

# **The psychological cost of labour market change:** Evidence from NHS anti-depressant prescriptions

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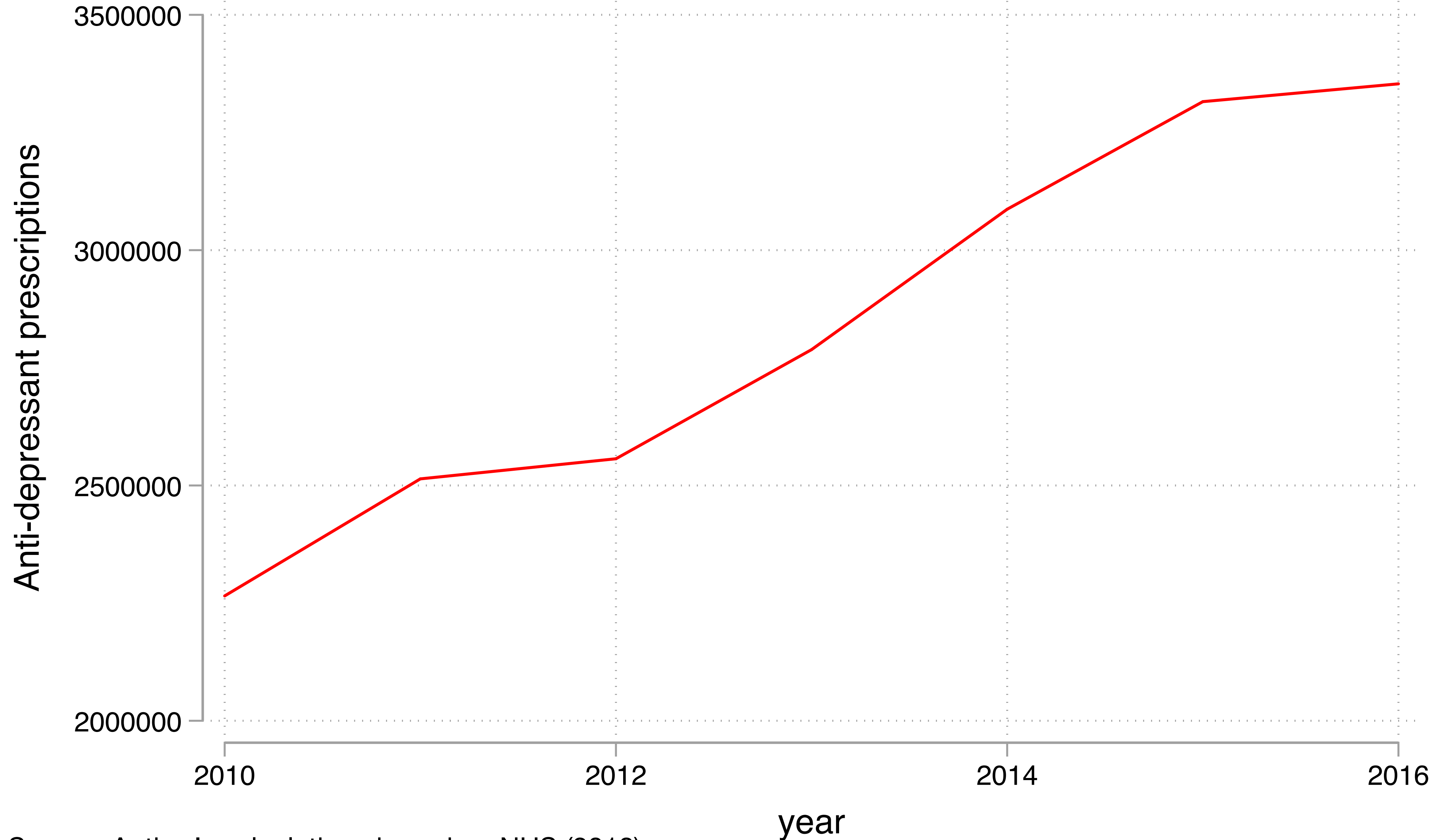
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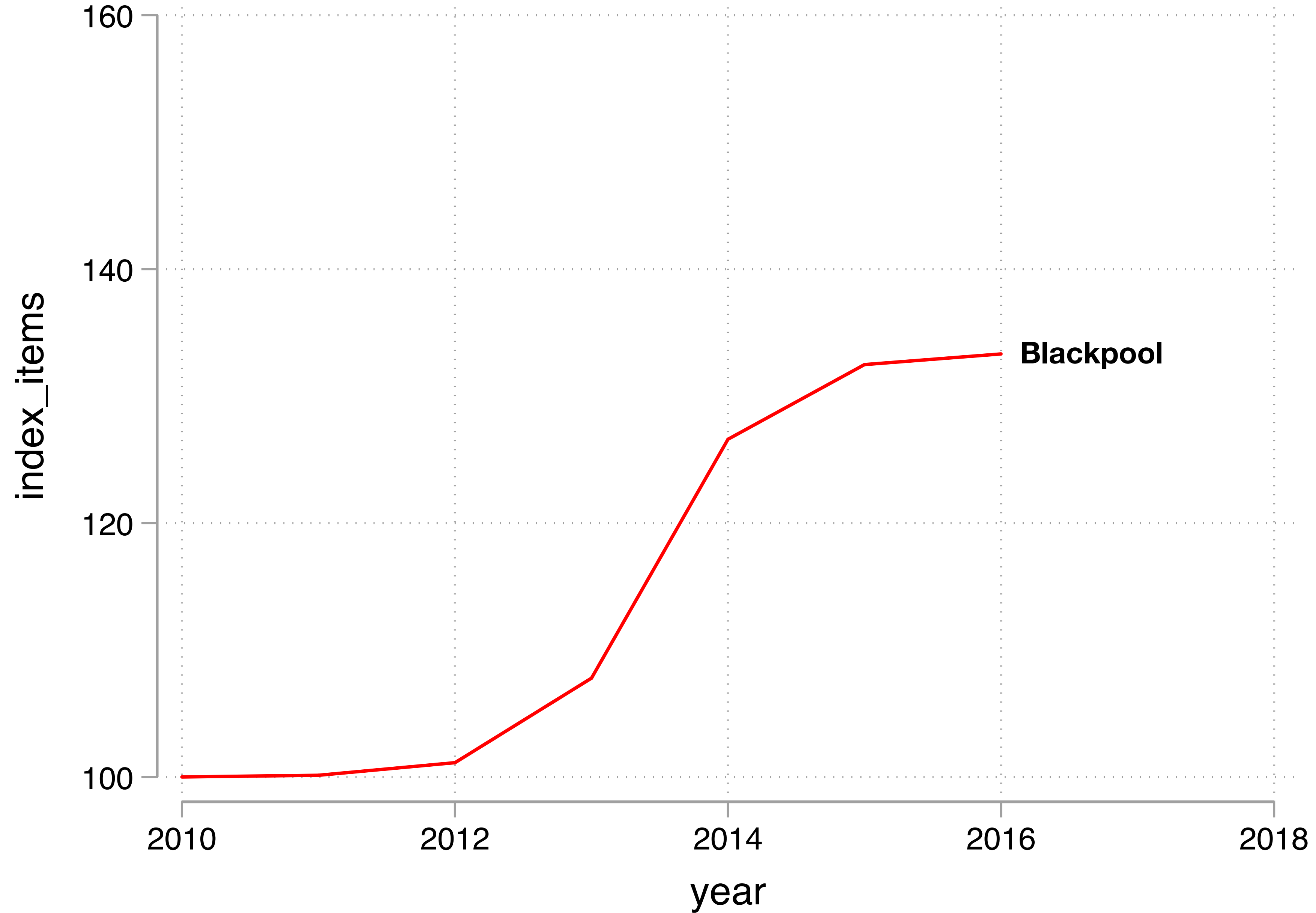
# Anti-depressant prescriptions in England, 2010 - 2016



