'Localism - what does it mean to the commercial sector?'

Town Centre First Policies: What do we get?

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- 'Planning'/'Zoning' – is an economic activity – allocates a scarce resource – land by legal 'use category' – commercial, retail…
  - But allocates <u>independently</u> of price
- Planning determines what can be built, where:
  - **But markets** set prices
- Space is an input into production process: offices; shops, etc
  - Constraining quantity of space raises prices;
  - Micromanagement of locations and site choices likely reduces productivity;
  - 'Needs' & 'Sequential' tests (*Town Centre First*) are barriers to entry;
  - Compliance costs – development control, 60% Brownfield – high
- And (micro-)location important for firm competitiveness/productivity
- Land markets: problems of market failure => regulation – but…

The Popular Perception

"Concreting over England"

Public opinion

Perceived % Developed In England

Perceived % land developed	% responses
75% or more	10
50 to 75%	21
About 50%	23
25 to 50%	19
25% or less	13
Don't know	15

Barker, Dec 2006

But urban land is green

& urban areas less than 10%

of Developed Land: England %

Domestic Buildings	1.14
Non-domestic Buildings	0.66
Roads	2.23
Railways	0.14
Paths	0.11
Other	1.4
Gardens	4.27

Land Use Futures, 2010

www.bis.gov.uk/foresight/our-work/projects/current-projects/land-use-futures/reports-and-publications

Protected England as % of Total

Sites of Special Scientific Interest	8.2
Special Protection Areas	4.7
Special Areas of Conservation	6.2
Areas of Outstanding Natural Beauty	15.6
Greenbelt	12.9
National Parks	7.6
Urban Areas	8.3-9.95

Barker, 2006: Land Use Futures, 2010

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And How About the Retail Sector?

- Three factors of production: land labour and capital.
  Forget land (unless agricultural economist)
- But land an input into production – in retailing:
  think British Ikea!!
- In 1980s land for retailing in prosperous SE of UK 250 x land for retailing in comparable US locations
- UK Planning system imposes (intentional) restrictions on supply of urban land via 'containment' & 60% Brownfield
  - And restricts supply of land for each (legally classified) use
  - And determines **micro-location** via Town Centre First policies
- Not surprising - increases cost of housing: reduces supply elasticity => so increases price volatility
- Increase costs of office space (Cheshire & Hilber, 2008) ....
- So impact on retail sector?

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The issues….

- Increasing support for idea that planning policies reduce productivity in retail: McKinsey Global Inst. 1998; Barker, 2006; Haskel & Sadun, 2009
- Haskel & Sadun - first academic study: by preventing emergence of large format out of town stores estimates lost 0.4% p.a. TFP growth 1997-2003
- Also Competition Commission 2000; 2008
  - Access to store level micro data for 4 main supermarket groups
  - Strong finding: larger stores more productive and profitable
  - More local competition reduces store prices
  - And land for retail in UK x 5 to 10 in France, Germany or NL
- Also see Schivardi & Viviano (2011) – Italy & barriers to entry

Hypotheses & intended contribution

- Seems likely planning policy restricts land available for retail development: so increases costs of space: reduces retail TFP
- Try to quantify the impact by:
- 1) Estimating production function - including space
- 2) Investigating connection to differences in application of *Town Centre First* and planning restrictiveness
- 3) Quantify impact on TFP & – by implication - retail prices
- Problem: Planning policy may negatively affect TFP via two distinct routes:
  - **Route 1:** Restriction of land supply for retail raises prices and causes profit maximising retailers to substitute land out of production: still cost minimising but lower space input and output for given costs
  - **Route 2**: 'Town Centre First policies' may force to locate on smaller and less productive, higher cost (logistics, labour, customers) sites; & barrier to entry
- Useful quasi-experiment: England different - N.I., Scotland
- Using microdata and detailed planning performance data

Planning policy and its impact: England

- Before 1988 relatively relaxed approach to retail – though evidence of overall space restriction via containment e.g. Reading 1984

