What's in a place? area effects on early stage entrepreneurship

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variables

pooled 4 years data (2005-2008), 120 thousand individual-level records
GEM variables coded as (1/0): variable names in *italics*,

- *tea*, engaged in early stage entrepreneurial activity coded '1'
- *sex*, male coded '1'
- (older)*age*, age 50 or older coded '1'
- (highly) *educated*, graduate coded '1'
- (high) *income*, annual income greater than £30,000 coded '1'
- (minority) *ethnicity*, not "white" coded '1'
- *migrant*, less than 5 years in the region coded '1'
- *estbus*, involved in the ownership or management of an established business coded '1'
- *infinv*,in past 3 years provided funds for new business coded '1'
- *shutbus*,in past year, sold, shut down, or quit a business coded '1'

spatial

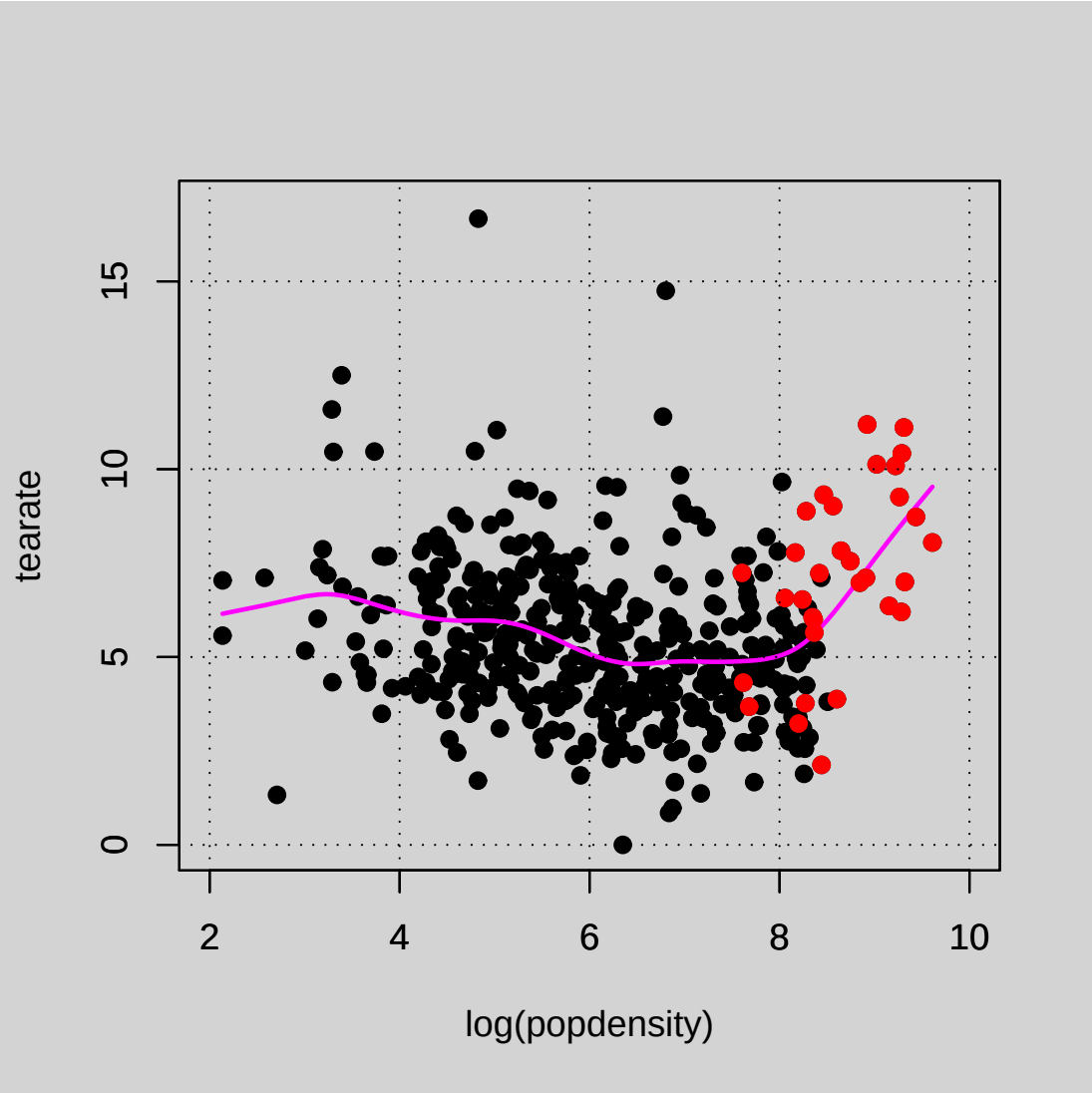
- there are 434 lads in the UK and we have cases from 433 (missing City of London)
- sample size is not proportional to lad-level population – disproportionately many more cases in Northern Ireland and Wales
- absolute sample sizes at the lad-level vary widely – the largest sample is for Cardiff ($\approx$ 2500), the smallest for the Isles of Scilly ($<$10)
- 21 lads have less than 100 cases

