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House prices in big cities cannot be expected to come down any time soon

Yujiang River Chen, Coen Teulings / 16 Dec 2025

House prices have increased sharply in many advanced economies, often leading to populist revolt and social crises. This column argues that agglomeration externalities foster urbanisation and knowledge spillovers, which generate high location premiums and can account for the increase in house prices. Policies to address the lack of affordable housing include building smaller houses in cities, providing efficient public rail transport for commuting, and pricing parking for residents in cities appropriately.

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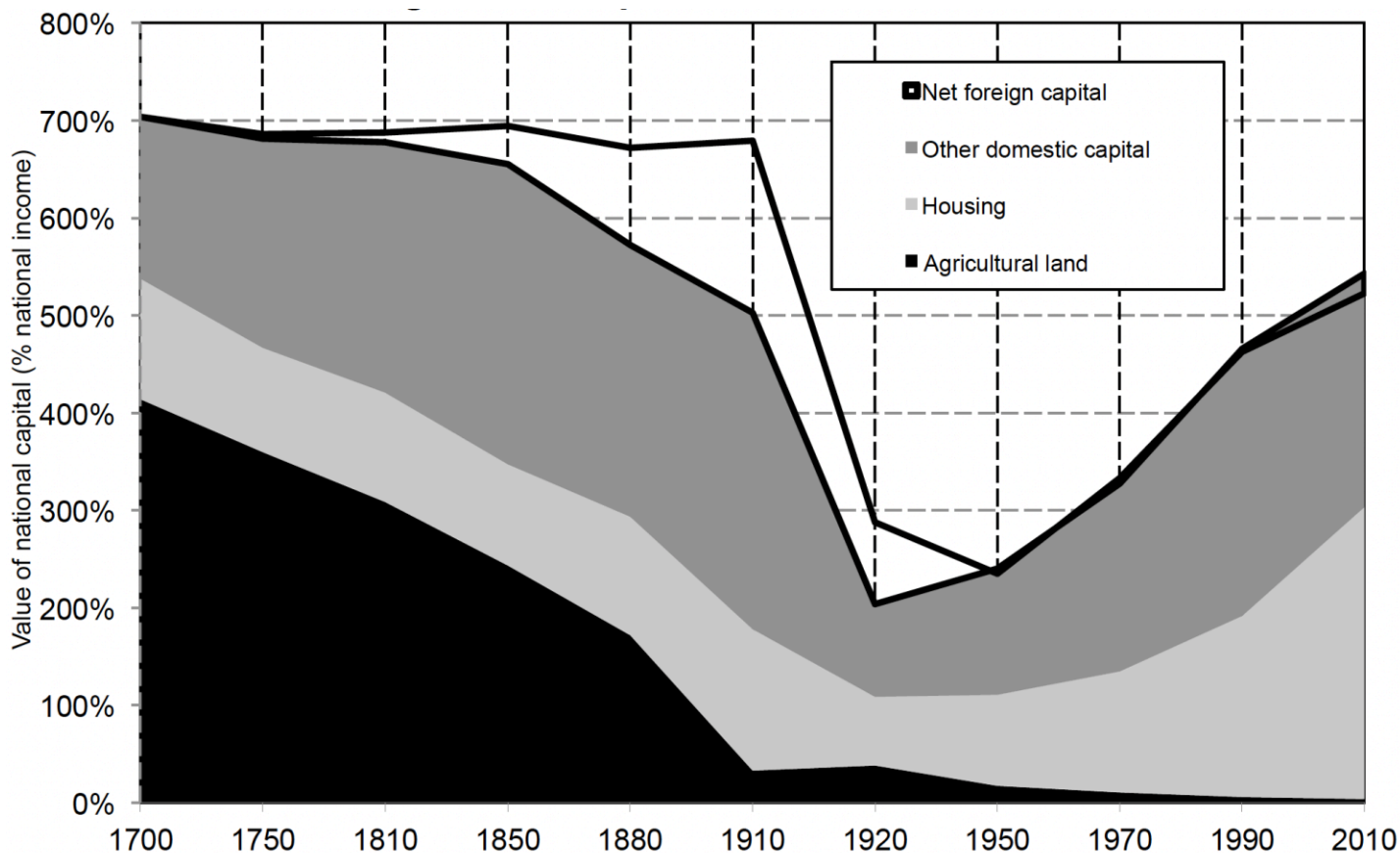
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The worry about the steep increases in house prices in most OECD countries is widespread (e.g. *The Economist* 2024, Wolf 2021). The shortage of affordable housing has played a major role in recent elections and is contributing to the global populist revolt. Political parties and policymakers are struggling to formulate an adequate response to what is perceived as a major market failure and social crisis.

