 but at the postcode level and uses log prices as the dependent variable and controls for year fixed effect. Column 3 shows the results of the same sample as in column 1 but uses a dummy as a dependent variable that takes the value of 1 when a building is considered tall and zero otherwise. Column 4 is identical to column 1, but only those buildings are considered tall. Column 5 is identical to column 1, but considering only those buildings not considered tall.
Source: Own calculations using building, height and price information for 2022 from the DEFRA, OS National Geographic Database (NGD), and UK's Land Registry and policy information from the GLA.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 2: RDD Results: Effects of PV on Heights and Prices (2022)

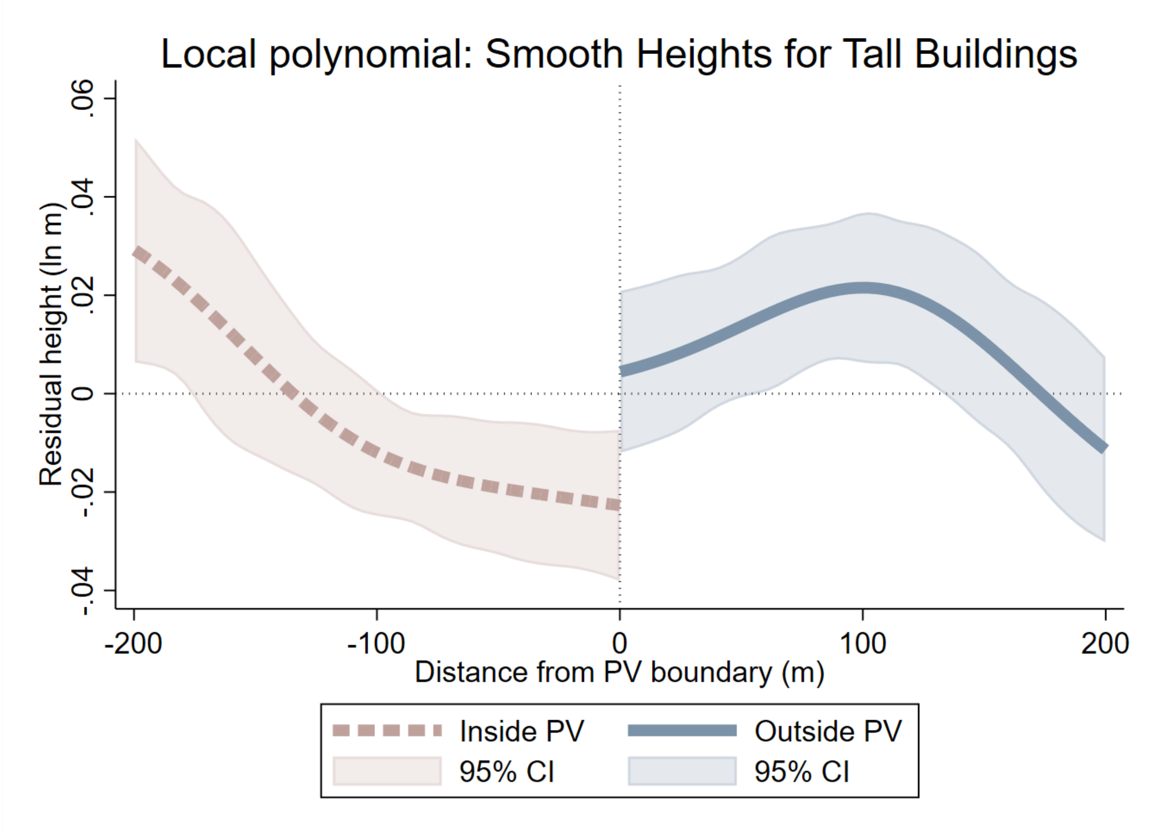
	(1)	(2)	(3)	(4)
	$\ln H$	$\ln H_{(Tall)}$	$\mathbb{1}\{\text{Tall}\}$	$\ln P$
Inside PV	-0.00	-0.06***	0.00	0.026**
	(0.01)	(0.02)	(0.00)	(0.01)
Distance from PV boundary (km)	-0.12*	-0.22**	-0.10***	-0.134**
	(0.06)	(0.09)	(0.02)	(0.053)
Boundary FE	Yes	Yes	Yes	Yes
Year FE	No	No	No	Yes
Observations	52,751	5,404	52,751	16,369
R^2	0.10	0.19	0.24	0.49

Standard errors in parentheses

Notes: The table reports OLS estimates of the elasticity of heights and prices on the treatment dummy, the running variable (distance from a PV boundary) and boundary fixed effects. Column 1 shows the results of the main specification, providing the results for log height, which focuses on those buildings outside a Conservation area within a 200-meter window of the cutoff. Column 2 is identical to column 1, but only those buildings are considered tall. Column 3 shows the results of the same sample as in column 1 but uses a dummy as a dependent variable that takes the value of 1 when a building is considered tall and zero otherwise. Column 4 considers the same areas in the city as in column 1 but at the postcode level and uses log prices as the dependent variable and controls for year fixed effect.
Source: Own calculations using building, height and price information for 2022 from the DEFRA, OS National Geographic Database (NGD), and UK's Land Registry and policy information from the GLA.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure 4: Non Parametric BDD: Effects on Built Height for Tall Buildings



Notes: The figure shows the graphical representation of the smoothed residuals of the border fixed effect regression on height, plotted against the running variable (distance from the boundary). The treated side is on the left, in red, with a dotted fitted line, while the control is on the right, in blue, and on a solid line.
Source: Own calculations using building and height information for 2022 from the DEFRA and OS National Geographic Database (NGD) and policy information from the GLA.

