Positive Policies for Flourishing Flexible Cities

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30th October 2017

Positive Policies for Flourishing Flexible Cities

1. Cities are economic & social constructs: but policy dominated by 'design' & 'engineering': economists not paid enough attention!
2. The most important human invention? The basis of civilisation.
3. Cities are very complex – ecosystems – always evolving;
4. Every agent, every component, interacts with every other – but almost entirely without being 'planned';
5. Because cities are important, so is getting urban policy right.
6. Cities work because of specialisation and agglomeration benefits:
7. But also have rising costs with size; space costs; congestion....
8. Too much policy **increases** costs of city size- so foregone agglomeration economies;
9. Policies need to be transparent & long term so actors adjust to incentives; to encourage 'churn', reduce costs of size & supply public goods.

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Who plans the bread supply?

- Early days of 'Glasnost', Moscow city planners visited New York;
- Saw the shops bursting with goods, the(dirty, graffiti-daubed) NY subway; Central Park, Columbia University; Yankee Stadium; Wall St; lunched in a deli;
- But a question:
- "Wonderful, rich city: but who plans the bread supply?"
- **"No one does!"** (of course)
- Nearly everything in cities just 'happens' without any planning. Markets (mainly) provide the incentives; people and firms respond; 'fill the niches'.
- Not just market incentives: opportunities - & people seize the moment – for example LSE, 1895;
  - Founded to improve the policy evidence for social action & provide university access for the poor.

Cities are fundamental to civilisation

- Cities may be humanity's most fundamental 'invention';
- Intrinsic to economic & cultural development
- Basis of division of labour **and** contribute to welfare directly
- 'Invention' as fundamental as - and complementary to - invention of agriculture:
  - could say cities led to invention of wheel….
  - The extra wealth and skills they generated led to both the demand and the ability to supply more food;

- Origins go back 12 500 years at least: to Middle East: spread throughout Mediterranean; and cities popped up independently in other times and places –
  - Ancient China; pre-Colombian America.

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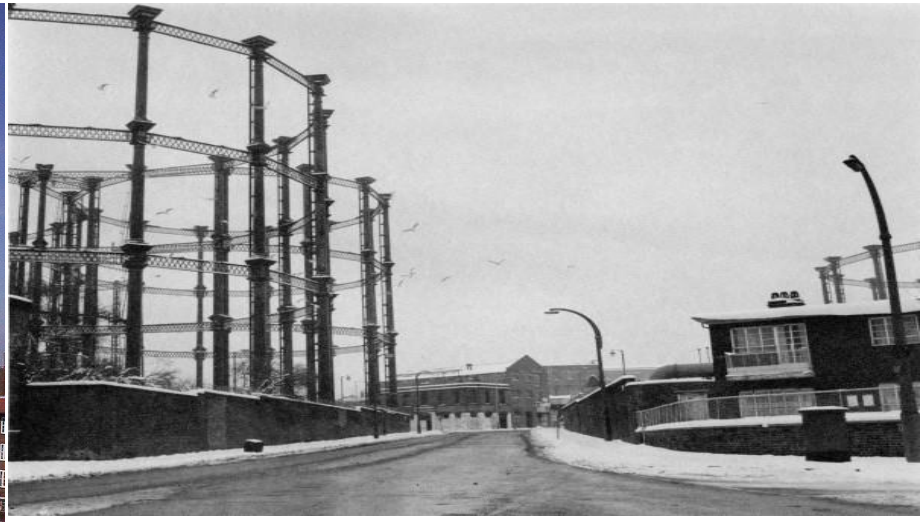
Cities evolve…

So no one 'invented' cities; a Darwinian process: experimentation – adopt what works - market places; public open spaces...drop what does not work - city walls…Gas holders.



Public policy froze development at Kings Cross for 25 years: significantly to 'preserve' these Gas Holders

- **Think of cities as ecosystems: highly complex set of interacting structures, people & agents: in constant flux with entry & exit; all governed by rules.**

What are cities about? Why do they work?

Visible features of cities are buildings, transport systems, cityscapes or parks

- But they are about **people**: systems to produce welfare and increase productivity;
- So while buildings, design and infrastructure are a means to an end, they are **NOT** 'the end itself' – still -
- Enhancing the built environment can promote prosperity or happiness – but only if it improves people's lives or productivity
- Cities founded on ***specialisation*** – enriching human interactions - economically and culturally
- Peasants/farmers ↔ urban occupations

  Commerce, artisans, administration, professional services, cultural/religion, defence/military

➢ **Still** the fundamental urban occupations (except defence)

If cities are so vital, so is urban policy

- **Policy dominated by designers, engineers & politicians**
- Intellectual traditions: architecture, design, engineering & law:
  - Baron Haussmann – Paris from 1850s – Lawyer;
  - Patrick Abercrombie – London Plan 1944 – Architect;
- Visionaries concerned with "how things should be" from disciplines which 'tell people what to do'
- Markets widely regarded as 'immoral': but disregarding market forces as helpful as designing aircraft disregarding the laws of gravity.
- Ecosystem of cities driven by competition - geared to 'markets' – generate incentives with regulatory framework => 'evolution'.
- Cities always changing - in mature economies industrial cities all but gone… along with gas holders.

Cities back on the economics agenda

- From about 1950 to 1990 economists largely ignored analytically 'inconvenient' economies of scale.
- All knew cities imposed costs – congestion, pollution, price of space; so unless costs compensated by gains – cities would not exist; let alone grow: must be economies of scale.
- But economics ignored economies of scale so economists more or less ignored cities. And for about 50 years did not have much to say about either cities or urban policy;
- Then along came Paul Krugman; brought scale and agglomeration economies back to economics mainstream;
- Urban economics has made enormous progress in past 20 years; now a lot to say relevant for urban policy.
- Very helpful because cities all about economic and social life; sources of productivity, creativity and welfare.

Specialisation Brings Agglomeration Economies

- **Cities provide the habitat for specialisation;**
- Important for production
- Firms and workers become more specialised & productive;
- Use each other, learn from each other: proximity improves contacts and **productive interactions**;

Conventional story told by Alfred Marshall in 19th Century:

- Textile firms used common knowledge of technology & markets: specialised finance, labour pooling; supply of specialised skills and - '*knowledge in the air*'.

- Producers benefit from being 'close' to other complementary firms: labour pools and specialised/skilled workers; subcontractors; specialised inputs e.g. finance; networks; infrastructure; knowledge sharing....
- And so do workers – opportunities for specialists and - rising education of women - '*power couples*' (Costa & Kahn, 2000)

And agglomeration economies for services...

- Traditionally thought of for manufacturing: but
- **More important for intellectual activities**
  - Cultural industries, media, business & financial services, R&D;
- London's **media** industry: theatre, actors' agencies, film, TV, graphics, music, digital effects, intellectual property law etc.;
- Cheap memory devices to £100 000 rough 'film' in 2 hours – minimise time to revenue generation; => inputs to hand;
- **Financial services** – instantly act on information; research etc.
- Interact with **legal services**, media: shared infrastructure (e.g. super high capacity internet; access to transport nodes – to access largest pool of skilled workers).

➢ So – localised agglomeration economies (within radius of 600m; vertical within buildings)

- Post-industrial economy - significance of agglomeration economies has been rising:
  - ➢ The resurgence of cities.