- 1988 PPG6 (England) tried to steer out of town to 'regeneration sites' e.g. Bluewater – but still not restrict competition
- PPG6 1993: attempts steer to in-town sites because of ***belief*** free market might 'under-provide' in town shopping
- Big change England – PPG6 1996 – *Town Centre First Policy* (TCFP)
  -More or less prohibited out of town development for all 'town centre' activities – i.e. not just retail but offices, leisure, restaurants
  -Introduced '**Needs**' + '**Sequential**' tests – but Local Dev. Plans?
- TCFP confirmed – even reinforced – by PPS6 2010

- Policy introduced **later** rest of UK and less restrictive - esp. in Scotland & N.I.

Figure 1: Number of Applications for Major Retail Developments, 1979-2008

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Figure 2: Applications for Extensions to Foodstores, 1990 to 2001

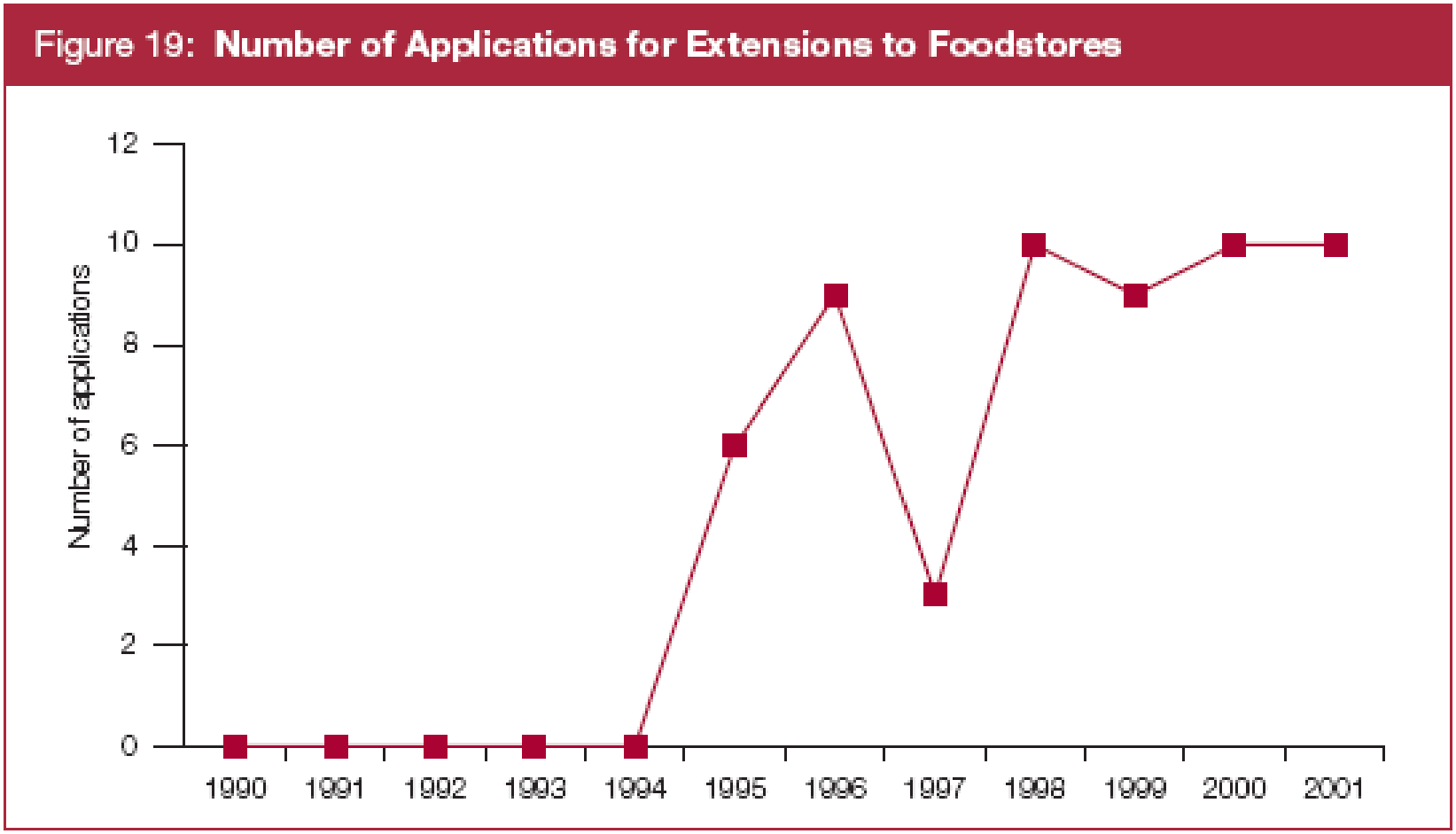

Figure 4: Age of Building Stock by Use Category

And an aging stock of retail buildings….

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Data, approach and some problems

