

Leniency, tigers and flies

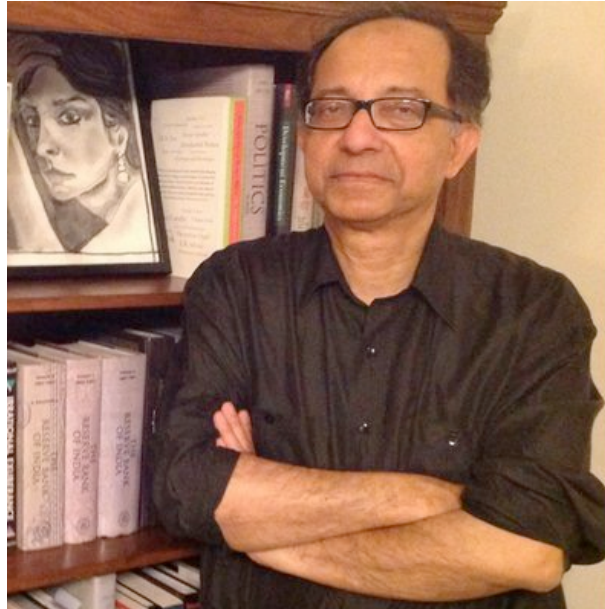
EVIDENCE FROM CHINESE ANTI-CORRUPTION

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The Basu proposal



*Why, for a Class of Bribes, the Act
of **Giving a Bribe** Should Be
Treated as **Legal***

Kaushik Basu, 2011



Leniency can break criminal partnership

Leniency: exemption from (or reduction of) sanctions conditional on reporting other criminals

- Basu proposal = non-conditional one-sided leniency
- Potentially powerful tool: may deter collusion (and corruption) at low cost (Spagnolo 2004; Apesteguia et al. 2007, Bigoni et al, 2012, 2015 among others)
- Main instrument to fight cartels around the world
- Huge literature in IO: implementation details crucial, it backfires if designed or implemented poorly

Leniency against corruption

- Buccirosi and Spagnolo (2006): it enforces otherwise unfeasible corruption if poorly designed
- Dreze (2011), Dufwenberg and Spagnolo (2015), Basu, Basu and Cordella (2016): not viable
- Abbink et al (2014): mixed experimental evidence
- No empirical evidence so far
- **Li (FT 2012): in China since 1997**, did not work because of repeated play, retaliation threats



Literature on corruption, tax evasion, China

- Participatory anti-corruption policies and the use of third-party information as a monitoring tool against corruption (Reinikka and Svensson, 2005)
- Incentives to report tax evasion (Kopczuk and Slemrod, 2006; Pomeranz, 2015; Kleven, Kreiner and Saez, 2016)
- In particular Naritomi (2018), on providing incentives for consumers to report VAT fraud instead of colluding with firms
- Corruption in China: ex. Fisman and Wang (2015a, 2015b)...

Plan of the paper

- Evolution of Chinese anti-corruption laws and details of 1997 reform
- Macro-evidence: extend Miller's test to corruption, leads to two potential interpretations
- Theoretical model mimicing the reform
- Contrast between theory and macro-evidence leads to question assumptions and provides insights in reform motivations
- Micro-evidence supports such insights

Contributions

- First empirical study of leniency and corruption
 - Extend Miller's test to corruption
 - Analysis of random sample of cases
- Identify theoretically the problems of counterproductive excessive leniency, novel result on "patience"
- Setting in China
 - Evolution of Chinese anti-corruption laws
 - Very imperfect but interesting own data
- Shed light on risks in new, similar reforms: China 2015, US 2016, Brazil&Mexico 2014

LEGAL ANALYSIS



Chinese anti-corruption legislation

- The **1997 reform** of CL gave strongest legal status to asymmetric punishment for harassment bribes (Basu proposal), as Li suggested
- But **also**:
 - *leniency for bribe-givers*, if they confess **before an investigation is opened** (helping detection)
 - *leniency for bribe-takers*, **even if** they collaborate **only after an investigation is open** (for capped value of bribes)
- And it slightly **decreased sanctions** for bribe-takers

Very different from Spagnolo (2004) and Basu (2011), where **only one party** should have leniency, and **sanctions for the others should be maximized**

EXPLORATIVE MACRO-EVIDENCE



Time series: inference problem & Miller's test

Problem: convictions observed, overall crime population not

EX: fall in convictions after a policy change consistent with:

- increased detection, increased deterrence, fewer cases, fewer convictions
- reduced detection, fewer convictions, reduced deterrence, more cases in the population

WE BORROW MILLER'S TEST FROM CARTEL LITERATURE

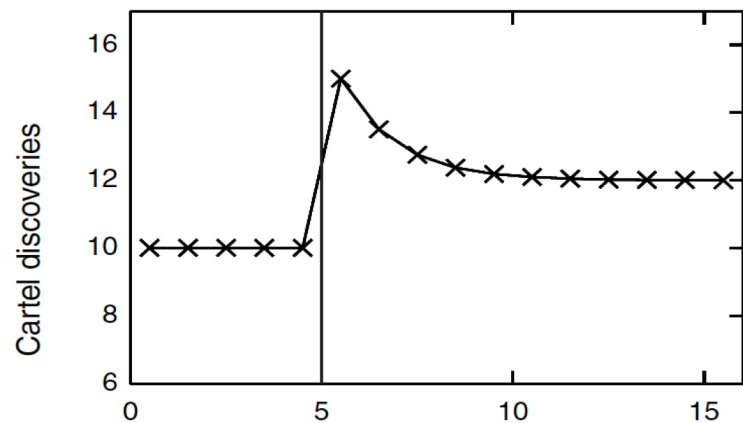
Miller (AER2009): model on stochastic cartel formation and deaths

- RES. 1: *Increase in convictions right after reform* sufficient to establish an *increase in detection rate*.
- RES. 2: If 1, then *subsequent decrease in convictions below initial levels* sufficient to establish *increased deterrence*.