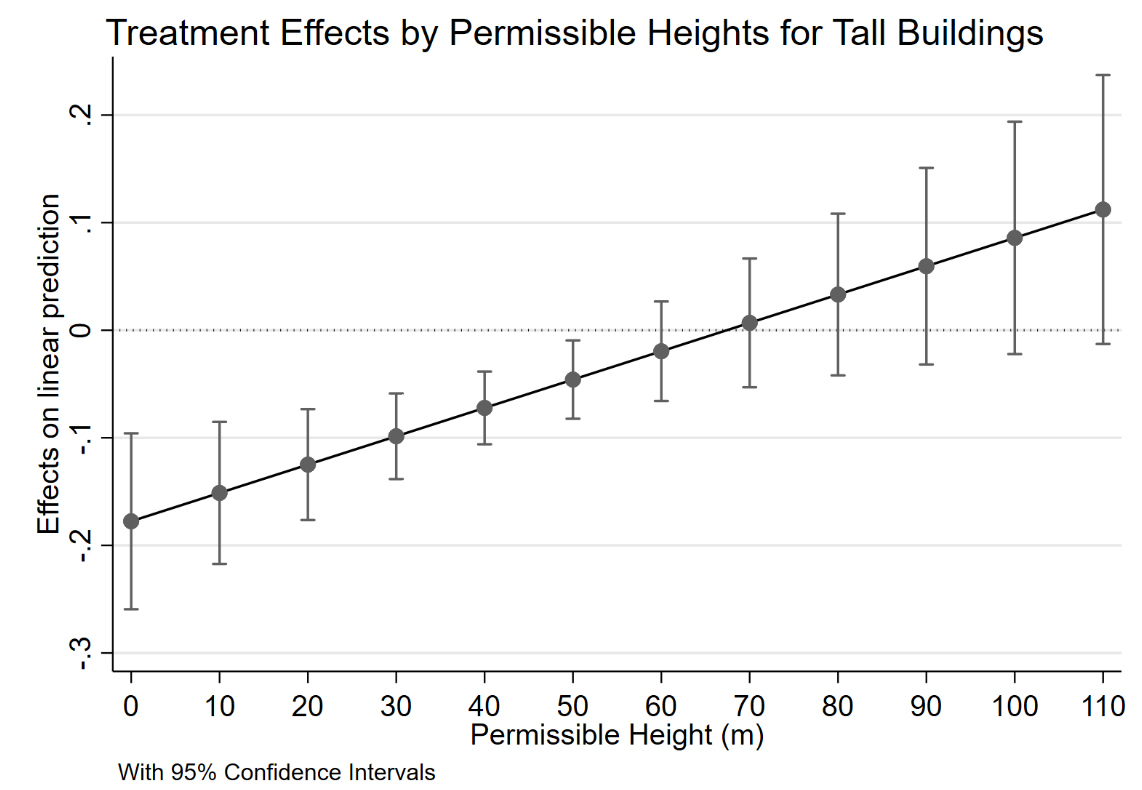
5.2 Treatment Intensity: Permissible Building Heights

Figure (5) shows the main results for tall buildings interacting with an explicit measure of the intensity of the treatment, the **Permitted Building Height** variable (in meters). As mentioned in the background section, the PV regulation has varying heights throughout the treated areas. The difference between the height defined in the regulation and the height of the ground, both in meters above sea level[4], allow an accurate measure of the allowable vertical space, which is an intensity variable of the

[4]The precise unit is called Above Ordnance Datum, which is the height in meters relative to the mean sea level at Newlyn in Cornwall.

treatment. Results are intuitive, for lower permissible heights, the treatment effects are negative and significant, increasing as the regulation allows for more building space. The effect is no longer statistically significant for buildable heights of 60 meters or above.

Figure 5: Treatment Effects for Tall Buildings interacted with Permissible Hieghts



Notes: The figure shows OLS estimates of the elasticity of heights on the treatment dummy interacted with the permissible height variable (difference between the height regulation and the ground elevation in meters), the running variable (distance from a PV boundary), boundary fixed effects and the interaction with a continuous heterogeneity variable for tall buildings outside a Conservation area within a 200-meter window of the cutoff.
Source: Own calculations using building, height and price information for 2022 from the DEFRA, OS National Geographic Database (NGD), and UK's Land Registry and policy information from the GLA.

5.3 Heterogeneous Results: Age of Buildings and Land Use

In this subsection, I explore the heterogeneous effects of PV on the built heights of taller buildings outside conservation areas. Using data from the Verisk Digimap Collections, I can identify buildings' binned age and use. For age, the information comes binned by periods like Historic, Interwar, Sixties and Seventies, etc. I group the ages into two, pre- and post-World War II (WWII), as this time coincides with significant innovations in engineering that allow for building higher, as well as the post-construction of London after the war. Regarding use, information is fairly disaggregated by types, including residential, commercial, office, education, and others. I will group information by the predominant type and focus on predominantly residential and predominantly commercial and office (which will also include mixed commercial and residential).

Table 3 presents heterogeneity analyses by age. Columns 2 and 3 report results for post-WWII buildings, while columns 4 and 5 focus on pre-WWII structures. Among tall buildings, those constructed after 1945 are approximately 7% shorter within Protected Vistas (PV) compared to outside, whereas pre-WWII buildings show no statistically significant difference. This pattern aligns with both technological and historical factors. Advances in engineering after the war enabled taller construction, making newer buildings more likely to approach regulatory height limits. In addition, much of London's postwar reconstruction involved replacing bomb-damaged areas with modern, often taller, structures. In contrast, older buildings, often built before modern high-rise techniques, are less likely to approach the height thresholds affected by the policy and thus remain largely unaffected.

In terms of composition, columns 3 and 5 show the results of the Linear Probability Model with a dependent variable that takes the value of 1 if the building was after WWII or before WWII. Column 3 shows a higher share of tall post-WWII buildings within PV areas, while column 5 shows a corresponding decline in tall pre-WWII structures. This suggests that newer developments are more prevalent in areas subject to height limits.

Table 4 explores heterogeneity by land use. Columns 2 and 3 examine residential buildings, and columns 4 and 5 focus on commercial, office, and mixed-use buildings. The only statistically significant effect is a 5% reduction in the height of tall commercial buildings within PV areas. Residential buildings show no significant height response. This may reflect differences in economic incentives: commercial developers are more likely to build to the maximum allowable envelope to maximise returns, making them more sensitive to height limits. In contrast, residential buildings, especially in low- to mid-rise typologies, may already fall below the regulatory thresholds or face other constraints such as neighbourhood character or planning norms.

