ECFIN-BI-WORKSHOP

Macroeconomic Implications of Housing Markets

Land market regulation: market versus policy failures

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Basic Points

1. Land markets have endemic problems of 'market failure'.
2. A case for regulation by 'planning';
3. Also specific issue of co-ordinating development and infrastructure provision;
4. Bigger cities are more productive – agglomeration economies; but costs rise with city size; main source of rising costs – space costs.
5. Because cities are important, so is urban policy. But….
6. Increasingly planning policies focus on restricting space and city growth; and
7. Micro-managing location of economic activities.
8. So too much policy **increases** costs of city size; e.g. 'Compact Cities' 'Growth Boundaries';
9. And forces economic activity to intrinsically less productive locations.

Planning from Economist's Perspective….

- Economists have failed to take planning seriously until recently but economics has useful things to contribute;
- Planning – has other functions - but basic **economic function;**
- Influence – sometimes control - on **location** of economic activities: but location influences productivity;
- Allocates a scarce resource – land by exact use – agriculture, housing, commercial etc.;
  - **But allocates independently of price.**
- We know about problems of 'market failure':
- Regulation - can reduce the impact of those problems….

Planning, prices and incentives

- Policy or regulation - uniformed by economic insight into how markets work - may try to achieve the unachievable;
- Or even make things worse than otherwise they would be – resulting in a policy rather than a market failure
- Smoothly functioning markets ensure we produce and consume the 'optimal' quantity of all goods and services
- Economists very democratic - assume people are the best judges of their own welfare: so 'optimal' has a technical meaning:
  - No reallocation possible which would make someone better off and no one worse off: ***Pareto optimality***

But Many Markets do not 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:
    - ***'Externalities'***
- And some goods are '***Public Goods':***
  - These are goods which are ***'non-rival'*** in consumption – and ***'non-excludable':*** 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 optimality (so long as non-congested)

Planning, Land Markets and Prices

- **So markets and price signals are vital mechanisms for resource allocation**:
- **But should not slavishly obey them:** land and property markets have endemic problems of 'market failure'
  - **Monopoly** – not most obvious but 'hold-out' sellers; or created by restrictive land supply policy;
  - **Externalities** – value of all parcels depend on uses of 'neighbouring' parcels – often external effects not reflected in prices; so separate or combine uses;
  - **Public goods** – esp. those provided by land such as open space, habitat, historic townscape; & public land for (future) strategic open space or transport.
- ➢ **But prices rich source of information**; reveal where development most productive; contributes most to welfare.

Reasons for Land Market Regulation

- Problems of market failure provide the classic case for regulation & guide regulatory interventions;
- Also – planning – co-ordinate development and infrastructure
- **But:**
  1. Not obvious 'planning' successfully resolves – even addresses problems of failure in land markets;
  2. There is evidence causes serious resource misallocation and loss of economic output;
- Planning does increase supply of land based public goods e.g. parks; historic townscape; recreational areas; National Parks;
- But most specific policies directed to:
  1. 'Urban containment'/anti-'sprawl'; imposing Green Belts;
  2. Determining locations for activities e.g. industry; retail.

And does 'Sprawl' represent a Market Failure?

- Open space – within cities **and** externally – a public good:
- But value of open space falls with distance – 1km;
  - Evidence from hedonic studies in UK is that 'Green Belt' land has **no value** except to those living in it.

➢ **Sprawl - concerns beyond demand for open space?**

1. Does compact development generate positive externalities e.g. energy use? infrastructure? And if so – cost effective?
2. A demand for *'visual amenity'* open space around cities?
3. Or an 'option' demand for unbuilt land out there?

- So less/no sprawl => generates a specific public good?

➢ And/or does increased consumption of personal open space (gardens) threaten assets or aesthetic preferences of existing privileged ex-urbanites?

- => 'Pull up the ladder….' so – **not** a societal worry.

So Planning *de facto* = 'supply restriction' & locational dirigisme?

1. **Restricts supply of space for each legal use:**
   a. **Space** – by height restrictions; floor area ratios;
   b. **Land** – 'urban containment'; Green Belts;
2. **Determines locations of economic activity e.g. retail**

- **1.a** Height restrictions prevalent in many EU cities e.g. Helsinki; Vienna; Stockholm; Paris; London; most historic districts & Conservation Areas;
- **2.** Policies such as *Town Centre First* (UK); *Loi D'Orientation du Commerce et de l'Artisanat* (France – Bertrand & Kramarz, *QJE*, 2002); *Bersani Law, 1998* (Italy - Schivardi & Viviano, *EJ*, 2010)

Effects not small – e.g. *Town Centre First Policy* estimated to have reduced Total Factor Productivity in supermarket sector by 32% - at least (Cheshire *et al.*, *JoEG*, 2015).

Take Cities Seriously: cities are important….