Not just agglomeration economies in production

- "...great achievements of the bourgeoisie ... rescued the mass of the people from the idiocy of rural life" (Marx & Engels, 1848)

Cities as generators of welfare: variety, choice, competition, interactions, **FUN**…(Glaeser – *City as consumption machine*)

- In cities not just more face-to-face communication: more communication of ALL types – learning & using each other.

➢ Agglomeration economies - important generators of welfare:

- Range, variety and quality of all forms of culture (Premier League Football, theatre, music, etc) require market/audience;
- Variety and choice of neighbourhoods/neighbours

➢ Consumption and production aspects of agglomeration **interact** => to attract people & firms

And Recent Research Shows Gains are 'Portable'

➢ Productivity – agglomeration economies

- Latest research suggests agglomeration economies 'portable' (de la Roca & Puga, 2017);
- Tracking people migrating from smaller to larger towns shows they gain productivity over time; and if return to smaller town 'take' some increased productivity with them
- **And vary by sector:**
- Agglomeration economies vary by sector: 3 times as big in Services as Manufacturing => urban resurgence; biggest in business & financial services; public admin. (Graham, 2009: UK estimate)

- No serious quantification of agglomeration benefits in **consumption** yet

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Research Giving us Quantitative Estimates

- **Productivity – agglomeration economies**
  - Double size of city and productivity increases by 3 to 6%:
  - Even more important in less developed countries e.g. India 10 to 20%:

  - De la Roca and Puga, 2017 – double city size and, all else equal, total factor productivity increase 5.5%

- So going from small town of 12 500 to Zurich *Functional Urban Region* with 3m+ - increases wages – everything else equal – by more than 40%

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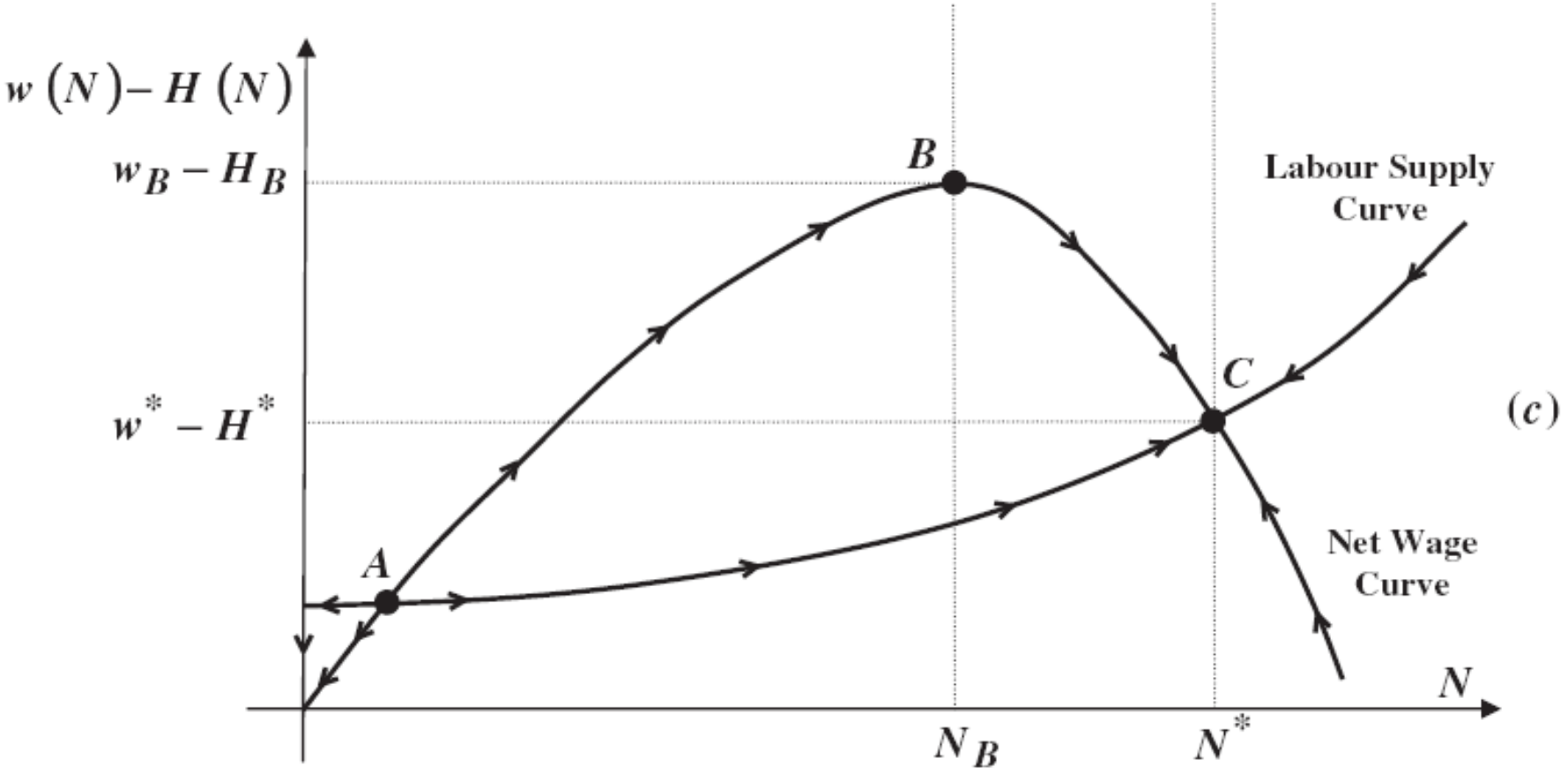
But there are also costs of city size

- If you are close enough to learn from someone
  - Then can give them a contagious disease; pick their pocket:
    =>crime benefits from agglomeration economies too
- But most obviously - **costs of space** systematically increase with city size – price paid for accessibility/agglomeration benefits;
- **Pollution** increases with city size
- **Congestion** increases with city size: congestion costs are significantly a problem of failed incentives:

- But there are technical solutions to many problems:
- For example - public health revolution of late 19th C.
  - Clean air - smokeless zones, low emission cars;
  - Congestion - mass transit, congestion charging
  - Even supply of urban space....

Even may be tendency for cities to get too big…



Combes *et al* (2005) *Papers in Regional Science*

Now Quantitative Estimates on Costs of Size

Costs of size?

- Research very recent and not yet replicated:
- Combes, Duranton & Gobillon (2012)
  - All 302 French cities of more than 200,000
  - Rigorous theoretically based methodology
- Conclude **IF**:

1. Land supply **fixed** - costs rise with size at same rate as productivity **but:-**
2. Land supply **elastic** - costs rise with size at only 2/5 the rate at which productivity rises;

- Consistent with Cheshire & Magrini (2009) – all else equal - bigger cities grew faster but – for given size - if denser grew more slowly

➢ So – still ignoring consumption benefits – bigger cities generate more output and welfare **IF** we give them space.

So – what does policy try to force cities to do?