Table 3: RDD Results: Effects of PV on Heights by Age of Building (2022)

	(1)	(2)	(3)	(4)	(5)
	$\ln H$	$\ln H$	$\mathbb{1}\{\text{Post-WWII}\}$	$\ln H$	$\mathbb{1}\{\text{Pre-WWII}\}$
Inside PV	-0.06***	-0.07***	0.05**	-0.01	-0.05***
	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)
Distance from PV boundary (m)	-0.00**	-0.00*	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Observations	5,404	4,155	5,438	888	5,438
R^2	0.19	0.21	0.20	0.32	0.22

Standard errors in parentheses

Notes: The table reports OLS estimates of the elasticity of heights and prices on the treatment dummy, the running variable (distance from a PV boundary) and boundary fixed effects. Column 1 shows the results of the main specification, providing the results for log height, which focuses on tall buildings, outside a Conservation area within a 200-meter window of the cutoff (the same as column 3 of Table (2)). Column 2 has the same variables as column 1 but considers only Post-WWII buildings. Column 3 shows the results of the same sample as in column 1 but uses a dummy as a dependent variable that takes the value of 1 when a building was built Post-WWII and zero otherwise. Column 4 has the same variables as column 1 but considers only Pre-WWII buildings. Column 5 shows the results of the same sample as in column 1 but uses a dummy as a dependent variable that takes the value of 1 when a building was built Pre-WWII and zero otherwise.
Source: Own calculations using building and height information for 2022 from the DEFRA and OS National Geographic Database (NGD) UK's Land Registry and policy information from the GLA.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: RDD Results: Effects of PV on Heights by Land Use (2022)

	(1) $\ln H$	(2) $\ln H$	(3) $\mathbb{1}\{\text{Res}\}$	(4) $\ln H$	(5) $\mathbb{1}\{\text{Com}\}$
Inside PV	-0.06***	-0.04	0.03	-0.05**	-0.00
	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)
Distance from PV boundary (m)	-0.00**	-0.00*	0.00	-0.00	-0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Observations	5,404	2,334	5,438	2,327	5,438
R^2	0.19	0.23	0.45	0.27	0.45

Standard errors in parentheses

Notes: The table reports OLS estimates of the elasticity of heights and prices on the treatment dummy, the running variable (distance from a PV boundary) and boundary fixed effects. Column 1 shows the results of the main specification, providing the results for log height, which focuses on tall buildings, outside a Conservation area within a 200-meter window of the cutoff (the same as column 3 of Table (2)). Column 2 has the same variables as column 1 but considers only primarily residential buildings. Column 3 shows the results of the same sample as in column 1 but uses a dummy as a dependent variable that takes the value of 1 when a building is residential and zero otherwise. Column 4 has the same variables as column 1 but considers only commercial and mixed-use buildings. Column 5 shows the results of the same sample as in column 1 but uses a dummy as a dependent variable that takes the value of 1 when a building is commercial and mixed-use and zero otherwise.
Source: Own calculations using building and height information for 2022 from the DEFRA and OS National Geographic Database (NGD) and policy information from the GLA.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

6 Quantitative Analysis

6.1 Calibration

Following Ahlfeldt et al. (2015), this paper calibrates a model for London using data at an LSOA level for 2021. I use the 2021 Census from the Office for National Statistics for employment, residents and commuting times. To construct the price index, I use the Ahlfeldt et al. (2023) toolkit[5] and transaction prices detailed in the Data section, which contains geographical coordinates, and various property attributes which serve as inputs for the creation of the index.

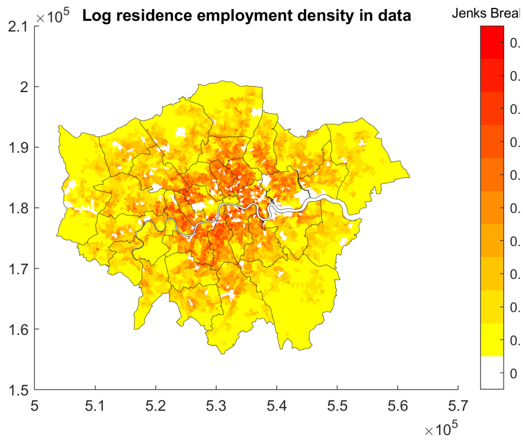
Figure (6) presents descriptive statistics of the main variables fed into the model at the 2021 LSOA level. Panel (a) shows the distribution of residents, which has a monocentric pattern, with a higher concentration of residents in the centre compared to the periphery, with a notable expectation of the most central part (in the City of London, where there are mainly offices and commercial buildings). Panel (b) shows a similar distribution of employment in the city, but with a higher gradient and concentration than the residential distribution. Last, panel (a) shows the 2020 price

[5] `https://github.com/Ahlfeldt/AHS2023-toolkit`

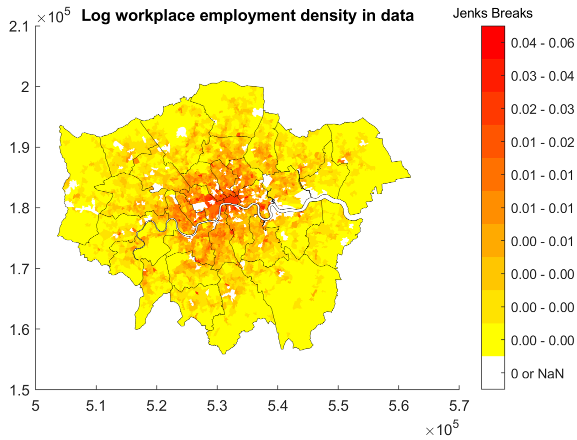
index, which shows higher values in the city's centre and towards the southwest, and lower values in the east.

Figure 6: Descriptive Statistics: Endogenous Variables (observed in data)

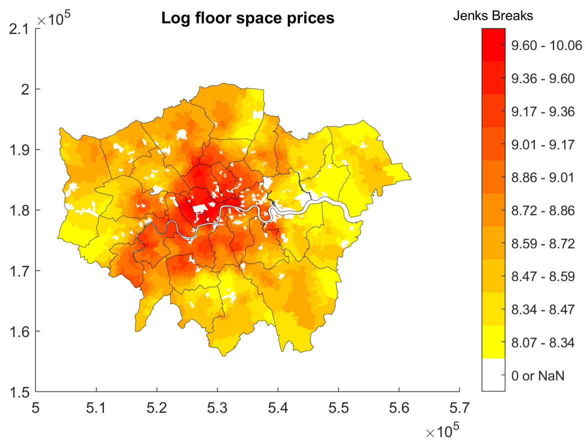
(a) Log Residence Employment



(b) Log Workplace Employment



(c) Log Floor Space Prices

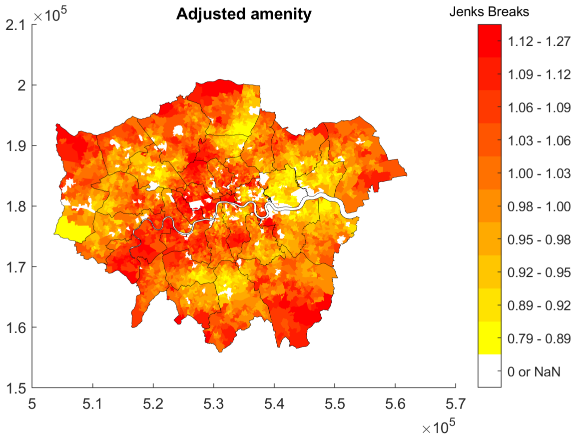


Notes: The figure shows descriptive statistics of variables fed into the model at an LSOA level.
Source: Own elaboration.