Cities are about specialisation…the division of labour

Founded on ***specialisation*** –

- peasants/farmers ↔ urban occupations
  Commerce, artisans, administration, cultural/religion, defence/military

➢ These are really still the fundamental urban occupations

- Cities 'discovered' in the Middle East (14,000 years ago);
- And independently in other cultures at various times
  - In northern China more than twenty 50,000+ cities by 221 BC
- Can reasonably argue invention of cities was catalyst for invention of the wheel…
- Basis of success is ***agglomeration*** economies;
- But costs also rise with city size – congestion, pollution, space…

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Agglomeration Economies: Recent Quantitative Estimates

- **Traditionally thought of as manufacturing –** Marshall and 19th C analysis: But…

- **First credible quantitative estimates circa 1996:**
- Double size of city and productivity increases by 3 to 6%:
  - Seems even more important in less developed countries e.g. India 10 to 20%:
  - Columbia (Duranton, 2016): workers are more skilled/ educated in larger cities;
  - Including the effects of more skilled labour, on average double city size => 11% wages

  - **Excluding effects of more skilled labour**,
    - double city size => productivity (wages) increase 5.4%;
- Going from small town of 10 000 to Bogota with 8m - increases wages – everything else equal – by more than 40%

Agglomeration Economies: Magnitude & 'Portability'

- **Agglomeration economies – 'externality'**
- To access: 'worth' bidding up price of more productive land

- Latest research suggests agglomeration economies bigger & 'portable' (de la Roca & Puga, *RES*, 2016);
- 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
- Double city size => Total Factor Productivity + 5%:
- ***TFP all else equal*** **going from size of Ghent to Bruxelles => + 12%: or Ghent to London => + 22%**

- **And vary by sector:**
- 3 times as big in Services as Manufacturing => urban resurgence; biggest in business & financial services; public admin. (Graham, 2009: UK estimate)

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 powerful in concentrating activity

Also important in generating 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

- Not yet serious quantification of agglomeration benefits in **consumption**

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

Now Quantitative Estimates of *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 similar rate to 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 - economic growth faster the bigger the city but – for given size – the denser the city, the slower it grew:

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

So – what does policy do? Contains them!

Urban containment/densification orthodoxy

- UNHabitat; OECD; New Urbanism…
- Will illustrate effects with Britain – but spreading:
- …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; & ineffective to counter global warming
- UK reaping the results in form of house prices –
- [And office costs; and costs of industrial space, and retail space…]

What Green Belt containment looks like…Cambridge

MYTH 1: ***Concreting over England***

REALITY: Greenbelts cover about 1.4 as much land as all urban areas; all urban less than 10%;

MYTH 2*: Greenbelt land environmentally valuable*

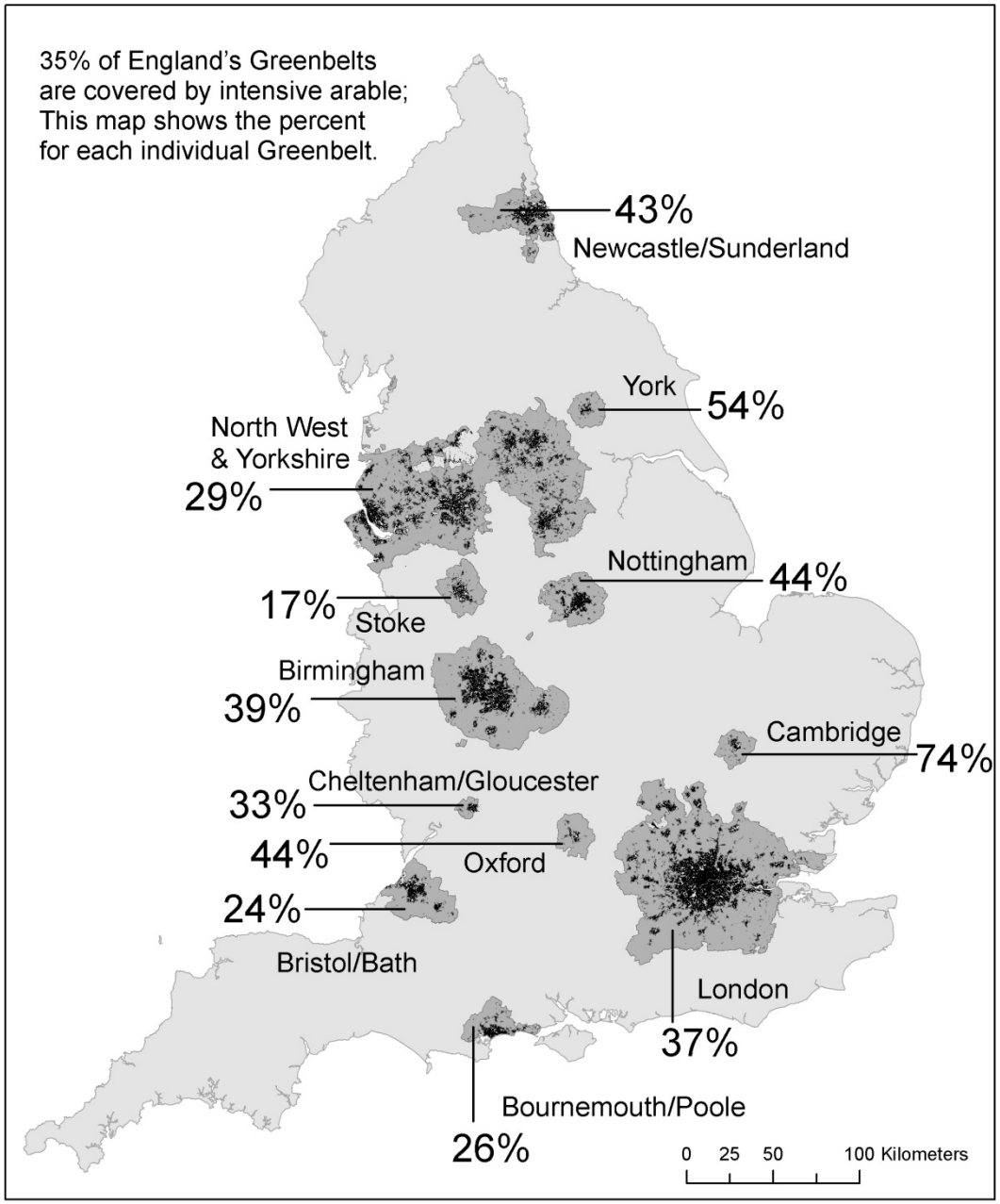
REALITY: biggest use - intensive arable e.g. Cambridge 74%;

