Cities and urban economies

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UNDERSTANDING CITIES AND THEIR SPATIAL CULTURES

9 March 2022

What you've covered so far …

- 'The urban' …
- Different perspectives on cities and urban social reality
- Different methods of exploring urban space
- Today: urban economies, cities as economic systems

What we will cover today

Part 1: overview. Economic activity across space

Part 2: theory. Urban economics: the key ideas

Break for ~10 mins

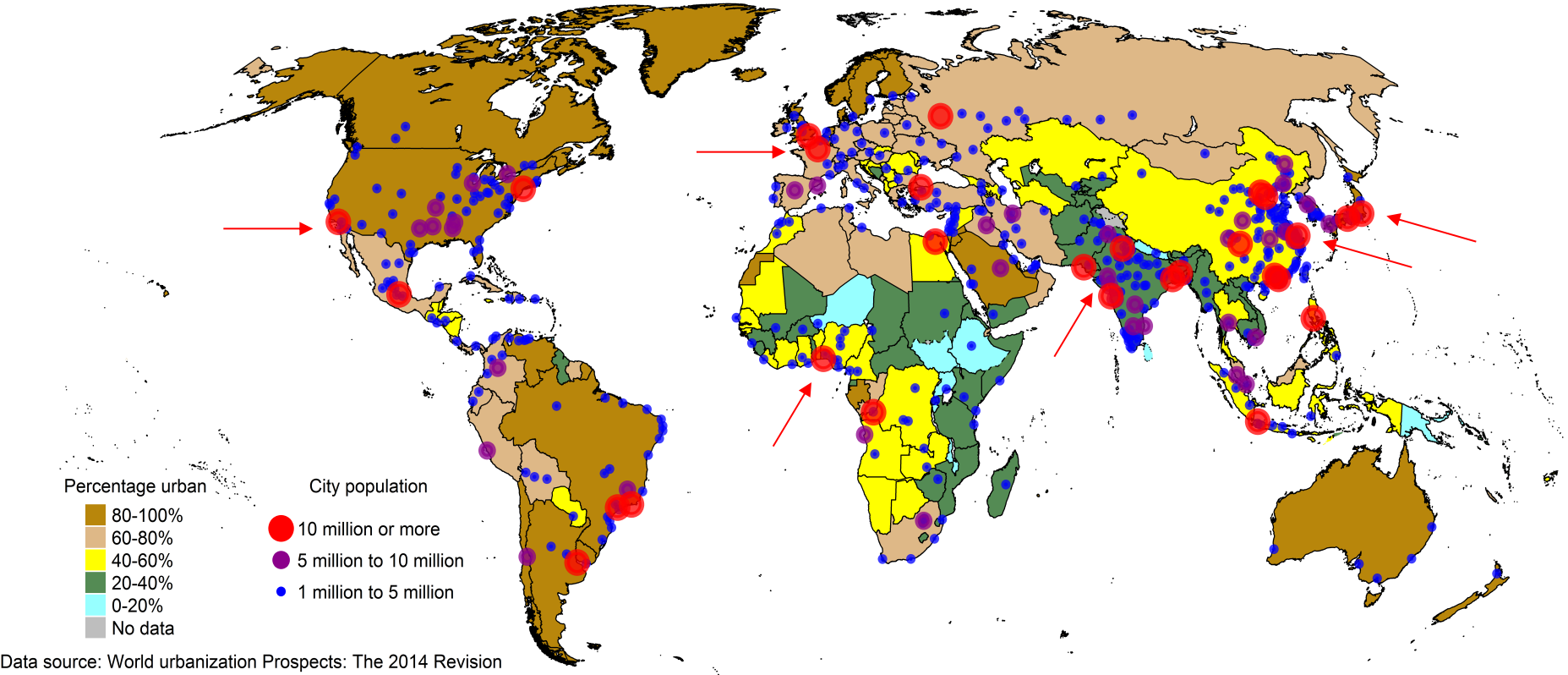
Part 3: real world. Unequal cities: labour markets, housing, mobility. And Covid-19

Questions? Please put them in the chat.
Or unmute and ask

Part 1: overview

The urban world: 2014

55% of the world's population lives in urban areas.
27 megacities, with populations over 10m

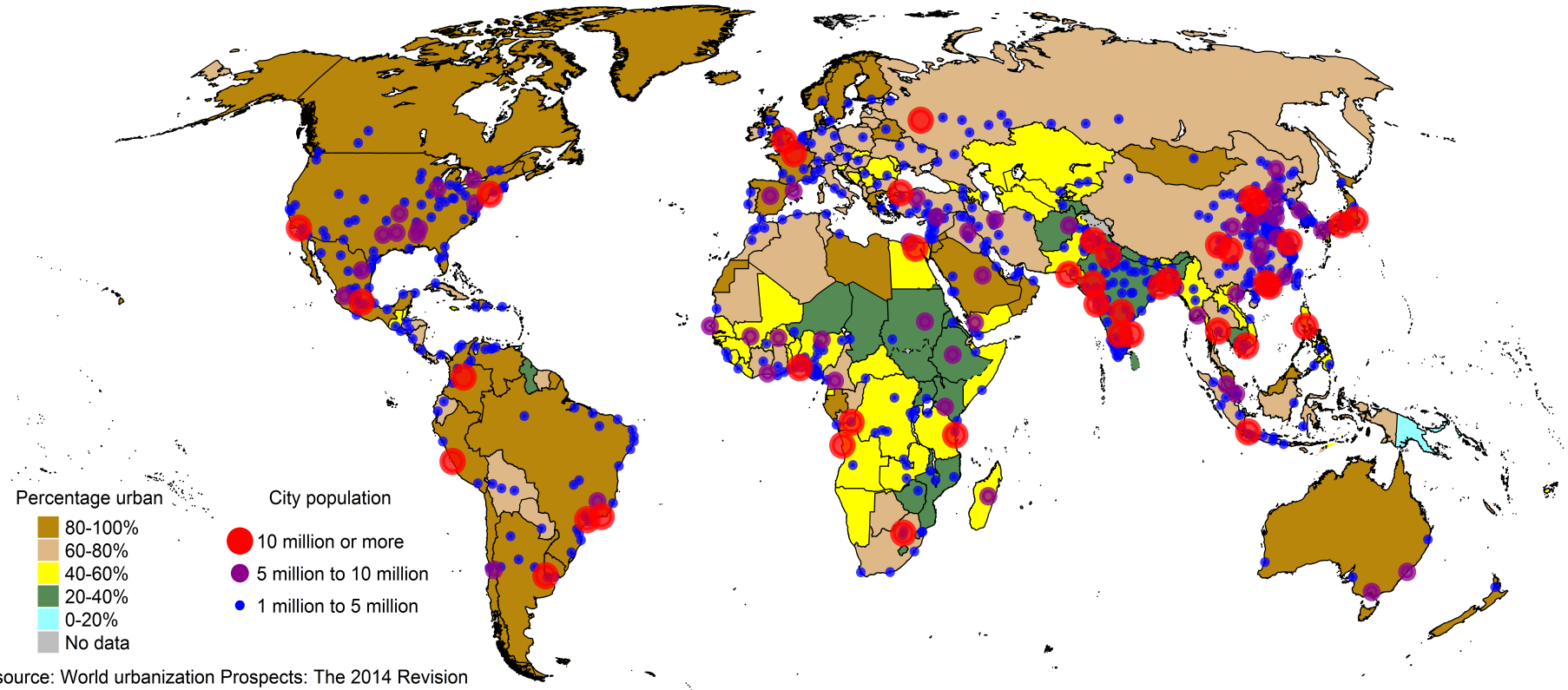


Data source: World urbanization Prospects: The 2014 Revision
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.
Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan.
The final status of Jammu and Kashmir has not yet been agreed upon by the parties.
Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined.

https://esa.un.org/unpd/wup/Maps/CityDistribution/CityPopulation/CityPop.aspx
http://www.un.org/en/development/desa/news/population/world-urbanization-prospects-2014.html

The urban world: 2030

60% of the world's population will live in urban areas.
41 megacities!



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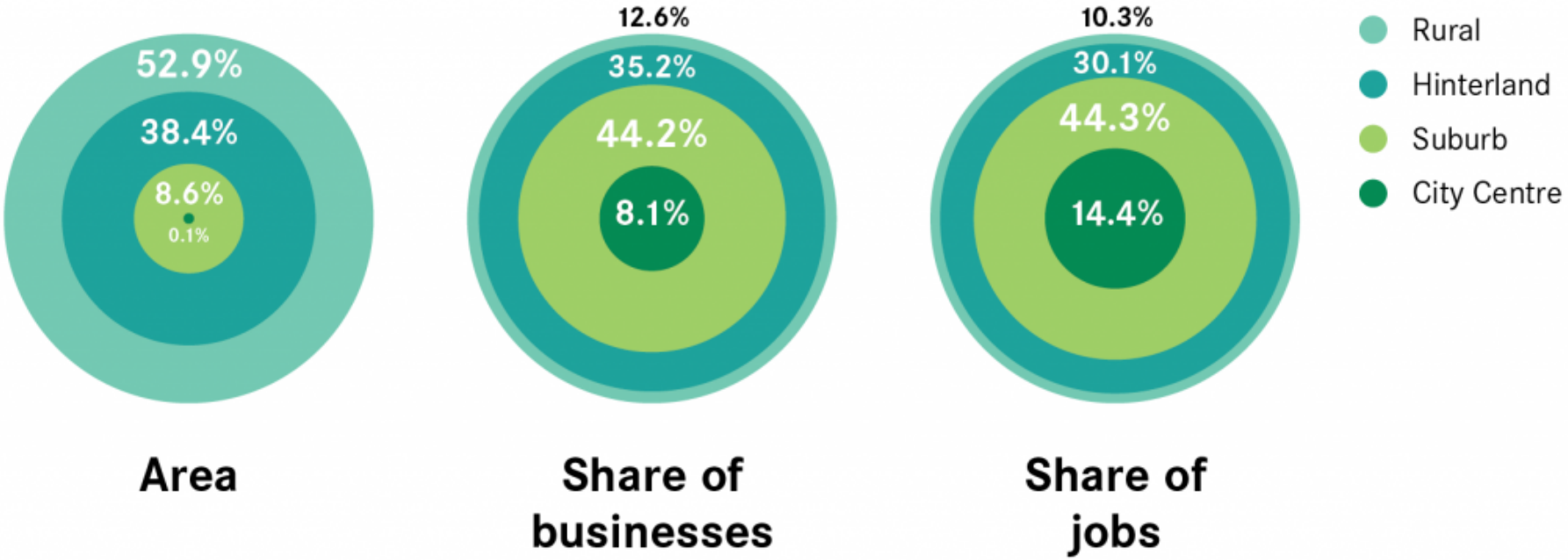
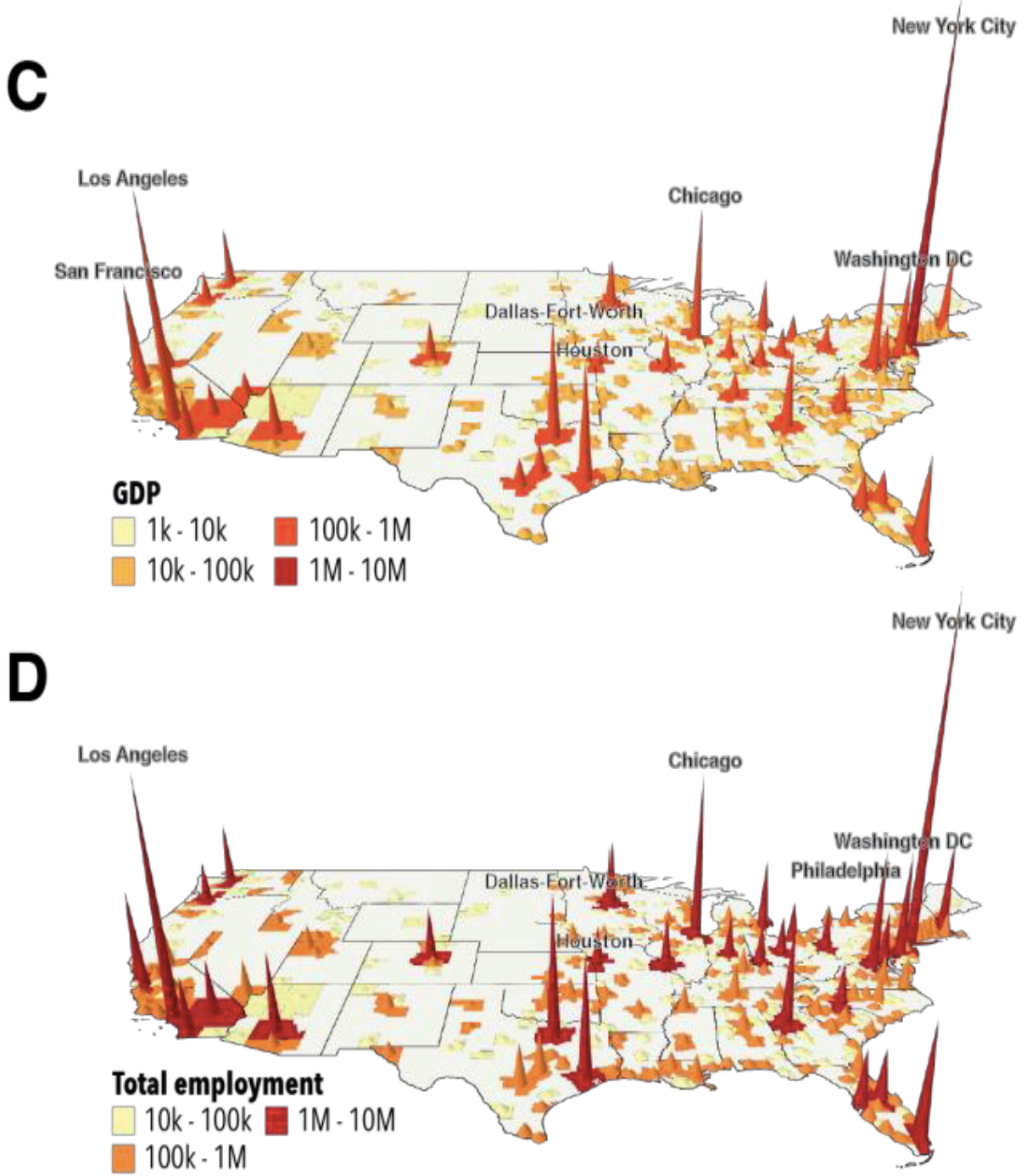
The UK: already urbanised