Source: Author's calculations based on NHS (2018)

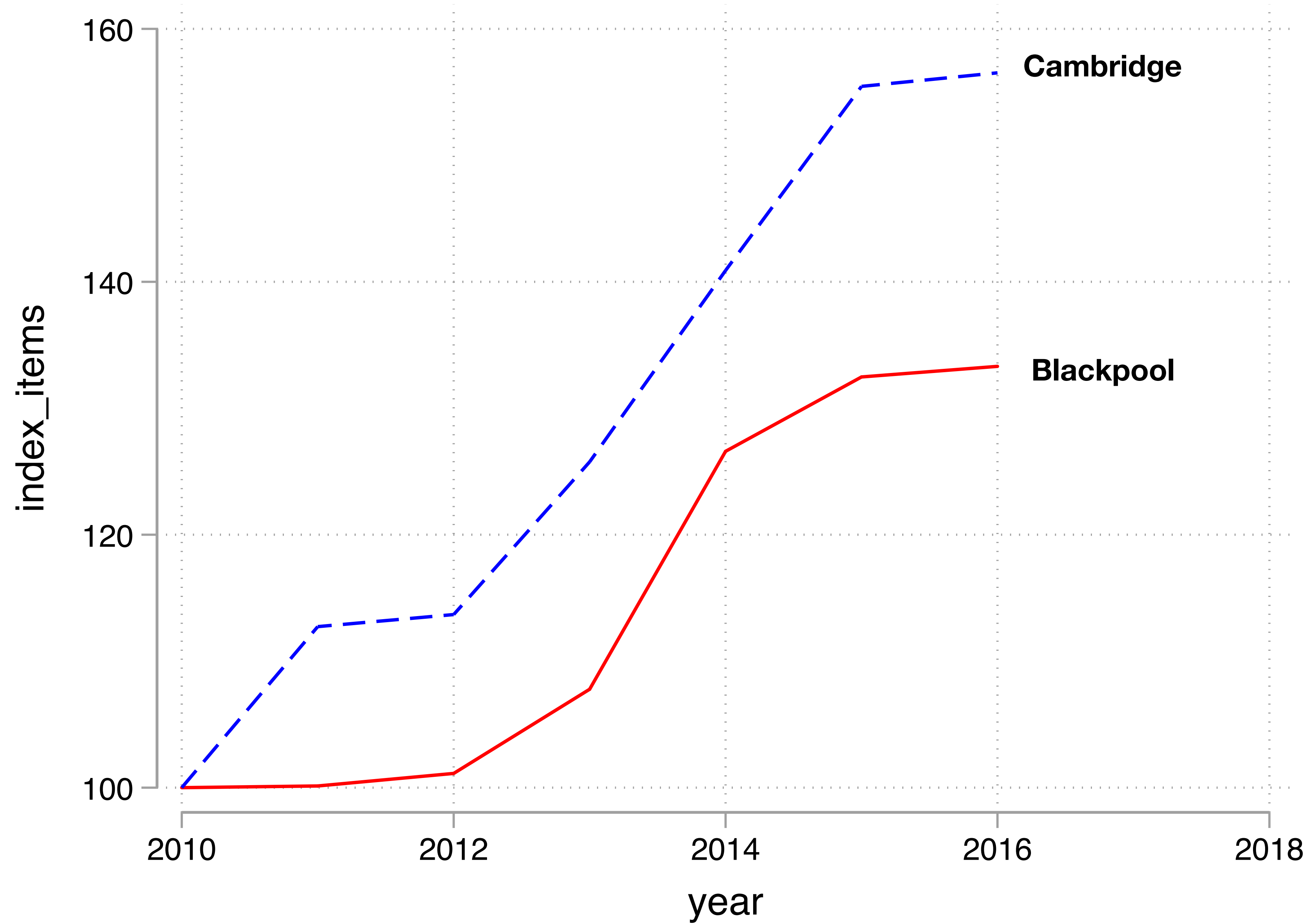
# Anti-depressant prescriptions in Blackpool