MYTH 3*: intensive farmland is 'Green'*

REALITY: No access & NET environmental cost per ha - compare parks & gardens!

[*Nat. Ecosystem Evaluation, 2011*]

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'.

Causes of the Crisis of Housing Affordability - Population?

- We all know that?
  - Take London - GLA Area

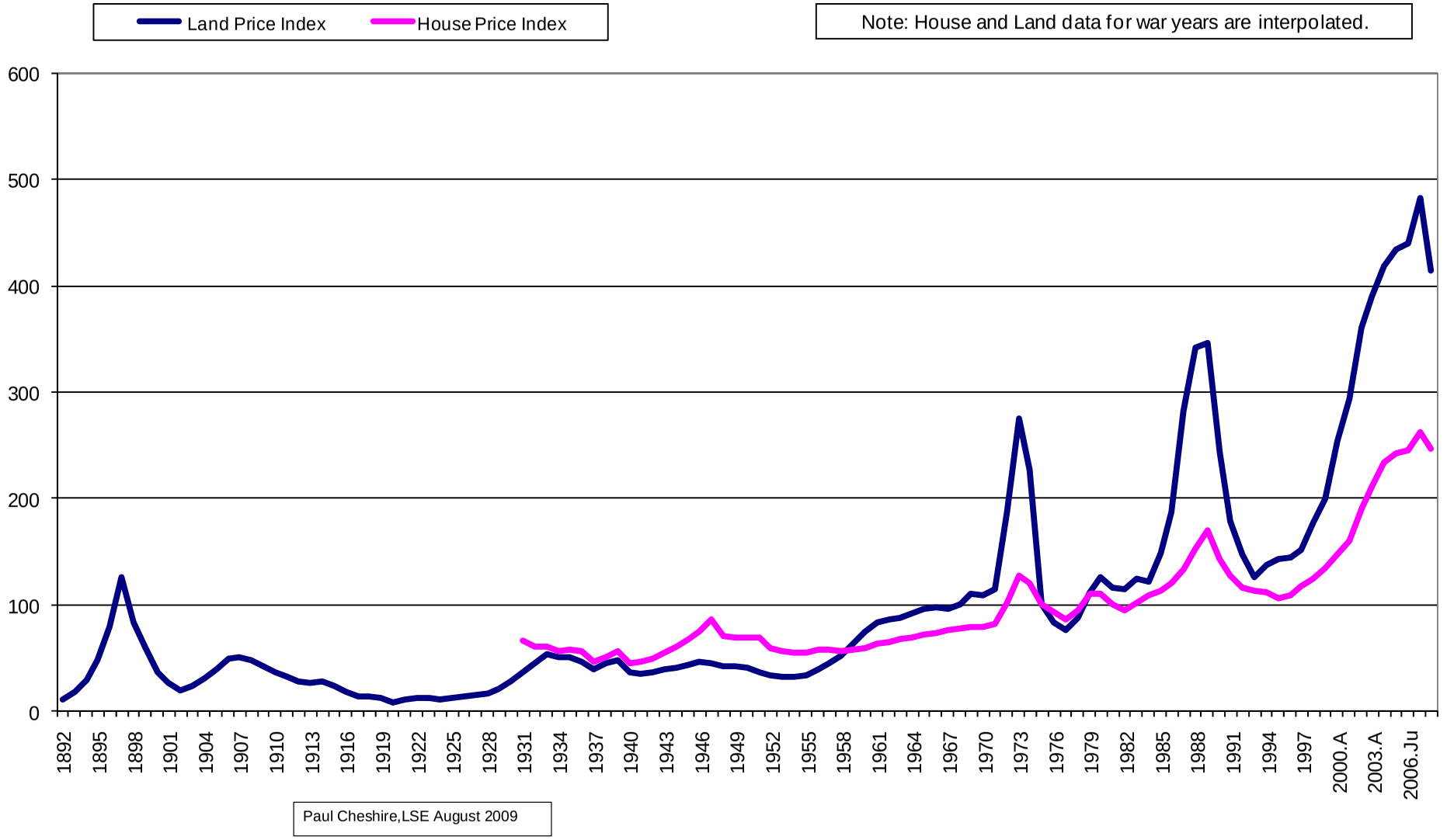
Period	% Change Pop	%Change Real House Prices
1981-2011	+20.5	227.6
1951-1981	-16.9	71.9
1951-2011	+0.1	+463.2

