The Political Economy Consequences of China's Export Slowdown

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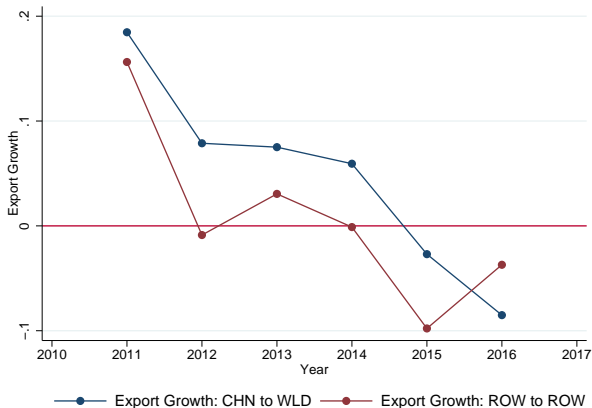HKS & NBER   NUS   NUS

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Background: China's Export Slowdown

► China's export growth has slowed in the past five years, in tandem with a broader slowdown in global trade

► A far cry from the average annual export growth rate of 18% from 1992-2008 (Hanson 2012)

Export Growth: CHN to WLD ⟶ Export Growth: ROW to ROW

Motivation

Given China's export-led development strategy (to this point), this has raised concerns over:

- ▶ the sustainability of economic growth;

- ▶ the impact on labor markets, i.e., employment and wages;

  (Feenstra and Hong (2010): For 2000 to 2005, export growth can explain employment growth of 7.5 million workers per year.)

"当前外贸形势可用"严峻"来形容。外部看，世贸组织已警告说，全球贸易处于30年来最糟糕的一年，程度超过国际金融危机时。但对于中国经济而言，作为比较优势所在，"三驾马车"中出口这一驾又必须稳住。这不仅事关GDP，也事关大量的就业。"

(Source: http://www.gov.cn/xinwen/2016-04/21/content_5066423.htm)

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> The current foreign trade situation can be described as "harsh". Externally, the WTO has warned that global trade is at its worst in 30 years, even worse than during the global financial crisis. However, for the Chinese economy, our export performance needs to be stabilized. This is not only of concern to GDP, but also concerns a large volume of employment.
>
> — Li Keqiang, 21 Apr 2016, State Council executive meeting

Motivation

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▶ the sustainability of economic growth;

▶ the impact on labor markets, i.e., employment and wages;

  (Feenstra and Hong (2010): For 2000 to 2005, export growth can explain employment growth of 7.5 million workers per year.)

▶ labor-related protests and strikes, with consequences for political economy.

Motivation (cont.)

▶ Accounts of labor-related events not difficult to uncover, and appear to be on the rise

Motivation (cont.)

▶ Accounts of labor-related events not difficult to uncover, and appear to be on the rise

▶ An example:

东莞厚宏制衣厂突然倒闭 数百工人游行讨薪

2015-05-01

Motivation (cont.)

▶ Accounts of labor-related events not difficult to uncover, and appear to be on the rise

"This is probably the thing that keeps Xi Jinping up at night," said Eli Friedman, a scholar at Cornell University who studies Chinese labor issues. "Governments are not swimming in money the way they used to be, and there's less room to compromise."

— NYT, 14 Mar 2016

▶ Connects with a broader literature on the relationship between economic circumstances and political instability.

E.g.: negative weather shocks, business cycle downturns, commodity price declines, etc.

This paper

Examines the implications of this recent export slowdown for a broad range of political outcomes.

Data: In the context of China, inherently challenging to obtain systematic data that speaks to strikes or other potential threats to political stability.

1. Labor-related "events": Strikes and other protests

   (Sources: China Labour Bulletin; GDELT)

2. Government response:

   ▶ Emphasis on maintaining stability (维稳, "weiwen")

      (Source: Textual analysis of prefecture government annual work reports)

   ▶ Local fiscal expenditures on public security

      (Source: Hand-collected from statistical yearbooks)

3. Political turnover: party secretary, mayor

   (Source: Hand-collected from cvs)

This paper

Examines the implications of this recent export slowdown for a broad range of political outcomes.