Urban containment/densification orthodoxy

- UNHabitat; OECD; New Urbanism…
- Will illustrate effects mainly from Britain:
- …I come from there… but a very useful case:
  - **First** to set strong urban growth boundaries –
    - '**Green Belts**' – areas around major cities – 1955
    - Function - not environmental: just to prevent building or development ('*stop settlements merging*')

➢ Effects of containment **cumulative over time** – new construction is a small part of supply; so can see future by looking at Britain

➢ UK reaping the results in form of house prices –

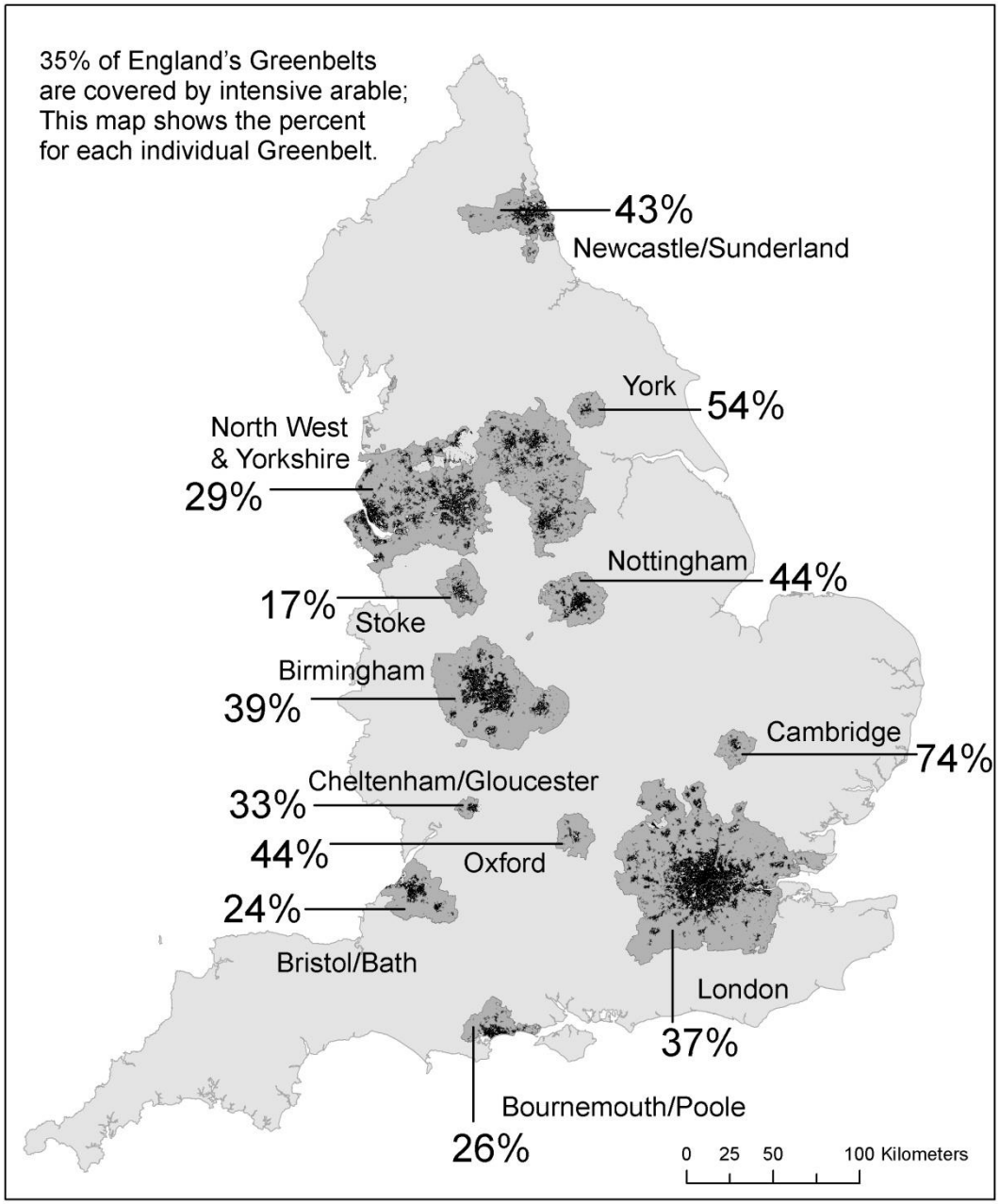
➢ But spread around world e.g. Vancouver, Canada; Portland Oregon; Bay Area, Calif; Auckland, New Zealand…

Been containing our cities with Greenbelts since 1955

Greenbelts cover nearly 1.5 as much land as all urban areas; all urban less than 10%;

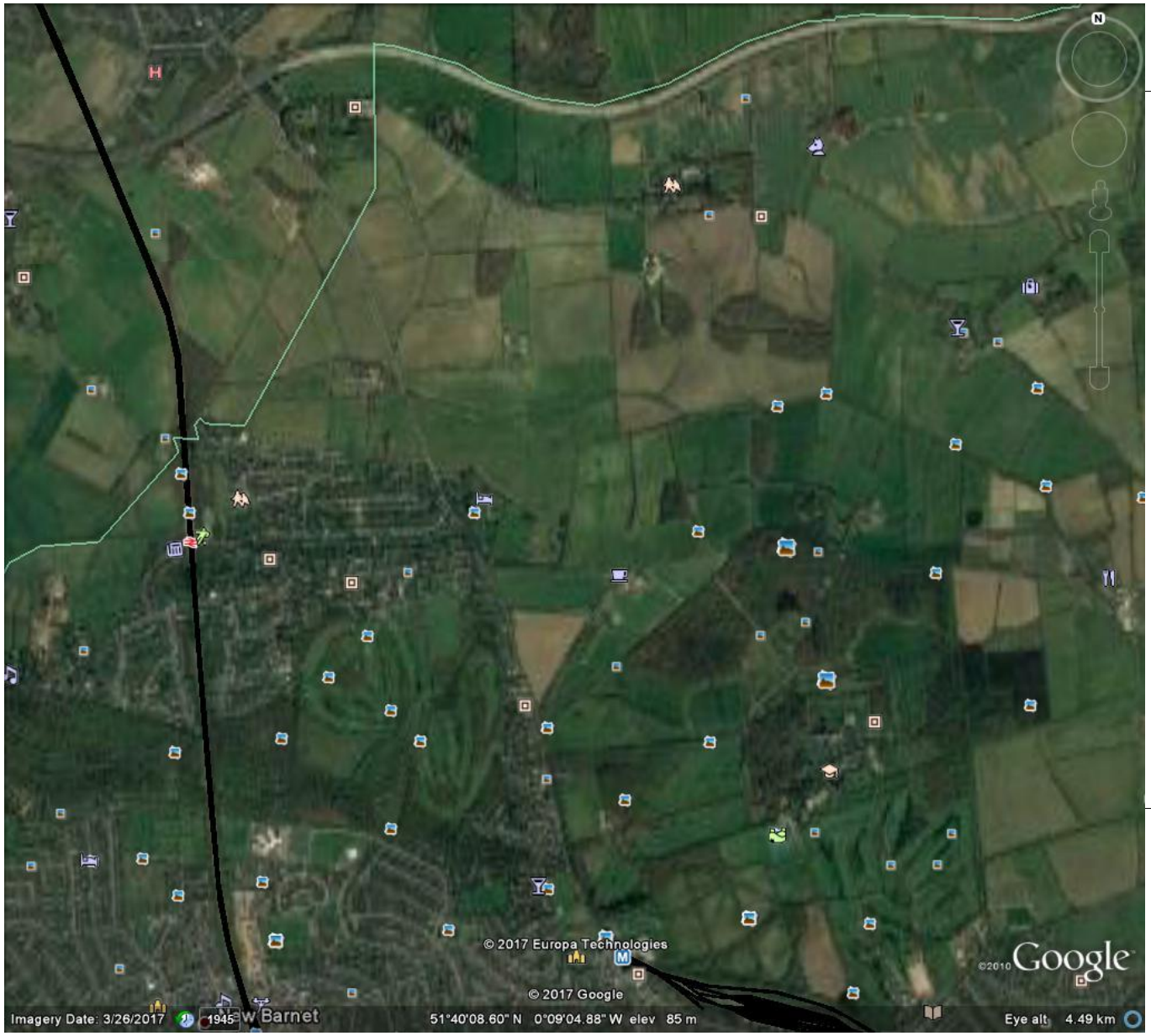
Greenbelt land not environmentally valuable
biggest use - intensive arable & intensive arable land has a net environmental cost per Ha.
[*Nat. Ecosystem Evaluation, 2011*]
Greenbelt land has little amenity value
No access - compare parks & gardens!

