Bandiera et al 2019 - Summary

- Field experiment to study allocation of authority between procurement agents and their auditors in Punjab, Pakistan.
- Finds a reduction in prices of about 9% by giving auditors more autonomy (discretionary spending done before auditing rather than after auditing). Smaller (2%) non-significant impact for incentives (performance pay) and similar effect to autonomy when applying both treatments.
- My comments summary: only minor comments because I thought it was a very good and interesting paper. Will suggest some additional robustness checks and things to address in theory.

Results

TABLE 3: TREATMENT EFFECTS ON PRICES PAID AND GOOD VARIETY

	Variety		Unit Price			
	(1)	(2)	(3)	(4)	(5)	(6)
Autonomy	0.016	0.010	-0.085	-0.086	-0.080	-0.082
	(0.030)	(0.023)	(0.038)	(0.032)	(0.031)	(0.034)
	[0.646]	[0.705]	[0.046]	[0.018]	[0.023]	[0.030]
Incentives	0.006	0.025	-0.016	-0.026	-0.022	-0.020
	(0.030)	(0.023)	(0.038)	(0.030)	(0.033)	(0.034)
	[0.846]	[0.325]	[0.723]	[0.476]	[0.571]	[0.625]
Both	0.037	0.059	-0.070	-0.083	-0.072	-0.086
	(0.030)	(0.023)	(0.041)	(0.032)	(0.033)	(0.039)
	[0.265]	[0.021]	[0.130]	[0.025]	[0.053]	[0.043]
Item Variety Control	Scalar	Coarse	None	Attribs	Scalar	Coarse
p(All = 0)	0.660	0.080	0.168	0.054	0.093	0.087
p(Autonomy = Incentives)	0.749	0.537	0.146	0.077	0.119	0.119
p(Autonomy = Both)	0.461	0.031	0.741	0.927	0.807	0.932
p(Incentives = Both)	0.302	0.144	0.262	0.133	0.227	0.136
Observations	11,771	11,771	11,771	11,771	11,771	11,771

Small picture comment: Proof errors/typos

2 minor errors on the proofs that do not disprove the propositions:

- c is missing from the proof of proposition 1
  - in the numerator of $\frac{\frac{\delta p}{\delta a}}{p}$:

$$\frac{\delta}{\delta a}\left(c+\frac{\gamma}{\mu(1-a)+b}+(1-a)\omega\right)$$

  - in the numerator of $\frac{\frac{\delta p}{\delta b}}{p}$:

$$\frac{\delta}{\delta b}\left(c+\frac{\gamma}{\mu(1-a)+b}+(1-a)\omega\right)$$

- The $\frac{\delta p}{\delta b}db$ term in the proof of proposition 2 is missing a square term

$$-\frac{\gamma}{(\mu(1-a)+b)^2}db$$

Small picture comment: Additional analysis of product attributes

The paper describes in 5.1 three measures of variety in the goods being purchased, but only shows results on the latter 2 *scalar* and *coarse*. What else could you do with the raw attributes?

- Whereas using scalar and coarse proves that treatments don't have an effect on the amount, variety, or composition of goods purchased, they don't prove that the attributes don't change because of your treatment.
- If attributes do change as a result of treatment, you could determine a potential mechanism through which markup might operate (e.g. if there's an attribute column for vendor, you might find potential vendors are more likely to bribe POs.)
- If attributes don't change as a result of treatment, you have additional robustness of your treatment to changes in attributes
- How might you test this? Potentially run PCA on X to get the principal components of X and run regressions on the top

Big picture comment: a dynamic game explanation for autonomy's large effects?

What if the law actually changed?

- Treat as a dynamic game where the PO is following the *active* waste interpretation.
  - In year 2: if I were a risk-averse PO were in the autonomy treatment group, knowing that it is an experiment, a potential strategy to maximize x in the long run might be to initially show cost savings from the additional autonomy SO THAT the government permanently gives more autonomy in the future.
  - At the beginning of year 3: because of 9% cost savings due to autonomy (that the POs do), POs might expect the government institutes autonomy policy for the next *n* years.
  - In years 3-n: Because of the new law, and with more experience (either because of actual years under the regime or because of experimentation) under the autonomy regime, the PO might be better able to capture more of the markup x over the long run than they would do in year 2.
- Perhaps they are still using POPS and you could get data assuming the treatment continued?

Other small comments

- Alignment is defined differently in different places in the paper
  - approves transactions smoothly (pg 4)
  - AG June share
  - Surely the most 'natural' measure of alignment is the proportion of times the AG asks for more paperwork from the PO, not the June share?
    - I'm sure data on this exists