Indexed where 2010 = 100



# Anti-depressant prescriptions in Blackpool & Cambridge

Indexed where 2010 = 100



# Background

- Antidepressant prescriptions in England increased by nearly 50% between 2010-2016
- This may be a symptom of wider economic, social and cultural problems, caused by uneven economic decline and austerity
  - Sarah O'Connor (2017) Financial Times report from Blackpool
  - Legacy of industrial decline (Beatty & Fothergill)
  - Supply side labour market policy, benefits sanctions, precarious employment (Green, Sissons)
- But the pattern is more complex than simple economic decline.

**How do local labour markets influence antidepressant use?**

**Is the combination of**

# Past literature

- **‘Deaths of despair’** in the United States - opiate addiction reduced life expectancies for rural, non-Latino Whites (Case & Deaton, 2015, 2017)
- **Andersen’s model** (Andersen, 1995; Phillips et al., 1998)
  - **predisposing** factors – such as demographics, attitudes or beliefs;
  - **enabling** factors such as family resources which allowed an individual to access that healthcare, and
  - **need** factors which determined whether healthcare was required or not.
  - **environmental** factors - community level attributes include the availability of doctors and the ‘economic climate’

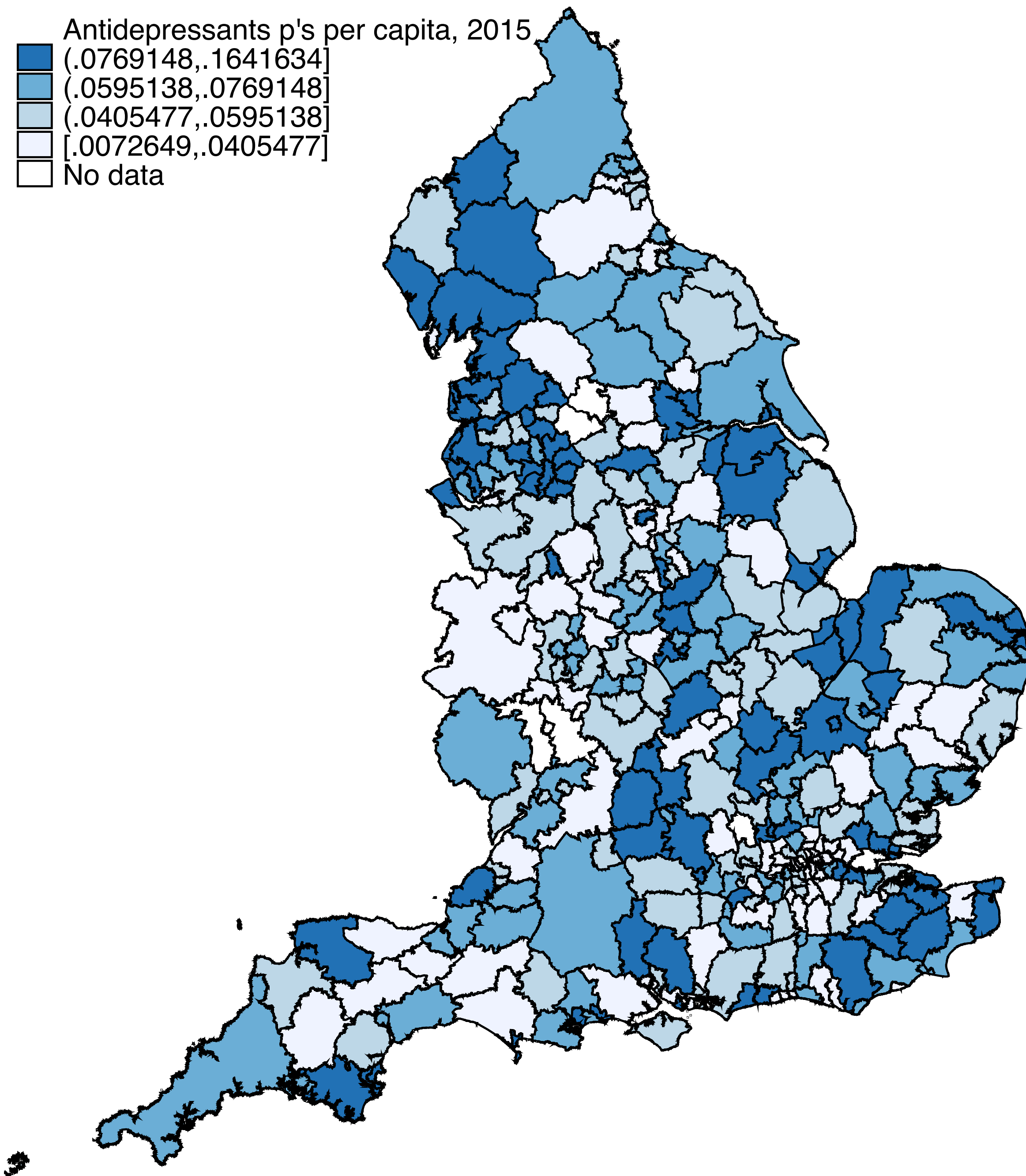
# Past literature (2)