Intensive Arable Land in English Greenbelts: percent



This map was prepared by Sevrin Waights. Calculations are based on Land Cover Map 2000. Intensive arable land was defined as use categories 4.1, 4.2 and 4.3 and so is a conservative estimate of 'intesively farmed agricultural land'.

Long-term policies influence development & Land use: What Greenbelt containment looks like…Barnet

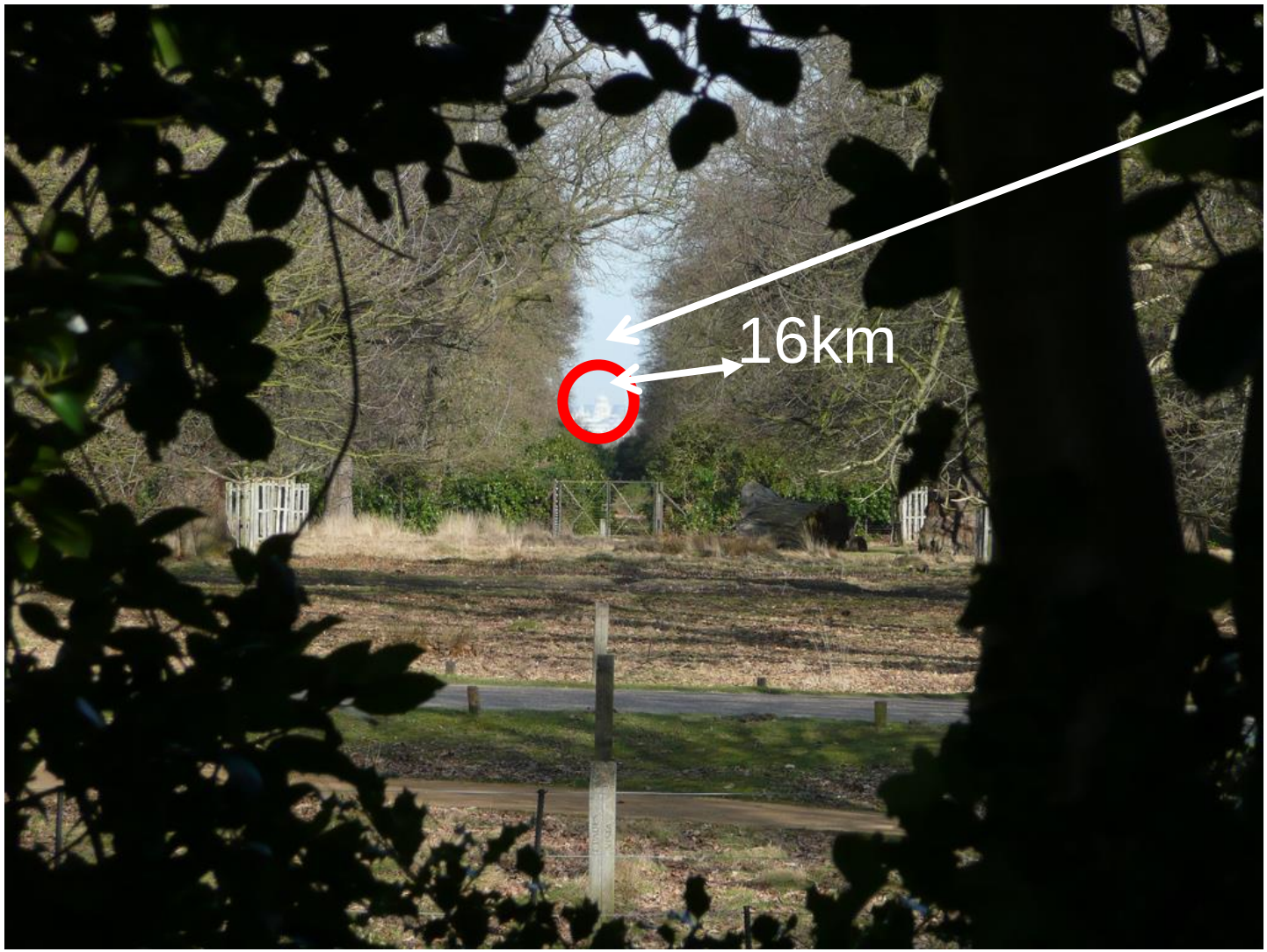


25 minutes to central London: Commuter rail - Hadley Wood; London Underground - Cockfosters. No competition for land – multiple Golf courses!

Then: Height Restrictions & Preservation e.g. London

Source: Cheshire and Derricks (2014)

Protected view from King Henry VIII Mound (Richmond Park)

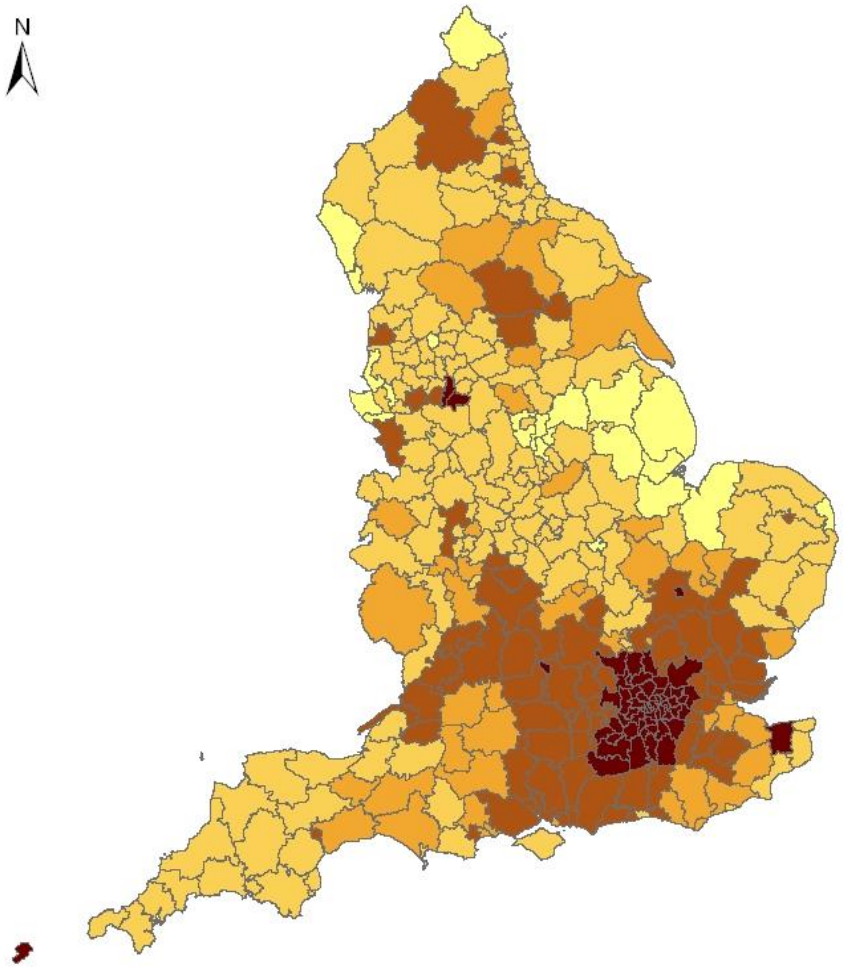


Also 'protects' backdrop:

- Liverpool St. Station area
- Stratford

What happens to price if you restrict the supply?