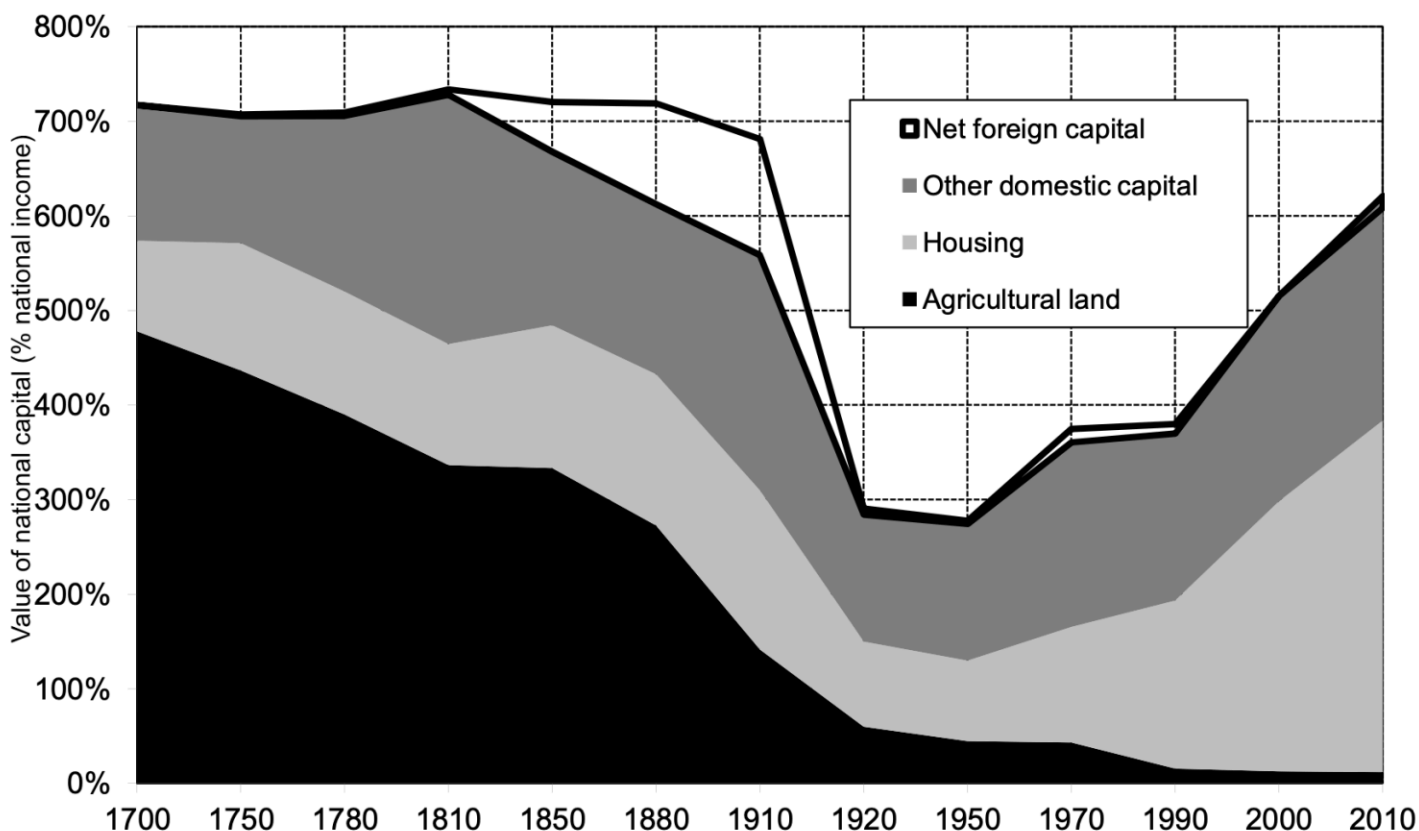
The data in Piketty's (2014) *Capital in the 21st century* show that the rising share of housing in the capital stock started as far back as the 1960s/1970s (Figure 1). This phenomenon is not easy to explain. One would expect house prices to move in parallel with construction costs in the long run. Though there might be some increase in relative construction costs, it seems unlikely that this explains the secular upward trend.