- Store level data for all stores for major retailer – supermarket - mainly food: plausible impact would vary by type of retail
- Detailed development control data for all English LPAs: applications, refusals, delays & appeals
- Stores geocoded - so also data for store catchment areas – population within given drive times, car ownership, competitor stores x distance, etc

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Data, approach and some problems

- How measure 'planning restrictiveness'?
- Use 'refusal' or 'delay' rate? Long term means – avoids one endogeneity problem but...

- Problem of endogeneity? – developers' behaviour may be influenced by LPA's – the 'discouraged developer' effect...also 'encouraged developer' effect?
  - So need instruments to identify:

➢ Use political make-up of LPAs (Haskel & Sadun, 2009, Hilber & Vermeulen, 2010); rise of *NIMBYism*

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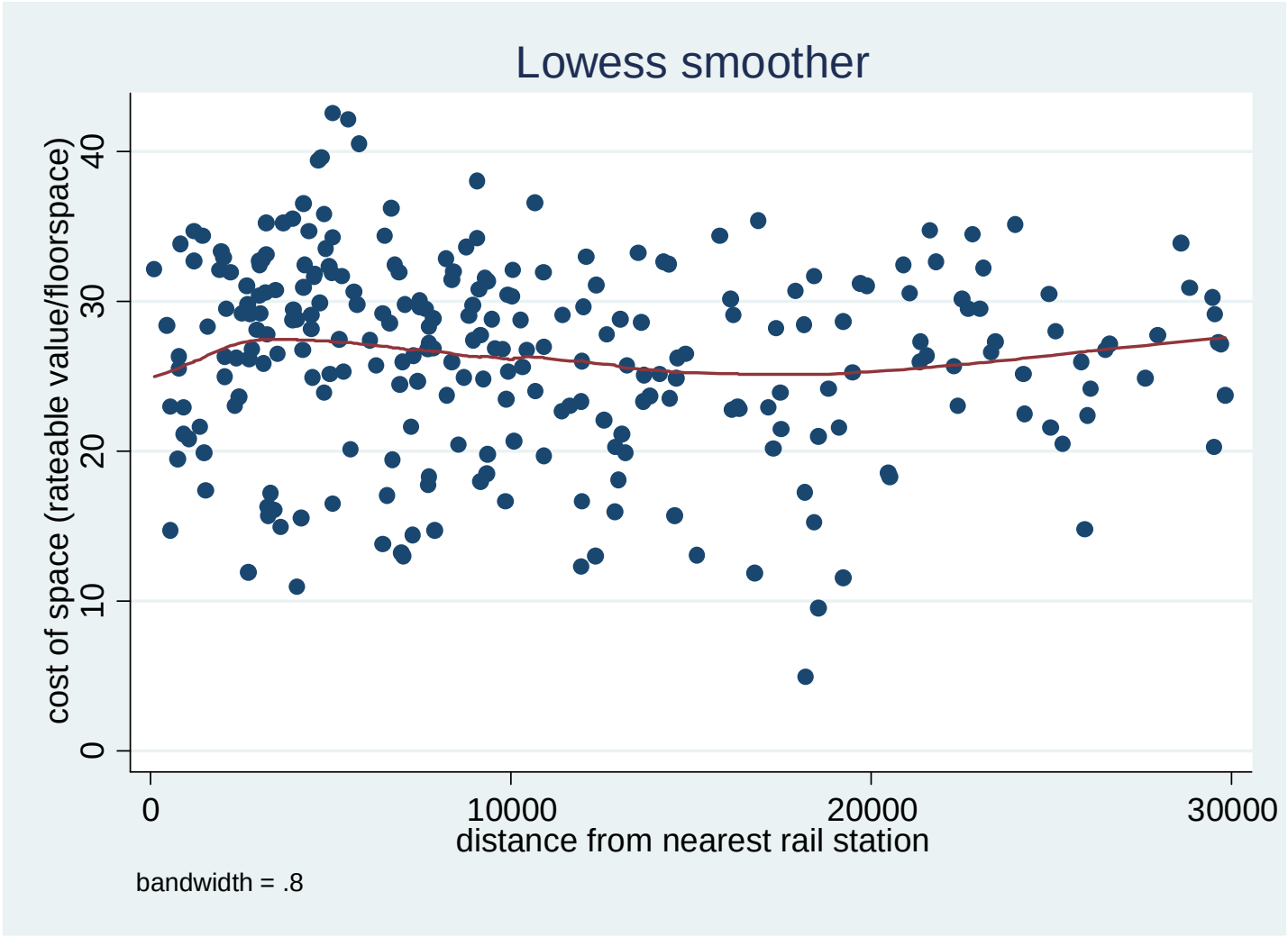
Costs not Related to Distance from Centres