- No we do not! Price results from interaction of **supply** with **demand**;
- Population has some impact on demand: but far more important influence is real incomes; also preferences – role of cars

So what is the effect of restricting the supply of space?

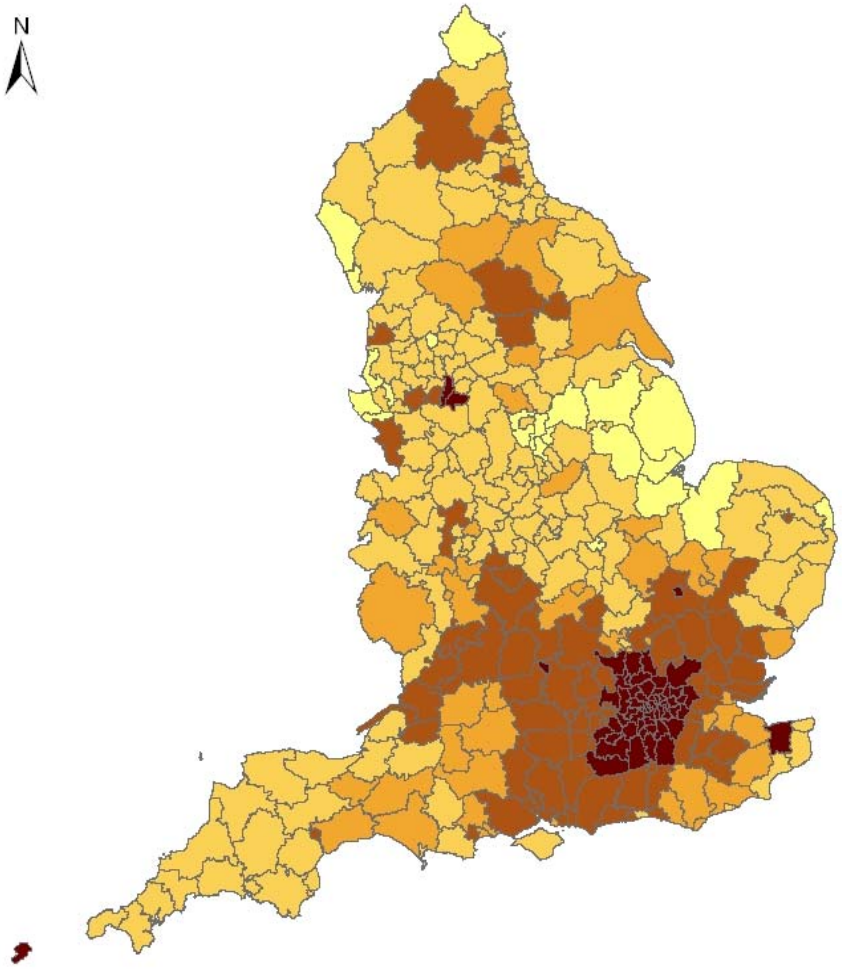
- **Space is valued:** a strong 'income elasticity of demand':
  - Cheshire & Sheppard (1998) – about 2
  - Meen (2013) about 2.7 > than price elasticity of demand
  - [OBR 2014 – about 3];
- Green Belts have restricted the supply of space for housing since 1955. Their **only** function is to prevent development: **NOT** recreational space: private land.
  - Since then world transformed: e.g. in Britain
  - Real incomes up x 3
  - Car ownership up x 13
- So restricting supply of developable space increases the price of land; and housing; [and increases price volatility.]

Real Land & House Price Indices (1975 = 100)

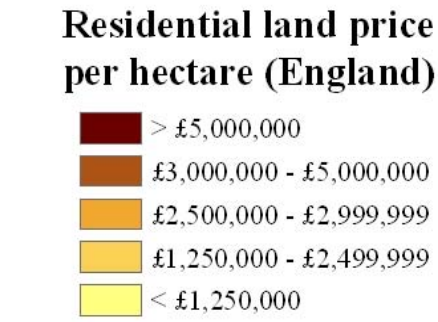


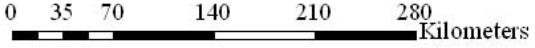
Price people out of where they want to live & be more productive

- Can identify Green Belts by price of land….