Figure 1 Housing takes a rising share of the capital stock in recent decades

a) UK



b) France



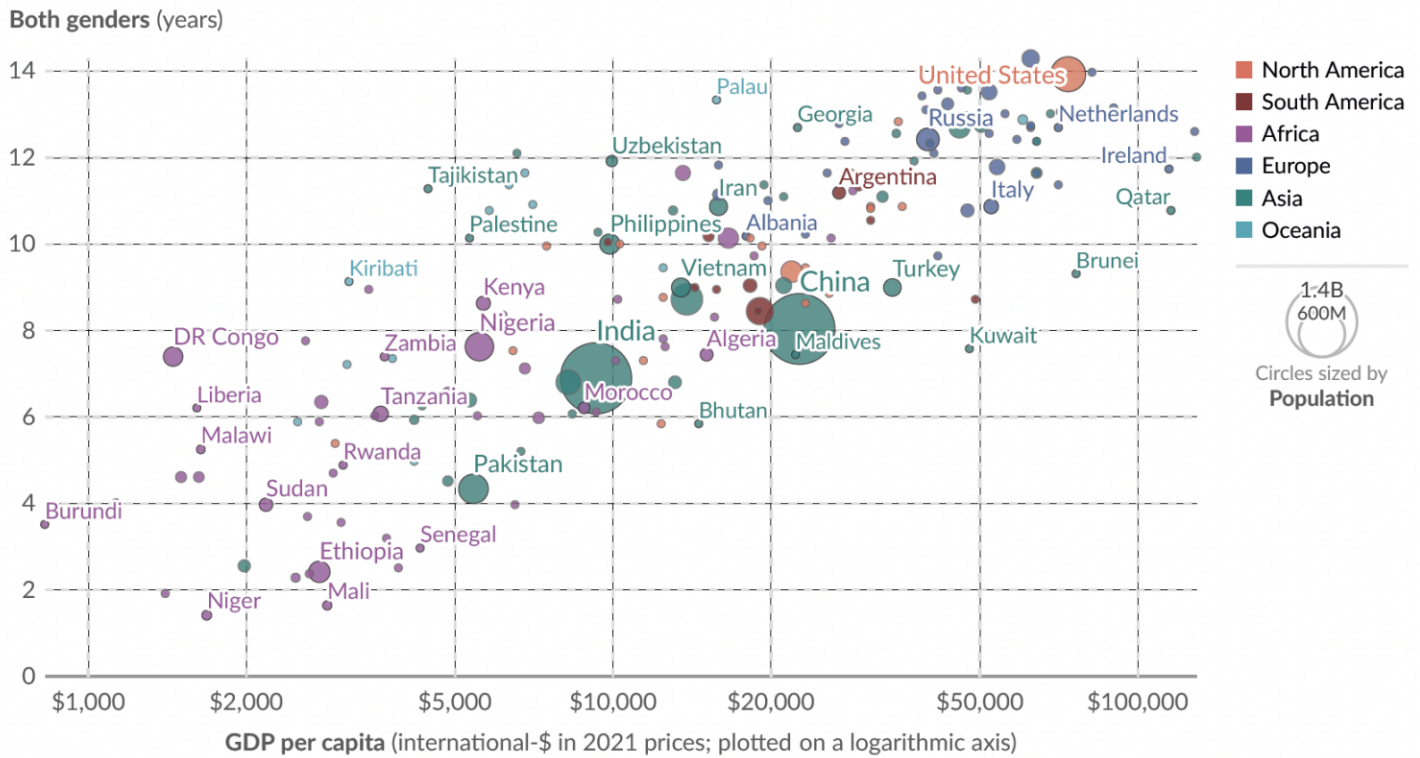
Source: Piketty (2014)

We offer an alternative explanation for the rising share of residential real estate in the capital stock. Our explanation is akin to real estate brokers' well-known answer when asked to list the three most important factors for the value of a property: location, location, and location. Agglomeration externalities foster urbanisation and yield high location premiums, which are embedded in the value of the housing stock. Location premia introduce a wedge between construction costs and house prices. As we shall argue, this phenomenon is the main reason for the increase in house prices. It is deeply rooted in the unprecedented growth of capitalist economies over the past two centuries and the prosperity of OECD countries. It relates to the growing shares of R&D on the one side and marketing/sales on the other side of the value chain (Baldwin and Ito 2021). Both parts of the value chain strongly rely on knowledge spillovers.

Human capital and economic growth

Around 1800, at the start of the capitalist/industrial revolution, differences in GDP per capita across the world were rather small, in the order of magnitude of a factor of four. Moreover, it was not that much different from what it had been in the richer part of the Roman Empire 1800 years earlier. For two centuries, the Netherlands had been twice as rich as most other parts of the world, but this was just an isolated harbinger of what the next two centuries would bring. When the capitalist revolution gathered steam during the 19th century, first in the UK, and not much later in the rest of Western Europe and in the US, GDP per capita exploded in these parts of the world, while there was hardly any effect elsewhere. This divergence continued for the next two centuries, leading to the wide dispersion in GDP per capita between countries observed today and documented in Figure 2.