- Increases the price of land and housing; and increases market volatility. Can identify Green Belt by land price….



Source: Property Market Report (July 2007).

Residential land price per hectare (England)

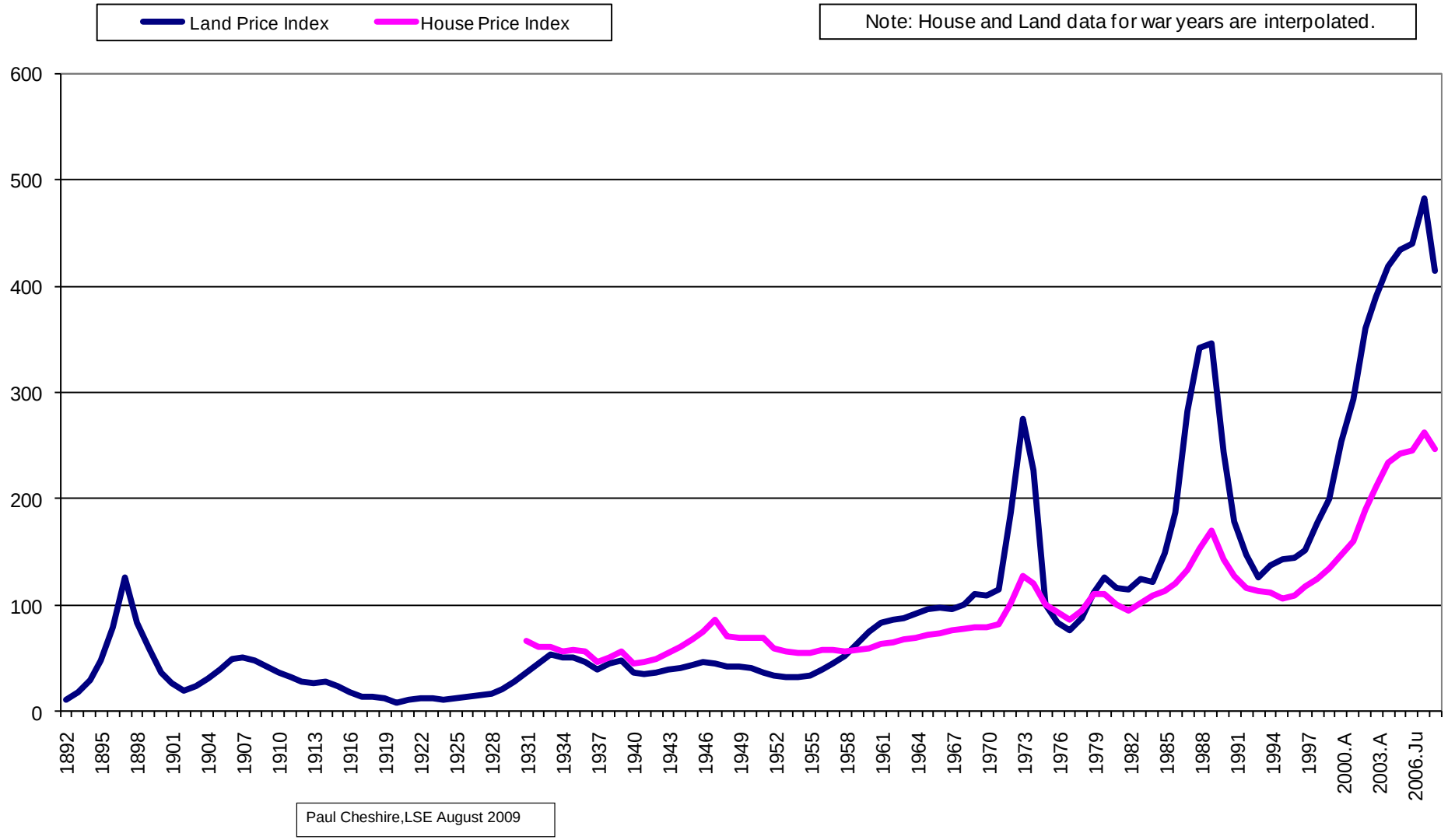
- > £5,000,000
- £3,000,000 - £5,000,000
- £2,500,000 - £2,999,999
- £1,250,000 - £2,499,999
- < £1,250,000

0 35 70 140 210 280 Kilometers

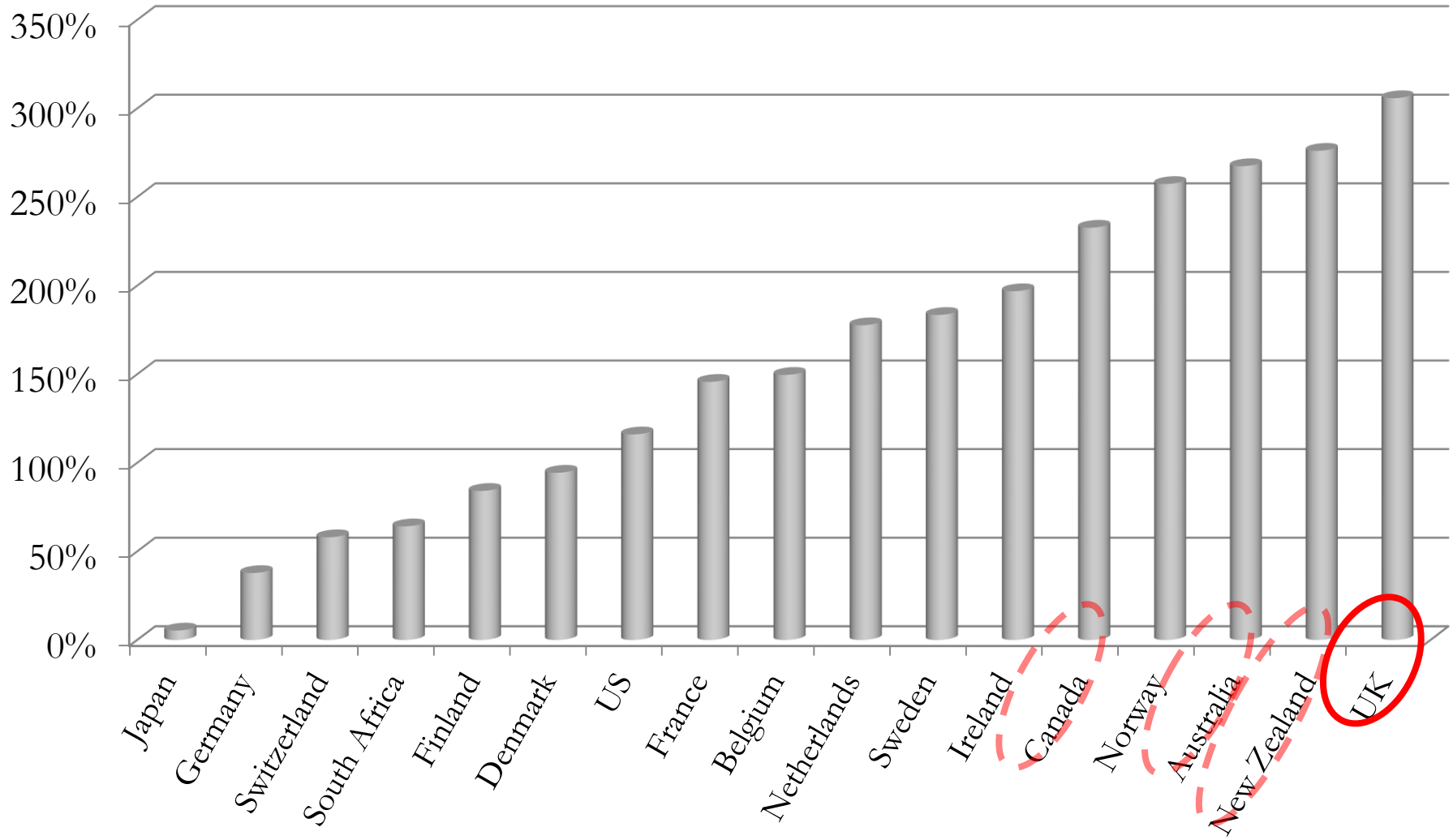
Land prices signal where land/ housing is most restricted relative to demand.