In 2016, British city-regions cover 47% of land … but have 87% of all businesses, and have about 90% of all jobs

Serwicka and Swinney (2016)

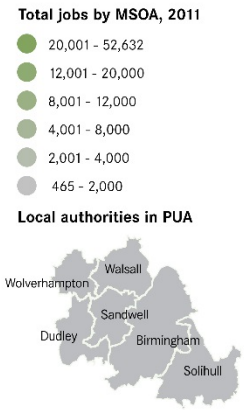


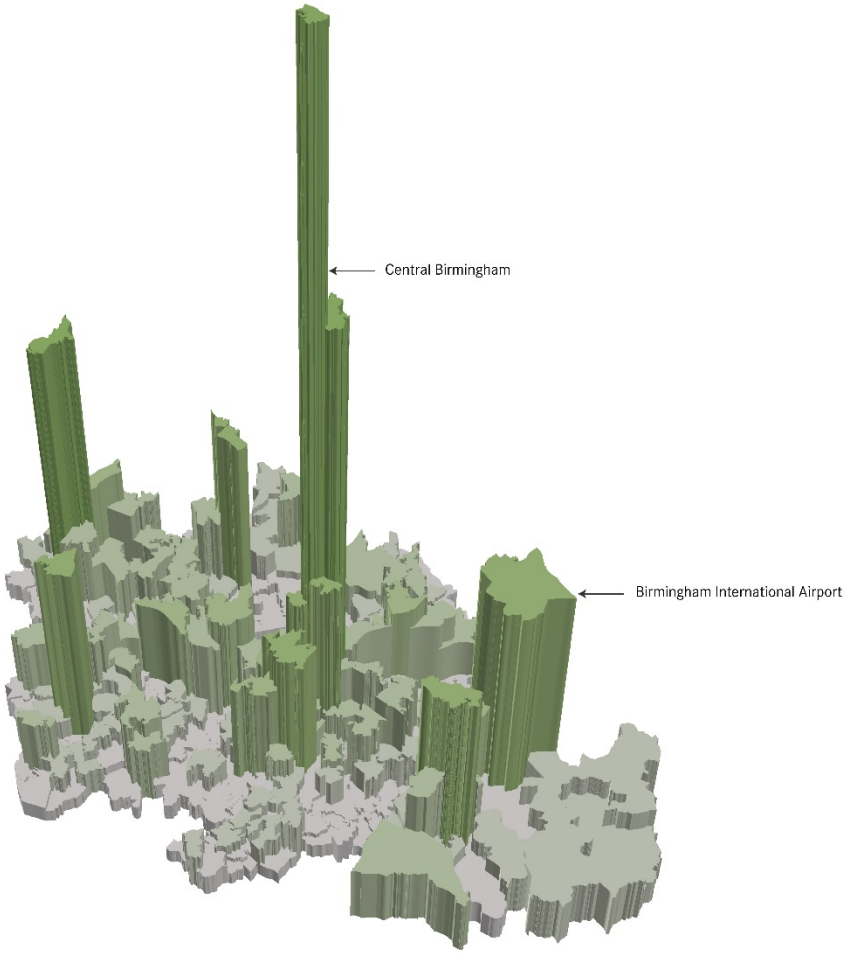
The world is spiky

Economic output, employment and many other measures are highly concentrated in a few urban cores

Balland et al (2020)

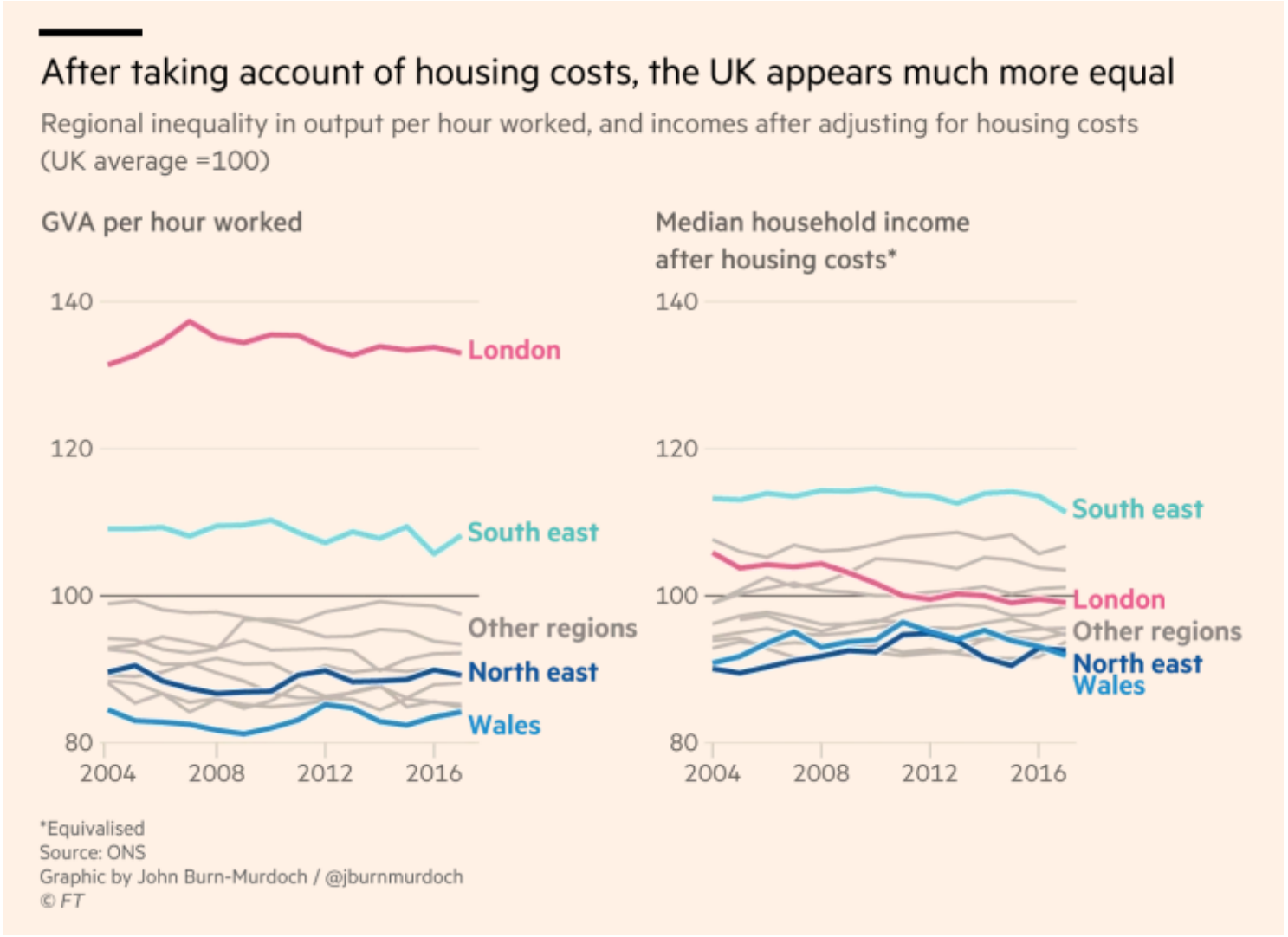
Big differences *within* cities too





http://www.centreforcities.org/city-by-city/
Built-up area geographies

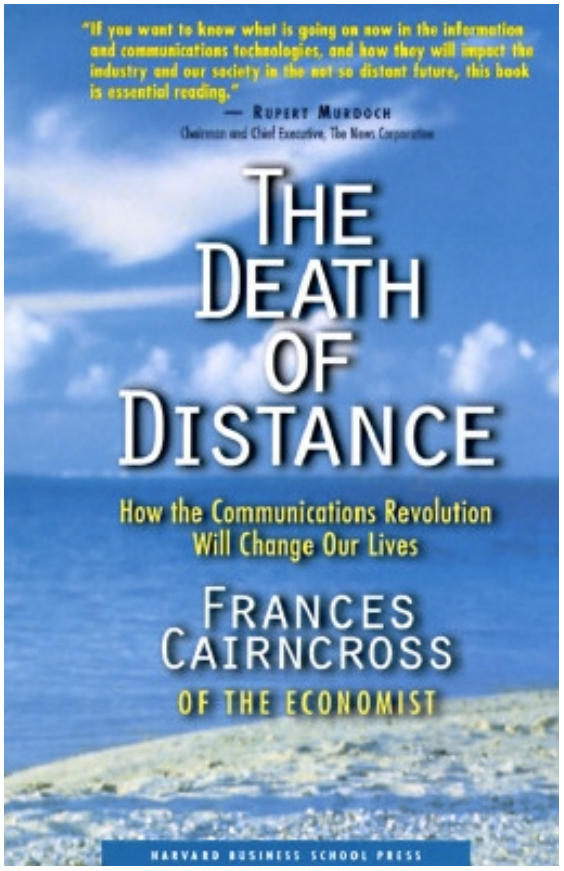
But: how you measure matters



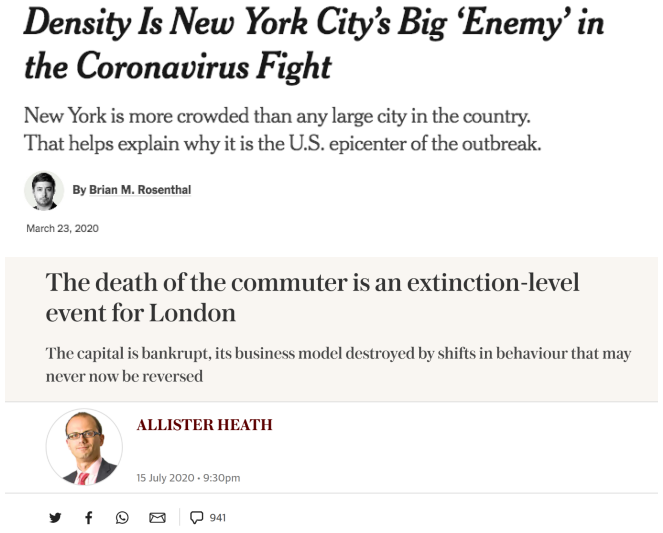
Giles (2021)