Empirical strategy:

- ▶ Construct manufacturing export shock per worker at the prefecture level

- ▶ Identification similar to Autor, Dorn, Hanson (2013): Instrument the export shock with a Bartik-style IV, based on

    - ▶ initial product-level export shares
    - ▶ product-level trade shocks per worker experienced in the rest of the world

This paper

Examines the implications of this recent export slowdown for a broad range of political outcomes.

Key findings:

▶ A significant and robust effect from negative export shocks to increases in labor-related events per capita

(Strongest evidence from panel regressions)

▶ Find evidence that this:

  (i) Raises public security concerns, as reflected in annual work reports;

  (ii) Prompts a reallocation of prefecture government expenditures towards public security uses;

  (iii) Raises the likelihood of turnover of local political officeholders.

Related Literature

1. Effects of income shocks on political stability:

   ▶ Democratic change – Burke and Leigh (2010), Brückner and Ciccone (2011); Conflict – Miguel, Satyanath and Sergenti (2004), Dube and Vargas (2013), Burke, Hsiang and Miguel (2015); Voting behavior – Charles and Stephens Jr. (2013); Revolution – Campante and Chor (2012), Jia (2014); Political turnover – Burke (2012), Cole et al. (2012), Nunn et al. (2017)

2. Effects of trade on local economies:

   ▶ Labor market outcomes – McCaig (2011), Topalova (2010), Autor et al. (2013), Kovak (2013), Dix-Carneiro and Kovak (2017)

   ▶ Political economy outcomes – Feingenbaum and Hall (2015), Jensen et al. (2016), Colantone and Stanig (2016), Autor et al. (2017), Che et al. (2018), Dippel et al. (2015), Dippel et al. (2018)

3. In the China context:

   ▶ Exports and jobs – Feenstra and Hong (2010), Los et al. (2015)

   ▶ Protests and political controls – King, Pan and Roberts (2013, 2014), Qin, Strömberg and Wu (2017)

   ▶ Economic performance and political turnover – Li and Zhou (2005), Jia, Kudamatsu and Seim(2015)

Plan for this talk

1. Background Motivation and Introduction

2. Data Sources

3. Regression Specification

4. Empirical Findings: China's Export Slowdown and Political Outcomes
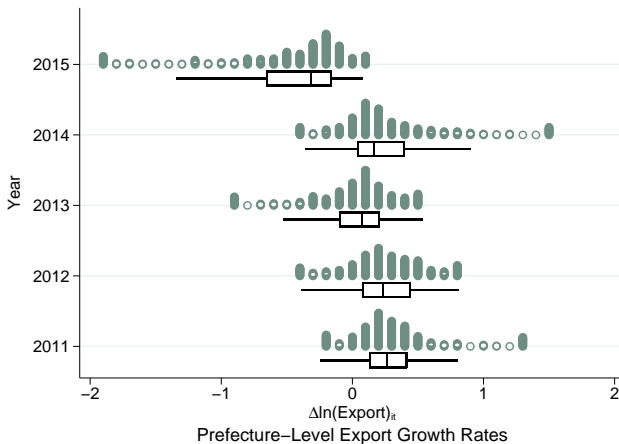
5. Concluding remarks

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Independent variable: Export shock
Dependent variable: Labor-related Events
Empirical Specification

Data and Key Variables

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Independent variable: Export shock
Dependent variable: Labor-related Events
Empirical Specification

Data Preliminaries

- ▶ Unit of observation: Chinese prefectures, less Tibet; 333 in all

- ▶ Annual data on exports from customs (2010-2015)

  Supplement with UN Comtrade product-level trade data for the rest of the world (available up to 2016).