sample statistics

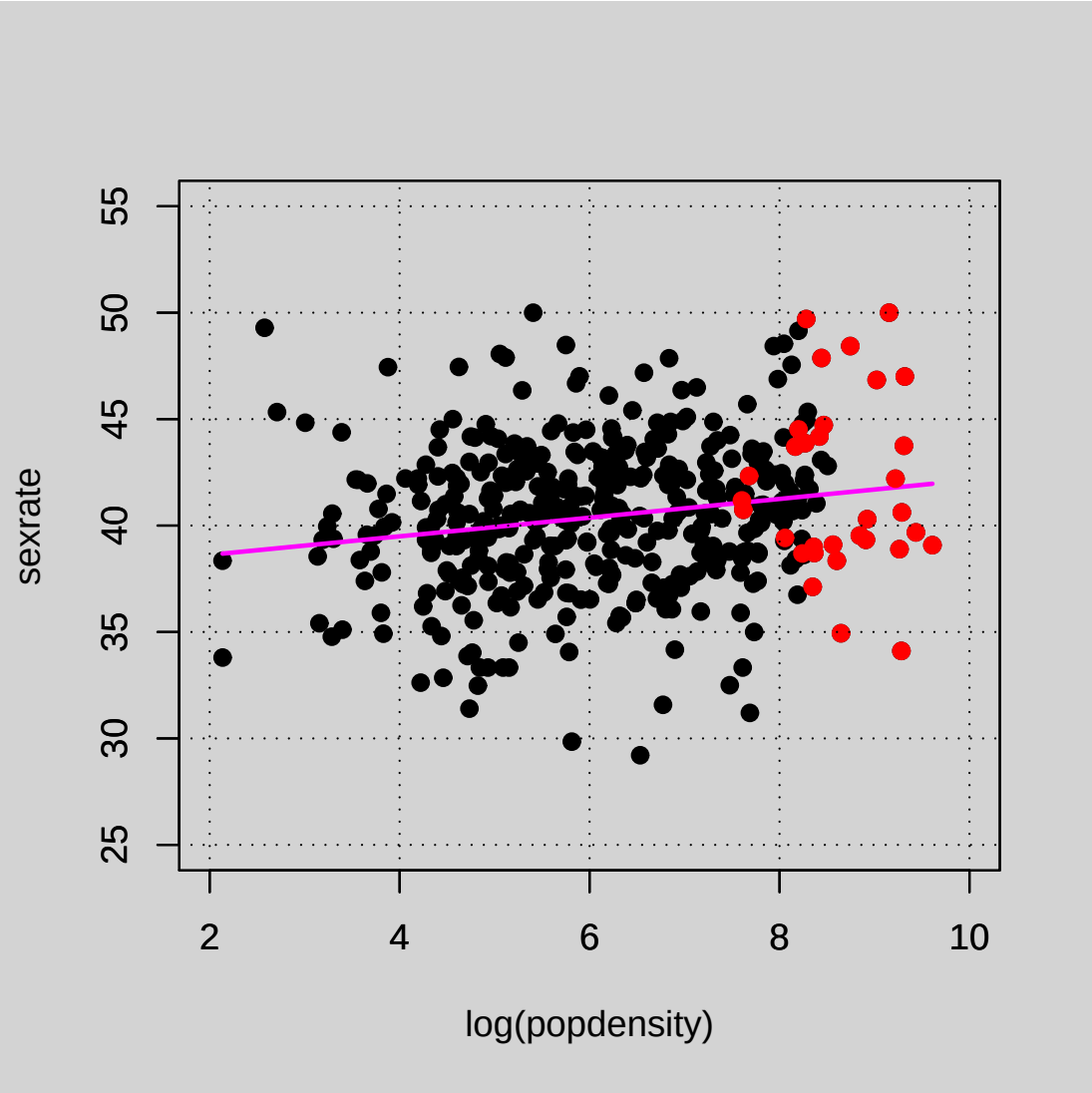
Table: GEM data, summary statistics (%)

	national	lad-level summary				
	mean	min	p10	median	p90	max
tea	5.24	0.00	3.07	5.24	7.98	16.67
sex	41.75	0.00	36.27	40.58	44.52	50.00
age	34.14	9.38	27.84	36.54	44.20	52.56
educated	30.37	10.26	18.85	28.77	40.29	67.35
income	43.49	20.69	33.94	45.73	61.43	78.79
ethnicity	4.20	0.00	0.58	2.21	12.94	58.14
migrant	9.52	0.00	5.14	10.14	16.65	28.12
estbus	5.19	0.78	3.01	5.59	9.40	16.67
infinv	1.23	0.00	0.46	1.20	2.47	16.67
shutbus	1.79	0.00	0.75	1.80	3.47	6.25
popdens	251.4	8.5	75.9	475.2	3112.2	14920.0
lpopdens	5.527	2.135	4.330	6.164	8.043	9.610