‘Reports of my death …’

1980s: crime, physical decay



1990s: the Internet



2020: COVID-19, remote working

https://www.nytimes.com/2020/03/23/nyregion/coronavirus-nyc-crowds-density.html
https://www.telegraph.co.uk/news/2020/07/15/death-commuter-extinction-level-event-london/
https://www.city-journal.org/post-covid-and-new-normal

Glaeser's Paradox

"**The central paradox of the modern metropolis**: proximity has become ever more valuable as the cost of connecting across long distances has fallen"

(Glaeser, 2011)

To address this paradox,

we need to understand **how urban economies work**

Part 2: theory

Urban economics

- **Key idea = cities help firms and workers become more productive**. 'Agglomeration economies' make this happen
- Duranton and Puga (2020) divide these into three types
  - **Sharing** – benefits of shared infrastructure, e.g. public transport
  - **Matching** – deep labour markets help workers and firms find the best job / people at any point
  - **Learning** – generating new ideas, learning from others
- **Production side**: cities help people connect and maintain economic links; observe, learn from each other
- **Consumption side**: urban scale supports a rich set of products, services, experiences

Face to face

- **Key idea: complex activity needs face to face interaction**; so does a lot of **retail and leisure** activity
- Pre-pandemic, at least, technology *helps* face-to-face

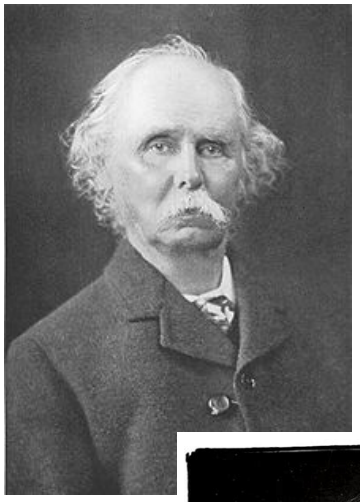
> The range of contact 'channels' is wider and deeper than at any time in the past, but face-to-face contact provides extra 'bandwidth' that other channels cannot, especially for tacit, understood, and inferred information and knowledge. Transactional exchanges can rely on ICT, but for insight and knowledge F2F will always have the edge. It offers speed, quality, reciprocity, and the clues of body language, among other things. It is critical to building relationships, and relationships are key in a world and an economy where competition is as much about affinity as about competence (everyone is competent, so how do you pick your collaborators?).
>
> Crookston and Reades (2021), p219

Clusters

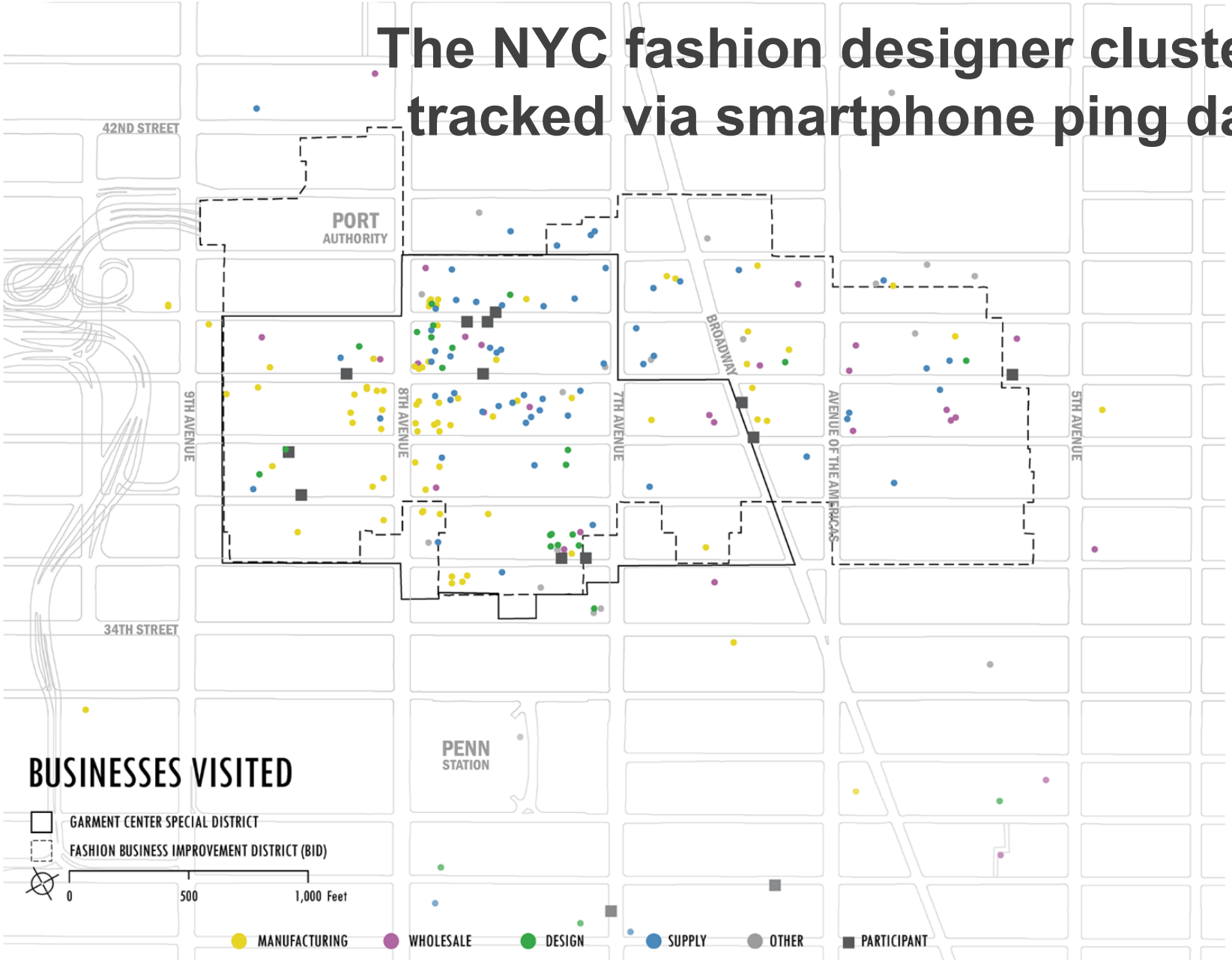
- Key idea: **colocation, interaction and collaboration by firms in cities** fosters innovation, growth (Marshall 1918)

- In the jargon, ‘industrial production districts’ or ‘milieux’ in cities

  - **Clusters may involve firms in the same industry** (Marshall)
  - **… or involve knowledge spillovers across industry** (Jacobs, 1969)



The NYC fashion designer cluster, tracked via smartphone ping data



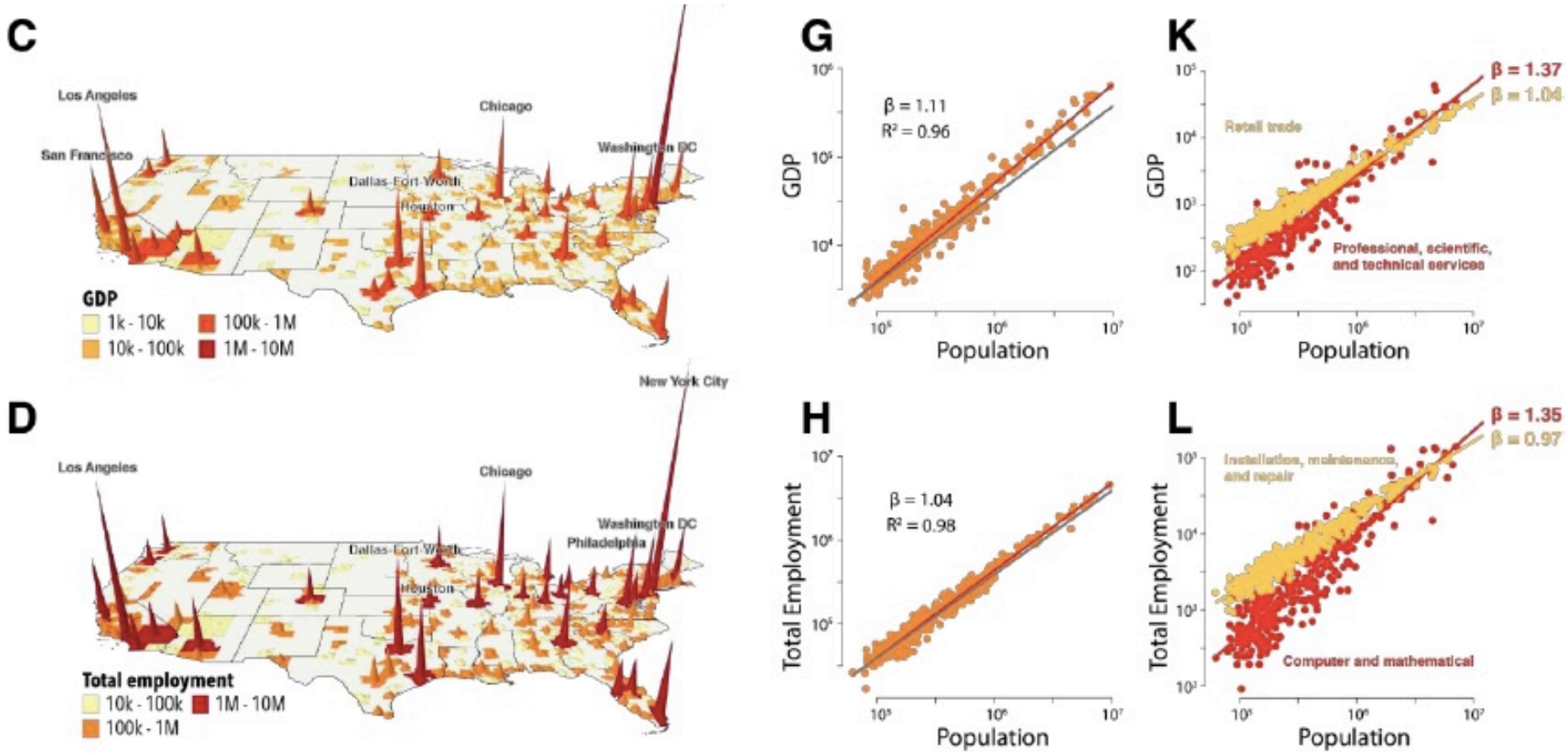
Willams and Currid-Halkett, 2016

Urban systems

- **What are the links between urban economics and the urban systems / networks approach?**
- **Key idea: urban economics gives a 'microfoundations' for scaling laws such as Zipf's Law**
- Matching / sharing / learning = forms of 'increasing returns to scale' in cities, and these can be non-linear (so, superlinear)
- Let's look at an example ...