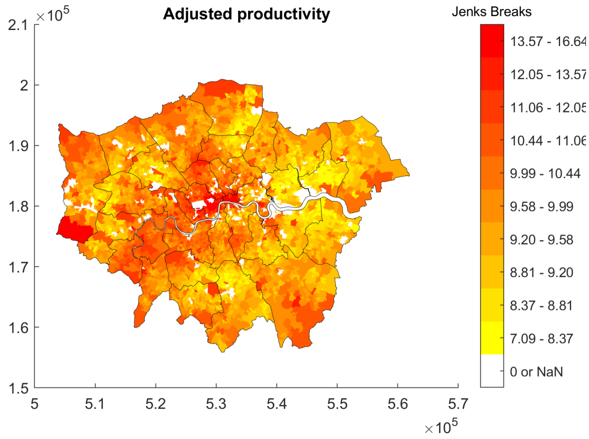
Figures (7) and (8) show the results of the model calibration. For the most part, they seem to match the reality of London. The distribution of fundamental amenities and productivity also makes sense, with high values in the centre for both and with high amenities in parts of the south west (i.e. Richmond borough), even the highlighted LSOA in the centre west, which encompasses Heathrow airport. Figures of the endogenous variables also make sense, with higher densities, the proportion of commercial floorspace and the total amount of floor space in the centre, and high expected income and adjusted wages in the centre.