- Jobs loss and **welfare reform** literature - problem of supply side welfare reform in demand deficient local economies (Beatty and Fothergill, 2017; Green et al., 2017)
- Literature on **benefits sanctions** - Barr et al. (2015) show work capability assessments lead to increased antidepressant use, anxiety
- **Austerity** and public service - overstretched GP surgeries and reduced access to support services
- Hypotheses: in context of austerity (reduced support, need for ‘quick fix’) and welfare reform (“incentivising work”)
  - Growing antidepressant use is caused partly by **increasingly precarious labour market**
  - This is **worse in context of high unemployment**

# The data

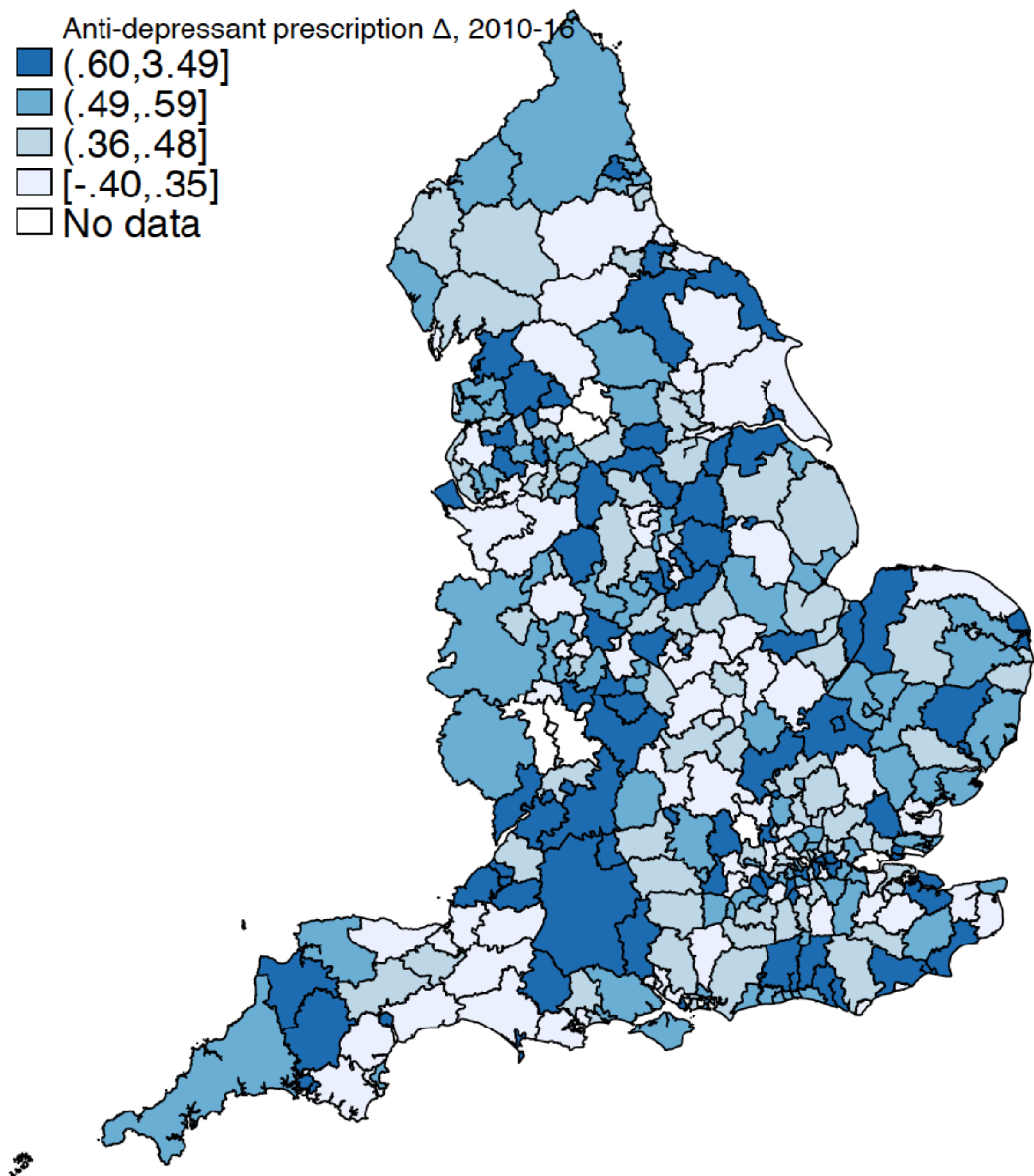
- Prescriptions data freely available from NHS open data
  - Classified by **British National Formulary** (BNF).
  - Geography **GP Surgery** - anti-depressants normally GP surgery (not hospital) [a few 'mega-surgeries' not yet matched]
  - We choose 'items' per capita rather than 'quantity' but robustness checks show matters little
- Controls largely come from Nomis - include administrative data (claimant count) and Annual Population Survey controls [more detail in prep]



