

*Paul Cheshire*  
**The Costs of Containment: Or  
 the Need to Plan for Urban  
 Growth**



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*Urban containment boundaries and greenbelts may appear to contribute to a more compact development pattern. However, they may backfire by causing fragmented, leapfrog development (OECD 2018).*

### INTRODUCTION

Lima in Peru and London in the UK have a surprising amount in common. Superficially very different, their problems and the policies they need to adopt, are surprisingly similar. Both are major cities and their country's capitals, cities of rich cultural cross-pollination. In functional terms they are a similar size. The OECD gives the population of London's Metropolitan region as about 12 million; Lima's is less well documented but the Metropolitan Region, as defined for administrative purposes, has a population of some 11 million. Both cities are extreme cases but represent archetypes of mega cities in prosperous and in poor countries. For very different reasons both cities are greatly handicapped by the unintended consequences of containment: in London's case, self-inflicted containment, but in Lima's case, unplanned and accidental.

Great cities are vitally important. A clear lesson from research in urban economics over the past 20 years is how important agglomeration economies are. Agglomeration economies are a form of externality: producers become more productive from their ability to interact with complementary producers and draw on specialized labor markets. But they come in two forms: agglomeration economies in production and agglomeration economies in consumption (Glaeser et al. 2001). Research has taught us quite a lot about production agglomeration economies: their importance varies by sector – not so important in manufacturing which may go some way to explain the absence of mega-cities in Germany; but very important for many traded services and also (less well known) public administration (Graham 2009). Their estimated quantitative significance varies between studies and appears to vary by national context – more important in developing countries like Peru than in advanced economies (Duranton 2016).

A recent and very rigorous study for Spain, tracking how wages and productivity varied as a given individual moved from a smaller to a larger city, con-

cluded that, all else equal, individual productivity increased by about 5 percent as city size doubled; that the increase in productivity took some seven years to build up following migration to a larger city but a substantial proportion of an individual's productivity gain was retained if they then moved back to a smaller city. Larger cities not only apparently generate productivity gains, they also export them to smaller cities (De la Roca and Puga 2017).

Less is known about agglomeration economies in consumption. Competition between providers of services and greater choice are most frequently cited as examples but other forms are important. Any service that requires a large market to be viable – especially a live audience – benefits from agglomeration economies. Live sports, music or theatre are examples of activities needing a large live audience but specialized medical or legal or financial services or museums also require a large market and the consumer needs personal access. They cannot be bought on the internet. Take the example of football and opera: only in a really large city can one enjoy top class experiences of either. Living in a city as large as London, it is possible to enjoy world class football in at least three venues, accessible from the center within 30 minutes; it would take even less time to get to world class opera or theater. Milan, Munich or Madrid are big enough to offer world class examples of both but with less choice.

There are many types of agglomeration economies in consumption and we really know very little about them still but it is reasonable to argue that cities are the most welfare enhancing human innovation in history: they empowered the division of labor, the invention of money, trade and technical inventions like the wheel – let alone government, the arts or culture. And that the bigger a city is, other things equal, the more productive are its producers and workers and the greater the welfare of its citizens.

Not all else is usually equal, however, especially because certain types of cost systematically increase with city size. The most obvious of these is the price of space: as cities increase in size so their rising agglomeration economies generate more competition from both producers and workers to access them; and from people to enjoy them. As a result, the price of space rises as cities get bigger and also become more productive. This is not just because more producers and people are competing for space but the rising productivity increases incomes and there is ample evidence that there is strong income elasticity of demand for space in housing (Cheshire and Sheppard 1998; Muellbauer 2018). As people get richer they try to consume better housing and a key characteristic of better housing is that it is roomier. Other costs that increase with city-size are most obviously congestion but also pollution and possibly crime. As Glaeser (2011) points out, if you are close

enough to other people to learn from them, you are close enough to mug them: in other words, there may be agglomeration economies in crime.