- ▶ Further control variables sourced from:

  - ▶ Population census: 2000, 2010

  - ▶ City Statistical Yearbooks: Annual

    (E.g.: Urban population share; Gross regional product per capita; College enrolment; Mobile subscribers; Internet subscribers)

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Independent variable: Export shock
Dependent variable: Labor-related Events
Empirical Specification

Data Preliminaries: The Export Slowdown across Prefectures

- ▶ Slowdown sets in particularly in 2014-2015
- ▶ Extensive variation in export performance across prefectures

Prefecture–Level Export Growth Rates

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Independent variable: Export shock
Dependent variable: Labor-related Events
Empirical Specification

Export Shock Measure

Let X_{ikt} denote prefecture i's exports of product k in year t.

Baseline measure: For $t = 2013, 2014, \ldots$

$$\text{ExpShock}_{it} = \sum_k \frac{\Delta X_{ikt}}{L_{i,2010}}$$

- $\Delta X_{ikt} = X_{ikt} - X_{ik,t-1}$; and
- $L_{i,2010}$ is the prefecture workforce (population aged 15-64).

Interpretation: Per worker export shock in 1,000 USD.

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Independent variable: Export shock
Dependent variable: Labor-related Events
Empirical Specification

Export Shock Measure

Let X_{ikt} denote prefecture i's exports of product k in year t.

Instrumental variables: (based on ADH 2013)

$$\text{ExpShockROW}_{it} = \sum_k \frac{X_{ik,2010}}{\sum_i X_{ik,2010}} \frac{\Delta X_{kt}^{ROW}}{L_{i,2000}}$$
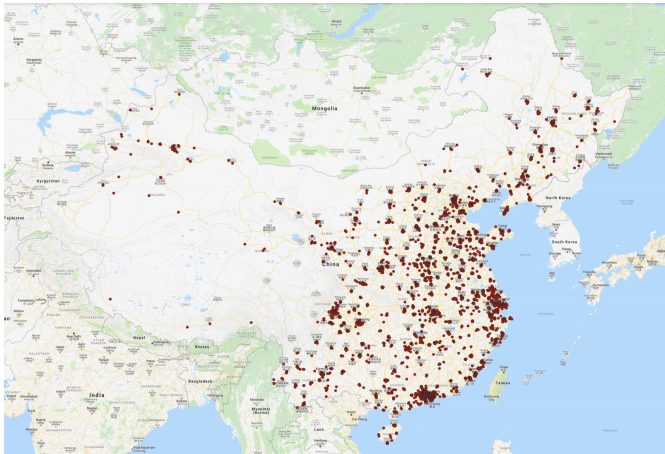
- X_{kt}^{ROW}: Total exports of product k from ROW to ROW (from UN Comtrade).

Interpretation: Per worker export shock from product k, apportioned to prefecture i based on i's initial share of product-k exports within China. ▸ Alt. Construction

Background and Introduction · Independent variable: Export shock
Data and Empirical Strategy · **Dependent variable: Labor-related Events**
Findings: Effects on. . . · Empirical Specification

China Labour Bulletin (CLB)

NGO based in HK advocating labor rights in mainland China

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Independent variable: Export shock
Dependent variable: Labor-related Events
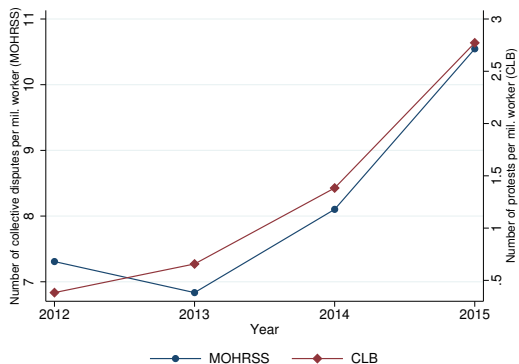Empirical Specification

China Labour Bulletin (CLB)

NGO based in HK advocating labor rights in mainland China

- Labor-related incidents (collective actions) from CLB Strike Map.

  http://www.clb.org.hk/content/introduction-china-labour-bulletin%E2%80%99s-strike-map

- Prior to 2017, updated daily by staff members using a variety of outlets, including: Sina Weibo, WeChat, Tianya, Baidu, Google.