Figure 2 Strong correlation between GDP per capita and average years of education across countries, 2023



Source: Our World in Data based on UNDP, Human Development Report (2025); Eurostat, OECD, IMF, and World Bank (2025)

Lucas (1988) asked how this could have happened. Standard economic theory would predict convergence rather than divergence of GDP per capita. As technology can be easily copied, differences in GDP per capita must be due to cross-country heterogeneity in the capital stock per worker. But then countries with high capital intensity face a low return to capital, making investment in these countries less attractive than in countries with low capital intensity. This should lead to convergence, a prediction that was clearly at odds with the data. The inevitable conclusion was that technology was not as easily transferable as thought previously, an analysis pre-empted by Arrow's (1962) analysis of the economics of learning by doing: new technology was mastered, largely by practising rather than by divine inspiration.

This analysis showed the relevance of large, localised knowledge spillovers, where spatial proximity to the location of inventions is the critical factor. Lucas pointed to the role of agglomeration in cities for knowledge spillovers. He cited Jacobs' famous (1961) book *The Death and Life of Great American Cities* as an analysis of what spatial structures of cities were most conducive to the generation of these spillovers. In subsequent work with Rossi-Hansberg (Lucas and Rossi-Hansberg 2002), they investigate the implications for the internal structure of cities with a commercial central business district (CBD) surrounded by residential suburbs. Their model has been used extensively, for example in the analysis by Heblich et al. (2020) of the rise of London as the first modern metropolis around 1850 and by Ahlfeldt et al. (2015) of the consequences of the Berlin Wall dividing the city for five decades.

The localised impact of human capital can also be seen from Figure 2, where GDP per capita is plotted against years of education. These data suggest a public return per year of education of about 50%, way above the standard estimate of the private return of about 10%. Gennaioli et al. (2013) report very similar numbers using within-country regional variation rather than the cross-country variation based on Barro and Lee (1996) and shown in Figure 2: within countries, high human capital workers concentrate in some regions and in these regions GDP per capita is much higher. These data support the idea of large externalities of the proximity of high human capital workers. Clearly, the raw data show just correlation, not causality. We return to this issue below.

Cities and human capital

In accordance with Lucas' (1988) analysis, cities have played a crucial role in economic progress throughout history. Urbanisation increased during periods of exceptional prosperity and declined during subsequent downturns. This pattern is aptly illustrated in Table 1, based on data collected by Bairoch (1988). Belgium was the world's most urbanised country during the peak of its textile industry between 1300 and 1500. In the 16th century, the Dutch Republic surpassed Belgium and the latter's urbanisation rate declined. As discussed before, the Netherlands was the most prosperous country during the next two centuries. During this era, it was the world's most urbanised country, with

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Amsterdam serving as the leading global port and financial centre. Although the Netherlands remained the world's wealthiest country well into the 18th century, its dominance – along with its urbanisation rate – gradually waned. It was only around 1850, with its industrial revolution in full swing, that the UK overtook the Netherlands as the world's most urbanised nation.

Table 1 Urbanisation in European countries closely aligned to economic growth

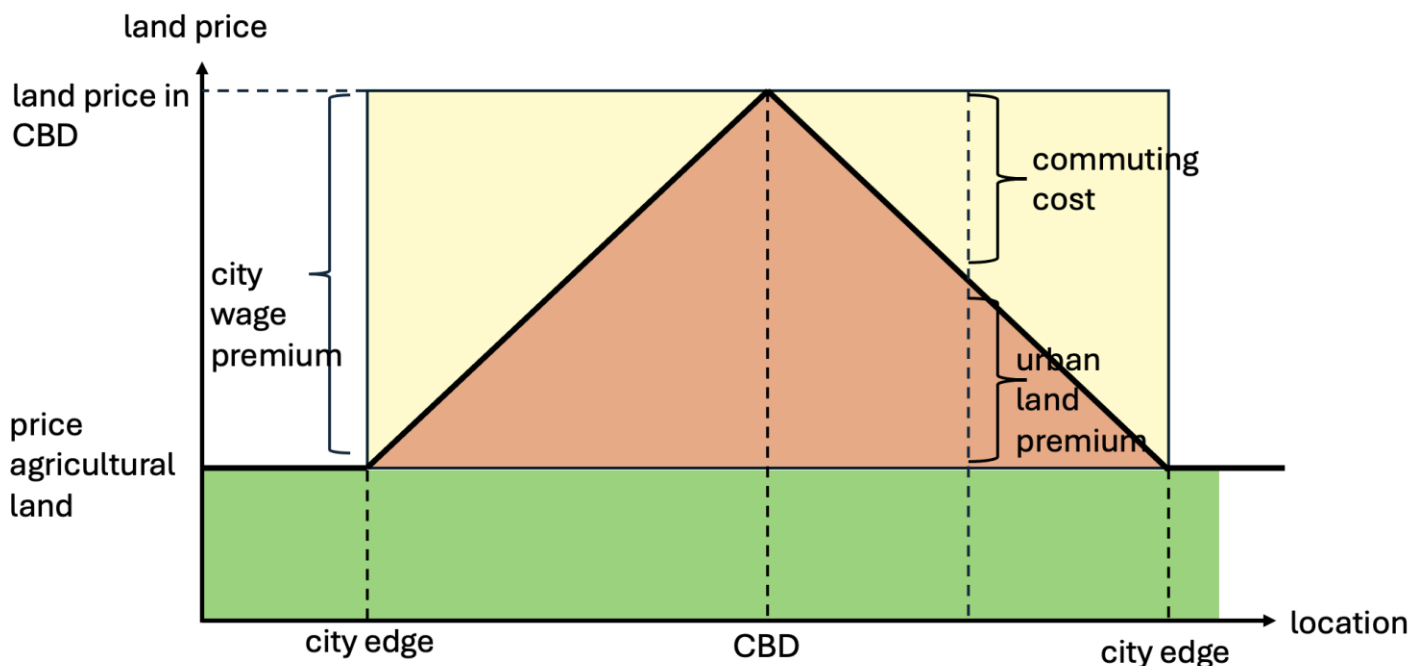
Country	1300	1500	1700	1800	1910	1980
Belgium	30	40	30	20	57	70
England	7	8	15	23	75	79
Italy	18	18	17	18	40	65
Netherlands	10	23	43	37	53	82
Portugal	10	12	20	16	16	34
Russia	5	5	6	6	14	61
Europe	8	8	10	10	41	66