### COST OF CONTAINMENT BY DESIGN

Since there are significant and tangible benefits – both economic and directly of welfare – from facilitating urban expansion, the obvious role for policy would seem to be to offset for the costs of city size. Yet in many OECD countries, and especially Britain, policy has actively worked to restrict urban expansion for two generations: in Britain since the first Green Belt – the Metropolitan Green Belt around London – was imposed in 1955. Since then Green Belts have been designated for all other major English cities and – like Oxford, Cambridge or York – several smaller cities. It is for this reason the focus here is on British cities, and particularly on London: English cities provide the first examples of rigid urban containment anywhere in the world and, as is argued below, the effects of containment build up over time and become ever more salient as decades pass.

Green Belts in Britain are essentially containment boundaries. They are only rhetorically ‘green’ since the land within them is privately owned, so the only access is via legal rights of way, and the most important use of land within them is intensive farming. Their only purpose, as confirmed in the National Planning Policy Framework of 2012 and 2019, is to prevent development. They do not protect land from development for amenity or environmental reasons, it is simply to prevent building and ‘settlements from merging’. Indeed, intensive agriculture is one of the most environmentally damaging land uses there is. Similar policies have been adopted over the past 50 years in parts of the United States (most notably Portland, Oregon), in Austria (Vienna), Canada (Toronto and Vancouver), New Zealand (Auckland), and South Korea.

Germany is an interesting case because many cities there have Green Belts. However, as Siedentop et al. (2016) point out, although designed for containment, they were ‘loosely’ drawn and included substantial areas for urban expansion. To date they do not appear to have produced leapfrogging across them nor measurably raised land prices. Moreover, with local autonomy rather than a unified national system of planning, in some cities like Cologne, Green Belt policies include improving access and the recreational quality of the land.

Containment policies such as Green Belts may be formulated in terms of physical development and densification but they ultimately have economic consequences. When first imposed in Britain, not only was some land left within them at urban fringes for future housing needs, but there was a program of building New Towns designed to house poorer peo-

ple from the old central city slums at lower densities and in a greener environment.

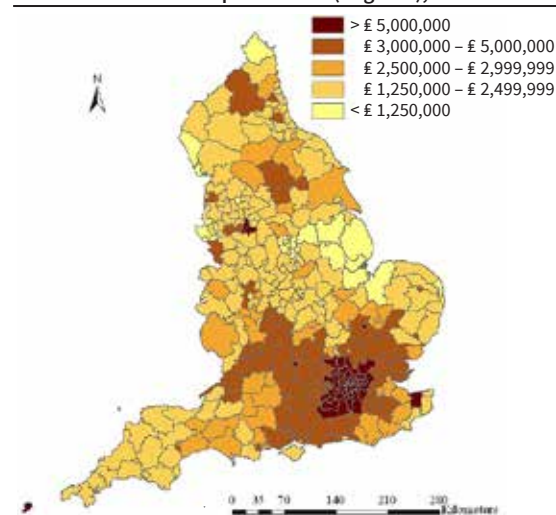
Because the demand for land grows both as cities get bigger but – because of the strong income elasticity of demand for space – more importantly as people get richer, if the supply of land is constrained, so, over time, its price is bid up. Since Green Belts were imposed in Britain in 1955 the price of land for housing has increased in real terms by a factor of 15. In the 60 years previous to 1955, there had been no upward trend. Transport investments, first in suburban railways and the London Underground and then, from the 1920s, in new roads, designed for car traffic, meant there was a more or less perfectly elastic supply of land for housing at the urban fringe.

The last New Town, Milton Keynes, was designated in 1967 however, and land inside the Green Belt boundaries was rapidly exhausted – in part because no allowance was made for the effect of rising incomes on the demand for land and space in houses. The increase in land and house prices was slow initially because new building (the element of housing supply restricted by constraints on land supply) was able to be still quite rapid. New building, however, is only ever quite a small proportion of total housing supply. In England, partly because of the impact of Green Belts on house building, the mean rate of new construction has shrunk substantially so that, at about 130,000 a year over the past 10 years, it has been only some 0.5 percent of the total housing stock.