And where people's welfare/ productivity greatest; so significantly signal foregone agglomeration economies.

Real Land & House Price Indices (1975 = 100)



International comparisons?
(Real HP growth 1970-2015, selected OECD countries)



Sources: BIS, World Bank, Bank of England

And Higher House Prices Impede Mobility

- **Agglomeration economies lost….**
- **Tighter regulatory restriction in more productive cities raises house prices in them.**
  - People move to where wages are higher – where they are more productive;
  - But not just wages – they take account of buying power of wages – so house prices.
- If policy constrains housing supply in more productive cities – reduces flow of people moving to more productive locations.

- Hsieh & Moretti (2015) estimate for USA 1964-2009:
- If US cities with most regulated housing supply had been as the median regulated city =>
- US GDP would have been 9.5% higher in real terms.

Land Use Planning, Regulation and Policy

- Land use planning assumes a basic economic function;
  - It determines where, what and how much can be built - so supply of scarce resource, space, independently of price;
  - This means it has substantial influence on:
    - Who gets access to public goods;
    - How workers interact with jobs;
    - Location of economic activity across urban space.
- Economists agree if land markets were just a 'free-for-all' => problems: don't leave it to (unregulated) markets;
- "Market Failures": economics helps pinpoint their form & sources; and how policy can reduce their impact;
- Equally why policy - uniformed by economic insight into how markets work - may try to achieve the unachievable;
- even make things worse than otherwise they would be.

Prices and market failure: why we regulate markets

- Prices reflect costs to society of production – a personal service, fuel, household appliances, etc.
- So if prices rise – an incentive to produce more **and** an incentive to buy less
  - Supply and Demand
- In 'perfectly' functioning markets the 'hidden hand' ensures we produce & consume the 'optimal' quantity of all goods;

- 'Optimal' in sense that no reallocation possible which would make someone better off and no one worse off: ***Pareto optimality***

But most Markets do <u>not</u> Run Smoothly – 'Market Failure'

- Sources of *Market Failure* & basis for regulation:
- **'Monopolies'** may be able to set prices above costs – '***monopoly profits'*** => so prices do not reflect costs to society
- Some 'goods' (or 'bads') – do not have prices
  - Obvious examples – pollution, congestion, noise
- These are ***'Externalities'***
- And some goods are '***Public Goods':***
  - These are goods which are ***'non-rival'*** in consumption – And '***non-excludable': e.g.*** a *restaurant meal* compared to a *wilderness area, a cityscape, a lake or a park*
- So producers can't charge for providing **Public Goods** (non-excludable); **and** welfare is improved if they **do not** charge => Pareto optimal (so long as non-congested).

Reasons for Land Market Regulation and Urban Policy

- Such problems of market failure provide the classic case for regulation & guide socially useful policy interventions
- **Land markets** have endemic problems of market failure:
- Parcels have specific locations and their value is a function of uses of adjoining parcels – subject to externalities
  - This makes the case for zoning – separate non-complementary uses
- Provision of *Public Goods* – e.g. urban parks; habitat; National Parks; wilderness/areas of natural beauty; recreational areas; urban conservation, space for future expansion…
- …But ***'sprawl'…?*** Does it represent a problem of 'market failure'? Or does it represent what people choose?
- Economists **support** preservation of environmentally valuable/amenity land – public goods; space for expansion.
  - Do not support just restricting supply of space.

Implications for Urban Policies? Offset for Market Failure

- **Reduce costs of city size:**
  1. Facilitate & plan for urban growth ensuring flexibility;
  2. Reduce costs of space;
  3. Tackle pollution;
  4. Reduce congestion;
  5. Reduce crime (not much of a problem in Swiss cities).
- All have an element of - or mainly result from – 'market failure' because reflect externalities/public goods;
- All essentially 'fixable';
- Prerequisite for fixing all: transparent regulatory framework, efficient **government** at appropriate level – the area including both those benefitting and paying the costs.
  - But policy too often either effectively fails to address or – worse – actively increases some costs: especially **space:**
  - And slows, even freezes, adaptive change.

Facilitate & plan for growth – space & land use

- **Reduce costs of city growth and size:**

➢ Facilitate & plan for growth; plan to reduce costs of space.

- Space goes **out** and **up**: supply where most productive:
- So work with the grain of markets; doesn't mean slavishly following the market.
- Prices embody vast quantities of information: where land prices higher – land is more productive;
- So if there is a price premium for one use compared to another: for example from farming to housing;
- Policy should permit transfer of use **unless** environmental or amenity value of land in existing use justifies *status quo*;
- Planning should offset for market failure but listen to markets.
- And public goods for the future – plan for long term growth and maintain transport corridors and open space.

Conclusions for Policy - congestion

- **Facilitate growth of larger cities**
- Reduce **congestion:**
- Public transit has external benefits (agglomeration): invest.
  - transport infrastructure investment should follow congestion – not attempt to 'transform';
  - Research evidence shows cannot solve congestion just by building more roads;
- **Price congestion** – politically difficult but….
  - Economists been recommending since 1950s
  - Still no true application – pricing journeys on basis of traffic flows: only toll 'zones';
- Means drivers take account of costs of congestion their journeys inflict on others;
  - Uses scarce infrastructure more efficiently.

Conclusions for Policy - pollution, crime, coordination

- **Facilitate growth of larger cities**
- **Reduce urban pollution and improve urban air quality**
  - Particulates and NO2 – problems – regulate and price;
  - Encourage/facilitate greener transport
  - But recent evidence agricultural pollution responsible for much urban air quality problems (Nature 2015);

➢ Implement at regional, national - even international – level.

- **Reduce crime.** Safety is a public good:
  - & crime is the enemy of a city's growth prospects – in extreme case - Columbia.
- Need **government** [co-ordination] for **Metro Areas**:
- Many of these policies most efficiently implemented at the Metro Area level (not municipalities) because of 'spillovers'
- For example: strategic planning; transportation; economic development; pollution control Cheshire & Magrini, 2009).