Source: Teulings and Huysmans (2025), adapted from Bairoch (1988)

Figure 3 presents a simplified version of Lucas and Rossi-Hansberg's (2002) model. Locations are reflected along the horizontal axis. The Central Business District (CBD) is in the centre. The vertical axis reflects land prices and wages; for simplicity they have the same dimension. Green reflects wages in the countryside. The higher wage in the CBD reflects the benefit of the agglomeration of workers at one point in space for the generation of knowledge spillovers. Workers, however, need land for residential purposes. They cannot all live in the CBD. They therefore live in the suburbs surrounding the CBD and commute to it. The yellow triangle measures the commuting cost, which increases linearly in the distance from the home location to the CBD: the further away from the CBD, the higher the commuting cost. The slope of the line between the yellow and orange triangles measures the commuting cost per kilometre.

Houses at locations close to the CBD are therefore more valuable since their residents save on commuting costs. At the edge of the city (see Figure 3), the city wage differential is offset by the commuting costs. This model explains the disconnection between house prices and construction costs. Building inside the city's edge is impossible, as all land is already occupied. Building outside its edge is not profitable because commuting costs from these locations exceed the city wage premium.

Figure 3 A simple model of a city

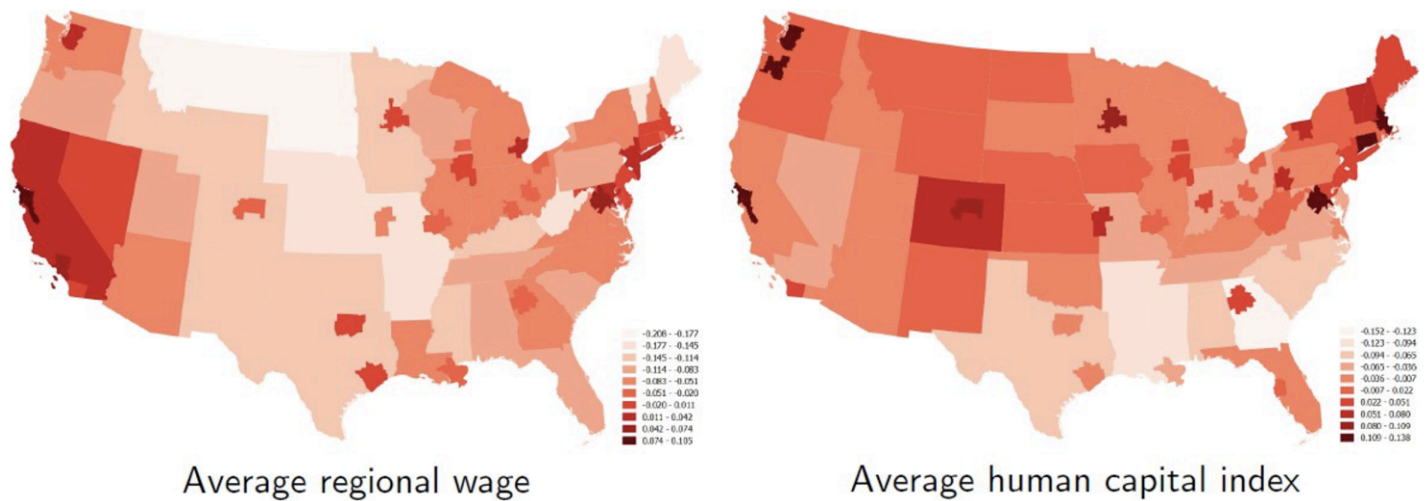


Source: Teulings and Huysmans (2025).