One of the economic effects is illustrated in Figure 1. This shows housing land prices mapped by local authority areas in 2007 (data ceased to be available on a comparable format from 2008).

By 2007 the price of land was above £3 million per ha in most areas covered by Green Belts: indeed, most cities’ Green Belts could be identified

Figure 1  
Residential Land Price per Hectare (England), 2007

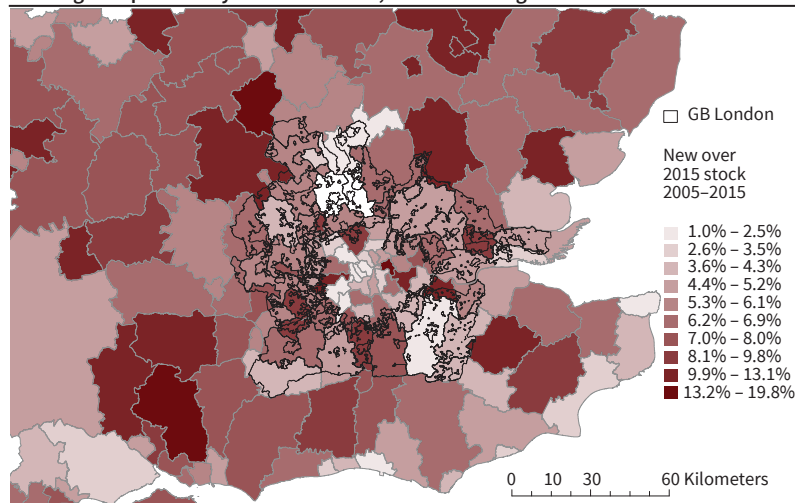


Source: Property Market Report (July 2007).

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Figure 2

**Housing Completions by LA 2005 to 2015, South East England**



Source: Author's estimates from MHCLG Live Tables 100 and 253 (<https://www.gov.uk/government/statistical-data-sets/live-tables-on-dwelling-stock-including-vacants-and> <https://www.gov.uk/government/statistical-data-sets/live-tables-on-house-building>). © ifo Institute

by the elevated land price. The Metropolitan Green Belt around London extends from the North Sea to the edge of Aylesbury 130 kms to the west. It also extends into the administrative area of London, the Greater London Authority (GLA): 23 percent of the GLA area is subject to Green Belt designation. This means that in a Borough of north London such as Barnet, if it were possible to build on a hectare of farmland, its price would increase from £20,000 to some £15 million to £18 million. Another way of thinking about this price distortion is that it is a measure of the costs of foregone agglomeration economies. People would pay a very large premium to be able to live close to the productive and well-paid jobs of London.

The policy has been highly ‘successful’ as a mechanism for preventing house building as is revealed in Figure 2: London’s Green Belt, outlined with a darker line, is also identifiable by the lack of house building.

This success has a double price, however. Internationally comparable data on house prices is notoriously difficult to find. One of the most widely quoted sources, albeit for 120m<sup>2</sup> flats in prime inner-city locations, is the Global Property Guide. Accessed in August 2019 this showed that

**Table 1**  
**Comparative Housing Prices**

City	Price 2019 (Hong Kong = 100)
London	92
New York	60
Paris	56
Geneva	50
Stockholm	30
Berlin	26
Madrid	21
Brussels	14

Source: <https://www.globalpropertyguide.com/most-expensive-cities>.

London was the second most expensive city in the world after Hong Kong (Table 1). New York, a richer and bigger city-region, was substantially cheaper, as were major European cities such as Paris. Prices in Stockholm, Berlin or Madrid were less than a third of those in London with Brussels, the beneficiary of no containment policy, the cheapest major city in Western Europe.

It is not just the restriction on the supply of land that prices people out of living where they want and would be most productive (see Cheshire 2018; Cheshire et al. 2014; or Hilber and Vermeulen

2016, for a discussion of other factors) but the Green Belt, imposed for containment, no longer even ‘contains’. People are forced to jump across it in their search for affordable housing space, creating ultra-long-distance commuting as Figure 3 reveals.