Figure 7: Calibration outcomes: Exogenous variables

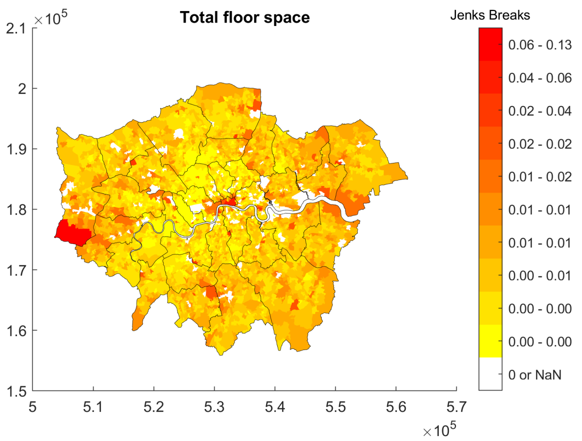
(a) Adjusted Amenities



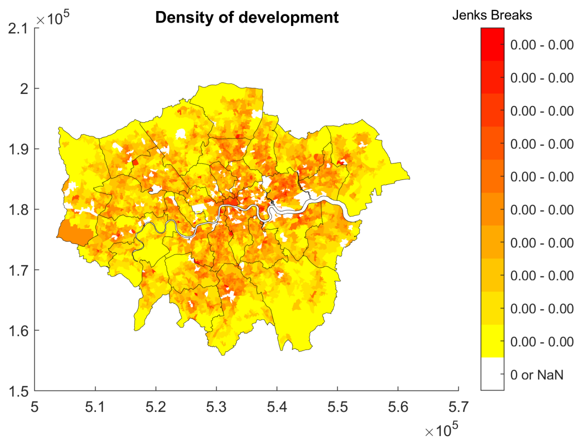
(b) Adjusted Productivity



(c) Total floor space



(d) Density of development

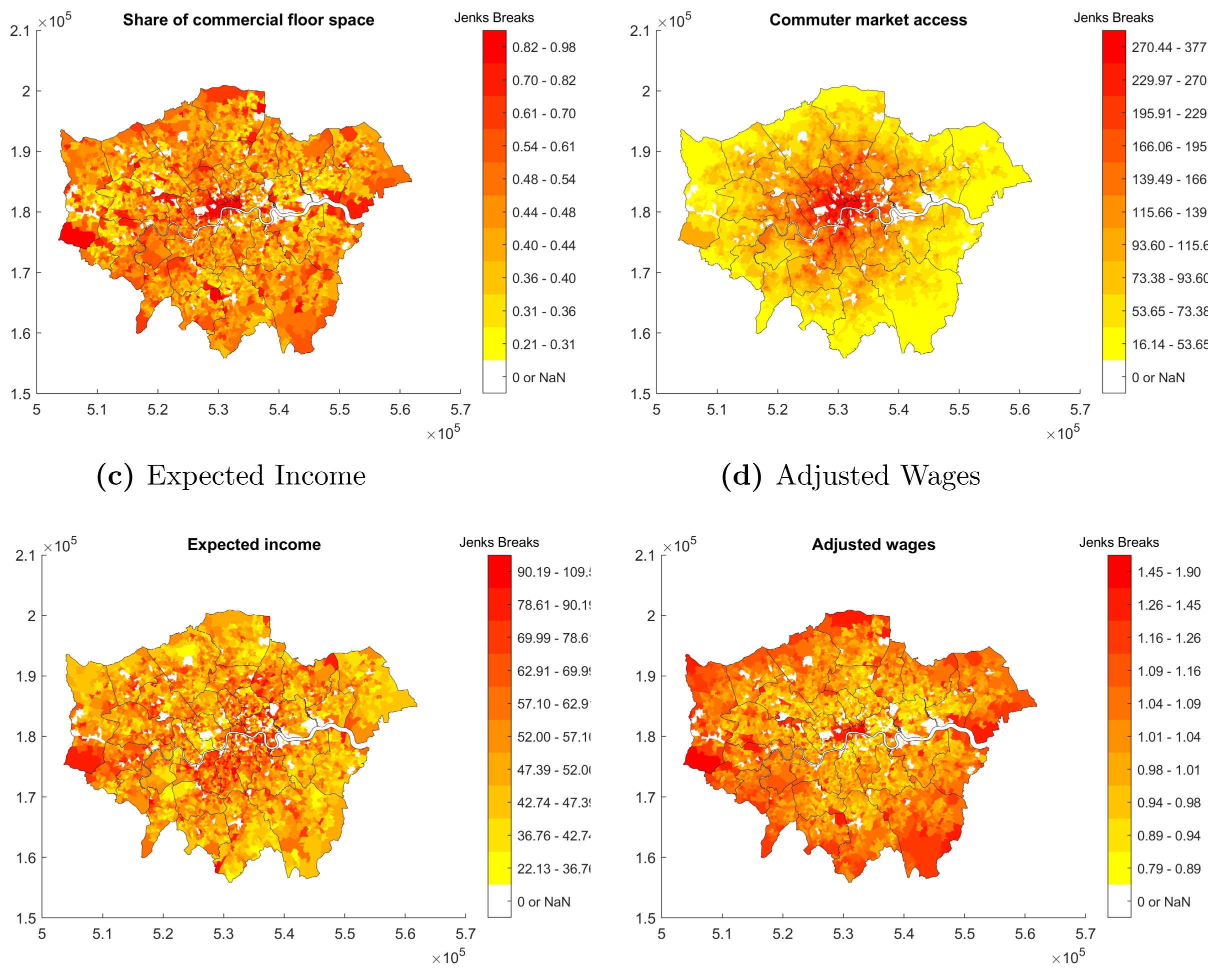


Notes: The figure shows calibrated outcomes (exogenous variables) at an LSOA level.
Source: Own elaboration.

Figure 8: Calibration outcomes: Endogenous variables

(a) Share of commercial floor space **(b)** Commuter Market Access

(c) Expected Income **(d)** Adjusted Wages



Notes: The figure shows calibrated outcomes (endogenous variables) at an LSOA level.
Source: Own elaboration.

6.2 Policy Counterfactual: Removal of the Protected Vistas

In this paper, I consider one main counterfactual exercise, which is a simple and hypothetical exercise to see how the city would look if there were no Protected Vistas. To do so, first, I will align the amount of floor space in the treated areas with nearby unrestricted areas by the causal differential found in Table (2). In other words, I will "fill in" the floor space inside the view corridor. Second, I will adjust the amenities levels within the treated areas so that the price changes obtained by the model match those of the price regressions in Table (2). Figure (9) maps the results of the counterfactual exercise, and Table (5) shows the aggregate results by treated area, direct spillover area (the same buffer considered in the reduced form) and in the whole city. As a complementary analysis, I also conduct counterfactuals for only changes in amenities and floor space separately; the results are in Panels b and c of Table (5) and in Figures (A1) and (A1) in the Appendix.

Figure (9) shows the results of the primary outcome variables after levelling the floor space in Protected Vista with the surrounding areas. Panel (a) shows changes in floor space, one of the forcing variables in this exercise; I added the Figure to facilitate the assessment of spatial correlations between supply changes and the other outcomes. To increase floor space, I use the proportion of tall buildings in each LSOA and multiply this by the negative value of the elasticity I got in the results for tall buildings in Table (2) of 0.06. The logic is that without this regulation, those tall buildings would have been taller. The distribution of this change in the floor space is mostly concentrated in the central boroughs, with a larger change experienced in those LSOA in the centre of the treated areas. Regarding changes in the amenity value, I create a fixed decrease in the amenity variable in the treated areas of 1.34% that allows us to match the price change obtained in the reduced form results in Table (2) of 0.026. Panel (a) of Figure (A2) shows the distribution of this decrease, which has a similar extent to the change in floor space.

Panel (b) of Figure (9) shows the price changes due to the combined changes of floor space and amenities, and in Panel (a) in Table (5) there is the aggregated results for the treated areas and the city as a whole. There is a price change in the treated areas of -2.54%, which varies in intensity inside the treated areas (yellow and orange pattern in the Figure). Prices also decrease in the buffer around the treated areas by 1.98%, but in the city as a whole, the price change is very small, a decrease of 0.06%. In the Figure, it is visible that most areas experience almost no changes in prices, or even some small price increases, which add up to a small decrease in the aggregate. When I assess each channels separately in Table (5), the most considerable decrease in prices in the treated areas and the buffer comes from the changes in the amenities relative to the changes in supply. In terms of the entire city, changes in supply decrease prices by a larger amount than the changes in amenities in the treated areas increase prices in London.

Panel (e) of Figure (9) shows the changes in the share of commercial floor space due to the combined changes of floor space and amenities. There is an increase in the share of commercial vs residential floor space of 5.61%, which seems to be driven mainly by the changes in residential amenity, of 5.09% versus 0.15% from the changes in only floor space. The Figure shows the high intensity of the increases mainly from places inside the PV but not those inside the City of London, probably because those areas already have a very high share at baseline. Overall, the combined counterfactual shows a decrease in the share of commercial floor space in the city of 0.14%, with both channels also showing negative changes. These results could hint that the very productive city centre can now attract and displace commercial activity from other places in the city due to the lack of competition from residents and the increase in floor space supply.

Panels (c), (d) and (f) of Figure (9) show the changes in residence employment, workplace employment and adjusted wages, respectively. Residents decrease by 8.44% in treated areas, a result that is strongly influenced by the decrease in residential amenities of 7.97%, while changes from floor space are close to zero. On the other hand, employment and wages increased by 3.01% and 0.65%, respectively, in treated areas, a result that agrees with the previous finding about the share of commercial floor space. When focusing on London, wages are close to zero and population does not change as this is a closed city model.

Regarding welfare, the last rows of each Panel in Table (5) show the changes in utility in London due to each counterfactual exercise. In all three cases, there is a small increase in the welfare of around 0.20%, but the isolated changes in floor space present the highest utility levels. These measurements do not account for the value of heritage. These elements contribute to residents' and visitors' well-being in ways that are not captured by standard measures of amenities or housing costs. The preservation of sightlines to historic landmarks, for instance, may yield non-market benefits such as identity, continuity, and aesthetic pleasure—values that are deeply embedded in the urban experience but difficult to monetise.

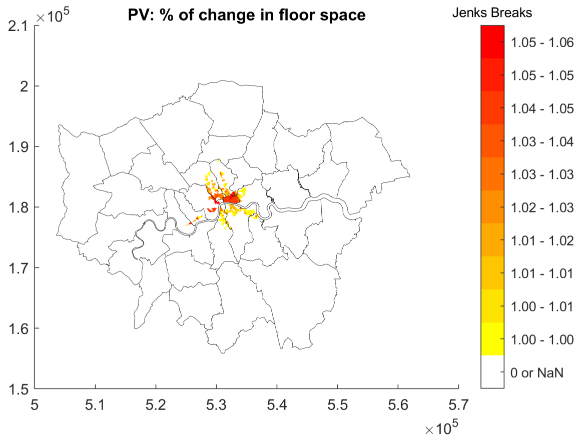
Table 5: Aggregate Counterfactual Outcomes