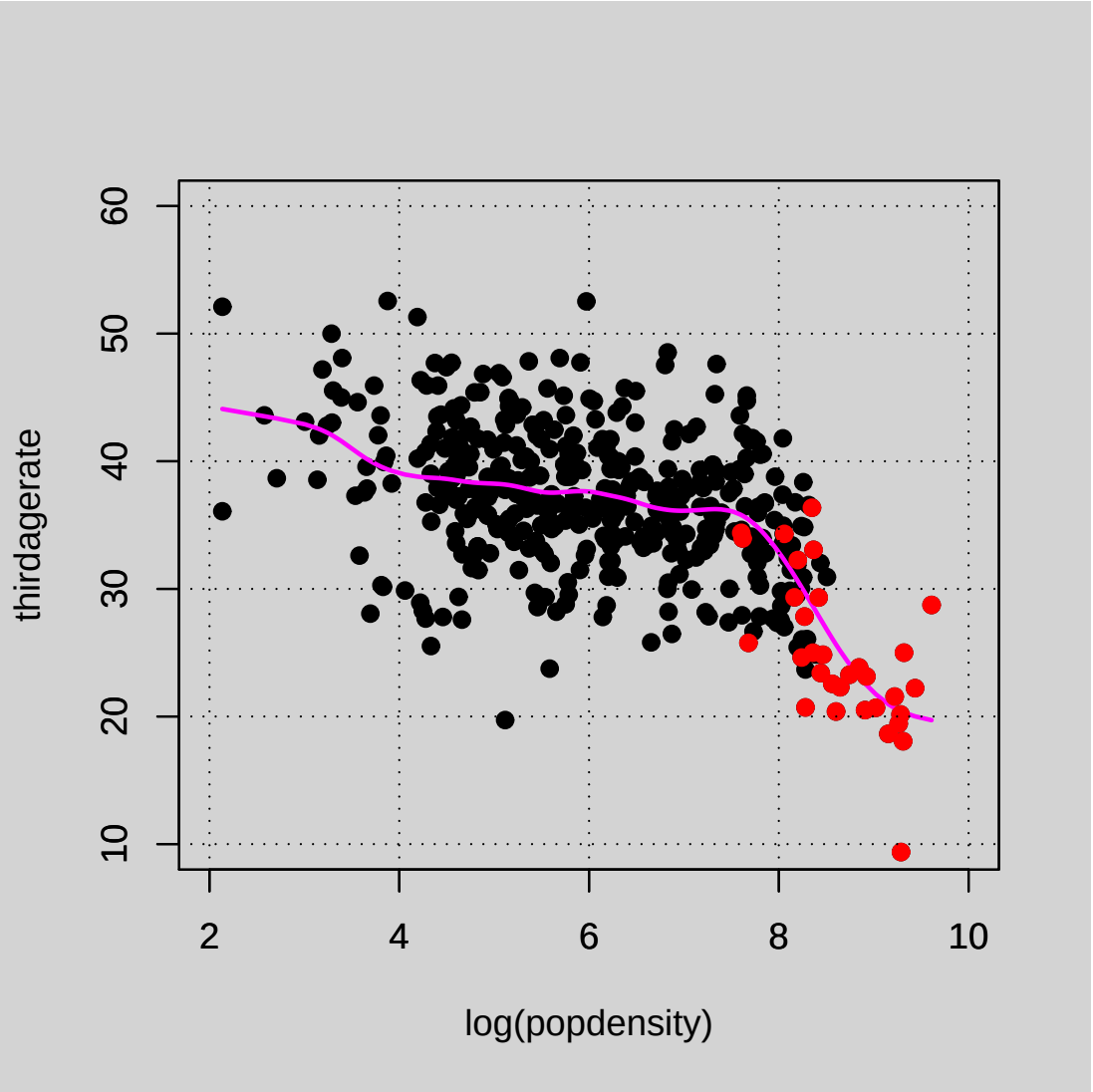
tea rate vs log(popdensity)



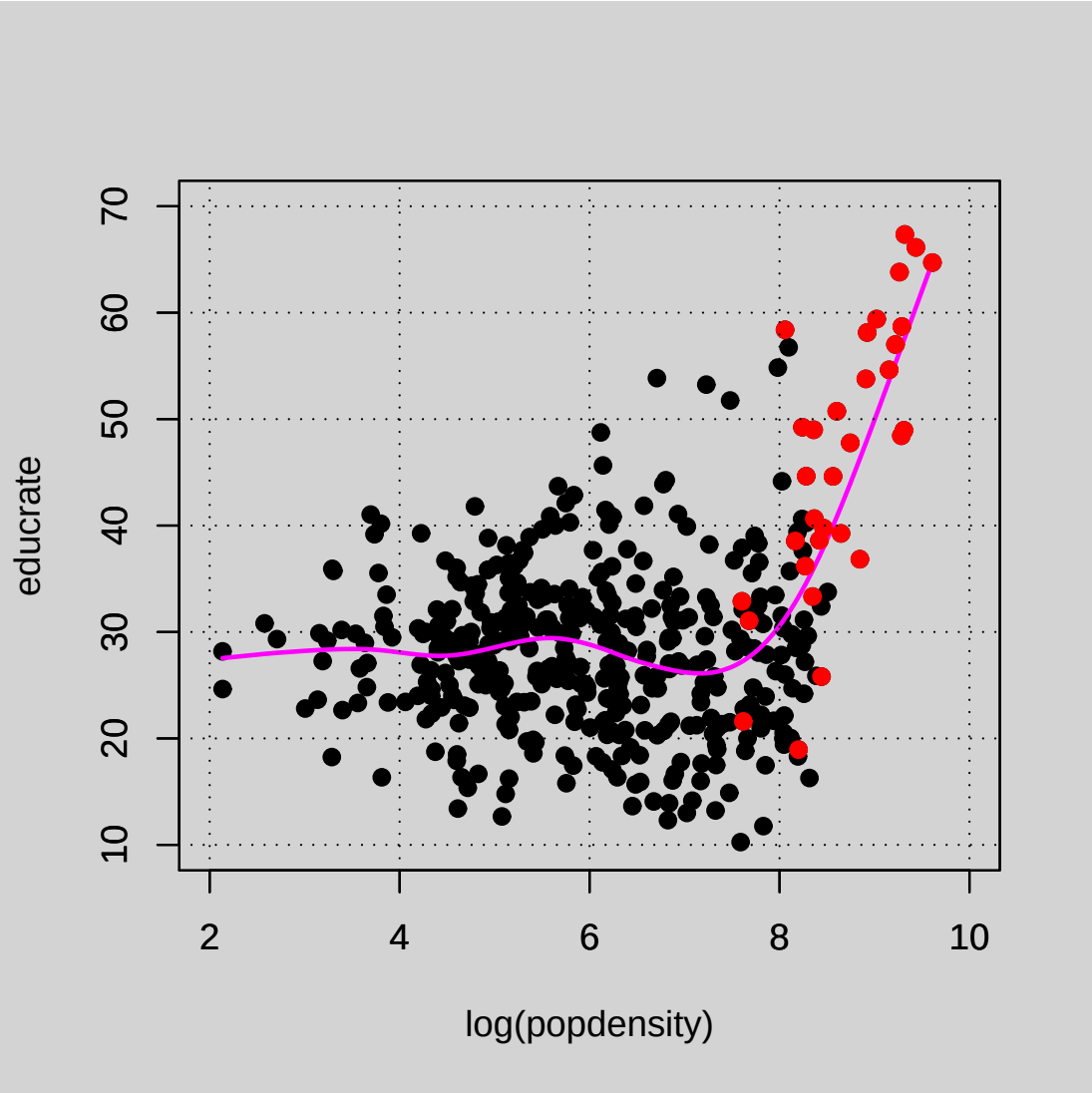
sex rate vs log(popdensity)