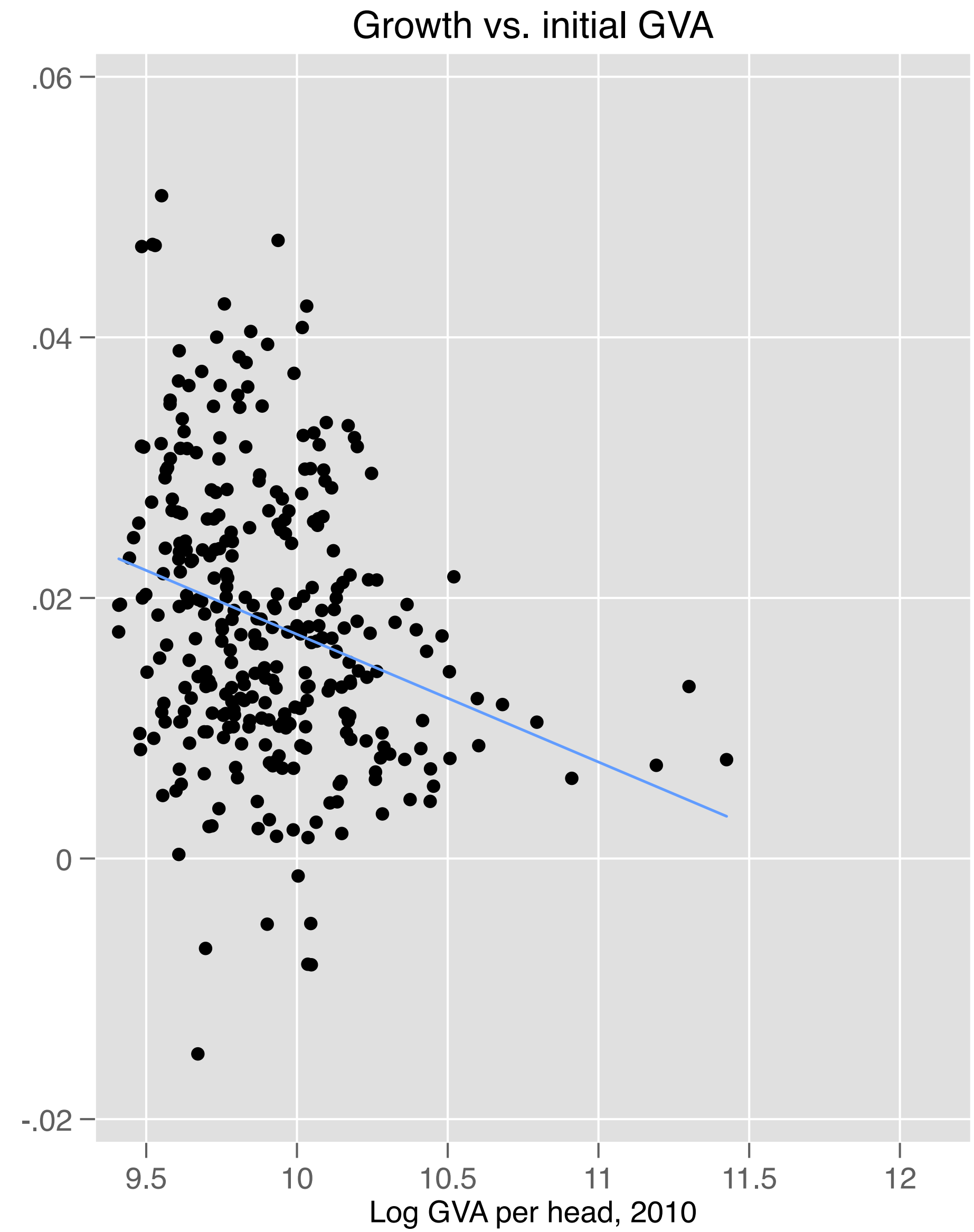
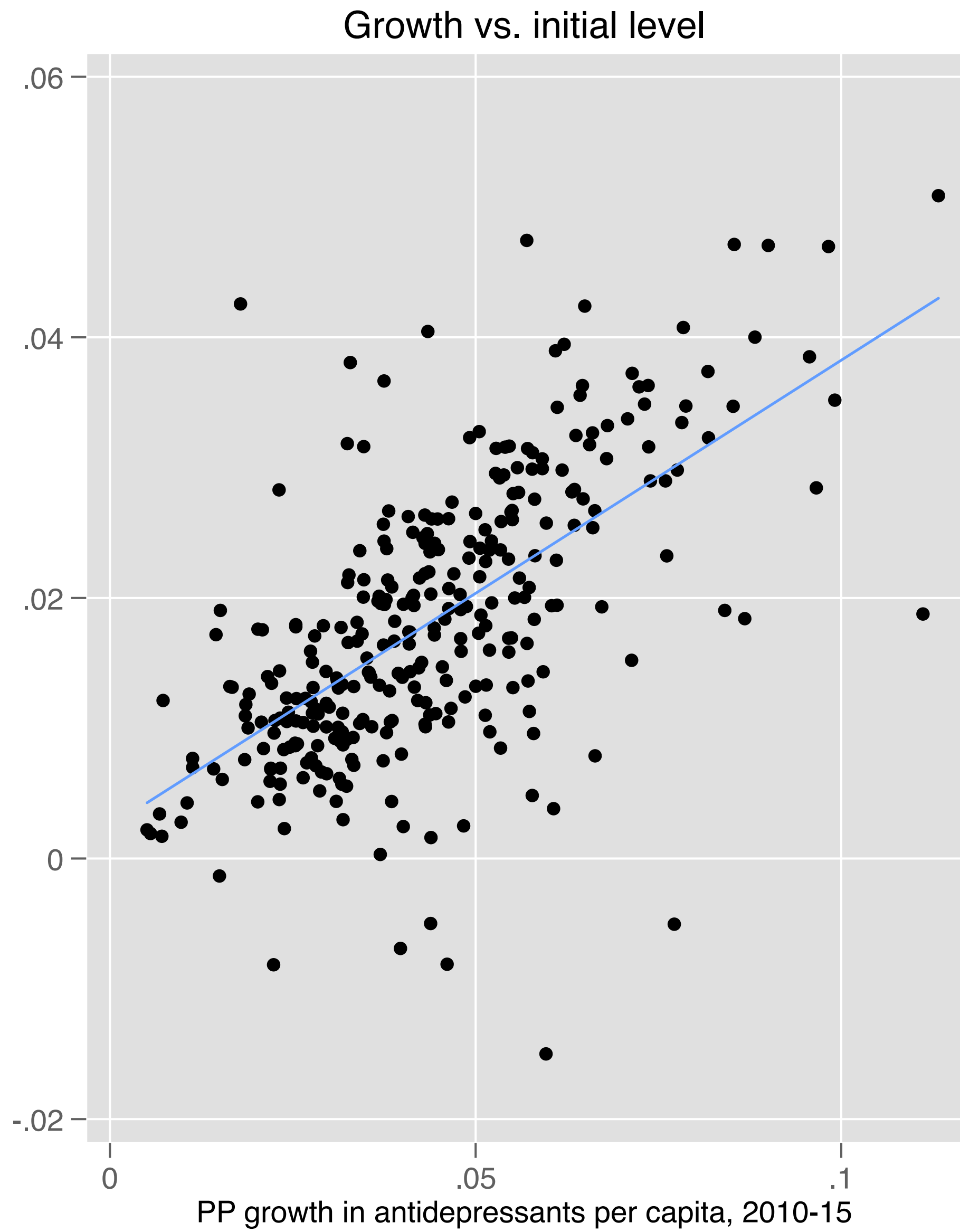