Panel A: Counterfactual for Changes in Floor Space and Amenities			
Δ in Variables	Treated	Buffer	London
Floor Space Price	-2.54	-1.98	-0.06
Share of Commercial Floor Space	5.61	4.34	-0.14
Residence Employment	-8.44	-6.83	0.00
Workplace Employment	3.01	2.39	0.00
Adjusted Wages	0.65	0.53	-0.00
Utility			0.22
Panel B: Counterfactual for Changes in Floor Space			
Δ in Variables	Treated	Buffer	London
Floor Space Price	-0.51	-0.42	-0.04
Share of Commercial Floor Space	0.15	0.11	-0.11
Residence Employment	0.00	-0.01	0.00
Workplace Employment	1.31	1.08	0.00
Adjusted Wages	0.11	0.10	0.01
Utility			0.27
Panel C: Counterfactual for Changes in Amenities			
Δ in Variables	Treated	Buffer	London
Floor Space Price	-1.91	-1.47	-0.00
Share of Commercial Floor Space	5.09	3.96	-0.05
Residence Employment	-7.97	-6.48	-0.00
Workplace Employment	1.60	1.24	-0.00
Adjusted Wages	0.50	0.40	-0.01
Utility			0.19

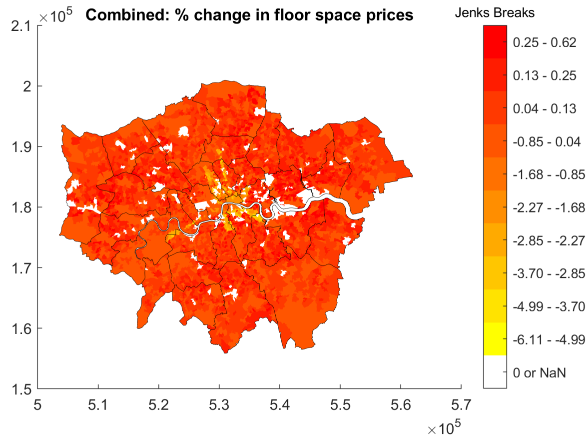
Notes: The table reports mean of key outcomes (in each row) under different conditions: LSOAs treated (column 1), buffer zone (column 2), and whole city (column 3). Panel A shows the results for the counterfactual exercises that modify the floor space and amenity level inside the treated areas to match the mean price change to the coefficient found in the reduced form. Panel B shows the results for the counterfactual exercises that modify only the floor space inside the treated areas. Panel C shows the one where there is only a modification to the amenities.
Source: Own elaboration.

Figure 9: Counterfactual: Changes in Floor Space and Amenities in the PV

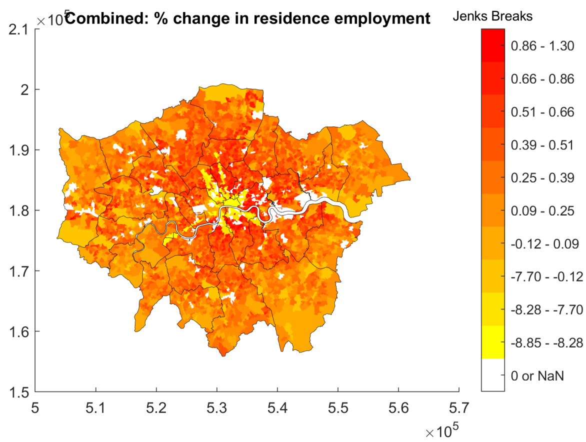
(a) Change in FS (forcing variable)



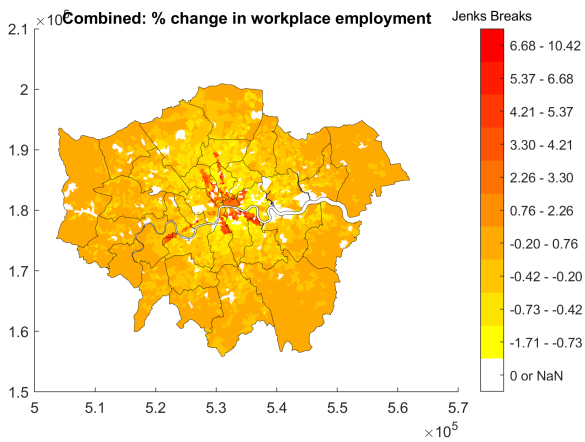
(b) Change in FS Prices



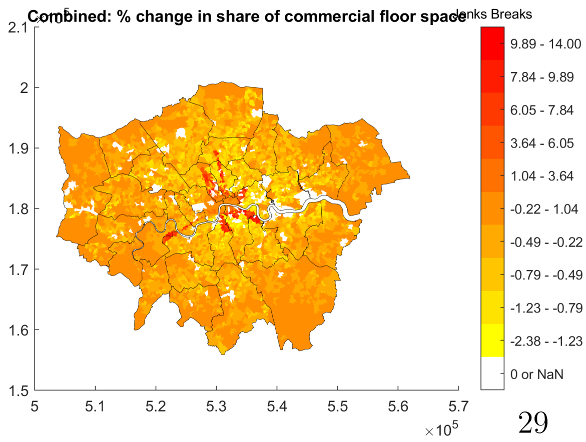
(c) Change in Residence Employment



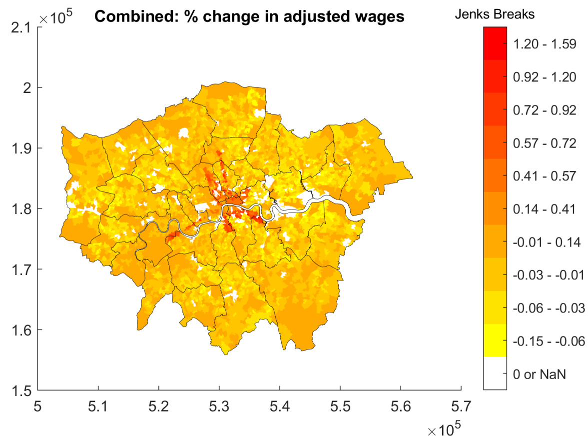
(d) Change in Workplace Employment



(e) Change in Share of Commercial FS



(f) Change in Adjusted Wages



Notes: The figure shows counterfactual outcomes at an LSOA level for the counterfactual exercises that modify the floor space and amenity level inside the treated areas to match the mean price change to the coefficient found in the reduced form. Panel B shows the results for the counterfactual exercises that modify only the floor space inside the treated areas. Panel C shows the one where there is only a modification to the amenities.
Source: Own elaboration.