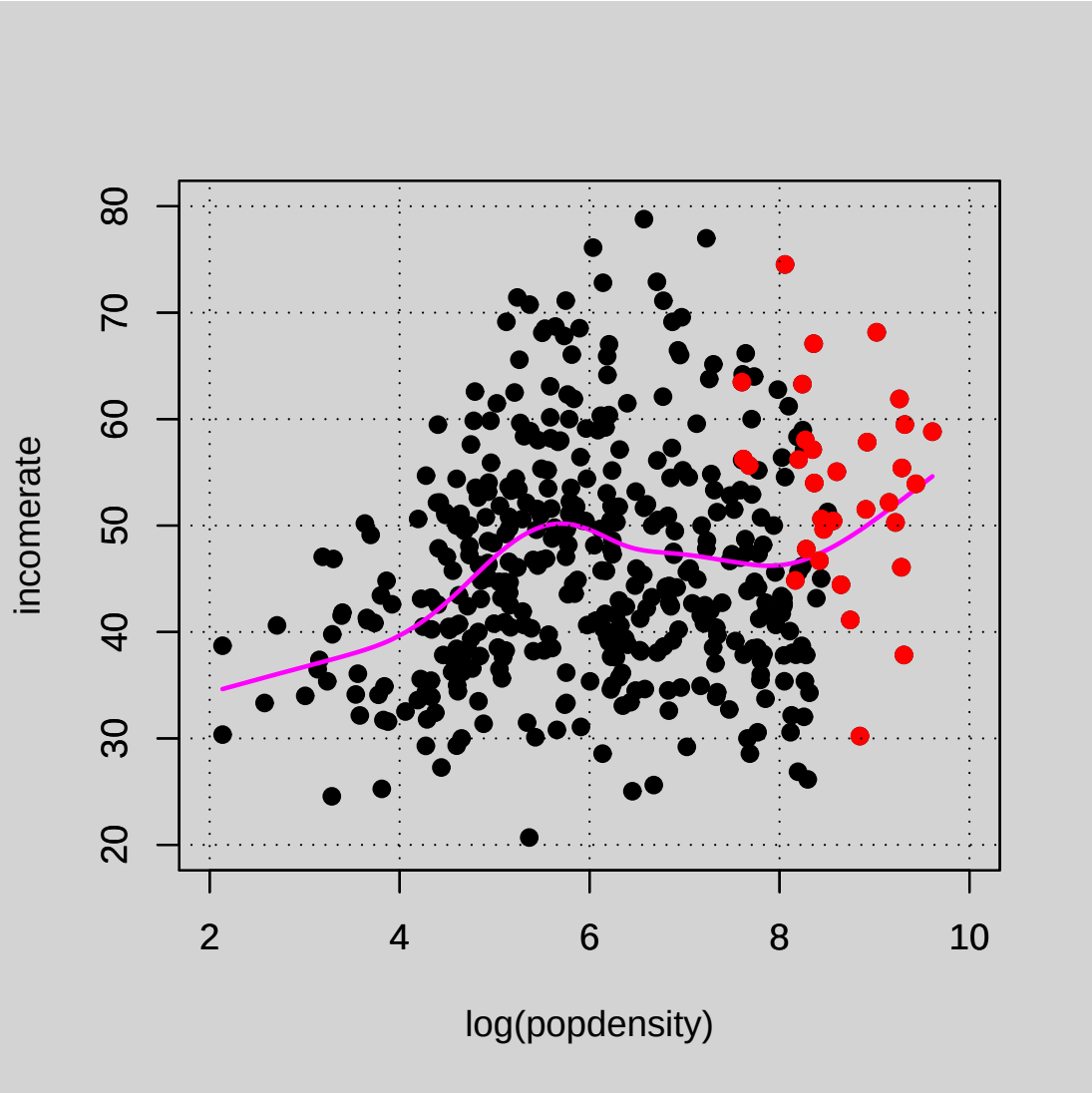
(older) age rate vs log(popdensity)