The spatial form of a city with a commercial CBD surrounded by residential suburbs is conducive to knowledge spillovers as it concentrates large numbers of workers in a small area, where in rural areas employment is geographically dispersed. Since knowledge spillovers are more relevant for high human capital workers, these workers agglomerate in cities, just as reported by Gennaioli et al. (2013). Figure 4, taken from Chen and Teulings (2025), shows this pattern for the US for 34 cities and 47 rural areas. San Francisco, Boston, and San Jose turn out to

have higher human capital per worker than other cities, and the average city has higher human capital than the average rural area (left panel). The same holds for wages (right panel).

Figure 4 Human capital regionally concentrated, in particular in cities



Source: Chen and Teulings (2025)

In Chen and Teulings (2025), we use this model. We regress individual log wages on both individual and regional human capital as explanatory variables. The effect of individual human capital measures its private return, while the effect of regional human capital measures its public return.

Table 2 shows the results. The public return adds 25% to the private return in rural areas and more than doubles the private return in cities (see column 2). The interpretation of the regression coefficients is subject to two well-known statistical problems. First, the effect of regional human capital might be a proxy for unobserved individual human capital, thereby overestimating the public return. Second, there might be a common latent factor explaining both why particular regions pay higher wages and why high human capital workers prefer living there. We correct for these problems. If anything, their correction underestimates the public return.

Workers' human capital therefore has positive externalities for the earnings of their co-workers in the region. The city form reinforces these externalities by bringing these workers together at one location, as predicted by the Lucas and Rossi-Hansberg (2002) model. The natural experiment of the 1974 Carnation revolution in Portugal confirms these conclusions. The rapid modernisation of the country in the subsequent decades led to a specialisation of its only big city, Lisbon, in high human capital activities (Teulings and Vieira 2004).

Table 2 The public return to human capital and land-prices in rural areas and cities

Region	Elasticities public vs private return ²⁾			Region	Human	Log
type	Wages	House prices	Land prices ³⁾	group	capital ⁶⁾	Land prices
Rural	0.25	1.25	2.75	Bottom 3 ⁴⁾	-0.08	-0.20
				All rural*	0.0	0.0
City	1.40	6.90	15.40	All cities	0.04	5.25 ⁷⁾
fixed eff. ¹⁾	0.30	1.30	3.30	Top 3 ⁵⁾	0.12	6.45 ⁷⁾

Note: *: reference category. Additional notes: (1) Fixed city effect in a wage regression on individual wages including the regional mean human capital; (2) Public return on average regional human relative to the private return; (3) Using the estimated coefficients in Table 8, λz from Table 7, $pr = vr - lr$ and equation 8; (4) Louisiana, Georgia, Mississippi; (5) San Francisco, Boston, San Jose; (6) Expressed in terms of the private return to this capital; (7) Including the fixed city effect

Source: Chen and Teulings (2025)

When choosing where to live, workers take these positive externalities into account. They prefer regions with high human capital, in particular cities with high human capital per worker, since a high regional human capital increases their pay. There must be an offsetting force that prevents everybody from moving to the city with the highest human capital. This offsetting force is house prices, or equivalently, the price of underlying land. They adjust as to make workers indifferent between regions. Indeed, workers get better paid in cities – in particular in cities with the best educated workforce – but buying or renting a house in these cities is more expensive. To test this idea, we regress regional log house prices on average regional human capital (see Table 2, column 3). Since housing services take only a small fraction of workers' budget, the effect of human capital on house prices must be a factor of five larger to offset the positive effect on wages, as

is found empirically. But since housing is much more expensive in cities, workers will substitute away from housing services to other consumption. The residential density is therefore higher in cities than in the countryside, making the effect on land prices even larger (see column 4). The final two columns show the implications for human capital and land prices in four groups of regions: rural areas and cities, and within rural regions the bottom three in terms of human capital (Louisiana, Georgia, and Mississippi) and within cities the top three (San Francisco, Boston, and San Jose), where rural areas are taken as a point of reference. Land prices are 6.45 log points (a factor 600!) higher in the top three cities than in the average rural region. Using a one-third land share in the cost of housing services implies that a square metre of housing is eight times more expensive in the top three cities than in the average rural area.