Centres measured as selected main rail stations: OS centres & LA centres also tried

Simple Cobb-Douglas production function

$$Y = A\, F^{\beta 1}\, L^{\beta 2}\, K^{\beta 3}\, e^{\gamma X}\, e^{u}$$

$$\ln Y_i = \beta_0 + \beta_1 \ln F_i + \beta_2 \ln L_i + \beta_3 \ln K_i + X_i \gamma + X_\alpha \delta + u$$

$$\text{RTS} = \beta_1 + \beta_2 + \beta_3$$

Y: sales of store *i*;
F: floorspace; L: labour; *K*: capital for store *i*
X'_i: vector of store specific controls
X'_α: vector of area specific controls

No detailed info on margins but assured they are constant by item across stores. So using ***sales*** as measure of 'output'

Table 5: Basic results from a TFP approach with Total Sales as 'output'

VARIABLES	(1)	(2)	(3)	(4)
Net Floorspace	0.0472**	0.0972**	0.128**	0.118**
S.E.	0.0335	0.0365	0.0471	0.0464
Employment	1.083**	1.043**	1.000**	0.974**
S.E.	0.0287	0.0294	0.0452	0.0481
Mezzanine		-0.0594**	-0.0499**	-0.0547**
S.E.		0.0211	0.0207	0.0204
Non-food format			-0.0815	-0.0775
S.E.			0.0747	0.0737
Hours				0.000915**
S.E.				0.00028
Constant	7.405**	7.093**	6.989**	7.126**
S.E.	(0.250	0.270	0.298	0.290
Observations	357	357	357	357
R-squared	0.958	0.959	0.959	0.961

Findings….

- Clear evidence productivity rises with store size
  Elasticity 0.1 to 0.13
- Productivity also rises with number of hours open and employment
- Falls with non-food format and if mezzanine
- Non-food format stores have different production functions

- **Add controls:**
  Competition
  Characteristics of catchment area
  Market potential
  Age of store (date of opening)

- Test model on English only and other samples separately

Further controls; England, Wales, Scotland & N.I.