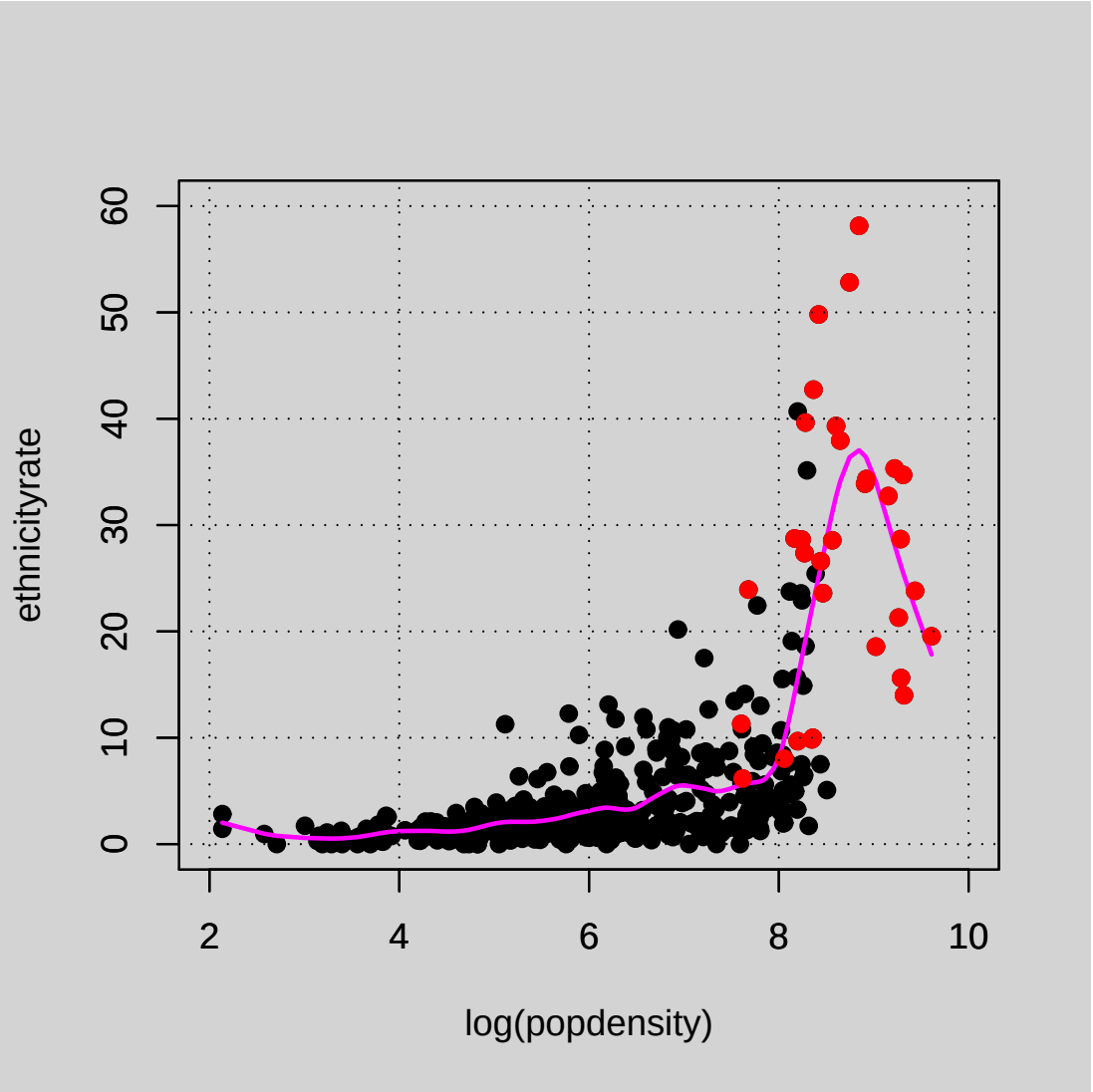
(highly) educated rate vs log(popdensity)



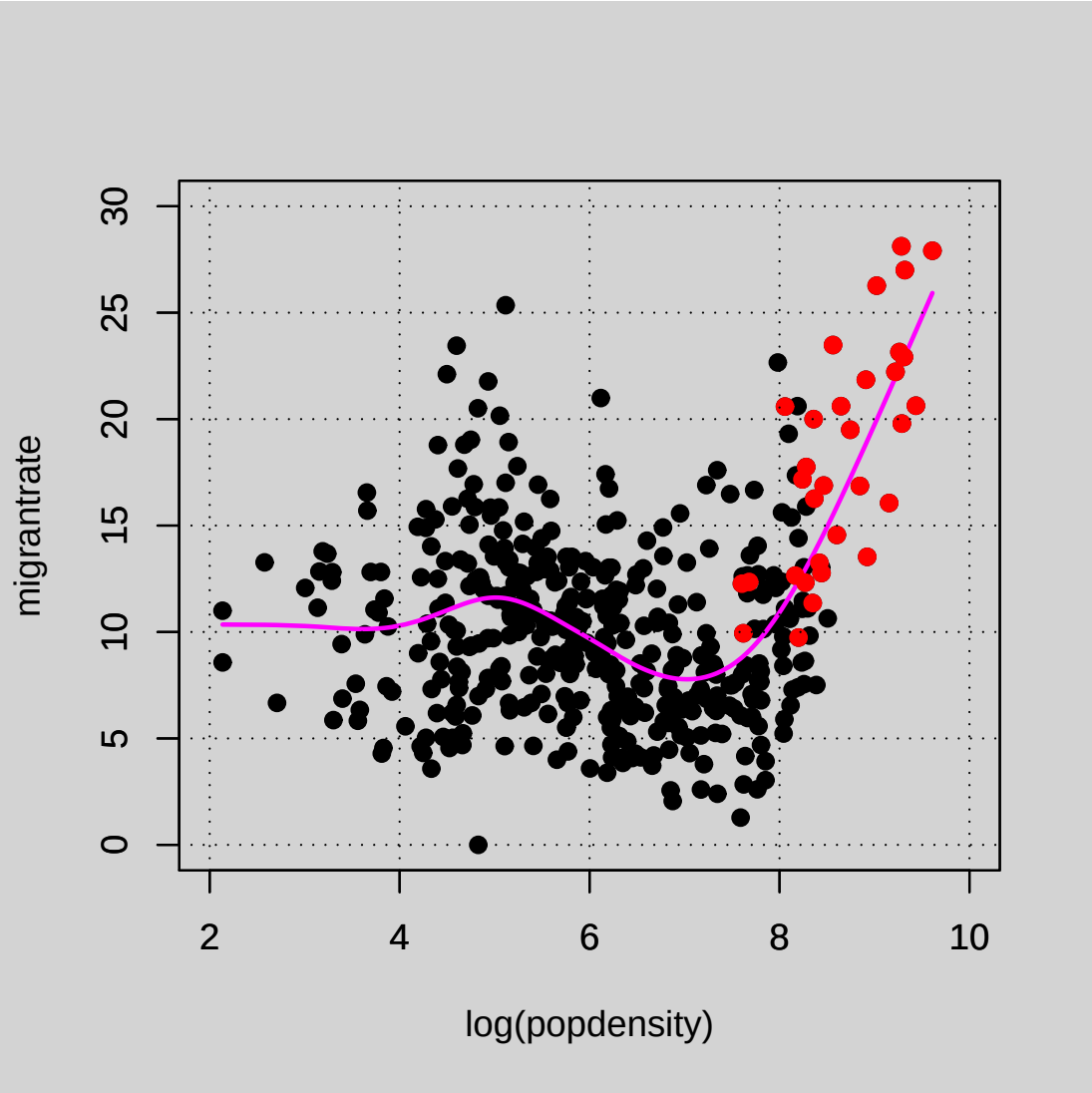
(high) income vs log(popdensity)