Balland et al (2020)

Urban systems



Left: In the US, GDP and jobs cluster into bigger cities

Right: More complex activities (red) exhibit superlinear scaling

The urban wage premium

- **Doubling city size ~ 5-10% increase in ave productivity**
- **Key idea: this gives an 'urban wage premium' for workers in cities**, compared to similar people outside cities
  - Why? Higher productivity ~> higher wages for urban workers
  - Bigger city ~> bigger wage premium
  - More skilled / experienced / higher ability ~> bigger wage premium
  - The wage premium stays with you after you leave a city

    Glaeser and Maré 2001, Baum-Snow and Pavan 2012, D'Costa and Overman 2014, De La Roca and Puga 2016
- This helps explain spatial inequality *between cities* (bigger vs. smaller places) and *within cities* (how qualified you are)

Dynamics 1: diversity

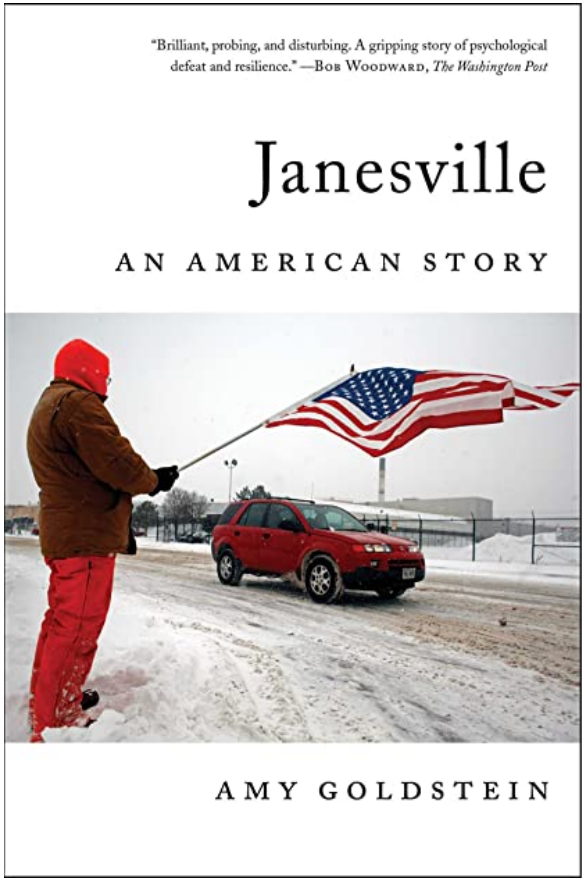
- **Key idea = industrial diversity matters**: cities do better with a range of industries (Glaeser 2011, Jacobs 1969)

- **Why? It boosts agglomeration, especially learning**
- Learning *across* industries and clusters, not just within them => innovation, hybridisation (Jacobs 1969)
- Example: fintech

Dynamics 1: diversity

- **Key idea = industrial diversity matters**: cities do better with a range of industries (Glaeser 2011, Jacobs 1969)

- **Why? It helps insulate cities against shocks**
- A big employer closes down, or 'jumps' to another country => lots of other types of work available
- Example: Janesville, WI



Dynamics 2: push-pull

- **Key idea = push-pull dynamic in urban systems**

- **Agglomeration can be self-reinforcing,** pulling people in
- This means that some cities will grow faster than others – and also helps explain economic inequality between places

- **But at the same time, these growing cities also have 'diseconomies'**, which push people out
- For example: congestion, pollution, a higher cost of living … and vulnerability to pandemics

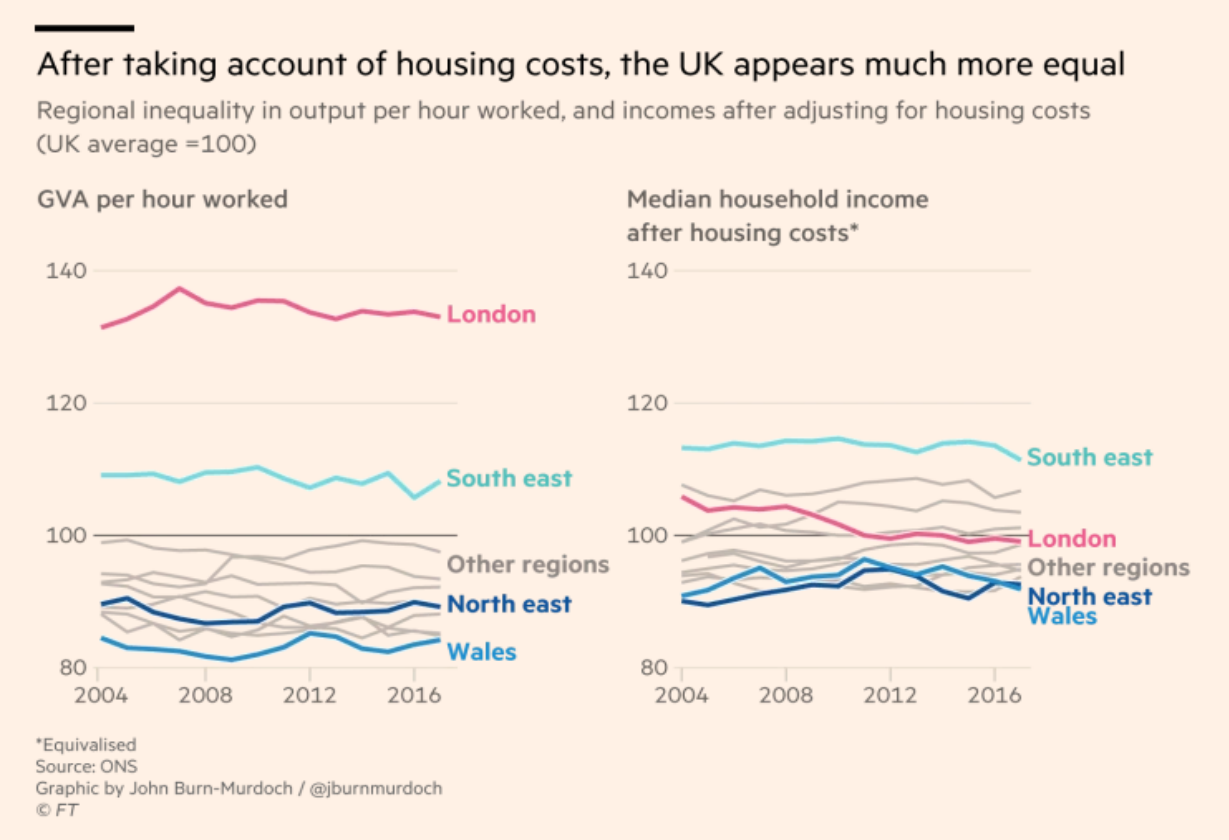
Spatial equilibrium

- **So urban systems and cities have a push-pull dynamic**
- Attraction/repulsion forces between and within cities

- Urban economists argue that these forces can organise into **'spatial equilibrium'** (Cheshire et al 2014, Glaeser 2011)

  - **Firms and workers can 'sort' into 'optimal' locations,** given their skills, needs and preferences
  - Popular cities have **higher wages *and* living costs**; unpopular places have lower wages and costs
  - **These wage / cost differences should cancel out**, so that 'real incomes' are ~ equal across locations

An example: ‘real wages’ in London are lower than money wages



Giles (2021)

London is very productive, and this feeds into wages

But London’s also very expensive to live in

So: is the UK ~at~ spatial equilibrium? Not exactly …

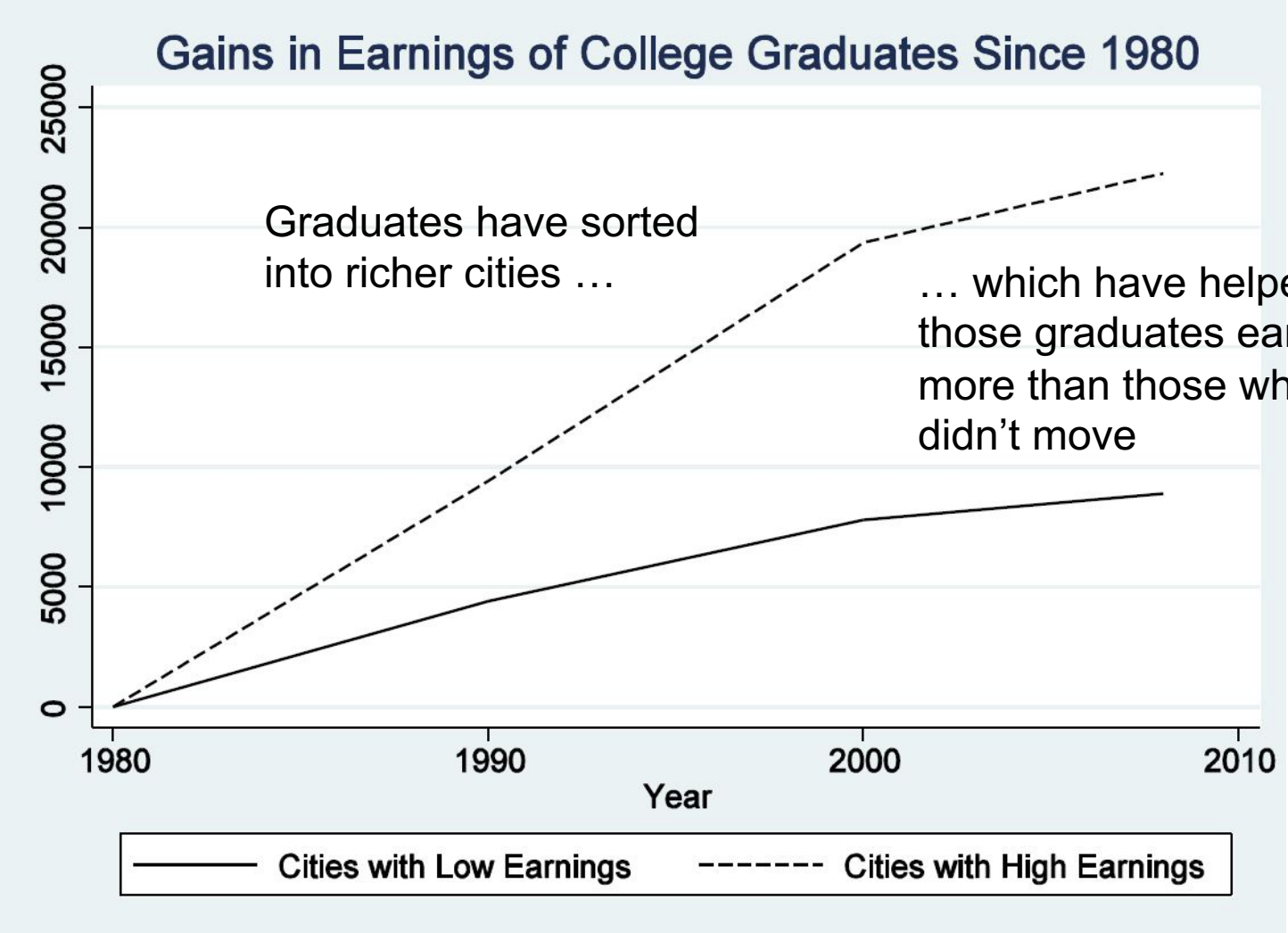
Have a break for 10 mins

Part 3: urban inequalities / urban futures

Recap

- **What we've covered so far**
  - The world is urbanising
  - Economic activity is urbanised, but uneven
  - How economists think about about a) urban economies, b) systems of cities and c) urban evolution and change
- Economic frameworks help explain patterns of urban growth – but also urban inequality, and why this is hard to shift
- **How much should we worry about this?**
- **Existing problems: labour markets, housing, mobility**
- **New problem: Covid-19**