	Dependent variable: Log(total sales)					
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	UK *No* FEs	UK *With* FEs	England *No* FEs	England *With* FEs	Scotland, & NI *No* FEs	Scotland, & NI *With* FEs
Net Floorspace	0.120***	0.108	0.149***	0.158**	0.183**	0.170
	(0.0457)	(0.0725)	(0.0565)	(0.0791)	(0.0896)	(0.164)
Employment	0.894***	0.897***	0.841***	0.848***	0.934***	0.904***
	(0.0476)	(0.0748)	(0.0615)	(0.0910)	(0.104)	(0.145)
Mezzanine dummy	-0.0409**	-0.0283	-0.0382*	-0.0448	-0.0350	0.0108
	(0.0185)	(0.0310)	(0.0207)	(0.0347)	(0.0431)	(0.0698)
Non-food format	-0.148**	-0.179*	-0.260***	-0.253**	-0.148	-0.0194
dummy	(0.0740)	(0.106)	(0.0900)	(0.124)	(0.111)	(0.152)
Hours (x10)	0.00105***	0.00112***	0.000937***	0.00104**	0.00153***	0.00118
	(0.000269)	(0.000422)	(0.000352)	(0.000516)	(0.000548)	(0.00096)
Years since opening	0.00939***	0.00795**	0.0122***	0.00981**	-0.00987	0.00437
	(0.00265)	(0.00397)	(0.00300)	(0.00430)	(0.00887)	(0.0116)
Years since opening	-0.000212***	-0.000183*	-0.000269***	-0.000218*	0.000269	-0.000137
squared	(6.61e-05)	(0.000112)	(7.30e-05)	(0.000118)	(0.000253)	(0.000346)
Population within 10	0.0590***	0.0510**	0.0522***	0.0638**	0.0735***	0.0417
minutes drive time	(0.0138)	(0.0251)	(0.0177)	(0.0283)	(0.0266)	(0.0571)
Car ownership share	0.000976	-0.00111	0.000740	-0.000313	-0.00198	-0.00398
within 15m	(0.000736)	(0.00174)	(0.000891)	(0.00192)	(0.00197)	(0.00455)
Competition	-0.00534**	-0.00399	-0.00553**	-0.00544	-0.0184**	-0.00564
	(0.00234)	(0.00347)	(0.00242)	(0.00361)	(0.00858)	(0.0136)
TTWA FEs	*No*	*Yes*	*No*	*Yes*	*No*	*Yes*
Scotland		-0.0718*				(omitted)
		(0.0391)				
Wales		-0.0371				
		(0.0551)				
Northern Ireland		0.256***				0.0476
		(0.0830)				(0.119)
Constant	6.739***	7.005***	6.808***	6.524***	5.68***	6.577***
	(0.311)	(0.594)	(0.356)	(0.580)	(0.434)	(1.080)
Observations	357	357	269	269	62	62
R-squared	0.965	0.981	0.966	0.980	0.968	0.987

Further controls; England, Wales, Scotland & N.I.

	Dependent variable: Log(total sales)					
	(1)	(2)	(3)	(4)	(5)	(6)
	UK	UK	England	England	Scotland & NI	Scotland & NI
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Simulated Productivity by year of opening:

estimated at sample mean: England only

Impact of store age is highly suggestive:

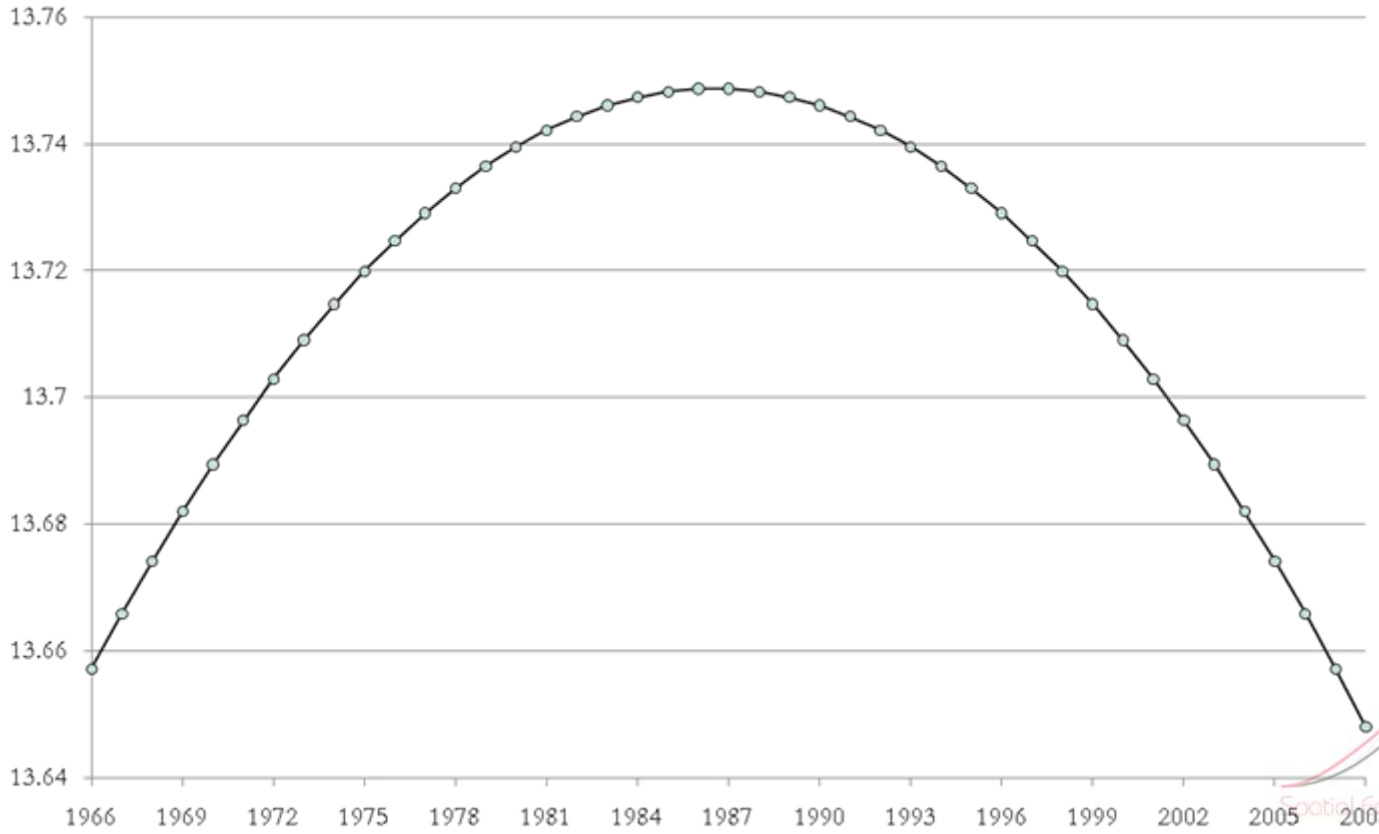
=> Oldest stores less productive (no surprise)

In England productivity falls *cet. par.* in stores founded from late 1980s

=> **newest stores least productive.** Looks like PPG6 ….

=> **Only significant for English stores**

Productivity by year of opening: controlled for all other factors: Eng.



Role of planning?….

- Evidence for *Route 2* effect – natural experiment: England compared to Scotland and N.I.

- So: is store size influenced by 'restrictiveness' of LPA?
- Test against:
  1. Refusal rate – both major residential and major retail (note major retail numbers can be small and seem noisy)
  2. Instrument 2 – % share of labour seats at the local elections (average over 2000-2007)

  Shown association - larger stores more productive:
  - Now show causal effect – more restrictive LAs generate smaller stores *cet. par.*

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Regressing floorspace on 'planning restrictiveness' (major residential projects refusal ratio); IV: share of Labour seats