- Information on:

  - Location (prefecture) and Date

  - Sector of workers (manufacturing; construction; mining; etc.)

  - Short description of cause and nature of the incident
    Most common cause ($> 2/3$): "wage arrears"

- Alternative measure from Global Database of Events, Language, and Tone (GDELT): Events classified as "Protest" that took place in China ▸ GDELT

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Independent variable: Export shock
Dependent variable: Labor-related Events
Empirical Specification
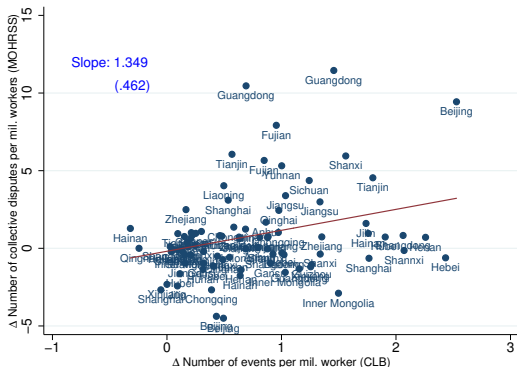
China Labour Bulletin (CLB)

Corroboration of data quality:

▶ Compare against province-level data on collective labor disputes from the Ministry of Human Resources and Social Security (MOHRSS)

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Independent variable: Export shock
Dependent variable: Labor-related Events
Empirical Specification

China Labour Bulletin (CLB)

Corroboration of data quality:

- ▶ Positive correlation between $\Delta(Event/L)_{pt}^{CLB}$ and $\Delta(Event/L)_{pt}^{MOHRSS}$
- ▶ Correlation between $Event_{pt}^{CLB}/Event_{pt}^{MOHRSS}$ and province-level export shocks is 0.013.

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Independent variable: Export shock
Dependent variable: Labor-related Events
Empirical Specification

Panel regression model

$$\Delta \left(\text{Events}/L\right)_{it} = \beta_0 \left(\text{Events}/L\right)_{i,t-1} + \beta \left(\text{ExpShock}\right)_{it} + \beta_X X_{it}$$
$$+ D_{prov,t} + D_i + \epsilon_{it}$$

▶ Fixed effects: D_i, Prefecture; $D_{prov,t}$, Province-year (2013-2015)

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Independent variable: Export shock
Dependent variable: Labor-related Events
Empirical Specification

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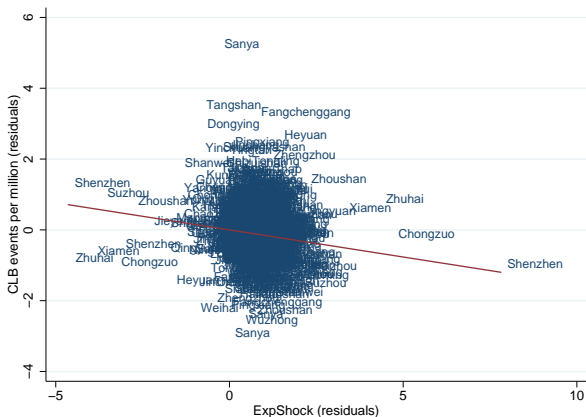
▶ Fixed effects: D_i, Prefecture; $D_{prov,t}$, Province-year (2013-2015)

▶ Instrument with: ExpShockROW$_{it}$. Valid to the extent that:

  (i) ΔX_{kt}^{ROW} reflects shifts in product-level trade that are orthogonal to conditions in prefecture i; and

  (ii) initial local export structure is uncorrelated with unobserved determinants of outcome variables.