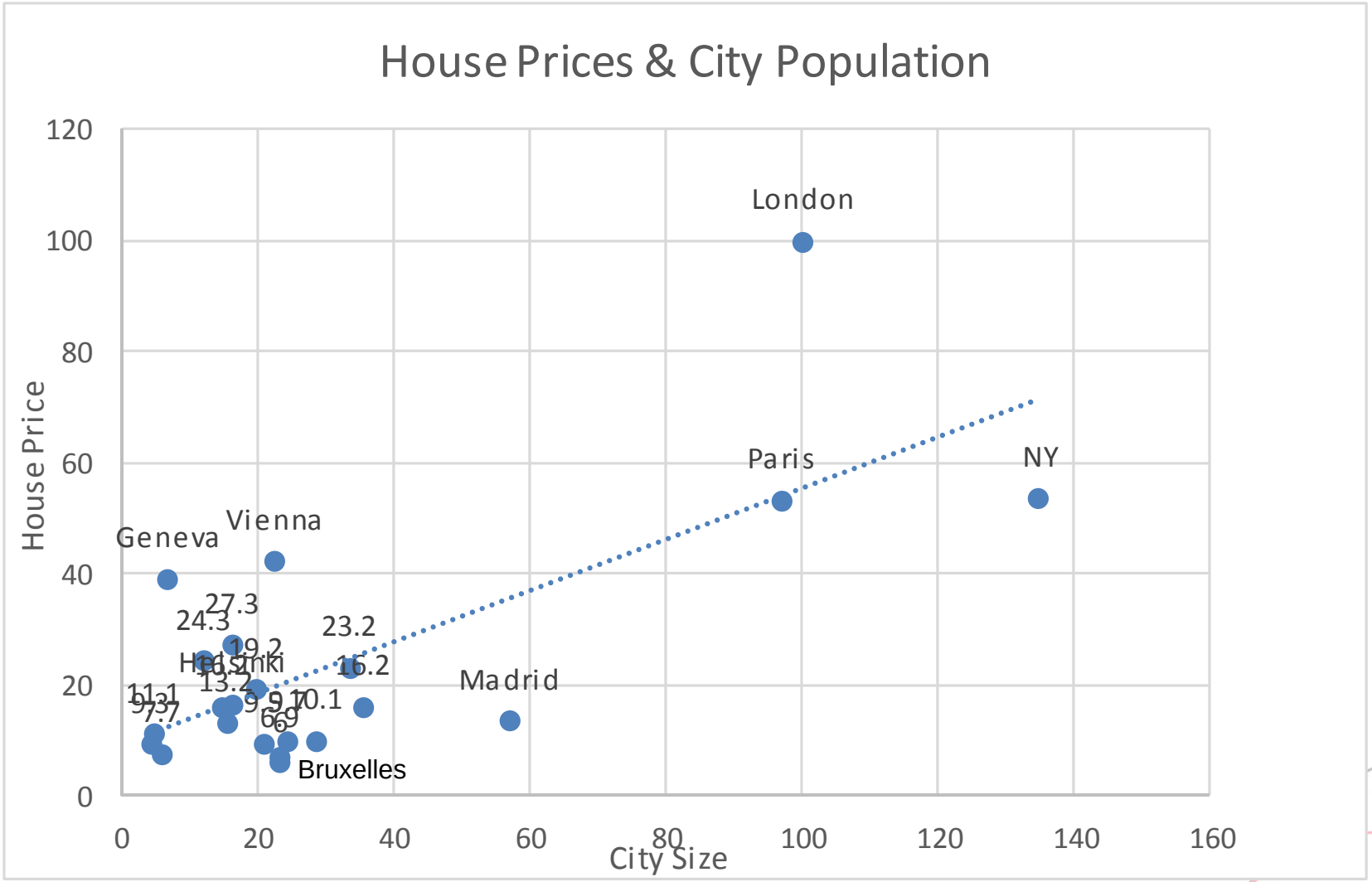
Source: Property Market Report (July 2007).





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.

Housing Costs & City Size: European Capitals: London=100



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And NOT just House Prices - Office Space

Office Market	Years with Available Data	Regulatory tax as %	
		Mean 1999-2005*	2005
City of London	'61-'05	488	334
London West End	'61-'05	809	889
Canary Wharf	'98-'05	327	277
Manchester	'73-'05	230	250
Newcastle upon Tyne	'65-'05	97	119
Croydon	'65-'05	94	98
Edinburgh	'65-'05	291	262
Glasgow	'65-'05	204	205
Reading	'65-'05	203	161
Bristol	'73-'05	157	196
Birmingham	'65-'05	250	268
Leeds	'73-'05	193	217
Amsterdam	'91-'05	202	192
Brussels	'91-'05	68	84
Frankfurt	'91-'05	437	331
Paris – City	'91-'05	305	375
Paris – La Défense	'91-'05	167	193
Stockholm	'91-'05	379	330
New York (Manhattan)	Range	1996-2000	0 to 50

Source: adapted from Cheshire & Hilber, *Economic Journal*, 2008

Measuring the *Regulatory Tax* on Cost of Office Space

(as % mark up of price of space relative to marginal costs of construction).

Excludes cost of compliance.