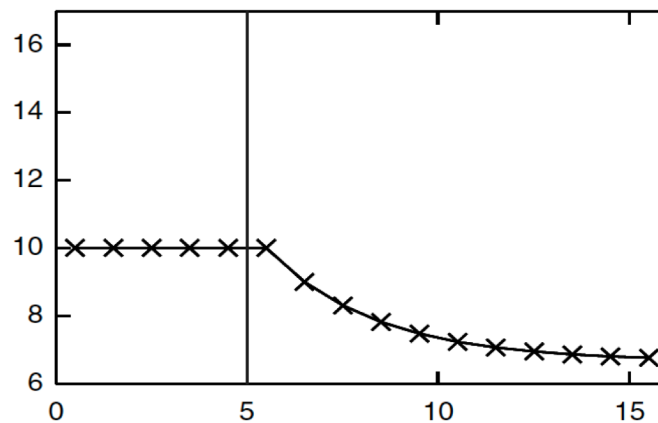


Miller's model

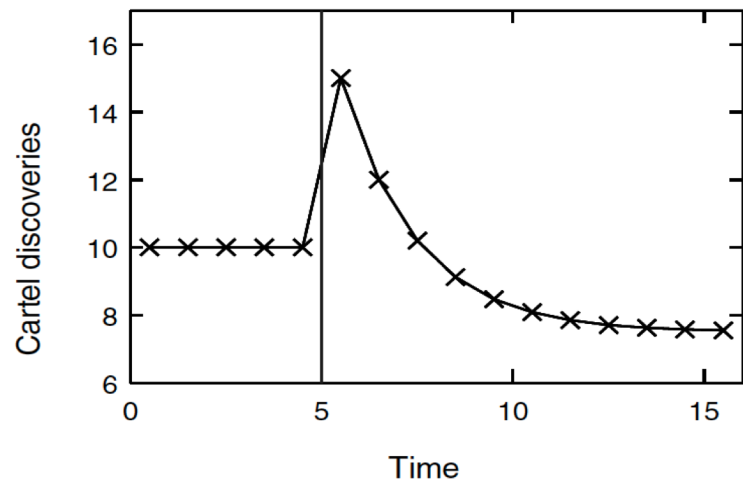
Panel A: Enhanced detection



Panel B: Enhanced deterrence



Panel C: Enhanced detection and deterrence



Panel D: Weaker detection and deterrence

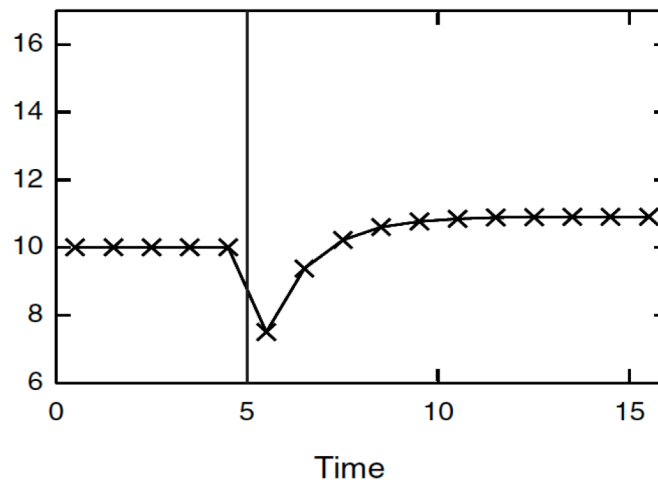
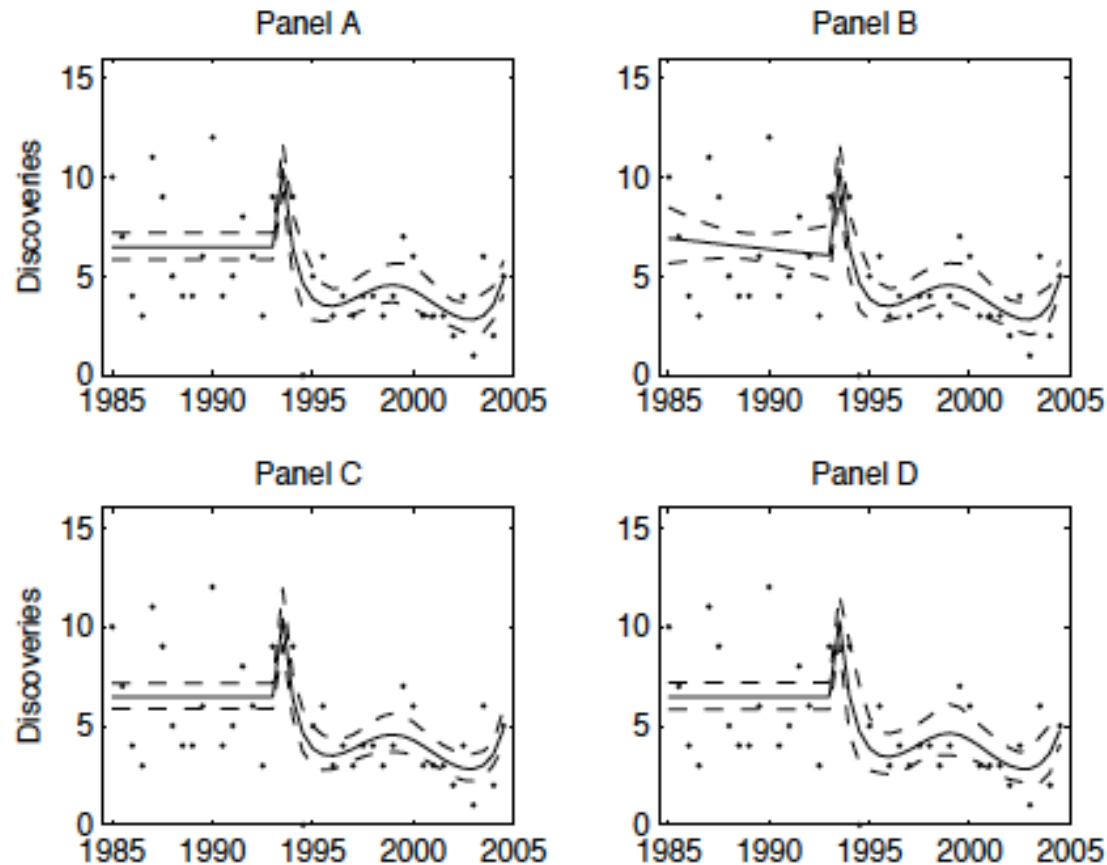