7 Conclusion

This paper leverages a unique quasi-experimental setting in London to estimate the causal effects of vertical land-use regulations on the built environment and housing markets. By exploiting the exogenous geometry of the Protected Vistas policy, the analysis provides new evidence of how height restrictions shape heights and prices in an attractive city like London. The reduced-form results show that these constraints bind selectively—curbing the height of tall, commercial, and post-war buildings. The policy also appears to have a price premium, likely reflecting amenity benefits. A spatial equilibrium model suggests that relaxing such constraints would modestly improve aggregate welfare, primarily by easing supply frictions in constrained central areas. The findings highlight the economic trade-offs inherent in urban regulation in growing cities and offer credible elasticity estimates that can inform debates on optimal urban design and regulation.

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Appendix

Table A1: RDD Results: Effects of PV on Heights by Permissible Heights for Tall Buildings (2022)

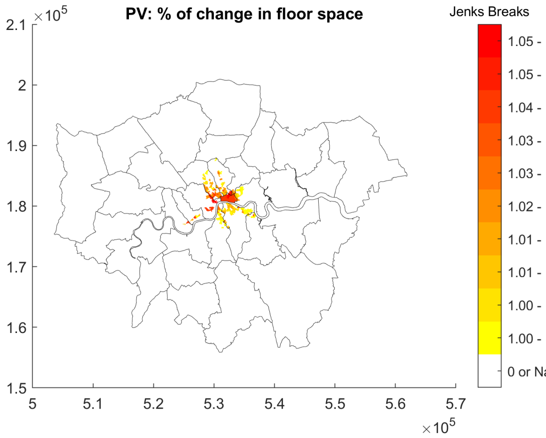
	(1)	(2)
	$\ln H$	$\ln H$
Inside PV	-0.06***	-0.18***
	(0.02)	(0.04)
Distance from PV boundary (m)	-0.00**	-0.00**
	(0.00)	(0.00)
Permissible Height (m)		-0.00***
		(0.00)
Inside PV × Permissible Height (m)		0.00***
		(0.00)
Observations	5,404	5,371
R^2	0.19	0.20

Standard errors in parentheses

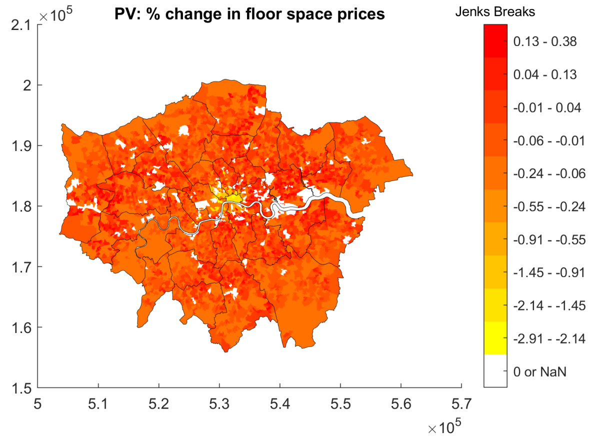
Notes: The table reports shows OLS estimates of the elasticity of heights on the treatment dummy, the running variable (distance from a PV boundary), boundary fixed effects and the interaction with a continuous heterogeneity variable for tall buildings outside a Conservation area within a 200-meter window of the cutoff. Column 1 shows the main specification, while column 2 shows the results of the main specification for tall buildings interacted with the permissible height variable (difference between the height regulation and the ground elevation in meters).
Source: Own calculations using building, height and price information for 2022 from the DEFRA, OS National Geographic Database (NGD), and UK's Land Registry and policy information from the GLA.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure A1: Counterfactual: Changes in Floor Space in the Protected Vista

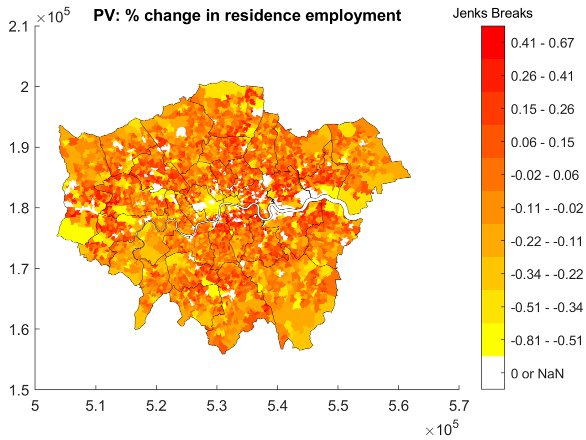
(a) Change in Floor Space (forcing variable)