The Great Divergence



Moretti (2012)

Recap: spatial equilibrium

- Economists argue that spatial equilibrium arises from:
  - Workers earn higher wages in cities. ‘Skilled’ workers earn more than less skilled workers
  - Agglomeration effects are stronger in bigger cities – and can be self-reinforcing over time
  - These forces raise income inequality – within and between cities
  - But, bigger cities are more expensive / crowded / congested to live in, so in ‘real terms’ differences tend to equalise
  - So workers need to ‘sort’ into the optimal places for them

- **How well do these forces work?**
- **What kind of policy response – if any – do we need?**

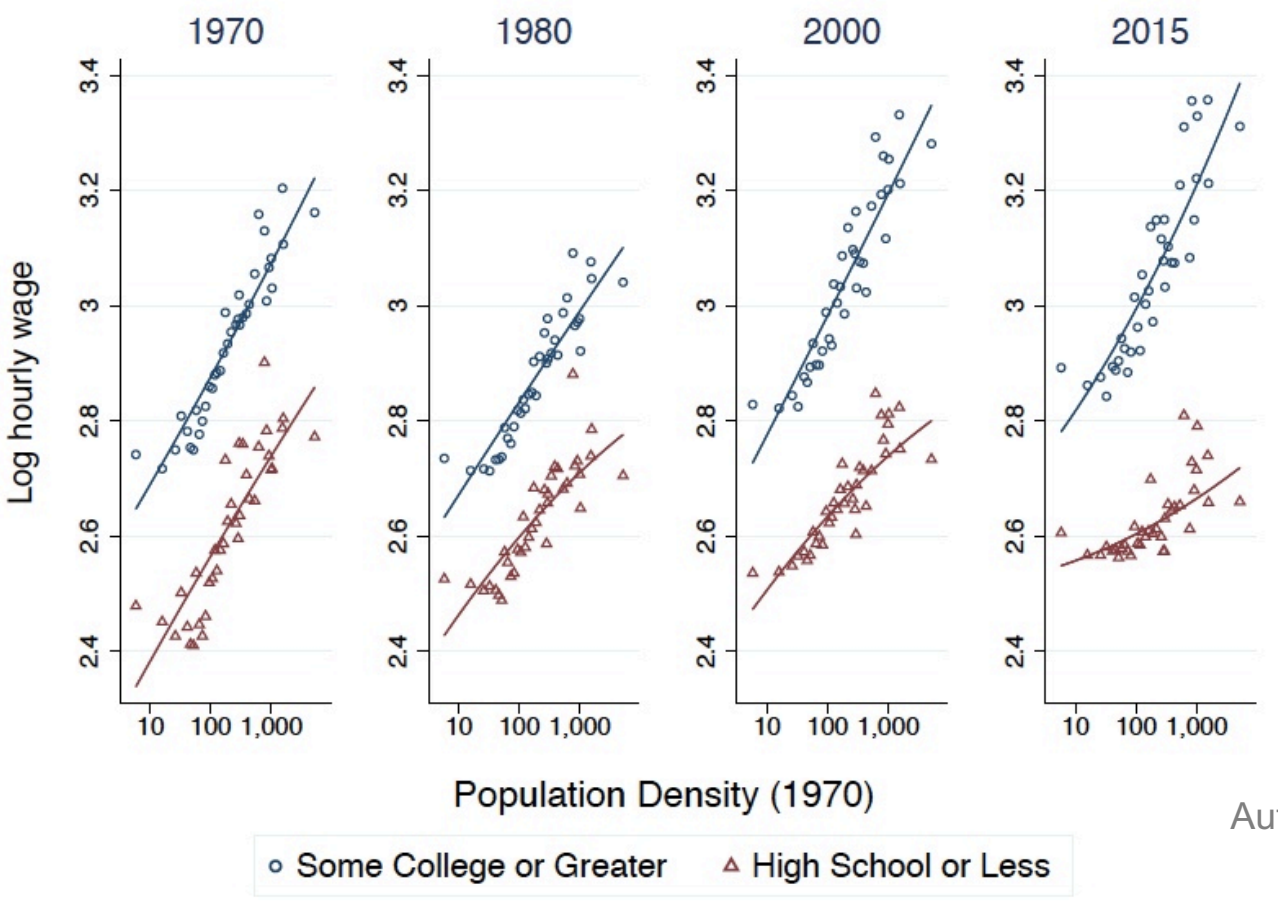
Challenge 1: unequal cities

- **This may work for highly qualified workers. But what about lower-paid people in expensive places?**

- In theory, everyone earns more in bigger cities – your urban wage premium should cushion against higher costs
- Is this still true in practice?

- Autor (2019) looks at real wages by skill group in US cities, between 1970 and 2015
  - Rising urban wage premium for graduates
  - Flattening urban wage premium for non-graduates
  - Especially for those aged under 40, i.e. Millennials and Gen Z

Unequal cities



Autor (2019)

Rising wage premium for college graduates (blue)

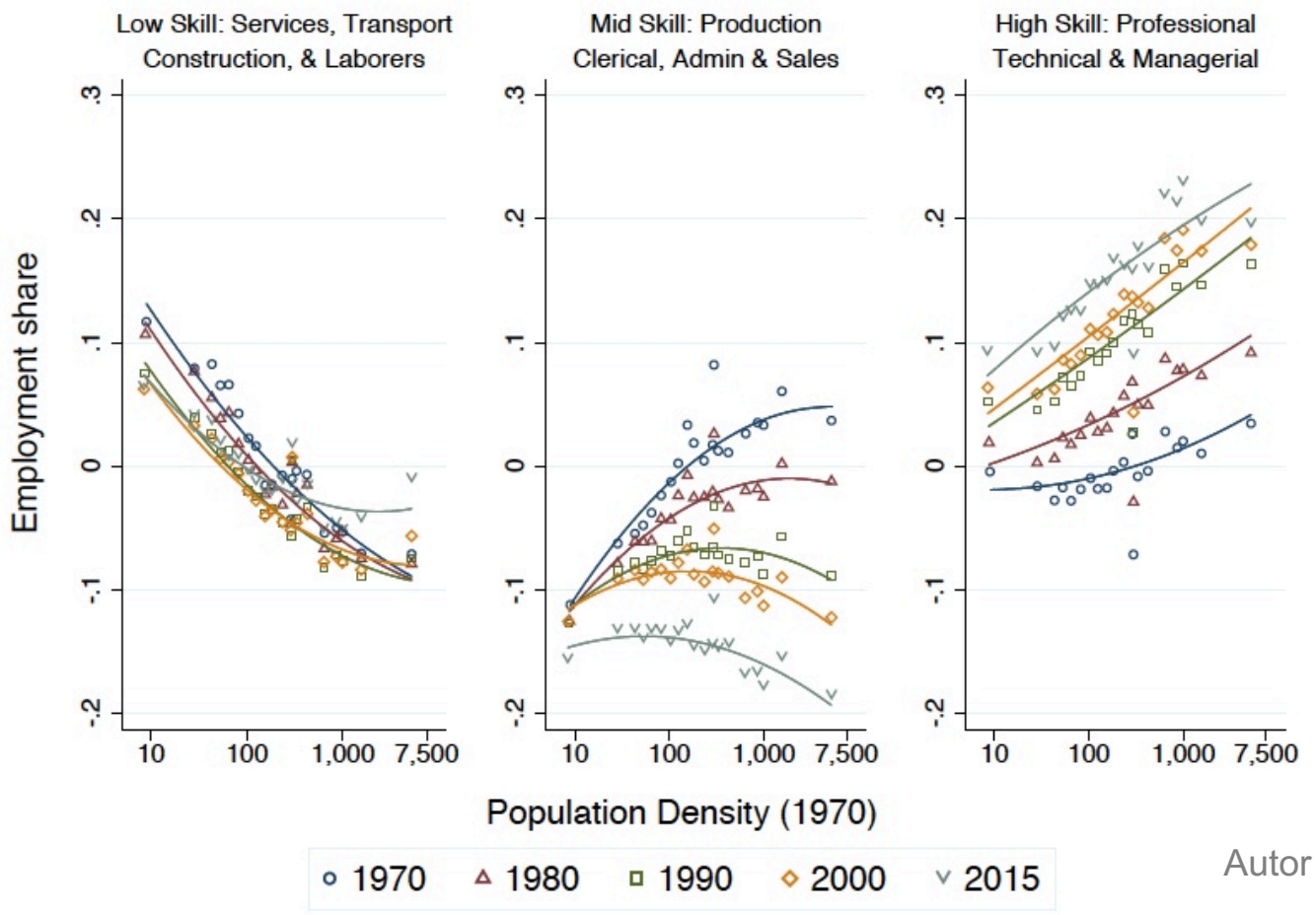
Flattening wages for non-graduates (red)

What explains these shifts?

- **Autor is clear that the main driver of change is 'job polarisation'** – that is, growth in high-wage and low-wage work, and shrinking of mid-wage work
- What drives polarisation? Autor is also clear that innovation ~> automation is one of the main forces, at least in the US
- Although there are others: trade shocks, weak unions …

- **These macro shifts have an urban footprint, generate winners and losers**

Geography of job polarisation



Autor (2019)

US cities have seen growth in lowest-paid and highest-paid jobs

Biggest changes in the biggest cities

Autor and Salomons (2019)

‘New work’

Table 1: Examples of New Job Titles by New Work Category and Decade

	Frontier work	Last Mile Work	Wealth Work
1980	Supervisor, Word Processing	Check Writer	Hypnotherapist
	Controller, Remotely-Piloted Vehicle	Tamale-Machine Feeder	Gift Wrapper
1990	Circuit Layout Designer	Vending-Machine Attendant	Dance Therapist
	Robotic Machine Operator	Film Touch-Up Inspector	Singing Messenger
2000	Artificial Intelligence Specialist	Chat Room Host/Monitor	Counselor, Marriage-Family
	Echocardiographer	Bicycle Messenger	Employee Wellness Crdnr
2010	Technician, Wind Turbine	Underground Utility Cable Locator	Exercise physiologist
	Intelligence Analyst	Technician, Prepress	Sommelier

Table reports examples of new job titles added to the 1977 and 1991 Dictionary of Occupational Titles, and the 2000 and 2010 Census Classified Indices of Occupations.