We use the model for two counterfactuals. First, what would happen if there were no cities and all regions were organised as rural areas with dispersed employment and therefore far smaller knowledge transfers? Second, what would happen if human capital was not clustered in particular regions that specialise in knowledge spillovers, but instead was spread equally across the country? In both cases, the answer is that GDP would be approximately 10% lower; in welfare terms, the effect is smaller, as part of the city wage premium is compensation for the commuting costs.

Policy options

The surge in house prices over the last half century documented by Piketty (2014) is therefore not much of a surprise; it can be readily explained by the growing importance of knowledge spillovers and human capital externalities and their crucial role in the growth of capitalist economies since 1800. These regional externalities generate rents which are captured largely by the owners of land close to CBDs. One might argue in favour of the Henry George taxation of these rents. This makes housing services at these locations a source of revenue for governments, but then housing in city centres will remain scarce and therefore expensive for individual residents.

Figure 4 suggests that a city can be extended until the point where the city wage premium is equal to the commuting costs. Lange and Teulings (2024) argue that vacant land at the edge of successful cities carries a substantial option value due to the irreversibility of construction. Better delay construction for some time than to build early at too low densities. This option value drives a wedge between the city wage premium and the commuting costs at the edge, raising house prices at the edge of the city. This mechanism adds to the delay of new construction in response to upward shocks in cities' house prices. The higher the growth rate of the city, the larger the option value and the higher therefore the delay. Our diagnosis therefore provides little hope for those arguing in favour of massive construction at the edge of cities to increase the supply of residential floorspace in cities and to bring down its price.

To the contrary, the Lucas-Rossi-Hansberg model implies that residents buy more floorspace than is efficient (Rossi-Hansberg 2004). Cities' high house prices reflect the advantage that an extra worker would derive from living close to the CBD and being able to benefit from the knowledge spillovers generated by the mass of workers concentrated in the CBD. However, house prices do not reflect the advantage for other workers in the CBD from the additional spillovers generated by this extra worker. Including this externality in the price would reduce the consumption of floorspace even further, contributing to more efficient knowledge spillovers.

There is a growing literature (e.g. Glaeser et al. 2005, Duranton and Puga 2023) documenting the effect of excess regulation on new construction. This regulation would stall new construction. Apart from a substantial institutional hysteresis, this literature holds insider interests of incumbent residents responsible for this excess regulation. Insiders block regulatory reform as new construction would erode the value of their property, either through the negative externalities of nearby construction of new houses or through the negative general equilibrium effect of additional supply of housing on the price of existing real estate.

The credibility of this argument depends on the political scale at which this regulation is set. It would not be excessively restrictive if the regulation is set at the level of the urban agglomeration as a whole; the agglomeration would internalise all relevant externalities. Cities run industrial policies to attract corporate headquarters and the like for the benefit of their knowledge spillovers. They usually provide the transport infrastructure for commuting to the CBD; the rollout of Canary Wharf in London is an example. Some cities do even impose minimum density constraints on new urban development, as theory predicts.

However, when the regulation is decided at a lower political scale, it will not internalise these externalities.¹ Local agglomeration benefits will prevail – for example, the desire of well-to-do neighbourhoods to keep out lower income strata. Minimum lot size regulations are a perfect tool for this. While this argument may hold for some luxury neighbourhoods, one can doubt whether this plays a major role at the aggregate level of the city – in particular in Europe, where city planning is more centralised.

Our analysis yields a number of alternative policies that might help to alleviate the popular uproar over the lack of affordable housing. Since house prices per square metre cannot be expected to come down, the first policy is to build smaller houses in cities. Those who want larger houses should move to faraway suburbs.

The second policy is to provide efficient public rail transport for commuting. This recommendation has two motivations. First, better public transport reduces commuting costs per kilometre. For a constant city wage premium, this extends the edge of the city (see Figure 3). Second, private car transport is highly land-intensive compared to public rail transport, due to both road construction and parking space at work locations in the CBD and home locations in the suburbs. Rail transport requires a large scale, but is particularly land-efficient, which makes it highly suitable for large cities. This land use crowds out commercial and residential land use and therefore reduces the scope for knowledge transfers. Jane Jacobs built her career on her protest against the construction of the Cross Bronx Expressway. Smaller European cities like Amsterdam and Copenhagen were successful in pushing back car use. Larger cities like London and Paris are now copying this model.