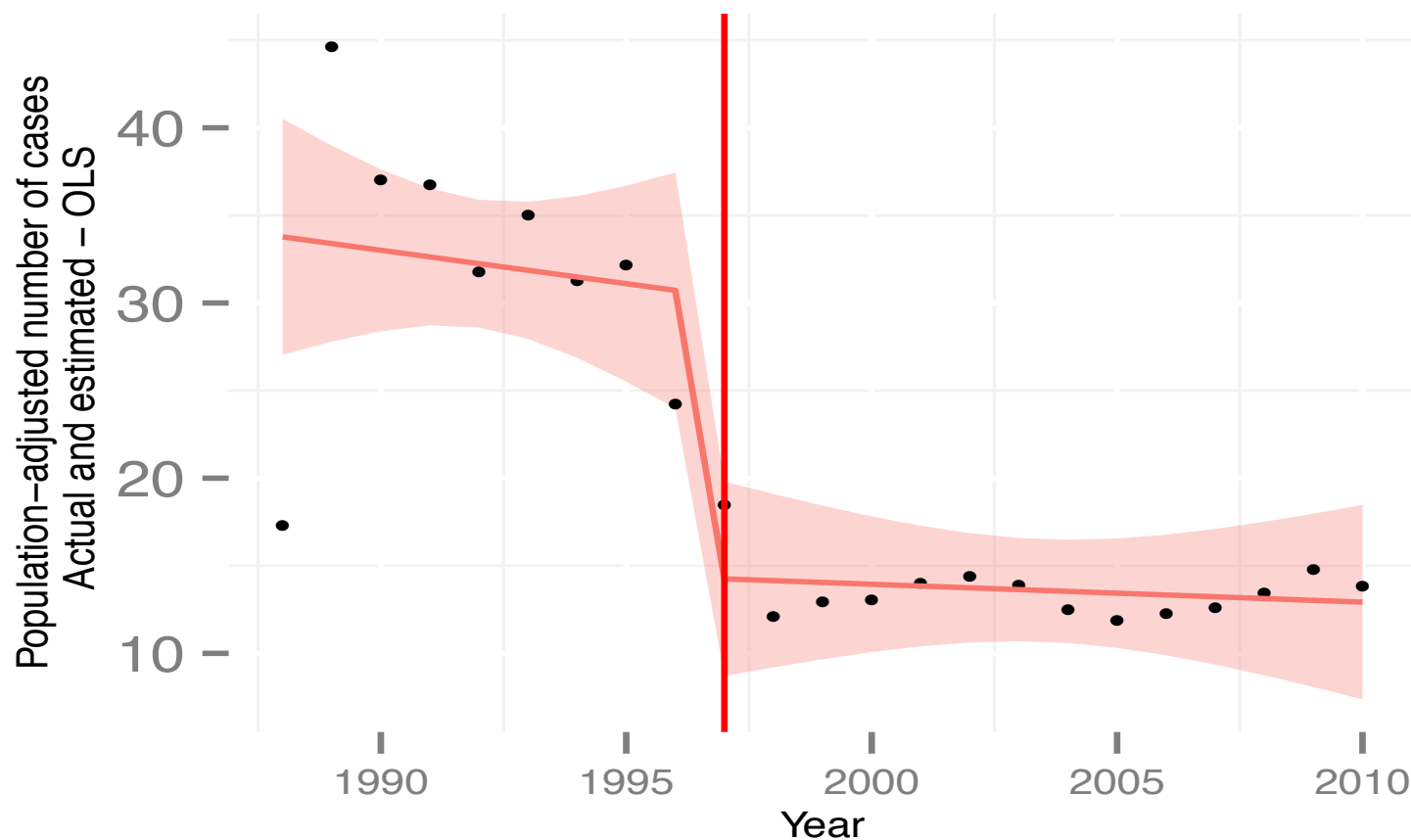
FIGURE 1. THE EXPECTED NUMBER OF CARTEL DISCOVERIES BY PERIOD

Miller's estimates for Leniency in US Antitrust (1993)



Application to Chinese corruption convictions

DATA: Number of prosecutions from the Procuratorates' Yearly Reports for each of the Chinese provinces since 1986



Interpretation and caveats

Immediate fall instead of spike suggests *fall in detection rate*, but

- May be due to differences between corruption and cartels: if corrupt deals instantaneous, adjustment potentially immediate, could be immediate *deterrence effect*
- On the other hand, reform retroactive, so spike could be expected even if instantaneous adjustment
- Moreover, limitations in the data:
 - We don't know which cases are harassment (extortionary) bribes and which collusive bribes (to gain illegitimate benefit), and what to expect in the two cases
 - Potential denomination effects if briber-givers' and bribe-takers' cases recorded separately

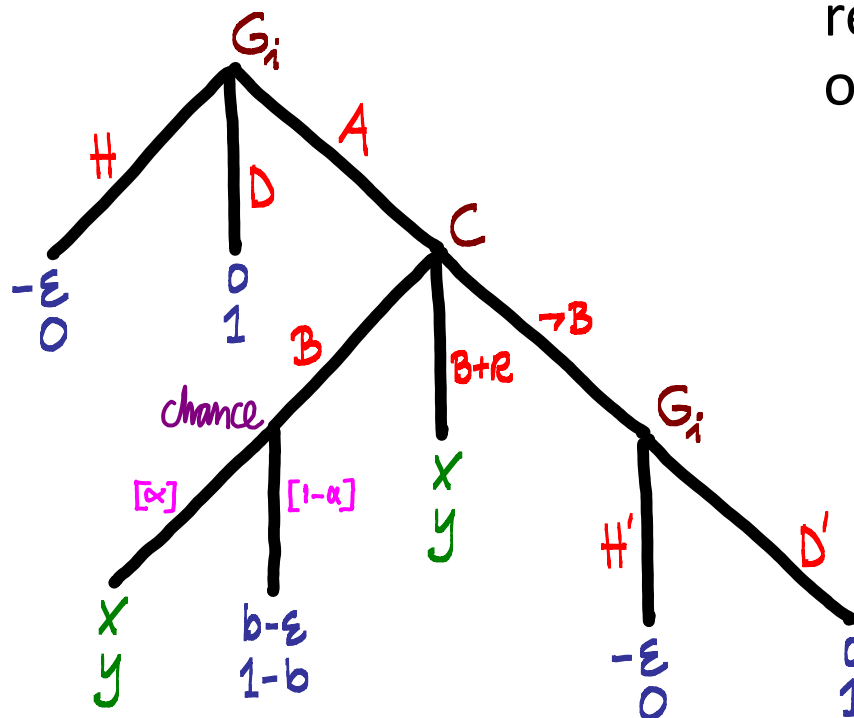


SOME THEORY MAY CLARIFY



Bribing Game HB

Fig. 1



	STD	BP	BP+L
$x =$	$-P$	$-P$	$-f$
$y =$	$-P$	1	1

- Repeated setting
- (x, y) affected by law
- Whether G_i is replaced also depends on law

Proposition 1: *Under Standard Law Enforcement (STD) for small enough ε , a SPE with perpetual on-path bribery, in which $G1$ is never replaced, exists if δ is neither too large nor too small.*

- Repetition make G 's threat to harass if no bribe credible
- If too impatient, not credible
- If too patient, deterred by threat of infinite punishment (life prison or death sentence, destroyed reputation). Novel effect for theory.