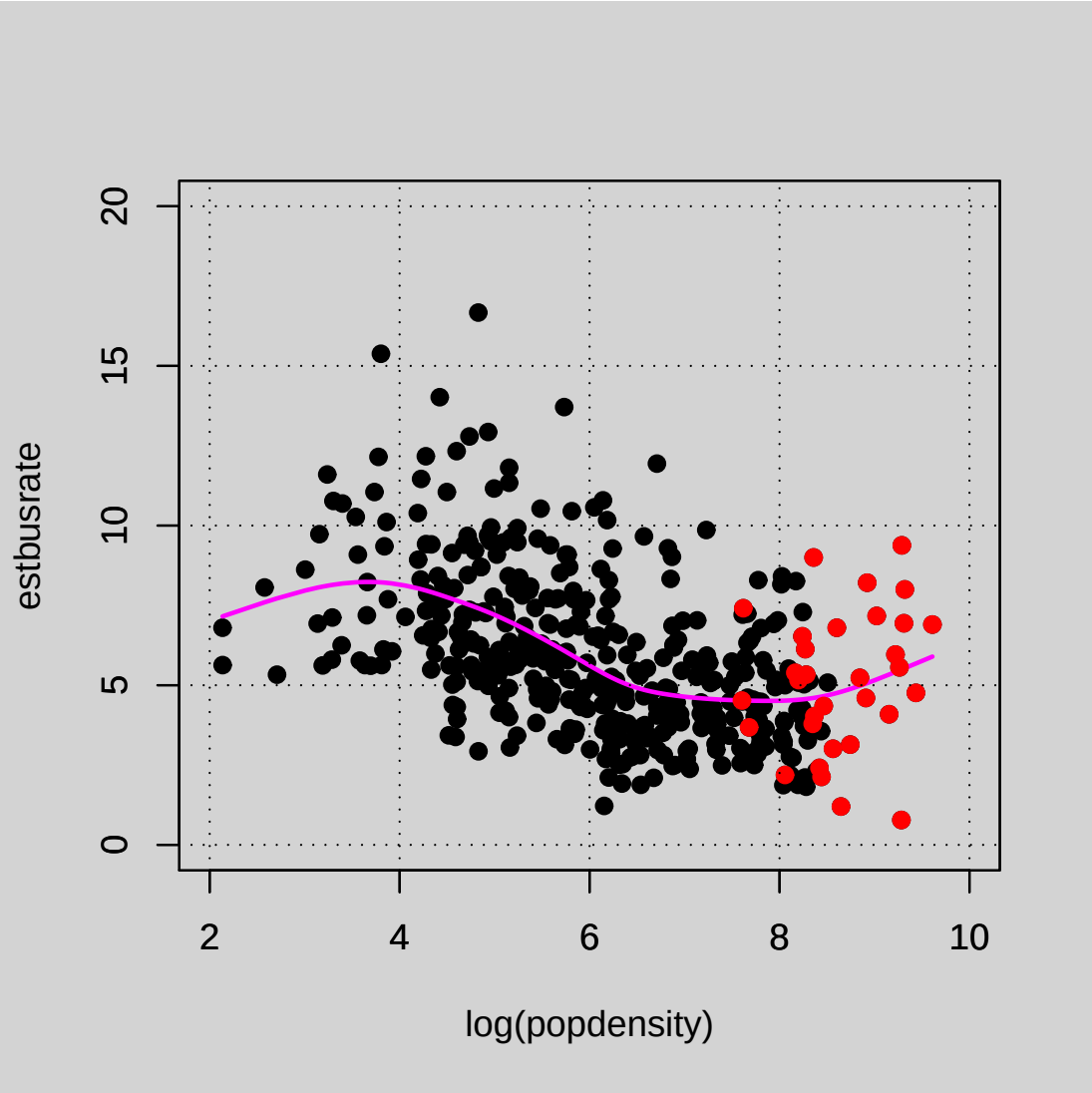
ethnic minority vs log(popdensity)