Conclusion

- Allow cities to get bigger but don't force them to - need an 'urban system' - cities of all sizes;
- Facilitate & provide for change: churn for flexibility;
- Plan for market failures but to do that need to understand how markets work.
- Provide & cherish urban 'public goods'; now & future
- Encourage diversity **and** specialisation;
- Policy should be transparent & long term: people/ cities will adapt.
- Cities are **better** for being **bigger – if there is effective policy to offset cost of size**.

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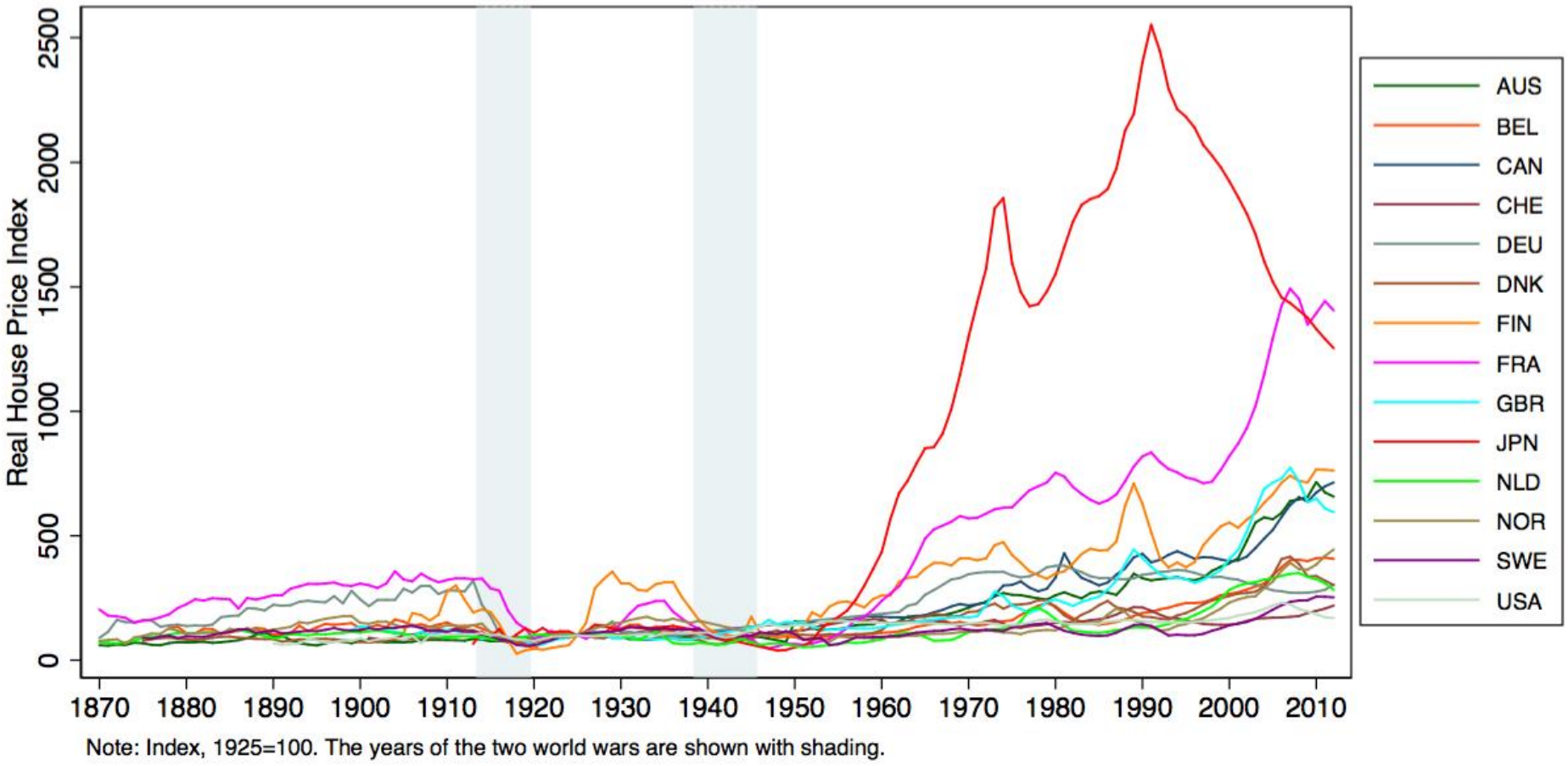
Appendix Slides: Supporting Evidence

Another Long Run International Comparison



Source: Knoll *et a*l, 2014

Beware the Unintended Consequences of Regulation

- Land markets have endemic problems of market failure but – markets 'get their revenge'
- The law of unintended consequences is powerful indeed
- Land use regulation or systems of taxation => generate incentive structures via price effects – change people's behaviour.
- Very powerful policies to prevent sprawl in UK 1947 Act – Greenbelts imposed in 1955. Tight – near absolute - limit on urban expansion; coupled with height limits. So 'rations' space;
- Result? Price goes up; but space in houses + gardens demanded – demand rises with incomes
- Incentive to leapfrog; land price discontinuities; incentive to sell public land even if high amenity e.g. playing fields

Can See Impact in Changes in Commuting Patterns

- Examine change in commuting patterns 2001 to 2011
- But no breakdown by skill level available
- Small area data from Population Censuses converted to spatial common units: 2010 Wards & (bigger) Local Authorities
- Map changes in proportion of employed local residents commuting to work in Inner London;
  1. For all wards in Greater South East England
  2. For all Local Authorities in England & Wales