Proposition 2: *Under BP, a SPE with perpetual on-path bribery does not exist (i.e. BP works)*

- With BP bribe giver C reports every time, keeps service and bribe, and sends G to life prison or death penalty $-P$
- Relies on memoryless G_i , far-fetched? Role for chance or selection

Proposition 3: *Under BP+L and ε small, SPE with perpetual on-path bribery is back. $\bar{\delta} = 1$ while $\underline{\delta}$ depends on α*

More patient players (than in STD) engage in corruption because:

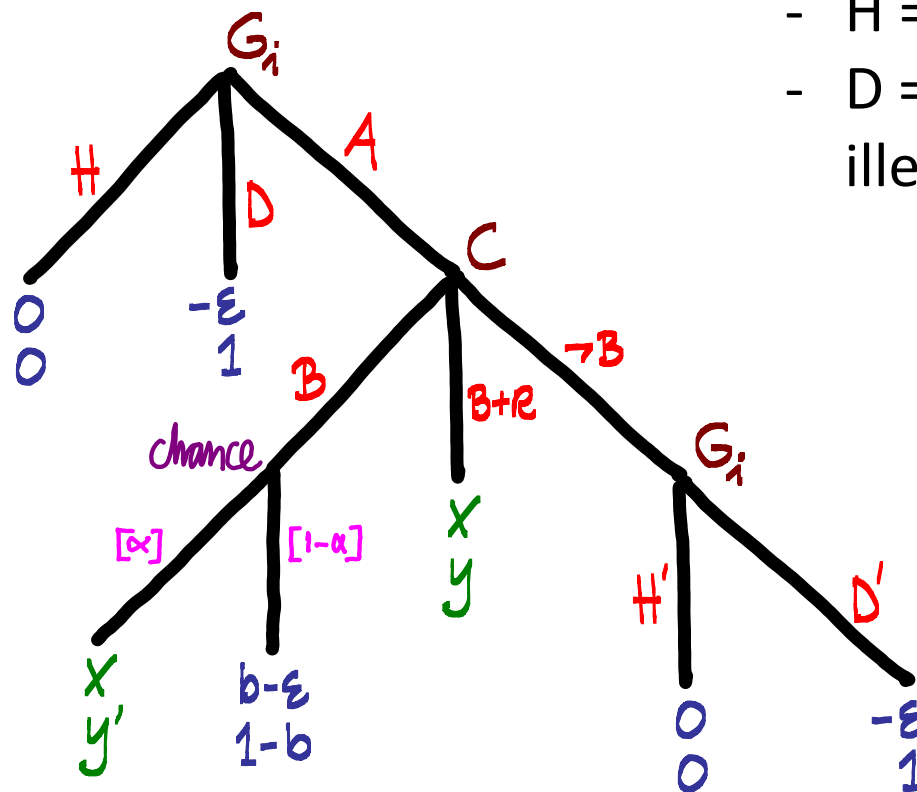
- no perpetual punishments for G_i
- no incentive to report for C_i given leniency to G_i and retaliation possibility

The case of low- δ players is ambiguous, however unless α is “small” there should be more corruption.

Collusive corruption

Fig. 2

- H = "honest"
- D = "deliver" illegal service



	<u>STD</u>	<u>L-for-C</u>	<u>Lx2</u>
$x =$	$-P/(1-\delta)$	$-P/(1-\delta)$	$-f$
$y =$	$-P/(1-\delta)$	$\pi=0$	$\pi=0$
$y' =$	$-P/(1-\delta)$	$-P/(1-\delta)$	$-P/(1-\delta)$

Collusive bribes – results & predictions

P4: In standard STD for small enough ε , collusion is sustainable for impatient players. For given P , more players will engage in this form of corruption than HB.

Intuition: There is no more cost of doing the right thing.

P5: Under L-for-C for small enough ε , collusion is sustainable for impatient players (same threshold as P4).

Intuition: Same scope for collusion since C loses the illegal favour if she reports.

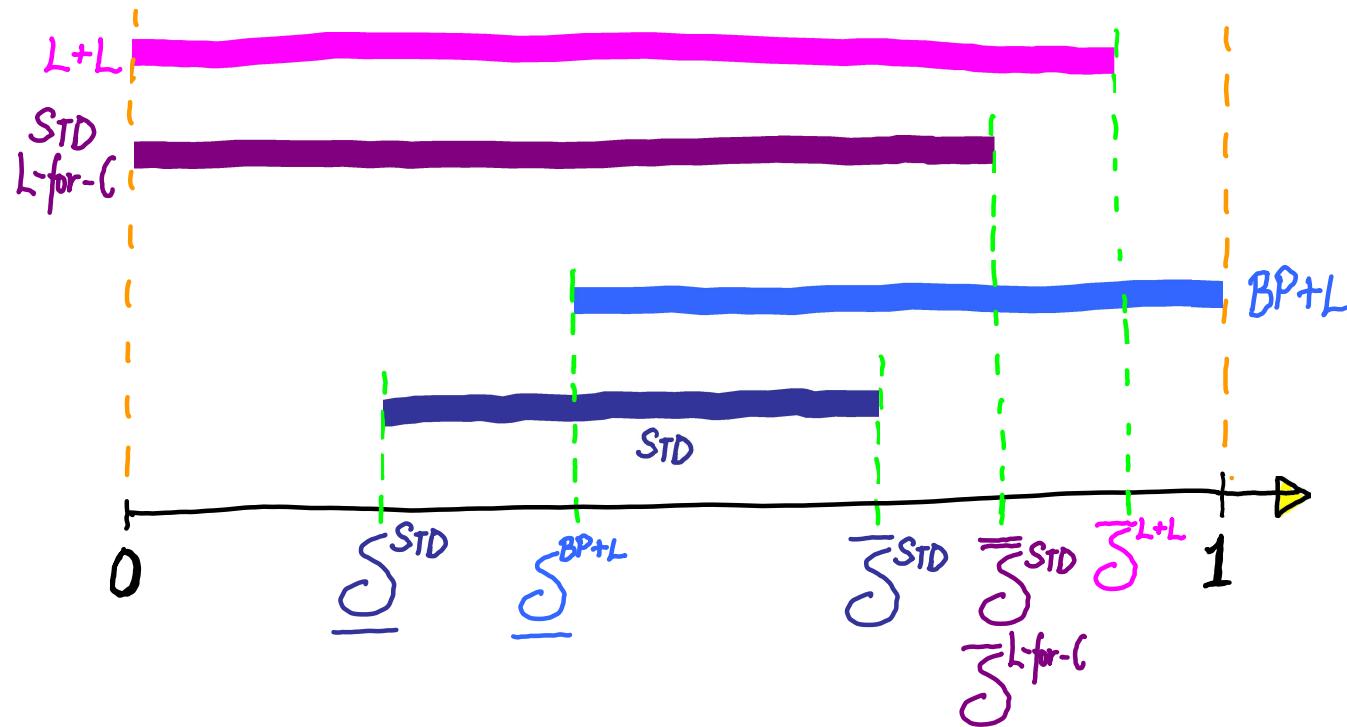
(Could be fixed, paying compensation/reward to reporting briber)

P6: With L+L for small enough ε , more patient players will engage in collusion as compared to STD and L-for-C.