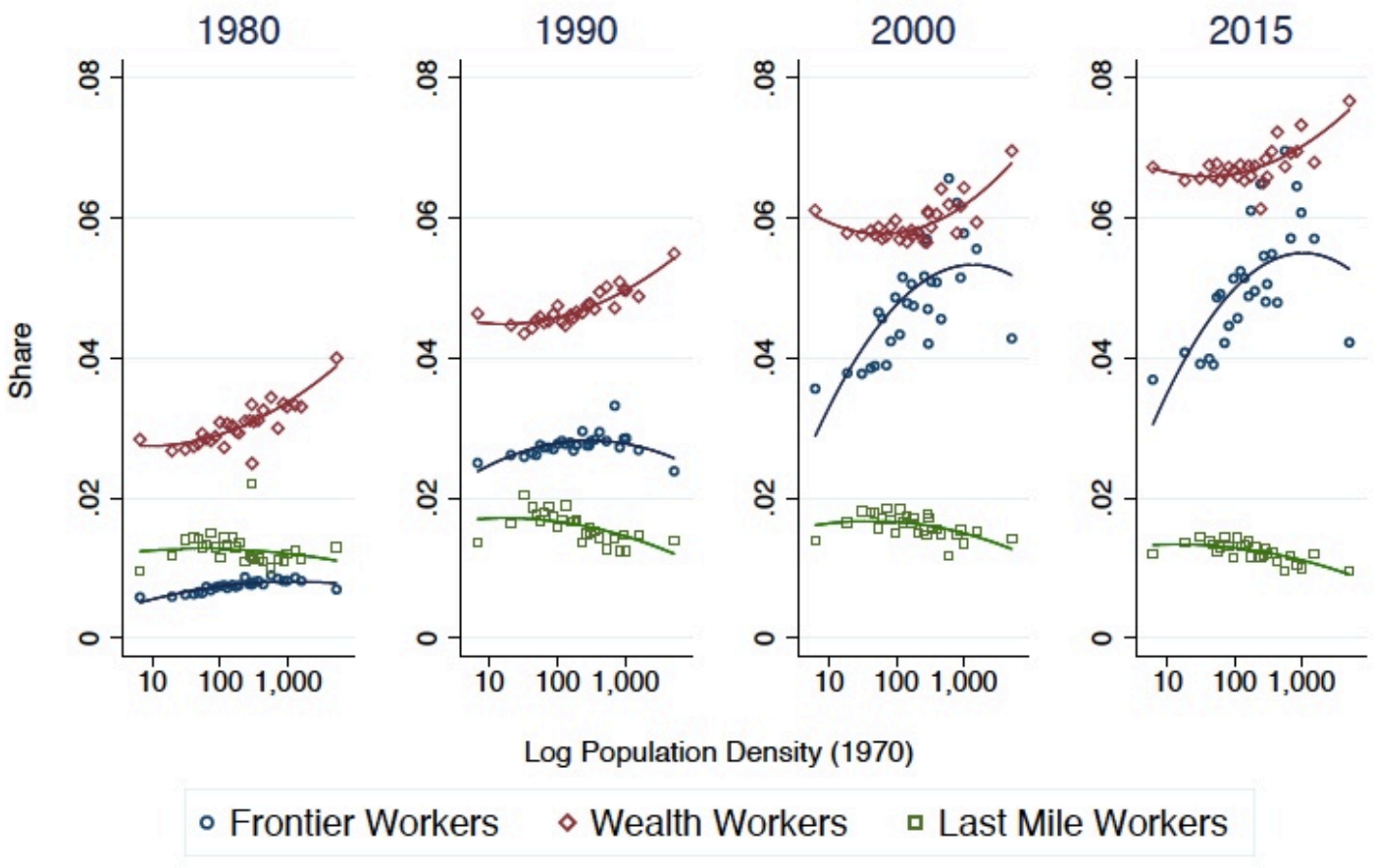
Autor and Salomons look how new types of job have appeared over time

Three groups of job, organised by tasks

Differ by a) qualifications b) salary c) gender

Autor and Salomons (2019)

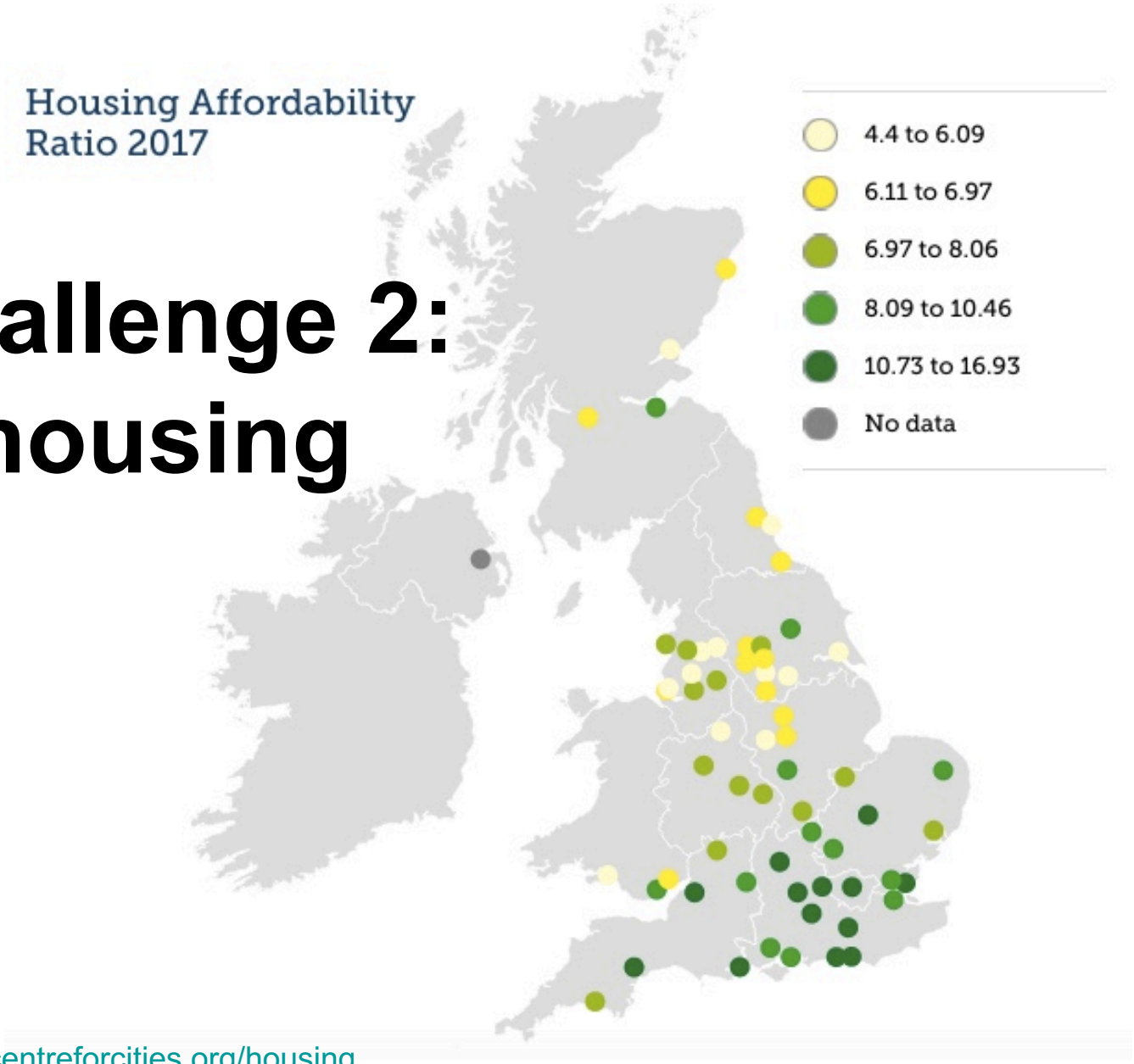
‘New work’ in cities



Higher-skilled and better-paid types of ‘new work’ cluster in bigger cities

Clustering has got stronger over time

Challenge 2: housing



https://www.centreforcities.org/housing

Affordability = ratio of mean house price / mean annual earnings

Causes of the crises

- **Key idea = two competing explanations for the urban housing crisis, supply side and demand side**

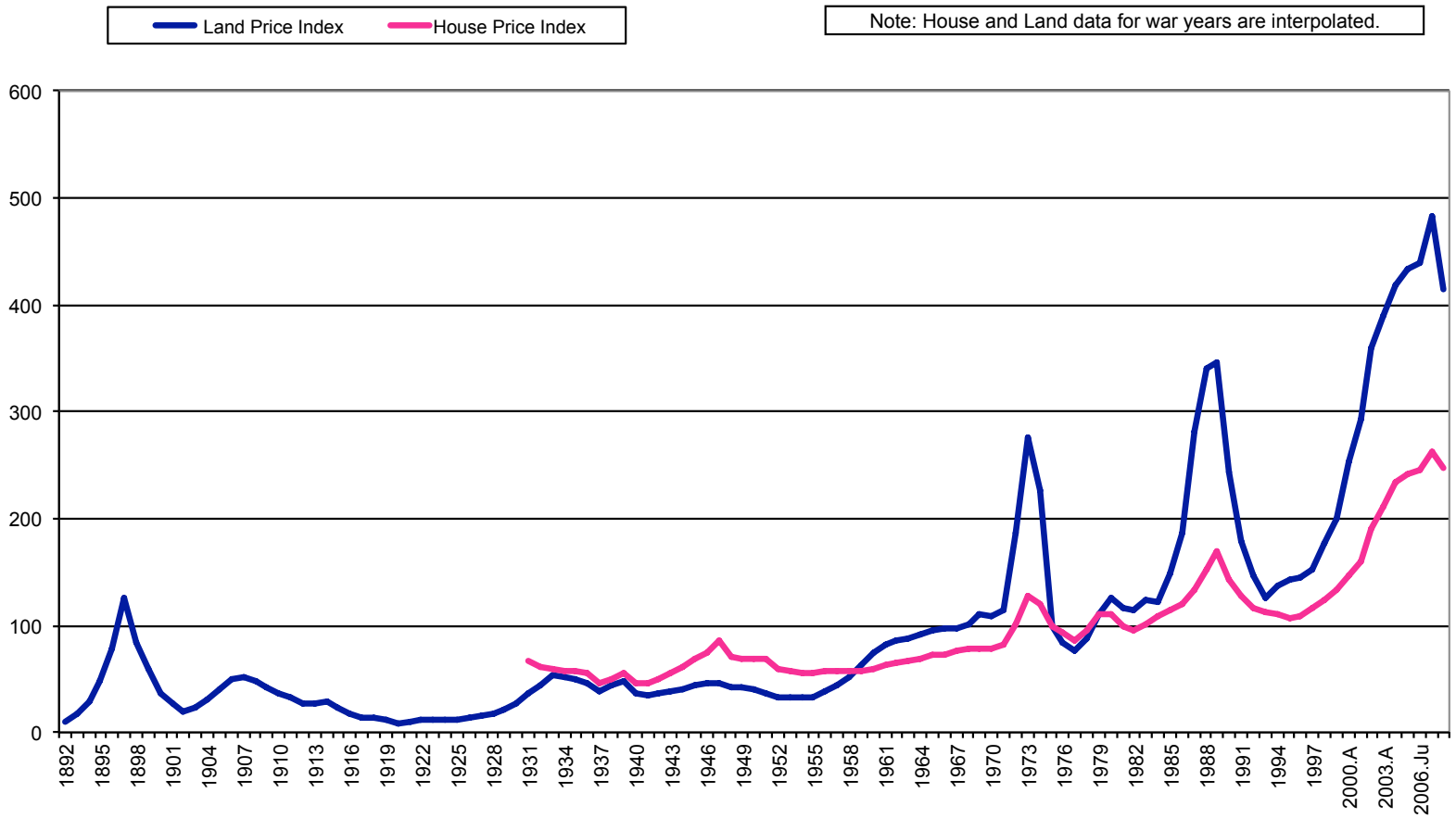
- **Supply side** – we're not building enough housing, especially affordable housing. The planning system is too restrictive, especially in the most popular places. Build more and prices will come down

- **Demand side** – no, the problem is who's buying. Housing has become financialised. We're building for investors and speculators, especially from outside the UK. This is why cities are full of luxury flats. Restrict that, and prices will fall.