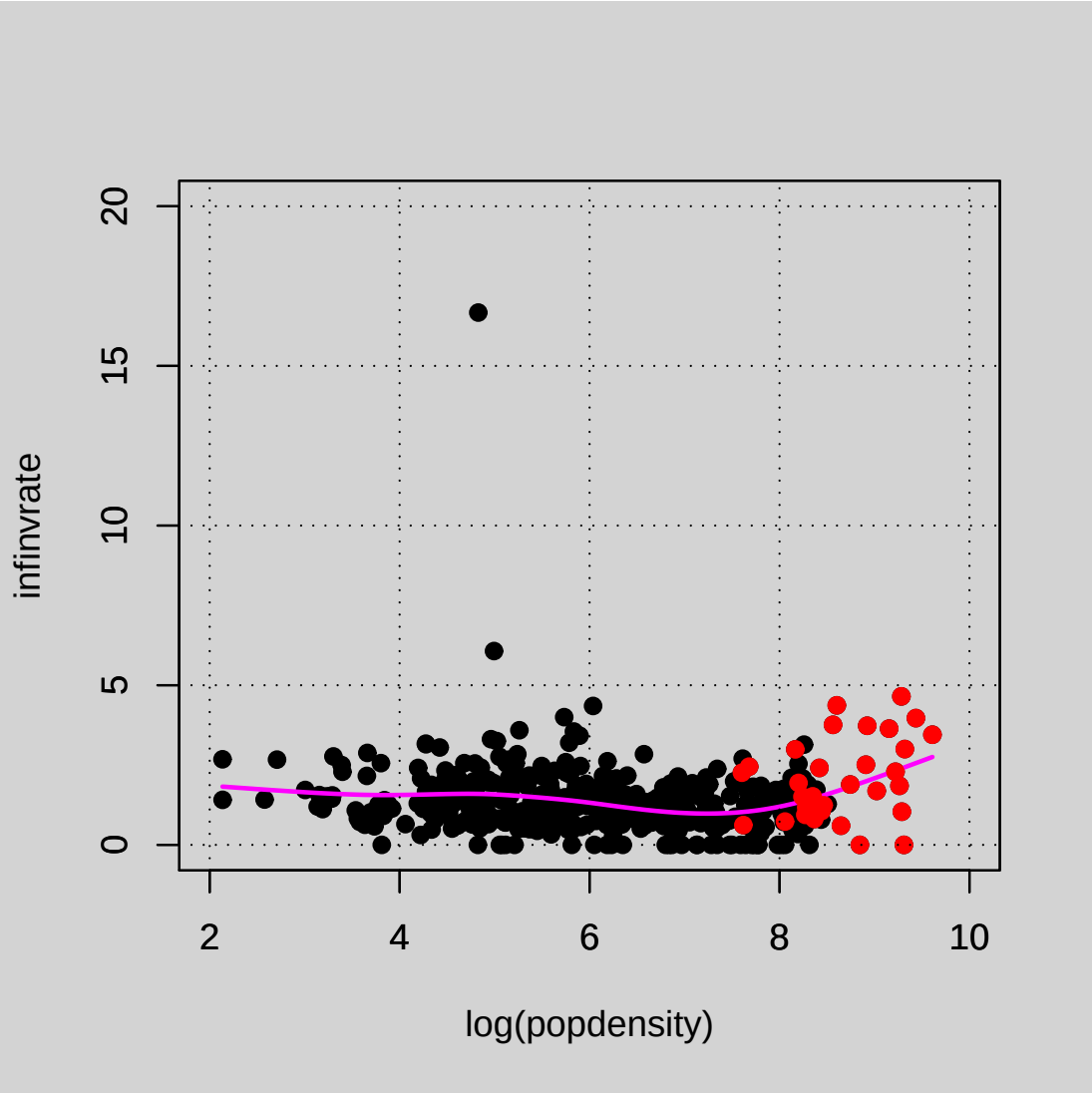
migrant rate vs log(popdensity)