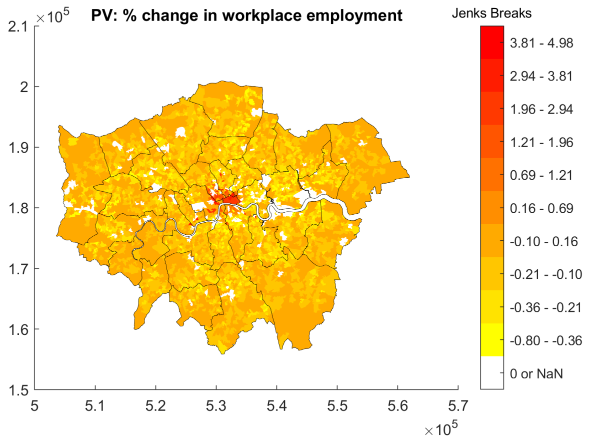
(b) Change in Floor Space Prices



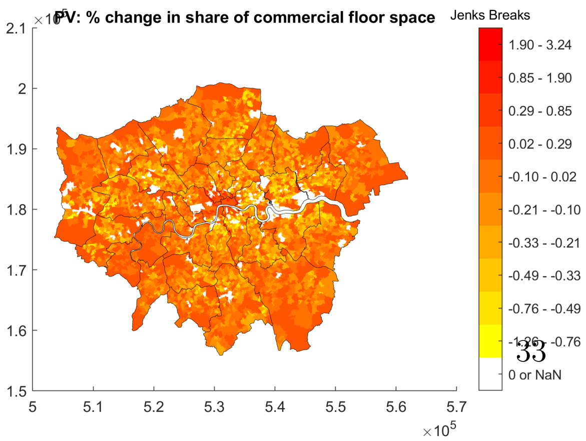
(c) Change in Residence Employment



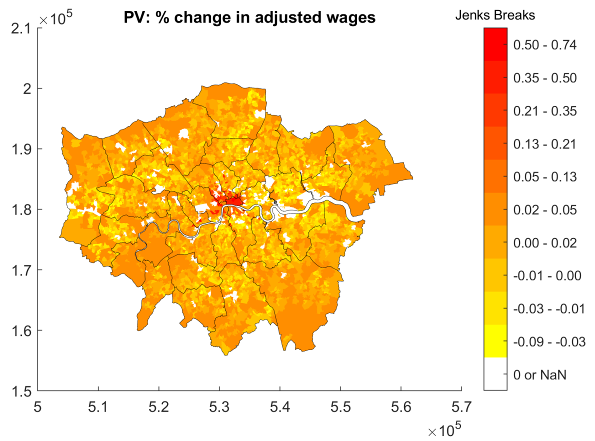
(d) Change in Workplace Employment



(e) Change in the Share of Commercial Floor Space



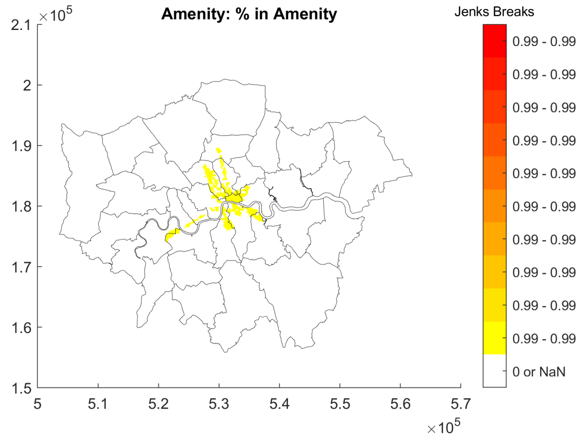
(f) Change in Adjusted Wages



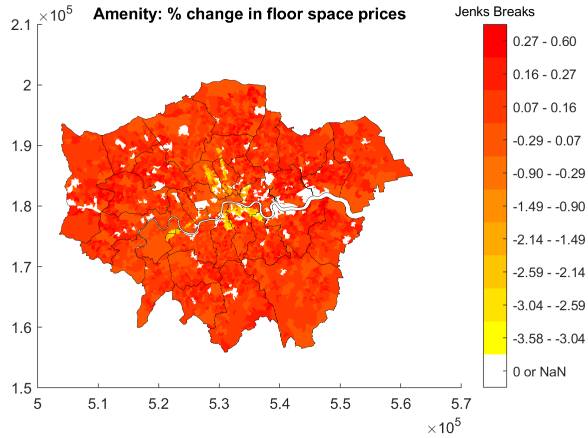
Notes: The figure shows counterfactual outcomes at an LSOA level for the counterfactual exercises that modify the floor space inside the treated areas by the reduced form result.
Source: Own elaboration.

Figure A2: Counterfactual: Changes in Amenities in the Protected Vista

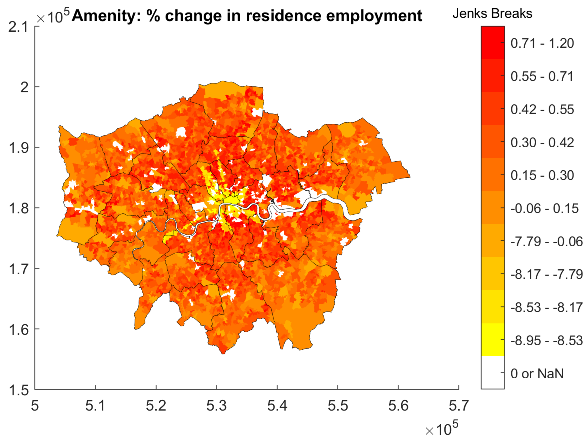
(a) Change in Amenities (forcing variable)



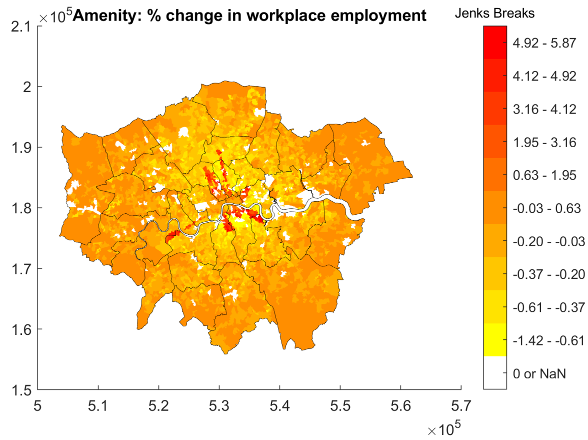
(b) Change in Floor Space Prices



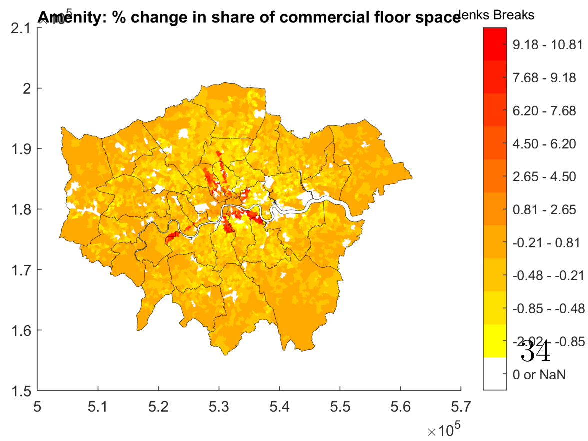
(c) Change in Residence Employment



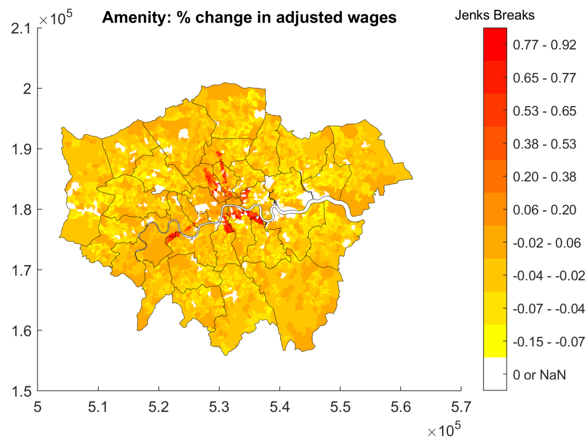
(d) Change in Workplace Employment



(e) Change in the Share of Commercial Floor Space



(f) Change in Adjusted Wages



Notes: The figure shows counterfactual outcomes at an LSOA level for the counterfactual exercises that modify the amenity level inside the treated areas to match the mean price change to the coefficient found in the reduced form.
Source: Own elaboration.