Anti-depressant prescription  $\Delta$ , 2010-16

- (.60,3.49]
- (.49,.59]
- (.36,.48]
- [-.40,.35]
- No data



# Growth in antidepressant use and initial levels



# The model

I estimate a panel model model for local authority 'i' in time 't', between 2010 - 2015 [for now]

$$\text{AntiDepressant}_{it} = \alpha + \beta_1 \text{ECON}_{it} + \beta_2 \text{EDUC}_{it} + \beta_3 \text{DEMOG}_{it} + \varepsilon + \delta$$

Where the dependent variable is the number of antidepressant prescriptions per capita, ECON is a set of variables for the local economy, EDUC controls for education, DEMOG for local demographics. Fixed effects controls for unobserved time invariant heterogeneity, year fixed effects for cyclical changes. Standard errors clustered by region.

# Local economy and anti-depressant prescriptions

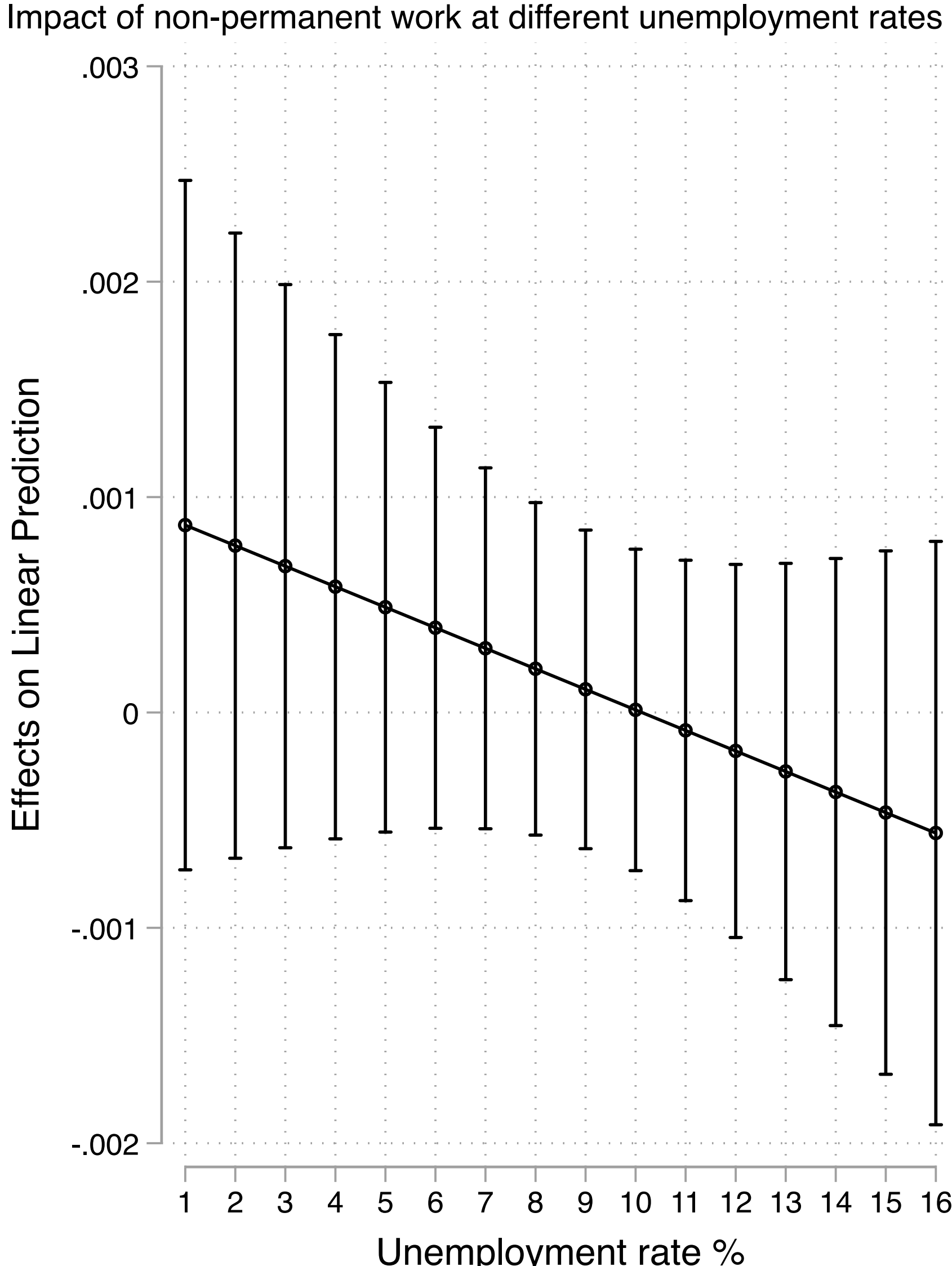
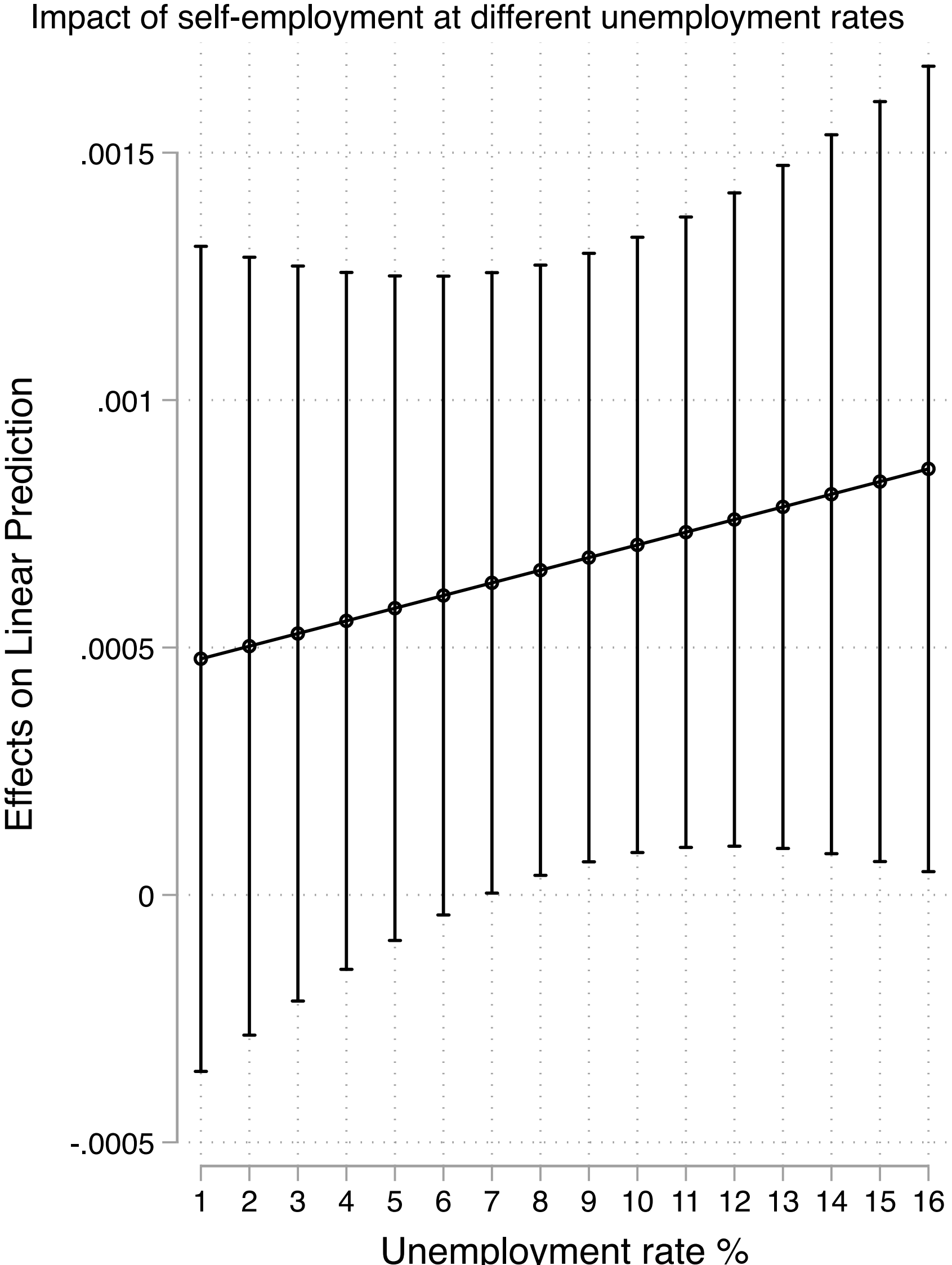
Dependent variable: Anti-depressant prescriptions per capita