Intuition: Only one of the two players (viz. C) is perpetually punished.

Scope for corruption

Fig. 3



Summing up

- Comparison between P1 and P3, and P4 and P6 respectively, suggest that corruption becomes easier with the reform both for harassment and collusive bribes.
- Since no incentive to report, and all detection comes from (fixed) α , we should observe more cases.
- This is incompatible with the fall observed in the macro evidence
- Changes we did not model:
 - Sanctions fall (not relevant)
 - Enforcement intensity (α) changes

Macro-evidence compatible with fall in (α)

- Why would the government change the law in order to deter corruption and at the same time reduce enforcement effort?
- Maybe the original intention of the reform was rather to increase tolerance of corruption (also consistent with lower sanctions)
 - a) Generalized tolerance to “grease the wheels of the economy”
 - b) Partial tolerance (of “flies”) to focus the effort on “tigers”

MICRO-EVIDENCE



Case study analysis

- Stratified random sample of 171 prosecution cases, 255 defendants, from two different archives
- Not useful to analyze prevalence, but details of behavior
- Shed light on potential problems with Miller's test and on implications of the model
- Pre-analysis plan in Perrotta and Spagnolo (2015)

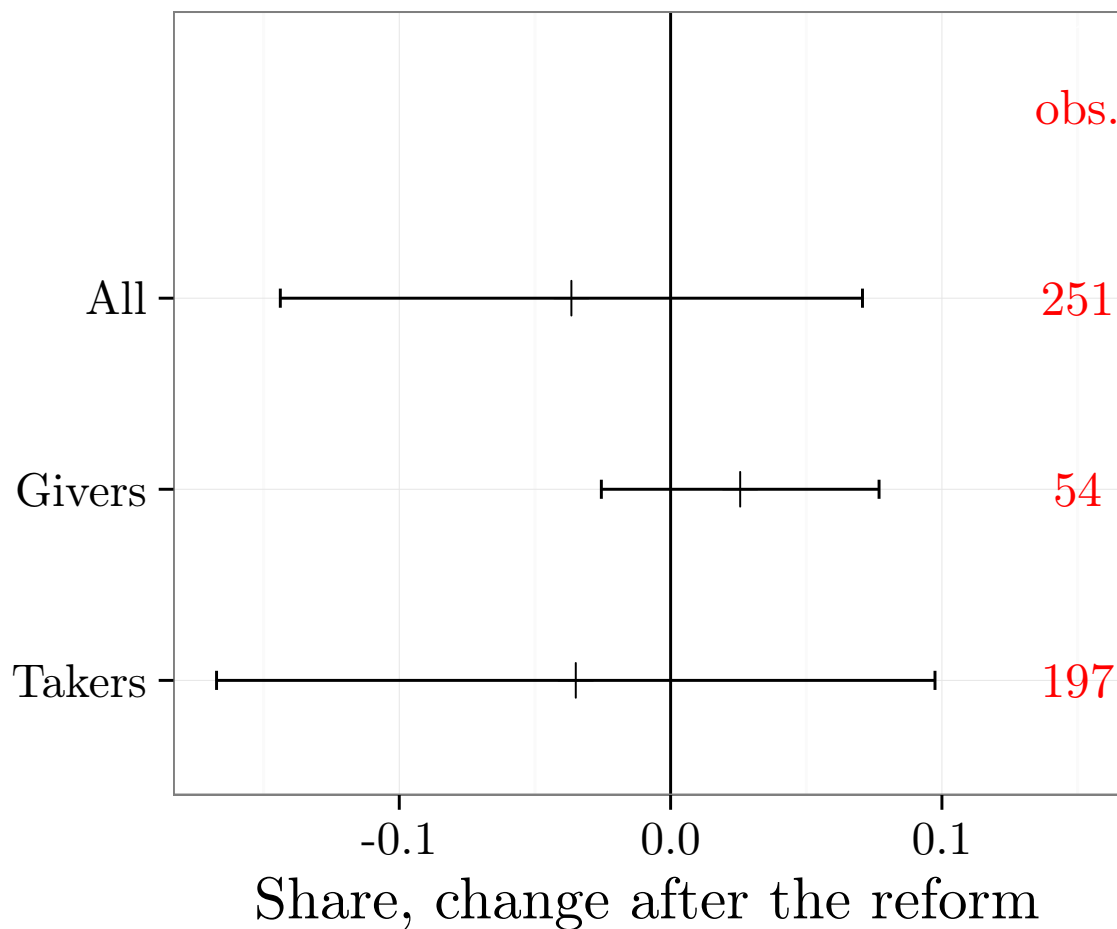
RULING OUT ALTERNATIVE EXPLANATIONS FOR THE PATTERN IN MACRO-DATA



No fewer bribe-giver nor harassment bribe cases

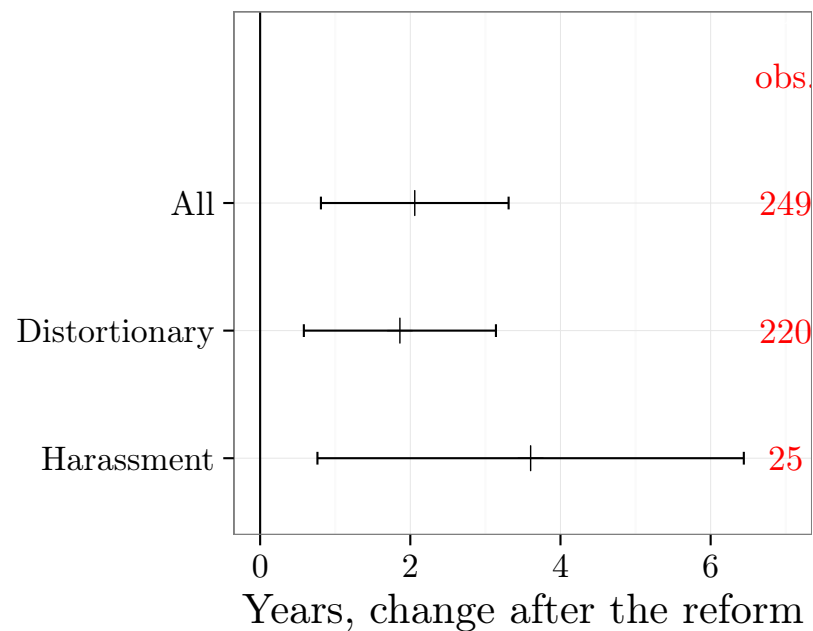
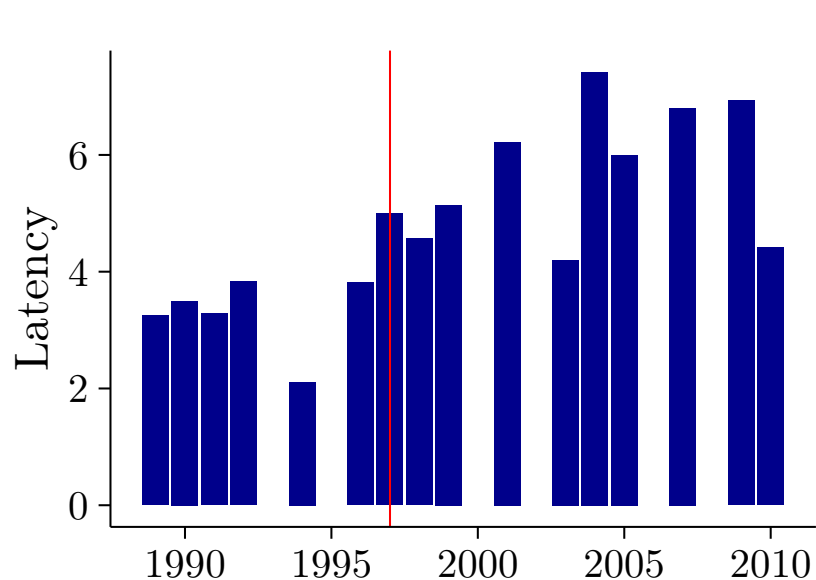
	Before		After		t-test
	mean	(s.d.)	mean	(s.d.)	p-value
Case against bribe-taker	0.857	0.352	0.733	0.444	0.018
Harassment bribe	0.125	0.332	0.088	0.285	0.342
Leniency	0.371	0.486	0.639	0.482	0.000
Prison sanction	25.548	39.519	15.780	30.659	0.025
Death penalty	0.181	0.387	0.087	0.283	0.026
Size of bribe (yuan)	486433	1570850	1306916	4936790	0.098
Rank	10.486	3.282	9.385	3.339	0.001
Total Cases	105	105	150	150	255

Share of harassment bribes unchanged



No major denomination problem (nor deterrence)