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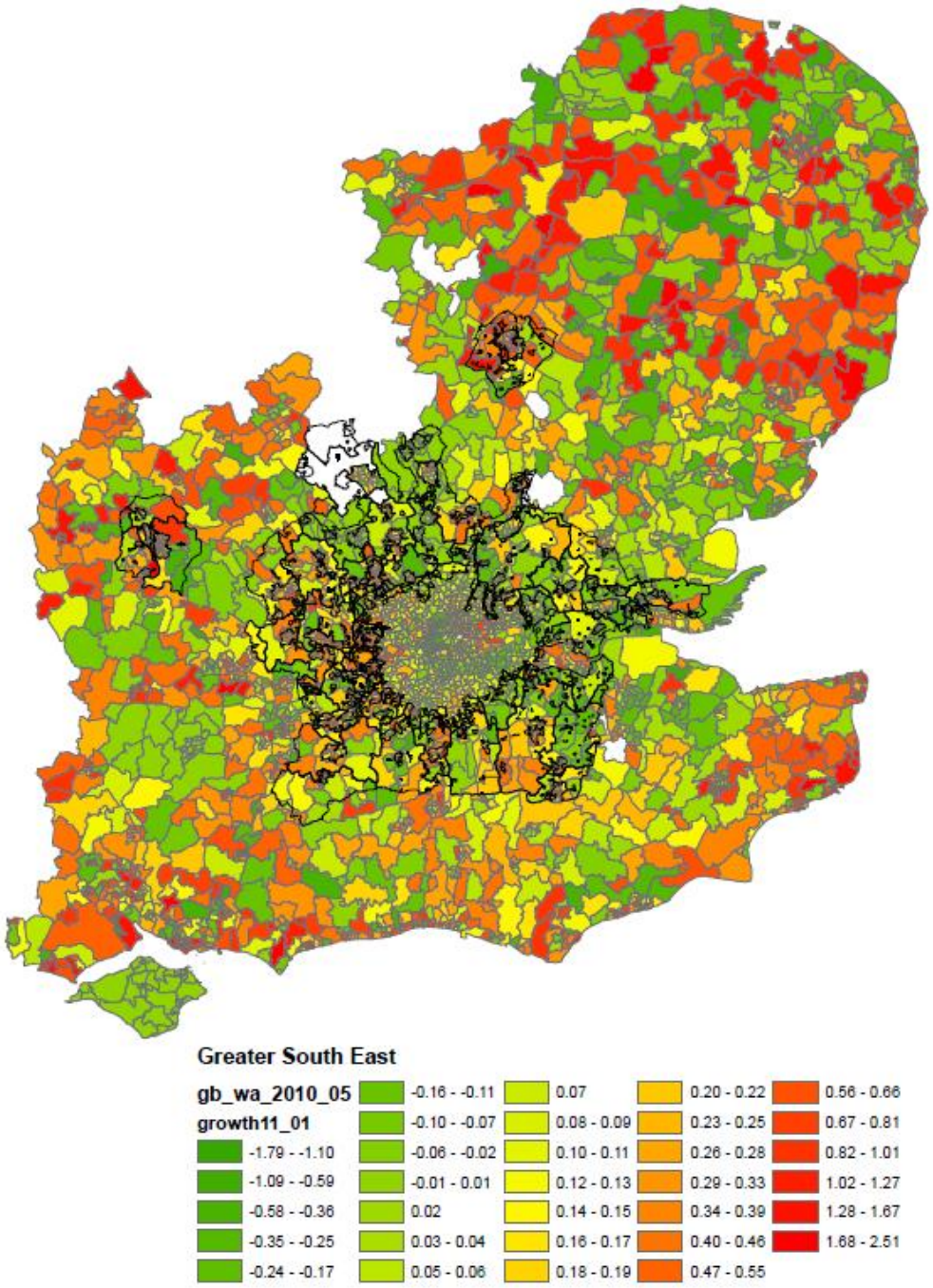
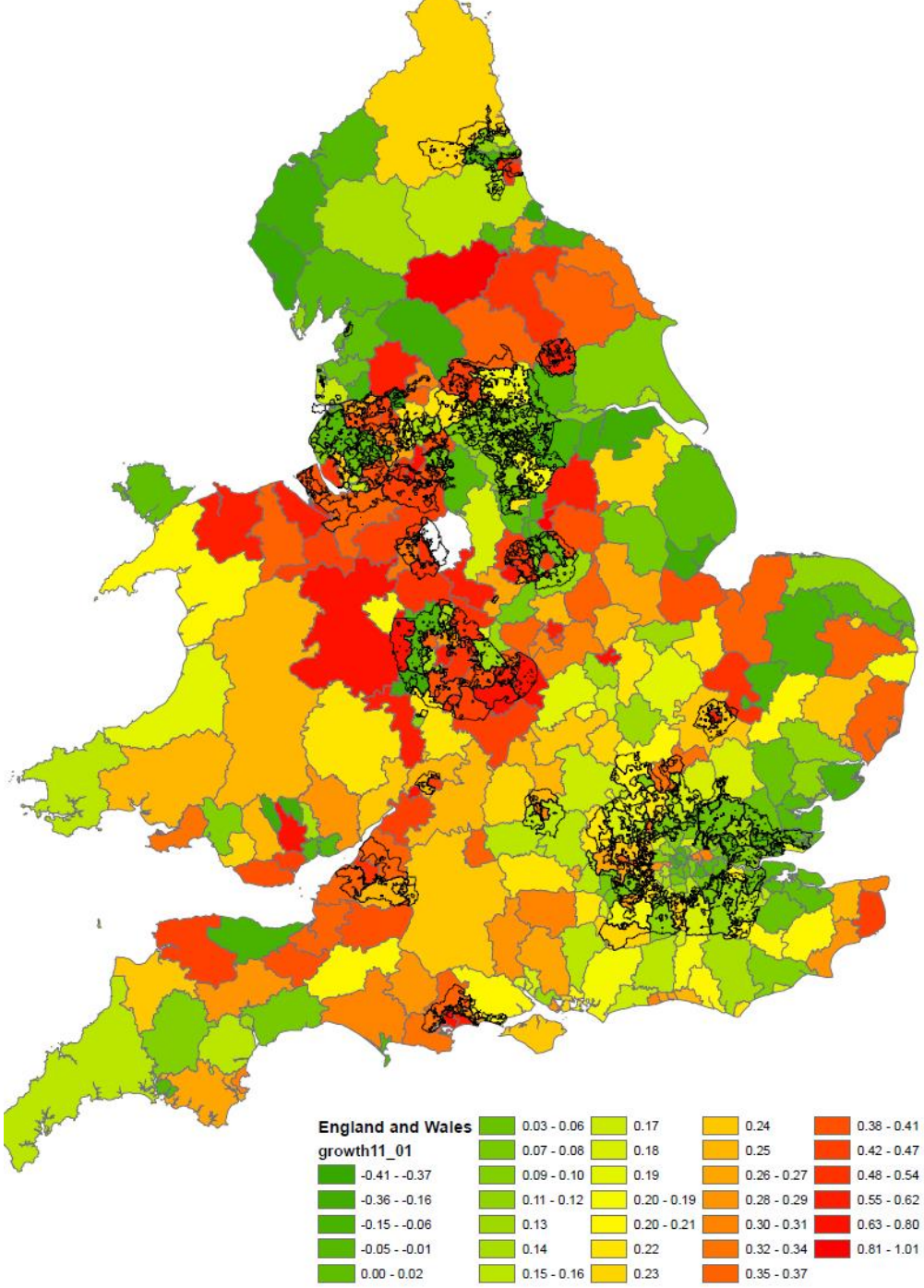
Greater South East



Change in proportion of resident working population commuting to jobs in Inner London 2001 to 2011: Ward level data.

Source: Census

England & Wales



Change in proportion of resident working population commuting to jobs in Inner London 2001 to 2011: Local Authority level data.

Source: Census

Some Conclusions - I

- As demand for space builds up over time with rising incomes and population, increasing numbers of people 'leapfrog' across containment boundaries;
- In Britain where policy has been rigid and longest standing:
- Green Belt identifiable from:
  1. Lack of growth of housing and population;
  2. Increased land and house prices – measure of foregone agglomeration economies;
  3. Reduced commuting to jobs in Inner London;

  - And at the same time average commuter trips increase as (richer) commuters move yet further out; &

Restricting the Supply of Space & Income Elasticity of Demand

- **Space is valued:** a strong 'income elasticity of demand':
  - Cheshire & Sheppard (*Oxford Bull of Econ & Stats*, 1998) – about 2
  - Meen (*Urban Studies*, 2013) about 2.7 > price elasticity of demand
  - Office for Budget Responsibility, 2014 – about 3;
- Green Belts have restricted the supply of space for housing since 1955. Their only function is to prevent development (NPPF, 2012): **NOT** environmental protection, not recreational space: private land.
    - Since 1955 our world transformed:
    - Real incomes up x 3
    - Car ownership up x 13
- So restricting supply of developable space increases the price of housing; by increasing price of housing land; [& price volatility.]