Cheshire et al (2014)

The supply side

Figure 1: Real Land & House Price Indices (1975 = 100)



UK house and land prices since the 1950s, big jump from the 1980s

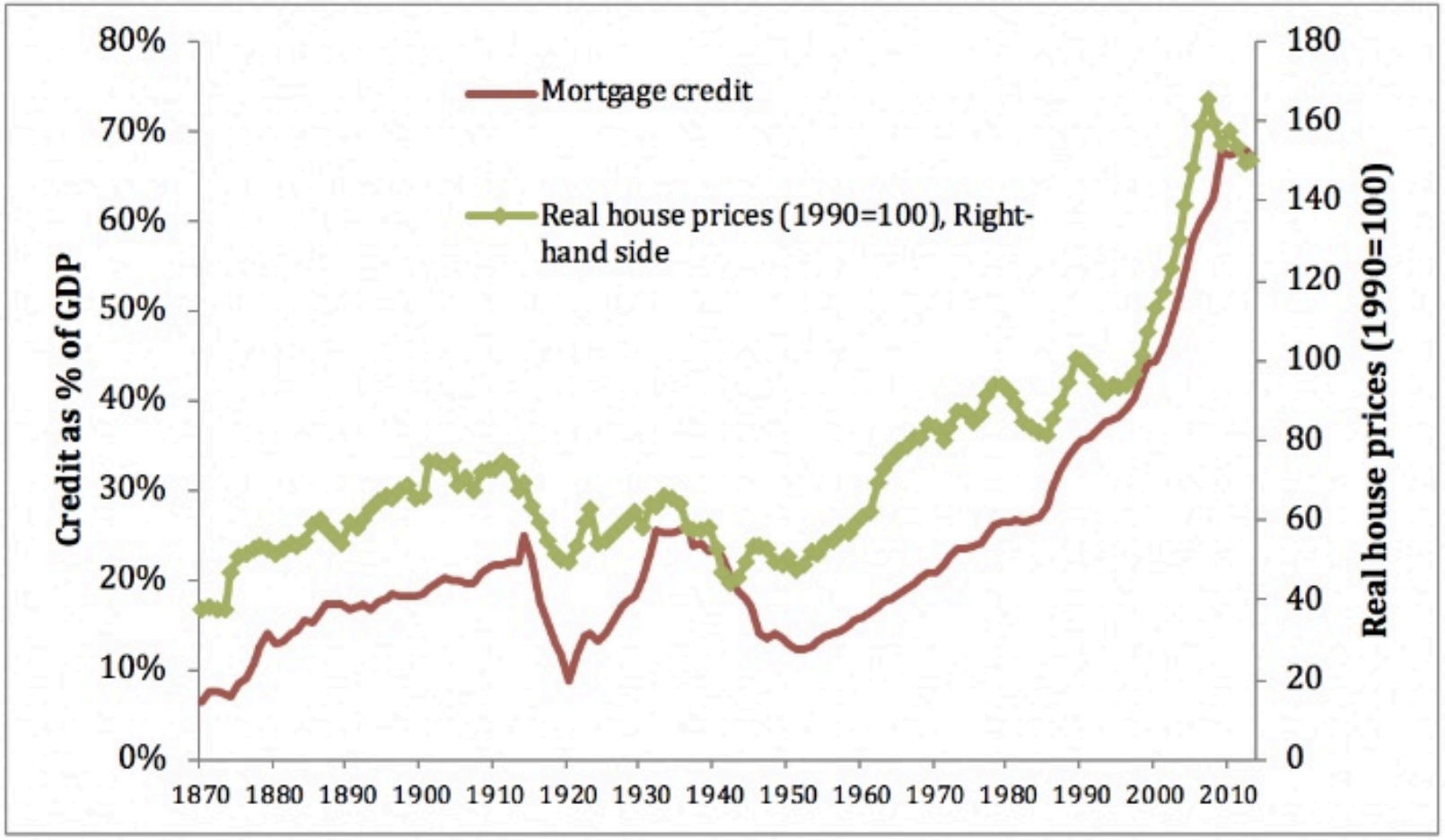
Why? Planning system doesn't release enough land, so prices go up

The supply side

- **Key idea = UK planning system is based on development control. This restricts supply in popular places**
  - Existing homeowners want to restrict supply, so their homes get more valuable (Cheshire et al 2014)
  - Hilber and Vermeulen (2016): house prices in England would be 35% lower – if all planning restrictions ended
  - Hilber and Mense (2021): problem worst in 'superstar cities': supply constraints plus richer workers sorting in

Ryan-Collins (2018)

The demand side

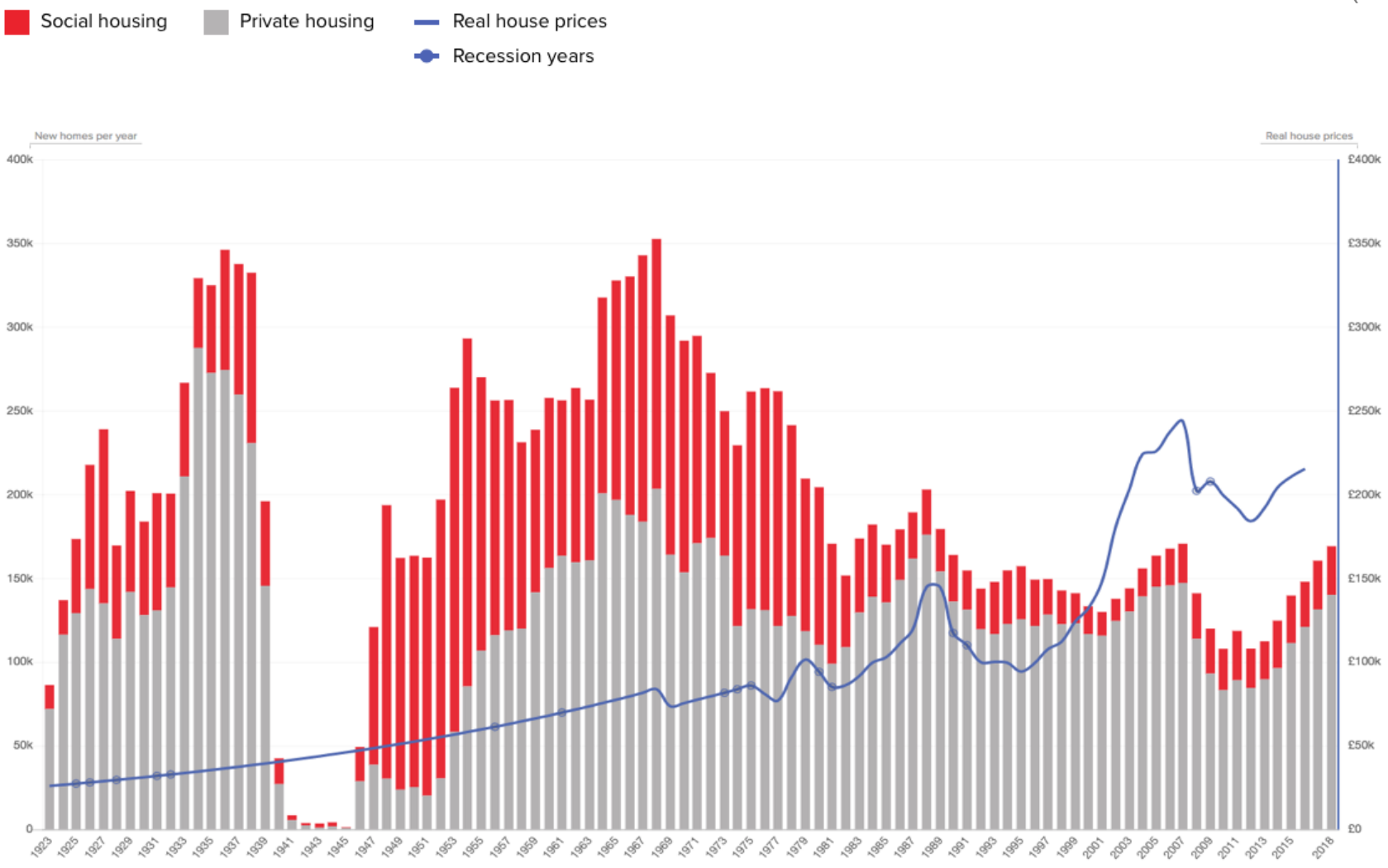


Big expansion of mortgage finance <~> higher house prices
17 countries, 1870-2010

The demand side

- **Key idea = we've turned housing into an investment class**
- Ryan-Collins (2018) in summary:
  - Banks lend you money to buy homes
  - Finite supply of land, limited supply of houses
  - Limited supply of mortgage credit ~ this limits demand, and thus prices
  - BUT liberalising finance hugely increases *demand for housing*
  - Housing becomes an asset, including for international investors
  - And: more borrowing ~> higher demand ~> higher prices
- **Lots of truth in this, especially in London**
- **But – why is housing so attractive an investment in the first place?** In part because it's in short supply ...

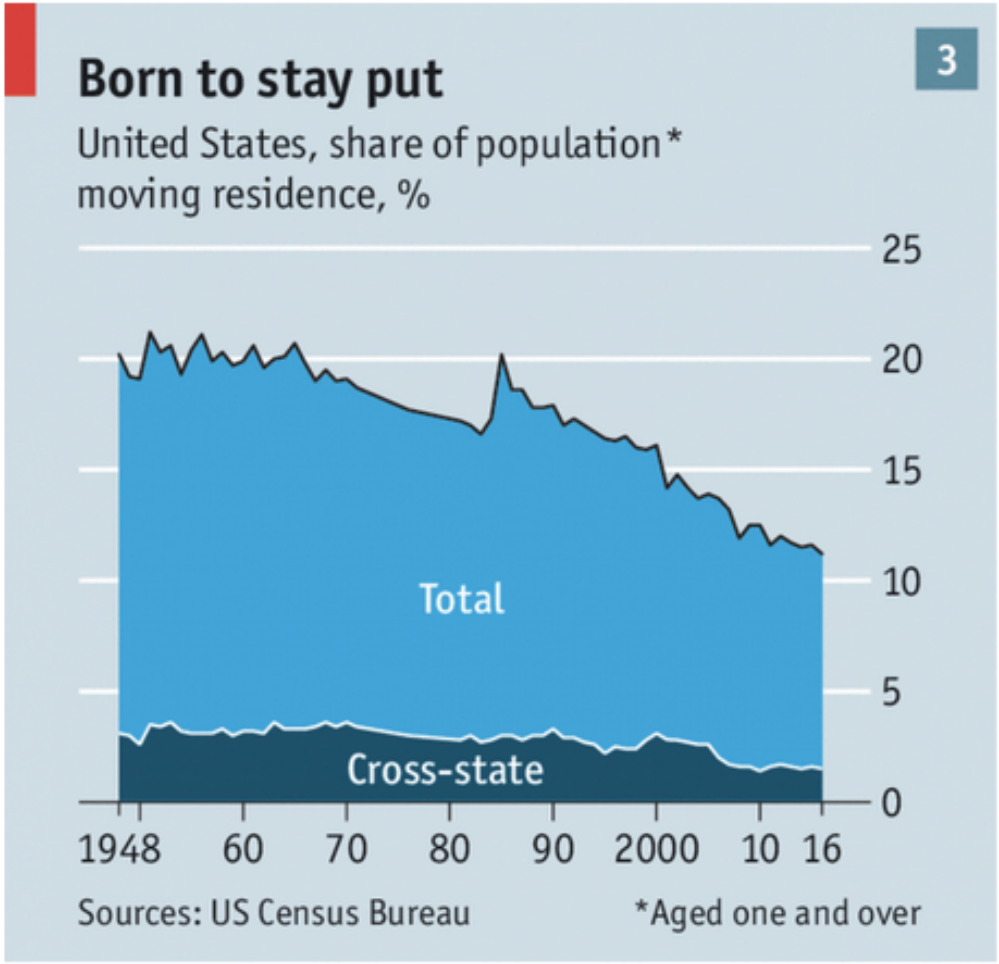
Shelter (2018)