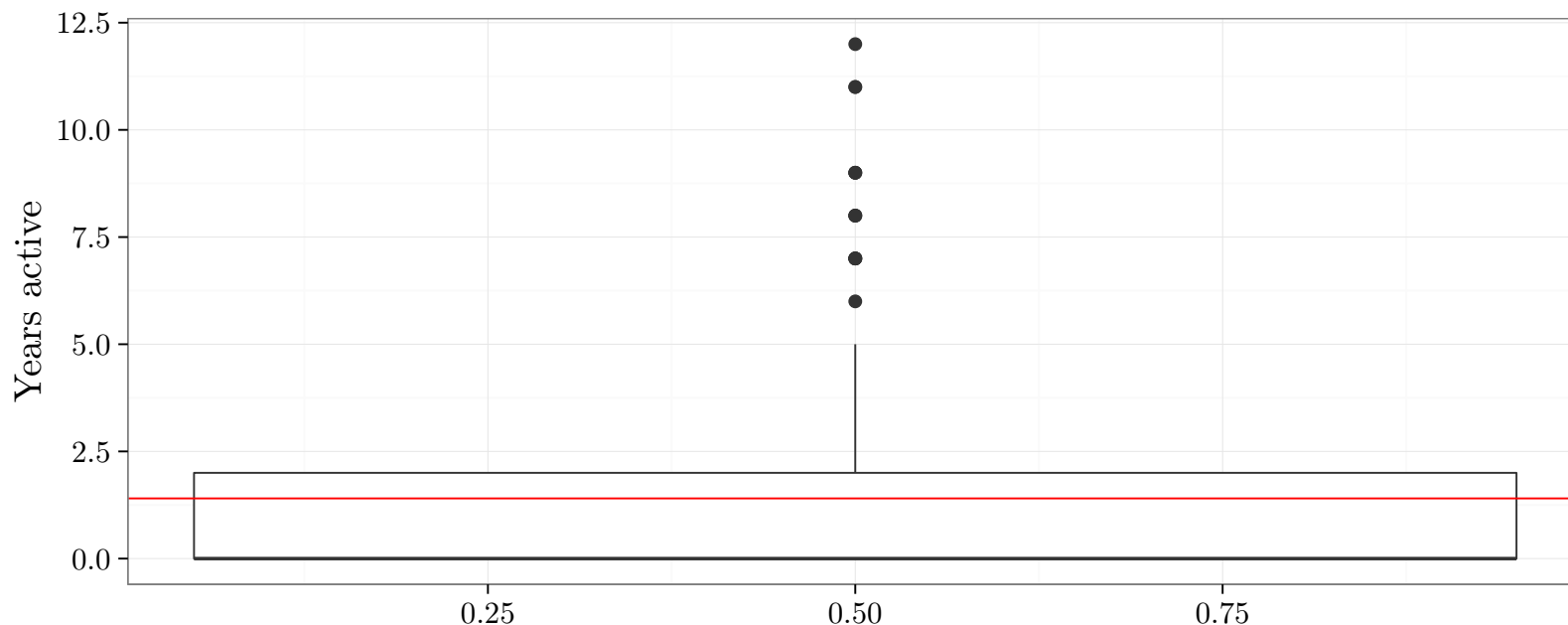
Time to discovery (latency) increases



Spike should have been observed if success

Corrupt relations not instantaneous

Time in activity of bribe takers substantial

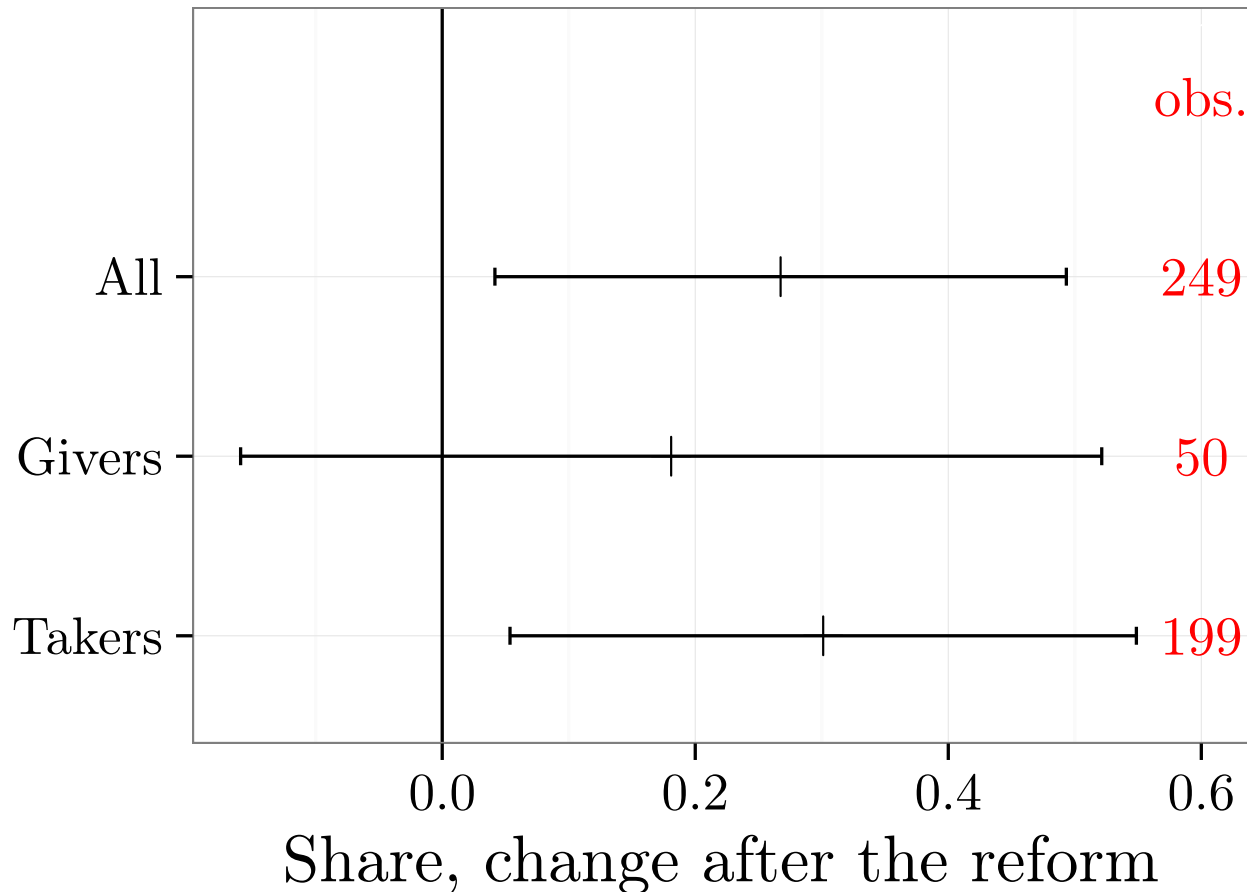


Spike should have been observed if success

TESTING IMPLICATIONS FROM THEORY