Between 2001 and 2011, the mean distance from central London of the 10 census wards with the biggest proportionate increase in employed residents commuting to London was 166 kms – so a round trip of 332 kms per day. The five English local authority areas with the biggest growth in commuting to Central London were Richmondshire in N. Yorkshire, Mansfield in Nottinghamshire, Derby, Gloucester, Rugby, and Shropshire. The price of an annual season ticket for travel from York to London is £14,888. A skilled professional worker in London might be paid £80,000 a year so this would represent nearly a fifth of their annual salary and would be paid out of post-tax income.<sup>1</sup>

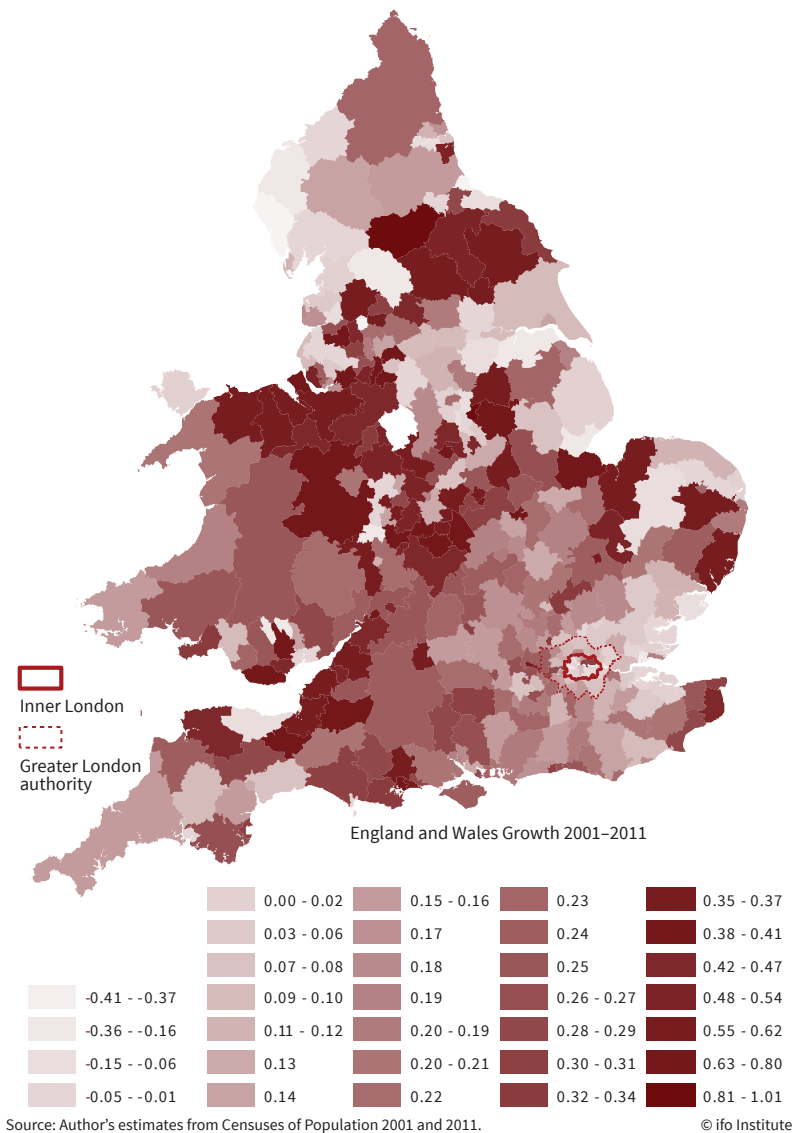
The evidence strongly suggests, therefore, that rigid containment policies, such as growth boundaries or Green Belts, in the long run not only fail to contain but substantially increase housing costs, reduce housing quality by restricting the size of new houses, and cause a loss of agglomeration economies by restricting the size of larger cities and preventing people from moving to where they would be most productive (Hsieh and Moretti 2019; Osman 2019).