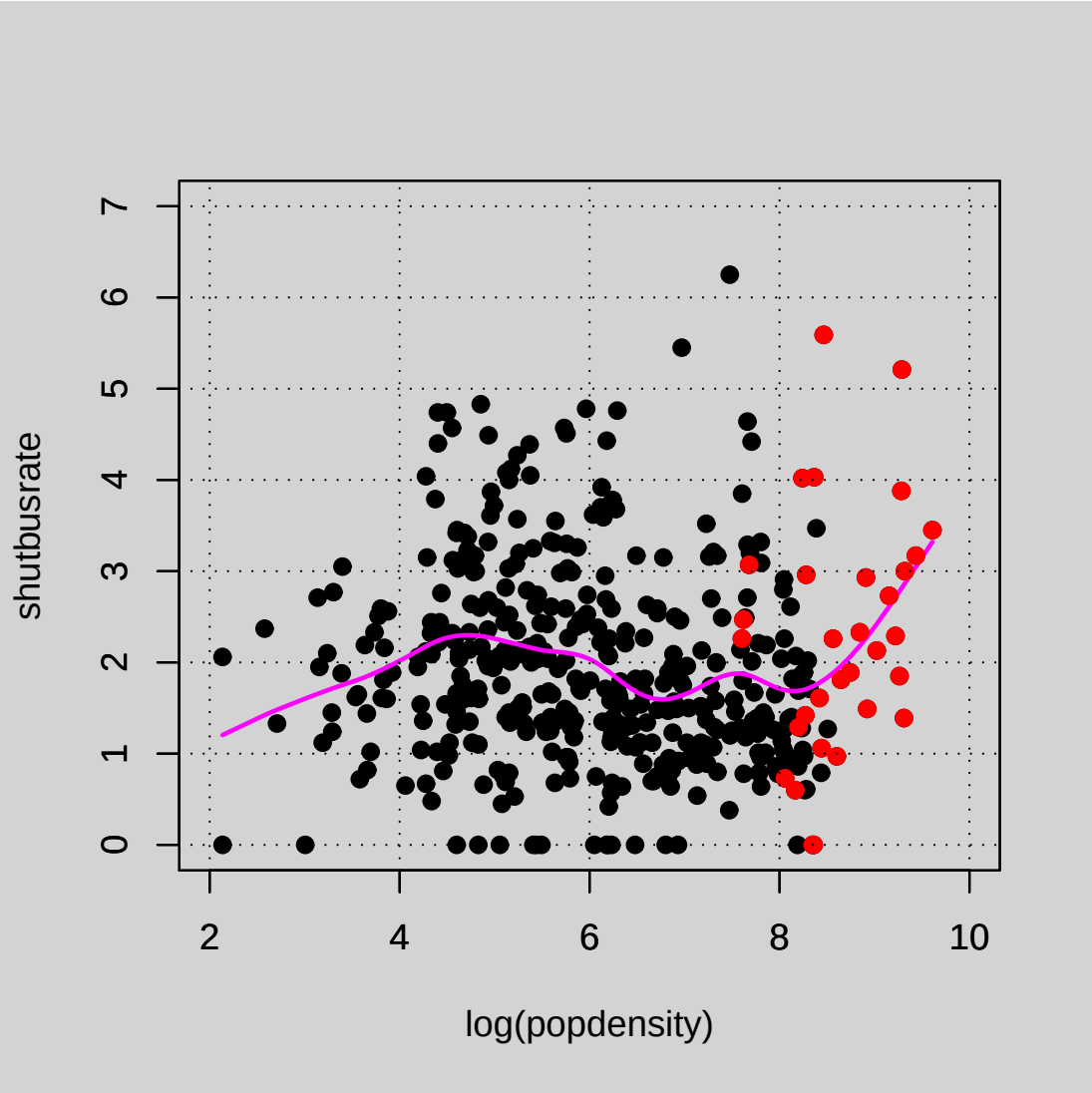
established business owner rate vs log(popdensity)



informal investor rate vs log(popdensity)



shut a business rate vs log(popdensity)



early stage entrepreneurship:coefficient estimates

	coefficient		odds ratio	
	individual	lad-level	individual	lad-level
intercept	-3.734			
sex	0.731	0.101	2.08	1.11
age	-0.528	0.654	0.59	1.92
educated	0.220	0.871	1.25	2.39
income	0.311	-0.066	1.36	0.94
ethnicity	0.279	0.977	1.32	2.66
migrant	0.194	1.711	1.21	5.53
estbus	-0.643	2.538	0.53	12.66
infinv	1.391	2.361	4.02	10.60
shutbus	1.309	2.859	3.70	17.44
lpopdens		-0.046		0.95

significant coefficients: 5% coloured red

decomposition of predictions (1): differences from Kensington & Chelsea

	Kensington &Chelsea	Newham	Bexley	Milton Keynes	Orkney Islands	Redcar & Cleveland
intercept	1	0	0	0	0	0
sex	0.3908	0.0045	0.0544	0.0013	0.0575	-0.0340
age	0.2874	-0.0490	0.0352	0.0468	0.1436	0.1079
educated	0.6471	-0.2787	-0.4576	-0.3640	-0.4190	-0.4635
income	0.5882	-0.2860	-0.0262	-0.0683	-0.2482	-0.2267
ethnicity	0.1954	0.3860	-0.0986	-0.0875	-0.1782	-0.1847
migrant	0.2791	-0.1105	-0.1817	-0.1362	-0.1584	-0.2383
estbus	0.0690	-0.0167	-0.0174	-0.0137	0.0172	-0.0498
infinv	0.0345	-0.0345	-0.0151	-0.0266	0.0172	-0.0021
shutbus	0.0345	-0.0112	-0.0216	-0.0082	-0.0173	-0.0281
lpopdens	9.610	-0.764	-1.410	-3.006	-6.604	-3.269

decomposition of predictions (2): weighted differences from Kensington & Chelsea

	Kensington &Chelsea	Newham	Bexley	Milton Keynes	Orkney Islands	Redcar & Cleveland
intercept	-3.734	0	0	0	0	0
sex	0.039	0.001	0.006	0.001	0.006	-0.003
age	0.188	-0.032	0.023	0.031	0.094	0.071
educated	0.564	-0.243	-0.399	-0.317	-0.365	-0.404
income	-0.039	0.019	0.002	0.005	0.017	0.015
ethnicity	0.191	0.377	-0.096	-0.086	-0.174	-0.181
migrant	0.478	-0.190	-0.311	-0.233	-0.271	-0.408
estbus	0.175	-0.042	-0.044	-0.035	0.044	-0.126
infinv	0.081	-0.081	-0.035	-0.062	0.041	-0.005
shutbus	0.099	-0.032	-0.062	-0.024	-0.050	-0.081
lpopdens	-0.442	0.035	0.065	0.138	0.304	0.150
sum	-2.400	-0.188	-0.851	-0.582	-0.354	-0.972
exp	9.10	0.829	0.427	0.559	0.702	0.378
tea	9.10	7.54	3.89	5.09	6.39	3.44

summing up

in brief,

- area-level effects are important – improve the fit & coefficients are significant & large
- some characteristics are significant at the individual-level are not significant at the area-level: sex; income; infinv; shutbus
- some characteristics have the opposite effect at the area-level: age; estbus