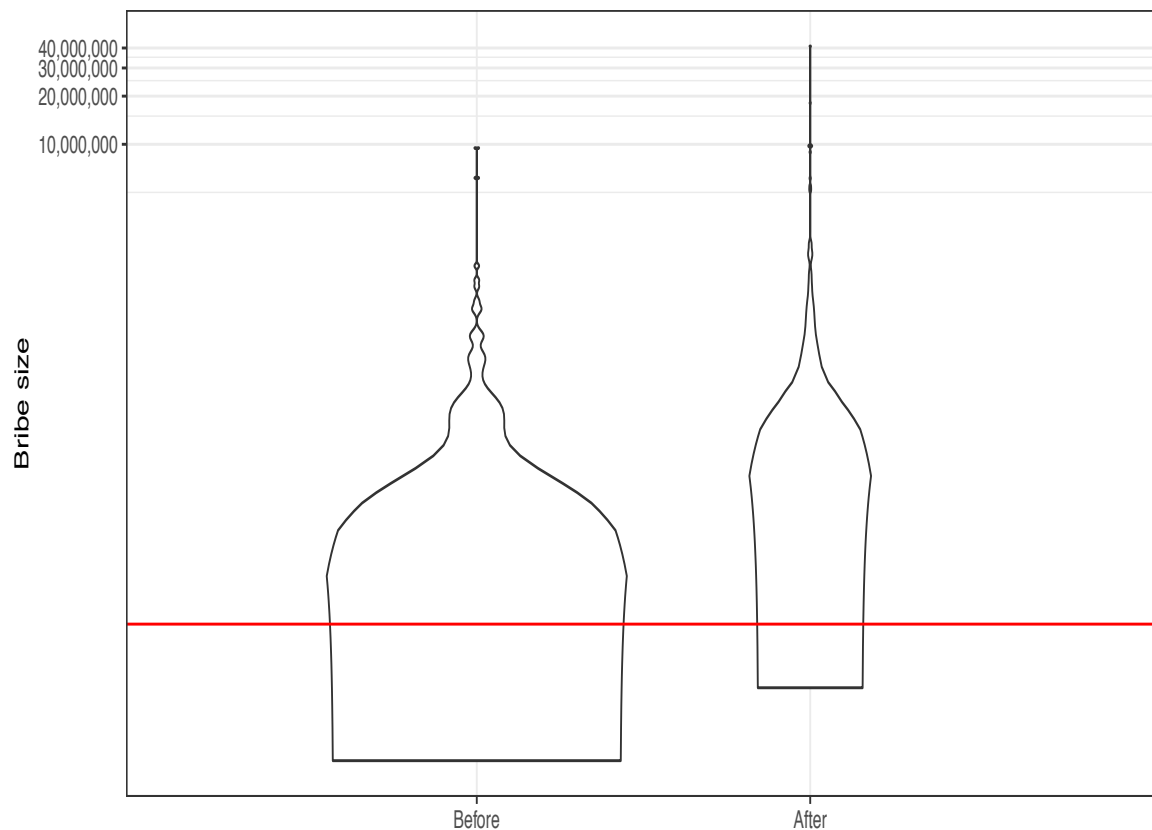
Leniency increases for bribe-takers



Consistent with our understanding and modelling of the reform, in particular the increased opportunity for retaliation

Motivation of reform: a) VS b)

Size of bribe increased \Rightarrow b) refocusing from "flies" to "tigers"