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Unemployment rate		-0.000122		-9.35E-05		-8.09E-05	
		(9.53e-05)		(8.94e-05)		(8.81e-05)	
Claimant count %			-0.00147*		-0.000431		0.000100
			(0.000731)		(0.000742)		(0.000775)
WCA (cumulative) pc				0.0904***	0.0889**	0.0907***	0.0920***
				(0.0273)	(0.0293)	(0.0262)	(0.0282)
Self-employment %						0.000643**	0.000721***
						(0.000252)	(0.000216)
Non-permanent %						0.000364	0.000337
						(0.000389)	(0.000374)
GVA (ln)	0.448**	0.414**	0.422**	0.223**	0.248**	0.224**	0.249**
	(0.163)	(0.156)	(0.147)	(0.0796)	(0.0804)	(0.0783)	(0.0775)
GVA (ln) squared	-0.0223**	-0.0207**	-0.0209**	-0.0111**	-0.0121**	-0.0111**	-0.0122**
	(0.00809)	(0.00767)	(0.00728)	(0.00386)	(0.00395)	(0.00379)	(0.00379)
Controls	Y	Y	Y	Y	Y	Y	Y
R-squared	0.672	0.675	0.675	0.693	0.690	0.694	0.692

Controls population (ln), ethnicity, qualifications, age and year. Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

# Self-employment is stressful in high unemployment areas



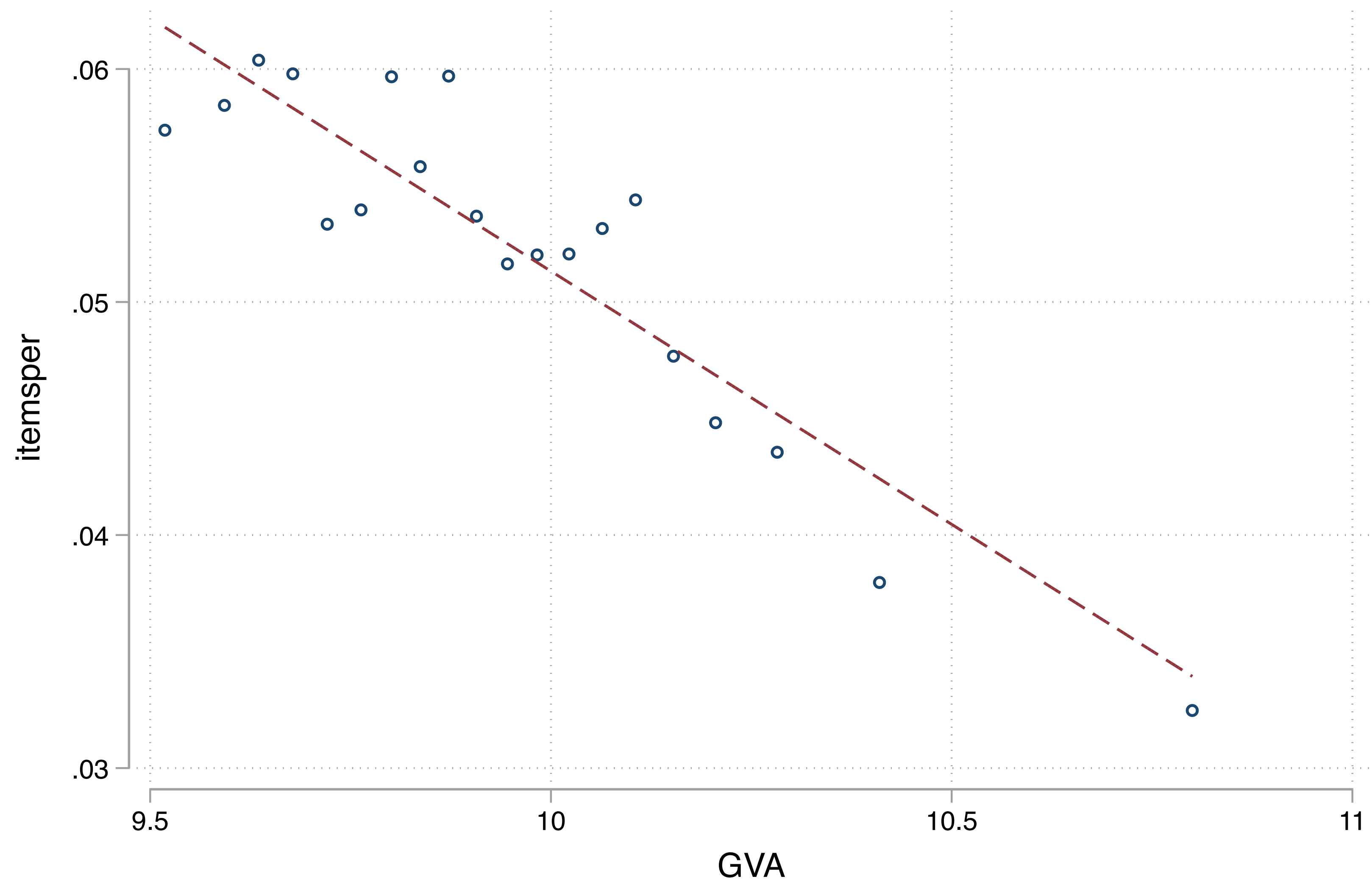
# Conclusions

- Qualitative work suggests an **increase in anxiety** - in part caused by a fragmenting labour market, low labour market demand, and welfare reform
- Early findings suggest that this is not a simple case of economic decline, but *partly* caused by **insecure self-employment in areas with high unemployment** (self-employment as a difficult 'route out')
- We also show government welfare reform has a significant impact over this period (Barr et al., 2015)
- But we cannot say yet if this our results are genuine anxiety, or some sort of response from doctors (we do not think it is commissioning guidelines)

# To-do list

- Test against Annual Population Survey anxiety data
- Updating with newer data
- Disaggregating antidepressants into severity





# Anti-depressant prescriptions in Blackpool & Cambridge