RT is greatest in London;
smallest in Brussels & New York.

And House Price Differentials 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 13.5% higher in real terms.

Planning and Prices

- So if prices indicate - permit development unless the value to society of land in current use **justifies** price premium;
  - Not just a question of numbers of 'units': houses complex goods – many characteristics – each contributing to welfare.
  - Never forget: demand for space is driven more by **income** and preferences: less by population growth;
  - People as they get richer want larger, detached homes; closer to better amenities and better quality of life.
  - If system restricts - then:
  - **a) Redistributes to those that have them – the rich;**
  - **b) Reduces welfare; &**
  - **c) Converts houses/land into an asset - speculation**

Implications of Recent Research for Urban Policies?

- **Reduce costs of city size:**
  1. Facilitate & plan for urban growth;
  2. Reduce costs of space;
  3. Tackle pollution;
  4. Reduce congestion;
  5. Reduce crime.

- All have an element of - or mainly result from – 'market failure' because reflect externalities/public goods;
- All essentially 'fixable' – and some cities gone a long way towards fixing; but others not;
- Prerequisite for fixing? transparent, efficient **government; understanding of how markets work & fail**
  - But policy too often either effectively fails to address or – worse – actively increases some costs: especially **space.**

Facilitate Larger Cities & Plan for growth

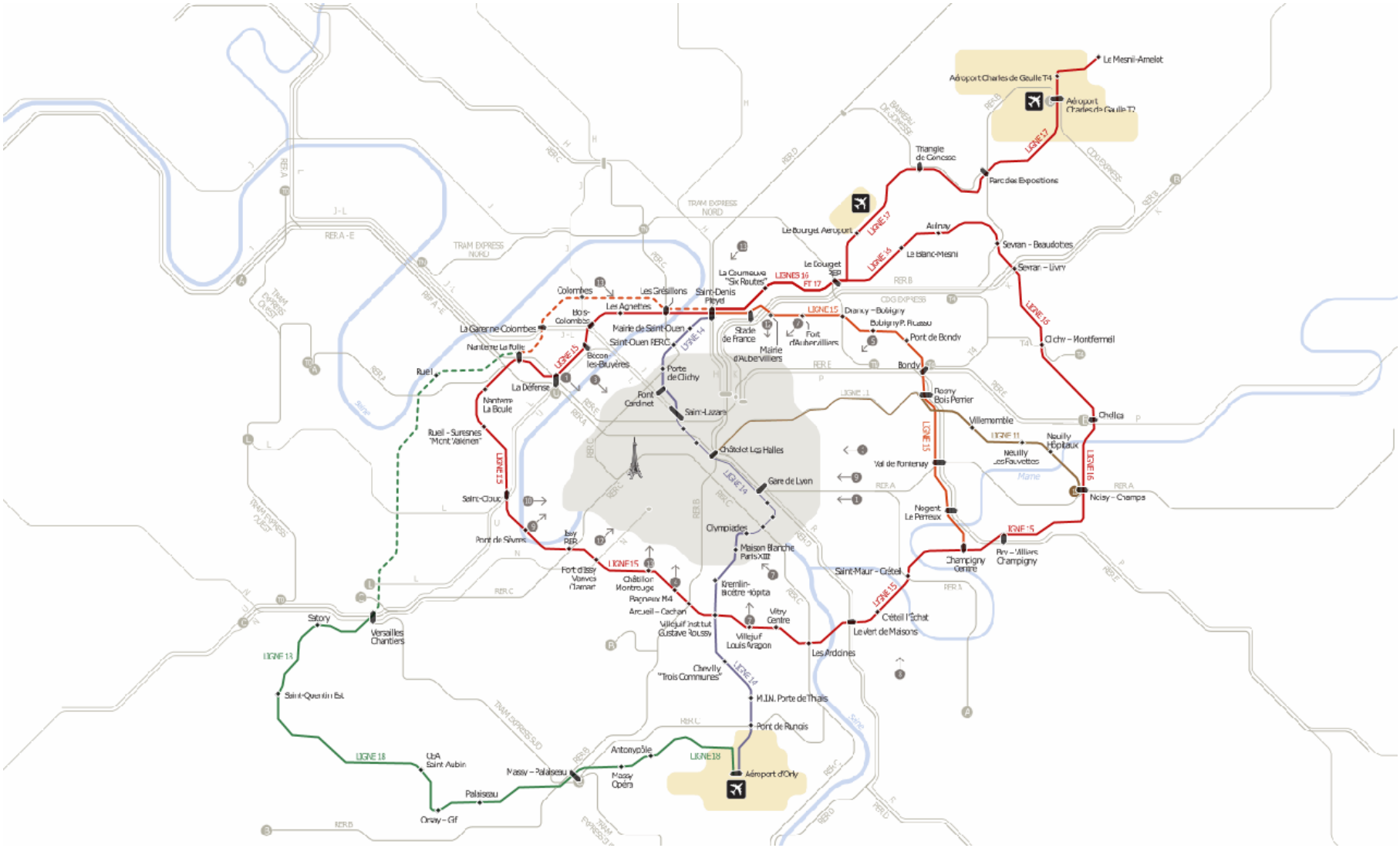
- **Reduce costs of city growth and size:**
- Land markets have endemic problems of 'market failure' - so;
  - Plan to preserve land on basis of environmental and amenity – as a 'public good';
  - But also plan for growth; to reduce costs of space;
  - Supply land as prices and preferences indicate **unless** issues of market failure.
- Need **clear plan** for growth – not 5 or 10 years ahead: but without time limit;
- Including protecting land for city growth (about 35%)–
  - For transport arteries and open space: forestall leapfrogging settlement – can damage public goods amenities and increase commuting cost/carbon footprint; leaping across Green Belts.
- But respond to market signals…