**COST OF CONTAINMENT BY POVERTY AND POOR PLANNING**

Why is this self-inflicted damage to cities comparable to the problems of mega-cities in poor coun-

<sup>1</sup> Britain has deregulated and cheap air travel. The author has an immediate colleague who lives in Berlin and commutes weekly to London during the university term.

Figure 3  
Proportionate Increase in Employed Residents Working in Inner London 2001 to 2011



tries, such as Lima in Peru? This is because in many such cities a failure to plan to accommodate growth and expand in an orderly way has created its own comparable problems. Lima is constrained by its own unplanned, high density slums and shanty towns that have grown up around it. Lima may be in an arid tropical desert but is watered by three rivers flowing from the Andes and because of being almost surrounded by the cool Pacific enjoys a temperate climate. Its population over the past 40 years exploded: it doubled from 1981 to 2001 and has doubled again since.

Most of this population gain resulted from the mass migration of poor people from the countryside. This flow was driven partly by poverty but strongly also by that historic advantage of the city: protection against lawless depredation, civil unrest and banditry. A revolutionary Communist movement, the Shining Path, was launched in Peru in 1980 and enjoyed substantial success, certainly forcing

people from the countryside. Although still not finally finished, the Shining Path progressively lost its power to disrupt from the early 2000s.

This flood of poor people coupled with a weak central administration led to a ramshackle explosion of Lima. The city is in effect two cities: a central city of pleasant boulevards, parks, beaches, and 20th century development with the ancient Spanish city, now just a small historic CBD, at its northern extreme; and surrounding this a city of perhaps six or seven million poor immigrants living in badly built or self-built unserved settlements. This high-density unplanned city cuts off the modern Lima even from its international airport and makes transport in, out or about the city by road hugely more congested and costly than it need be. Given that the land is now occupied and claimed, retrofitting modern infrastructure is too expensive – both politically and economically – to implement, perhaps even to contemplate. Lima has a containment boundary of slums which greatly reduces the potential agglomeration economies it

size could generate. Transport and productive interactions within the metropolitan area are seriously impeded by a lack of transport infrastructure and the costs of retrofitting such infrastructure.

## CONCLUSIONS

Containing the growth of cities, whether by policy or by accident, has substantial costs in terms of foregone agglomeration economies. Such agglomeration economies benefit not just the inhabitants of larger cities but the national economies in which those cities are located. Because workers who move from larger to smaller cities retain productivity gains obtained from living in larger cities, the agglomeration economies generated by large cities, benefit smaller cities too.

City size brings costs but effective policy can reduce these costs. Such effective policies would be to restrict the rise in the costs of space by free-

ing up the supply of space (not restricting it); by reducing the costs of congestion by proper pricing of road space and, as cities get bigger, investment in mass transit; and by controlling pollution and crime. A vital role of public policy for cities is also to offset for failures in land markets. Land markets are particularly susceptible to problems of market failure both because of spillovers and the importance of public goods such as civic public space and green space for the quality of urban life. Some of the spillovers between land parcels – such as pollution or aircraft noise – can be geographically very extensive. These issues provide a powerful argument for urban planning.

A less widely appreciated argument for planning is urban growth itself. Unplanned growth – as in the case of Lima – itself causes problems and reduces potential agglomeration economies. Urban policy does not need to contain cities; it needs to plan for their growth. This is a process elegantly described by Bertaud (2019) and originating with the ancient Greeks. There needs to be a clear demarcation of private land, to be developed by (regulated) markets, from public land for street and road networks, utilities and public goods and future urban expansion. This division needs to be capable of replication as the city grows outwards.

There is no evidence urban land take itself is the result of market failure or exacerbates problems such as climate change. The inhabitants of cities use less carbon than the inhabitants of rural areas. Agglomeration economies create their own incentives to increase density. Pricing and regulation can further reduce energy use. As the quotation from OECD (2018) at the head of this article suggests, even the OECD may be having second thoughts about containment policies.

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