The third policy is related to the second. Ossokina et al. (2025) show that the parking fees at shopping malls are largely proportional to local land prices and roughly consistent with a rate of return on the asset value of land of 5%, as one would expect for commercial parties who face a trade-off between using the land for either parking lots, floorspace for shops, or residential construction. Most cities, however, heavily subsidise parking at home locations. Where car ownership is no longer an obvious choice in larger cities, one wonders why city governments choose to offer residents parking spaces almost for free while the actual cost is €1000-€5000 per year in larger cities, corresponding to an asset value of €20,000-€100,000. By making parking free or almost free for residents, this right is linked to the ownership of a house. Its value makes up 10-20% of the total value of the house. For those without a car, this expenditure is wasted. Why should residents without a car subsidise car owners?

References

- Arrow, K J (1962), "The economic implications of learning by doing", *The Review of Economic Studies* 29(3): 155-173.
- Ahlfeldt, G M, S J Redding, D M Sturm and N Wolf (2015), "The economics of density: Evidence from the Berlin Wall", *Econometrica* 83(6): 2127-2189.
- Bairoch, P (1988), *Cities and economic development: from the dawn of history to the present*, University of Chicago Press.
- Baldwin, R and T Ito (2021), "The smile curve: Evolving sources of value added in manufacturing", *Canadian Journal of Economics* 54(4): 1842-1880.
- Barro, R J and J W Lee (1996), "International measures of schooling years and schooling quality", *The American Economic Review* 86(2): 218-223.
- Chen, Y and C N Teulings (2025), "**Agglomeration and Human Capital**", CEPR Discussion Paper No. 20201.
- De Groot, H L, G Marlet, C Teulings and W Vermeulen (2015), *Cities and the urban land premium*, Edward Elgar Publishing.
- Duranton, G and D Puga (2023), "Urban growth and its aggregate implications", *Econometrica* 91(6): 2219-2259.
- The Economist* (2024), "Why house prices are surging once again", 16 June.
- Gautier, P A, M Svarer and C N Teulings (2010), "Marriage and the city: Search frictions and sorting of singles", *Journal of Urban Economics* 67(2): 206-218.
- Gennaioli, N, R La Porta, F Lopez-de-Silanes and A Shleifer (2013), "Human capital and regional development", *The Quarterly Journal of Economics* 128(1): 105-164.
- Glaeser, E L (2005), "Reinventing Boston: 1630-2003", *Journal of Economic Geography* 5(2): 119-153.
- Glaeser, E L, J Gyourko and R Saks (2005), "Why is Manhattan so expensive? Regulation and the rise in housing prices", *The Journal of Law and Economics* 48(2): 331-369.
- Glaeser, E L, M E Kahn and J Rappaport (2008), "Why do the poor live in cities? The role of public transportation", *Journal of Urban Economics* 63(1): 1-24.
- Heblich, S, S J Redding and D M Sturm (2020), "The making of the modern metropolis: evidence from London", *The Quarterly Journal of Economics* 135(4): 2059-2133.
- Jacobs, J (1961), *The Death and Life of Great American Cities*, Penguin.
- Lange, R J and C N Teulings (2024), "Irreversible investment under predictable growth: Why land stays vacant when housing demand is booming", *Journal of Economic Theory* 215, 105776.
- Lucas Jr, R E (1988), "On the mechanics of economic development", *Journal of Monetary Economics* 22(1): 3-42.
- Lucas, R E and E Rossi-Hansberg (2002), "On the internal structure of cities", *Econometrica* 70(4): 1445-1476.
- Ossokina, I V, C N Teulings and B Dijsselbloem (2025), "Do parking fees support efficient land use in cities?", Working Paper.
- Ossokina, I V, J Svitak and C N Teulings (2024), "**The urban economics of retail**", *Regional Science and Urban Economics* 108, 104026.
- Piketty, T (2014), *Capital in the Twenty-First century*, Harvard University Press.
- Rossi-Hansberg, E (2004), "Optimal urban land use and zoning", *Review of Economic Dynamics* 7(1): 69-106.
- Rossi-Hansberg, E and M L Wright (2007), "Urban structure and growth", *The Review of Economic Studies* 74(2): 597-624.
- Teulings, C and M Huysmans (2025), *The Microeconomics of Market Failures and Institutions*, Springer Books.
- Teulings, C N, I V Ossokina and H L de Groot (2014), "Welfare benefits of agglomeration and worker heterogeneity", Working Paper.

Teulings, C N and J A C Vieira (2004), "Urban versus rural return to human capital in Portugal: a cookbook recipe for applying assignment models", *Labour* 18(2): 265-291.

Wolf, M (2021), "British housing is expensive and its supply must increase", *Financial Times*, 21 March.

Footnotes

1. For example, Menlo Park, Mountain View, and the other neighbourhoods in Silicon Valley close to Stanford/Apple, where wealthy individuals like Mark Zuckerberg buy out their neighbours (see <https://www.nytimes.com/2025/08/10/us/mark-zuckerberg-palo-alto.html>).

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