Huge drop in *total* housebuilding after 1983, driven by drop in social housing

Lower supply ~ higher prices

Challenge 3: falling mobility



Avent (2017)

Immobility is high

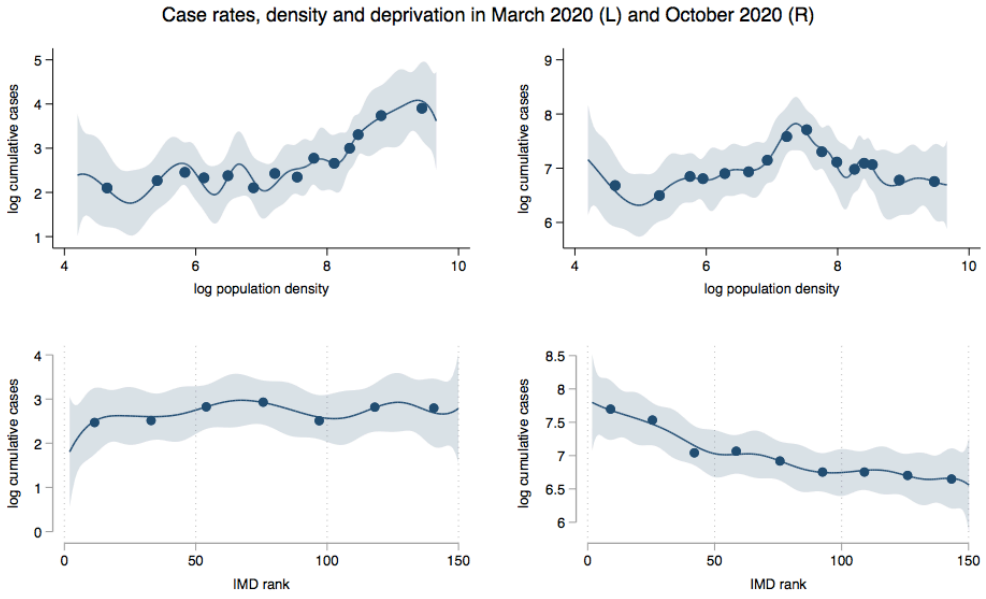
- Bosquet and Overman (2019) look at UK mobility patterns. They find that:
  - Nearly 44% of people only ever work in the place they were born
  - Immobility is higher for people with low qualifications, or none
  - Lack of mobility is also related to your parents' social class

- **Large minority of people *never* move**
- **Lack of income** – linked to lower qualifications – partly explains this. But others **may not want to move**
- UE generally doesn't talk about **attachments to places and communities; 'bonding social capital'**

Challenge 4: COVID-19

- **Big cities historically vulnerable to pandemics**
- **New problem of globalised pandemics**

- Big cities hit first
- Bigger impact on more deprived communities



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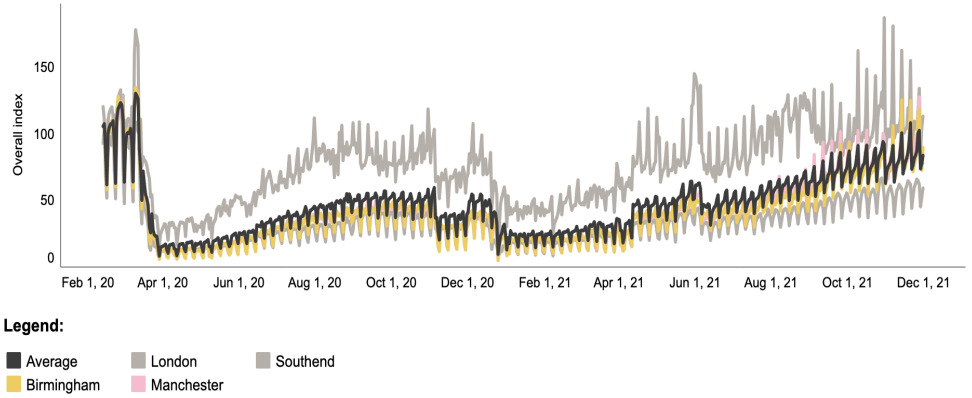
Forced experiments

- **COVID-19 is a triple shock to urban economies**
- Many abstract / office tasks can be done remotely
- Consumption can shift online
- Massive jumps in urban unemployment, poverty

- Massive drops in footfall
- Huge jump in working from home during 2020: from 6% to 43% (Felstead and Reuschke 2020)



Source: Centre for Cities High Street Recovery Tracker. https://www.centreforcities.org/data/high-streets-recovery-tracker/

This index looks at everyone who was in the city centre at any time of the day, compared to a pre-lockdown baseline of 100.

What next?

- **Lots of big questions:**

1. Is hybrid working ‘good enough’ for abstract / complex tasks – the kind that clusters in big cities?
2. Less demand for office space in central business districts, or higher demand for more flexible space?
3. What local services will stay online? What will relocate?
4. Cities offer production *and* consumption benefits, and these are hard to unbundle (Smith 2021). So will activity shift *within* cities (to suburbs) or *out of cities* altogether?

Summing up

Summary

- Today's world is an urban world – urban areas are the world's economic building blocks
- Economic activity is uneven – between countries, cities and neighbourhoods

- This is partly the result of big 'macro' forces, such as technological change and job polarisation

- Cities help people and firms get more productive …
- … but urban economies also produce disparities between and within cities.

Summary (2)

- Economists argue that urban systems should move towards ‘spatial equilibrium’, with people sorting to the right places
- This smooths out some of the inequalities we worry about
- BUT in practice, four challenges to getting there:

- Challenge 1: the urban wage premium is disappearing for entry-level jobs
- Challenge 2: housing in many big cities is unaffordable, and building rates (in some countries) are very low
- Challenge 3: many people can’t or don’t want to move
- Challenge 4: the ‘triple shock’ of COVID-19

Thanks!

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Extras: policy ideas

Policy responses: disparities

- **Key idea = policies for people vs. policies for places** (Cheshire et al 2014)
- In practice, you need a mixture of both

- **Less radical:** skills training, active labour market policy
- **More radical:** Living Wages, UBI

- **Less radical:** business support, workspace, tax breaks
- **More radical:** sustained area-based investment in e.g. R&D, infrastructure and skills; devolve powers to do it
  - UK2070 Commission: to close economic gaps between towns and cities in the UK, need to spend £1tn over 20 years!

Policy responses: housing

- **Supply side responses …**
- **Change the planning system –** move UK to masterplanning systems as in Netherlands, Germany
- **Build up and out in cities** – higher density, more tall buildings, more building on the Green Belt

- **Demand-side responses …**
- **Tighter mortgage finance regs** – make it harder to own
- **Restrictions on investors** – dampen financialisation, penalise Buy To Let

- **The State should build more affordable homes!**

Policy responses: immobility

- **What's driving this?**
- Partly things we've covered today: flattening urban wage premia; unaffordable housing in cities

- But also, economists' assumption that people 'sort' across space may not be that realistic (social capital should be part of UE frameworks)

- In 'left behind' places, rather than encouraging mobility, it may be smarter to **improve public services and quality of life**

Policy responses: COVID-19

- **Crucial importance of effective and public health response** – fear / lack of confidence drives more behaviour change than lockdowns (Goolsbee and Syverson 2020)
- Beyond that, at this point we are treating only one of the three shocks – the economic emergency
  - Grants to firms
  - Furlough
  - Living wage level income support, especially for those isolating
  - Income support for those out of work
  - Help with job search and training
- **Beyond that, it's too early to know!**

Extras: references

References (1)

- Autor (2019) Work of the Past, Work of the Future, *AEA Papers and Proceedings* 109, 1-32
- Autor and Salomons (2019) New Frontiers: The Evolving Content and Geography of New Work in the 20th Century, mimeo
- Avent (2017) 'In the Lurch', *Economist*, 21 October
- Balland, Jara-Figueroa et al (2020) Complex economic activities concentrate in large cities, *Nature Human Behaviour* **4**(3): 248-254
- Baum-Snow and Pavan (2012) Understanding the City Size Wage Gap, *The Review of Economic Studies* **79**(1): 88-127
- Bosquet and Overman (2019) Why Does Birthplace Matter So Much? *Journal of Urban Economics*, **110**(3), 26-34
- Cairncross (2001) The Death of Distance: How the Communications Revolution Is Changing Our Lives. Cambridge, Mass, Harvard Business School Press
- Carpenter (1981) Escape from New York
- Cheshire, Nathan & Overman (2014) Urban Economics and Urban Policy, Cheltenham: Edward Elgar
- Crookston and Reades (2021) Why Face to Face Still Matters, Bristol: Polity
- D'Costa and Overman (2014) The urban wage growth premium: Sorting or learning? *Regional Science and Urban Economics* **48**: 168-179
- De La Roca&Puga (2016) Learning by Working in Big Cities, *Review of Economic Studies* **84**(1): 106-142
- Duranton & Puga (2020) The Economics of Urban Density. *Journal of Economic Perspectives* **34**(3): 3-26
- Felstead and Reuschke (2020) Homeworking in the UK: Before and During the 2020 Lockdown. WISERD Report. Cardiff Wales Institute of Social and Economic Research

References (2)

- Giles (2021): 'UK Budget: the long road to levelling up.' Financial Times, March 2
- Glaeser (2011) The Triumph of the City, London: Pan MacMillan
- Glaeser and Maré (2001) Cities and Skills, *Journal of Labor Economics* **19**(2): 316-342
- Goldstein (2017) Janesville: An American Story, London: Simon & Schuster
- Goolsbee and Syverson (2020) Fear, Lockdown, and Diversion: Comparing Drivers of Pandemic Economic Decline. BFI Working Paper 2020-80. Chicago: Becker Friedman Institute
- Hilber and Vermeulen (2016) The Impact of Supply Constraints on House Prices in England, *Economic Journal*, **126**(591), 358–405
- Jacobs (1969) The Economy of Cities, London: Vintage
- Marshall (1918) Principles of Economics
- Moretti (2012) The New Geography of Jobs, NYC: Haughton Mifflin Harcourt
- Nathan (2021) Th City and the Virus, *Urban Studies,* https://doi.org/10.1177/00420980211058383
- Ryan-Collins (2018) Why Can't You Afford a Home? Bristol: Polity
- Serwicka and Swinney (2016) Trading Places, London: Centre for Cities
- Shelter (2018) A Vision for Social Housing, London: Shelter
- Smith (2021) 'Can knowledge industries escape superstar cities?' Noahpinion, 26 January
- Williams and Currid-Halkett (2014) Industry in Motion, *PLoS ONE* **9**: e86165
- UN-DESA (2014): World Urbanisation Prospects 2014, Geneva: United Nations