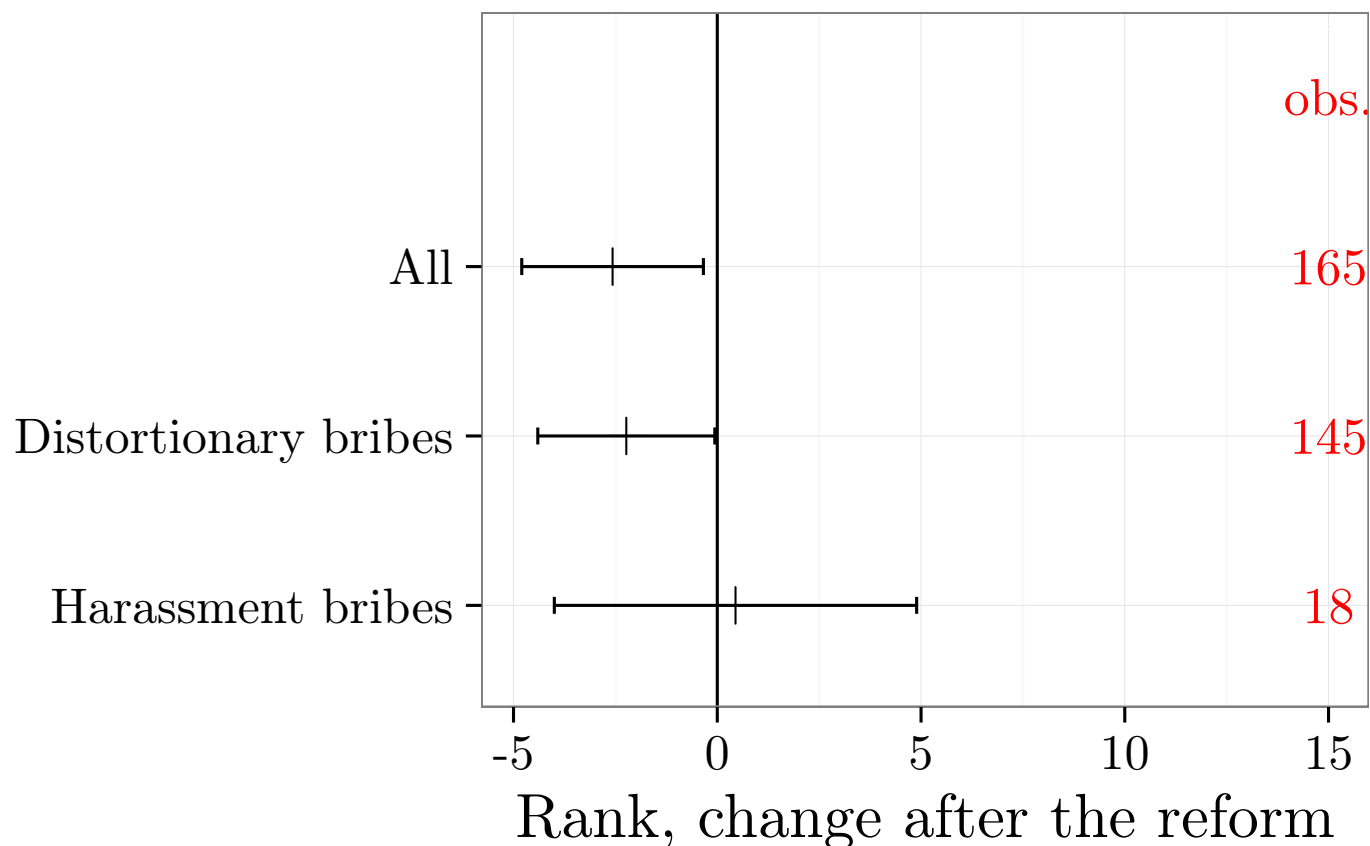
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Motivation of reform: a) VS b)

	Prison years		Prison years per 1000 yuan		Death sentence		Death or life sentence	
After	0.0358 (0.947)	0.297 (1.011)	-0.120*** (0.0324)	-0.105*** (0.0307)	-0.0937 (0.0576)	-0.0239 (0.0540)	-0.105* (0.0632)	-0.0454 (0.0630)
Harassment bribe		1.233 (1.828)		0.176 (0.204)		0.418*** (0.122)		0.374*** (0.125)
Harassment*After		-3.644* (1.964)		-0.186 (0.204)		-0.515*** (0.126)		-0.493*** (0.130)
Constant	4.691*** (0.872)	4.600*** (0.929)	0.170*** (0.0313)	0.156*** (0.0295)	0.181*** (0.0500)	0.121*** (0.0435)	0.219*** (0.0544)	0.165*** (0.0521)
R ²	0.000	0.021	0.173	0.215	0.019	0.093	0.020	0.074
Observations	209	207	203	201	254	250	254	250

- Sanctions for collusive bribes increase. Assuming that “tigers” are not taking harassment bribes nor bribes below 10,000
⇒ b) refocusing from “flies” to “tigers”
- Bribes increased more than sanctions. ⇒ b) refocusing from “flies” to “tigers”

Motivation of reform: a) VS b)



Higher-rank bureaucrats involved \Rightarrow b) refocusing from "flies" to "tigers"

Wrapping up

- MILLER TEST: immediate fall in cases after 1997 suggests reduced overall detection
- MODEL OF REFORM: due to “excessive leniency”, allowing retaliation, we should observe increase in number of cases, unless detection effort went down (at least in some part of the distribution)
- CASE FILES ANALYSIS:
 - Confirms our interpretation and model of the reform
 - Lack of spike not due to corruption occasional/short lived
 - Consistent with reduction in effort against “flies” and increase against “tigers”
- TAKE AWAY: Reform probably not aimed at deterring, but at refocusing effort on larger scale corruption!

Conclusions I

- Li misled the debate on BP. Theory and evidence point to lack of deterrence of 1997 Chinese reform (BP+L, L+L), not of BP or Leniency, because reform aimed at decriminalize and save resources.
- Leniency for deterrence maximizes asymmetry for illegal partners (e.g. only the first get leniency)
- Chinese 1997 reform (BP+L) creates no asymmetry, and allows reported bureaucrats to stay and retaliate
- "Excessive leniency," also observed in EU Cartel enforcement, harms deterrence: asymmetry crucial
- Potentially powerful tools must be competently designed: easily misapplied, becoming counterproductive

2015 Corruption Crackdown in China

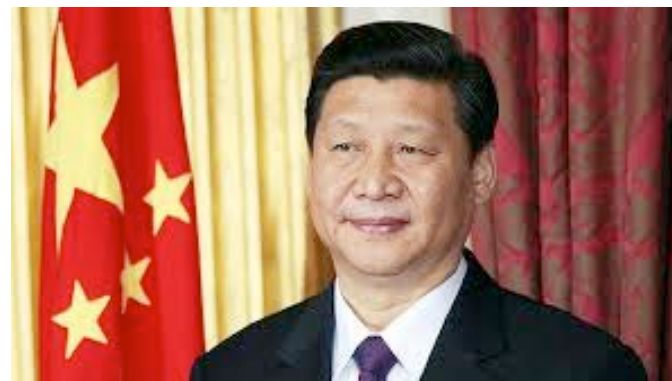
Debate:

- Biased against Xi Jinping's potential rivals?
- Is it the reason behind current economic slowdown?

Less debated, legal change
Amendment IX of Nov. 1, 2015:

- conditions for leniency stricter for givers, laxer for takers
- added fines for givers
- bigger punishment but higher (and vague) thresholds for takers

Is it aimed at deterring corruption?



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