Conclusion

- Cities, real estate markets and planning are important:
- Land an increasingly important asset; a factor of production; housing contributes directly to welfare; location directly impacts on productivity;
- So pay attention; planning not just a sandbox for designers.
- Allow cities to get bigger but don't force them to - an 'urban system' - cities of all sizes;
- Supply space for all urban land uses responding to prices: numbers of houses but characteristics and locations vital too; and commercial space.
- Let firms (& people) be the judges of their most productive locations; a policy case for well evidenced restriction;
- There are reasons for regulation but we have overregulation and supply restriction.

CrossRail: £18bn but no houses allowed!

Paris can do it too….



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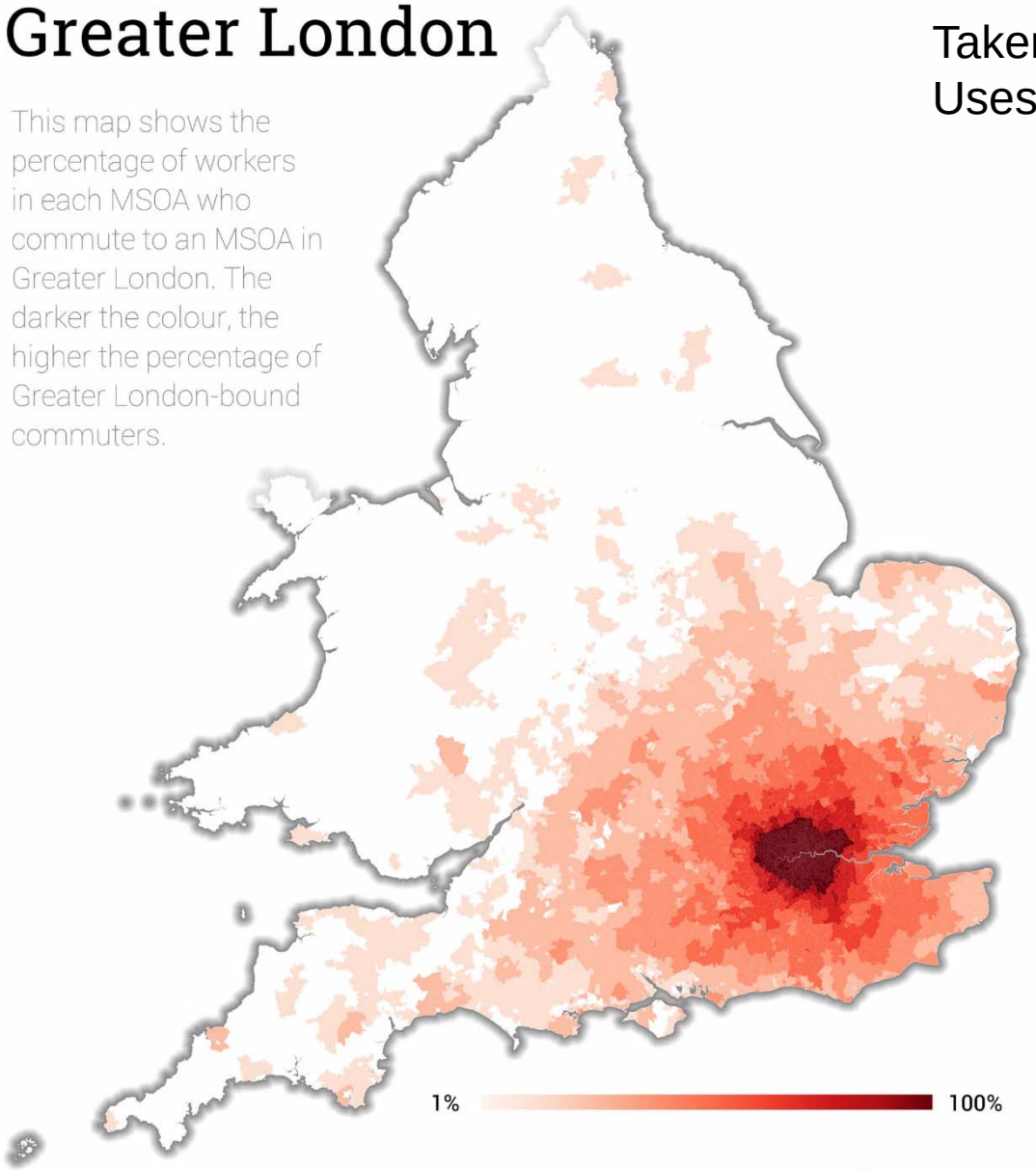
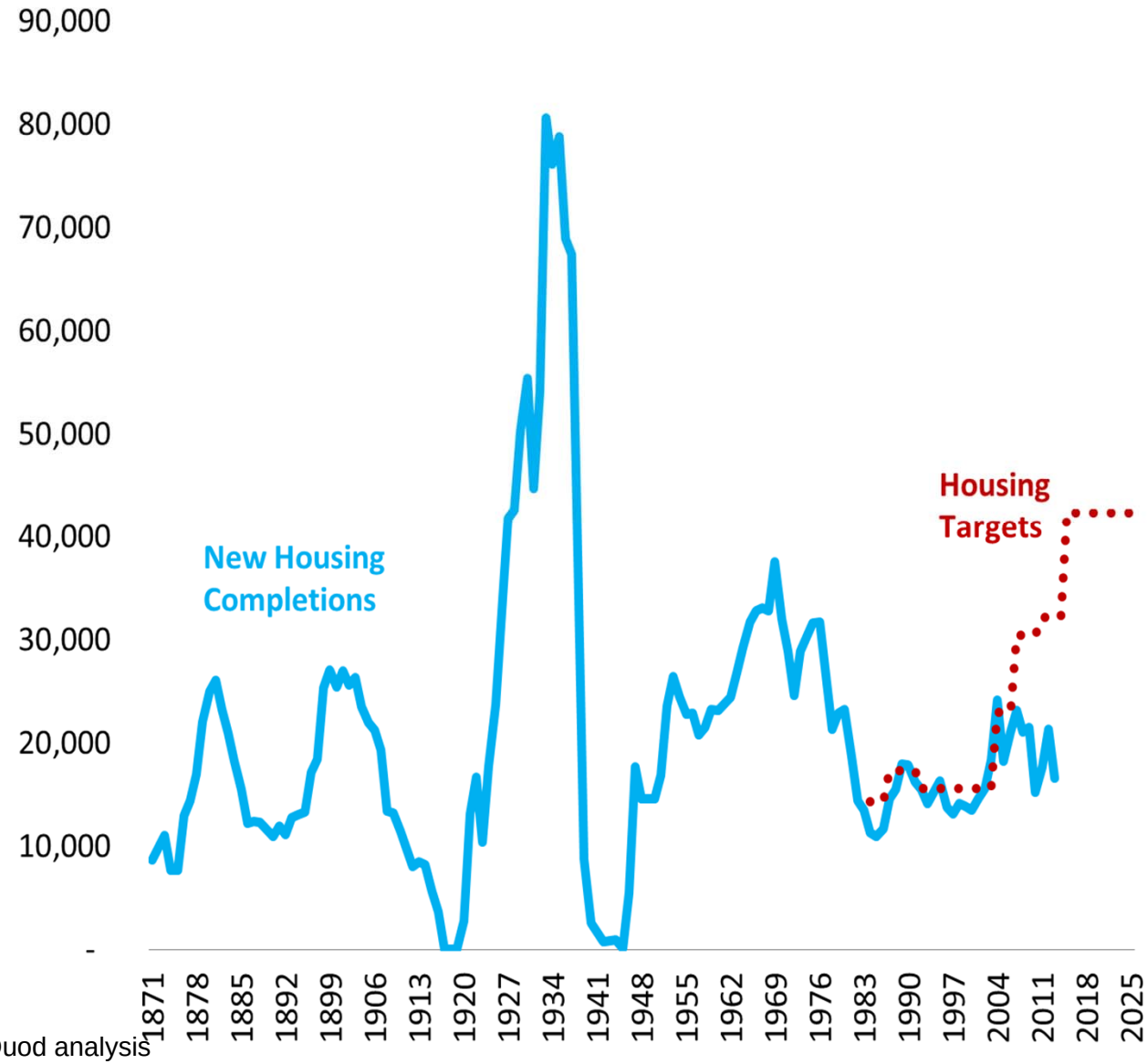


Taken from Alasdair Rae, 2016
Uses 2011 Census data

And just stop building

London house building and housing targets 1871 to 2015 (constant GLA Boundaries)



Source: GLA, DCLG and Quod analysis

Micro-based forecasting Model

- Evidence from model constructed for DETR/ODPM in 1997-99
- 'Microsimulation' model built from observations of individual households + houses; calibrated on 3 housing markets; grossed up to largest 56 urban regions (≈housing markets)
- Interregional migration + induced household formation
- Demand driven by household numbers & incomes
- Static equilibrium - so long term only
- Aim was to estimate effect on house prices not of housing numbers but of land supply
  - Assuming announced planning policy – 60% Brownfield – *Urban Task Force*
  - Household numbers increase at then predicted rate
  - Real incomes grow at historic trend rate
- Increase in real price of quality constant houses 1996-2016 132%;
- **But IF only** household numbers increased, price rise = 4.4%