	TSLS: *Second stage* Dependent variable: log (net floorspace area)					
	(1)	(2)	(3)	(4)	(5)	(6)
	All English stores	>1980	>1990	All English stores	>1980	>1990
Refusal rate:	-0.746	-1.088*	-1.515*	-1.050	-2.097*	-2.608
major residential projects	(0.532)	(0.582)	(0.834)	(1.079)	(1.230)	(2.338)
Population within 10 minutes				0.199***	0.125*	-0.0452
drive time				(0.0700)	(0.0735)	(0.163)
Car ownership share within				0.00457	0.00486	0.000482
within 15 minutes drive time				(0.00549)	(0.00588)	(0.00745)
Competition				-0.0154	-0.0153	-0.0265
				(0.00954)	(0.0105)	(0.0214)
TTWA FEs	*No*	*No*	*No*	*Yes*	*Yes*	*Yes*
Observations	254	217	132	254	217	132
	TSLS: *First stage* Dependent variable: **refusal rate (major residential projects)**					
Share Labour seats	-0.192***	-0.190***	-0.196***	-0.148***	-0.140***	-0.126***
	(0.016)	(0.015)	(0.017)	(0.027)	(0.030)	(0.040)
Controls and FEs (included instr.)	*No*	*No*	*No*	*Yes*	*Yes*	*Yes*
Kleibergen-Paap rk Wald F stat.	153.1	165.9	131.4	30.0	22.0	9.8

Estimating the impact on TFP

- As described two separate effects:

1. Town centre first policies (TCFP): directly restricting store size, locations and barrier to entry
2. Cross sectional variations in LA restrictiveness and relation to land prices, factor substitution and store size & productivity

- To estimate a **lower** bound impact of TCFP assume rate of increase of productivity 1986-2006 'would have been' as 1966-86: lower bound because assumes no acceleration of growth in TFP 1986-2006: contrary to USA experience

- To estimate **lower** bound estimate of cross sectional variation in LA restrictiveness assume store in most restrictive LA would have been as big as a store in least restrictive LA: lower bound because implicitly assumes no impact on store size in least restrictive LA.

Bigger stores are more productive: tighter the planning the more expensive is space

Total Impact on Supermarket Productivity: Town Centre First plus variations in LA Restrictiveness

Representative store: All values at sample mean except…	Predicted weekly sales per sq ft	Loss in productivity
Store built in **2006** – ***but annual productivity growth since 1986 assumed at estimated rate for 1966-1986***	£20.85	(Base)
Store built in **2006** (post introduction of Town Centre First Policy)	£17.52	**-16.0%**
Store with lowest level of regulatory restrictiveness (based on sample)	£19.21	(Base)
Average of all stores in sample	£18.39	**-4.2%**
All stores in sample assumed to have highest level of regulatory restrictiveness	£16.76	-12.8%
Total Impact on TFP		**-20.2%**

Productivity loss almost certainly more than 20.2%: hits poorer most; likely to increase carbon footprint of retail!

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Conclusions: retail/supermarket sector

- Strong evidence that productivity rises with store size
- So - restricting store sizes by either direct constraints on sites or formats, **or** restricting supply of land so raising prices
  => Increases resource use in retail and raises retail prices
- Clear efficiency cost: a reasonable lower bound estimate is a loss of productivity of 20.2% - compare Haskell & Sadun 0.4% pa 1997-2003
- Highly suggestive evidence that more restrictive local planning policy causes stores to be smaller
- Quasi-natural experiment England compared to rest of UK very strong evidence Town Centre First policies directly reduced TFP
- So, by implication, planning policy responsible for lower retail productivity
- Since poorer spend proportionately more of disposable income in stores (esp. food) this is distributionaly regressive
- Net costs? What are the benefits – esp. of 'Town Centre First'?
- Later stage (funding?) carbon footprint impact of TCFP

So do Town Centre First Policies deliver the goods?

- Aims of TCFP (ODPM, 2004):

1. Improve access to retail by public transport
   i. maintain access for poorer households and
   ii. facilitate multi-purpose visits
2. Reduce overall energy use
   - So - equity/redistribution and carbon footprint goals

BUT loss of TFP raises retail prices and this is inequitable: and

- Affects on carbon footprint to be researched but points:

1. Lengthens shopping trips as population decentralises
2. Increases frequency of shopping trips (smaller store sizes)
3. May achieve some substitution to public transport but
4. Concentrates shopping trips in more congested locations
5. Increases re-stocking trips
6. Concentrates re-stocking trips in congested locations
7. Achieves no substitution of re-stocking to public transport