▶ ΔX_{kt}^{ROW} in principle captures export supply or import demand shocks involving the ROW

▶ Broader evidence on the global trade slowdown points to weak import demand as the main determinant (c.f., IMF WEO 2016), mitigating concerns related to correlated export supply shocks across CHN and ROW

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Findings:
China's Export Slowdown and Labor Events

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Effect on Labor Events per million workers: Panel (2013-2015)

Dependent variable:	Δ CLB Events per million$_{it}$				
	(1) OLS	(2) IV	(3) IV	(4) IV	(5) IV
Export shock$_{it}$	-0.1595*** [0.0324]	-0.2412*** [0.0431]	-0.3094*** [0.0581]	-0.2974*** [0.0544]	-0.3080*** [0.0579]
CLB Events per million workers$_{i,t-1}$	-0.9169*** [0.1608]	-0.9172*** [0.1699]	-0.9174*** [0.1781]	-0.9484*** [0.2006]	-1.0248*** [0.1558]
Δ Log Average wage$_{i,t}$				-0.5400 [0.5655]	-1.3888* [0.7665]
Δ Log Gross Regional Product per capita$_{i,t}$				1.8570 [1.6703]	1.0140 [1.7476]
Δ Log College-enrolled share$_{i,t}$				0.4996** [0.1843]	0.2377 [0.1919]
Δ Log Mobile share$_{i,t}$					1.4926* [0.7829]
Δ Log Internet share$_{i,t}$					0.3895*** [0.1057]
Prefecture dummies?	Y	Y	Y	Y	Y
Province-Year dummies?	Y	Y	Y	Y	Y
Instrumental variable:	---	Bartik: CHN	Bartik: ROW	Bartik: ROW	Bartik: ROW
First-stage F-stat		26.44	55.97	58.63	76.62
Observations	981	981	981	823	809
R^2	0.6234	0.6200	0.6118	0.6304	0.6529

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Residual Scatterplot: Panel (2013-2015)

► One s.d. larger negative export shock corresponds to ≈1/4 more events per million workers (Median number of events per million: 0.97)

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Breakdown by Sector of Labor Events

► Largest effects on events in manufacturing sector, with spillovers on construction and services

Dependent variable:	Δ Events per million$_{it}$				
	CLB: Manufacturing	CLB: Construction	CLB: Mining	CLB: Transportation	CLB: Services
	(1)	(2)	(3)	(4)	(5)
	IV	IV	IV	IV	IV
Export shock$_{it}$	-0.1546***	-0.1099***	0.0064	0.0204	-0.0441***
	[0.0262]	[0.0312]	[0.0079]	[0.0208]	[0.0117]
Events per million workers$_{i,t-1}$	-0.8816***	-0.8436***	-1.1333***	-1.4139***	-1.3757***
	[0.1360]	[0.2165]	[0.1915]	[0.0562]	[0.0868]
Additional controls:	All columns: Δ Log Average wage$_{it}$; Δ Log Gross Regional Product per capita$_{it}$; Δ Log College-enrolled share$_{it}$; Δ Log Mobile share$_{it}$; Δ Log Internet share$_{it}$				
Prefecture dummies?	Y	Y	Y	Y	Y
Province-Year dummies?	Y	Y	Y	Y	Y
Instrumental variable:	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW
First-stage F-stat	59.62	105.76	100.73	120.55	96.79
Observations	809	809	809	809	809
R^2	0.6443	0.6367	0.5473	0.7029	0.6602

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Nature of Labor Events and Other Protest Measures

▶ Results particularly strong when focusing on labor events driven by "wage arrears" or "layoffs" ▶ Less Shenzhen

▶ Similar findings with first principal comp. of GDELT and CLB measures

Dependent variable:	Δ Events per million$_{it}$				
	CLB: Wage Arrears	CLB: Wage Arrears and Layoffs	CLB: NOT Wage Arrears and Layoffs	GDELT	CLB & GDELT: First PC
	(1)	(2)	(3)	(4)	(5)
	IV	IV	IV	IV	IV
Export shock$_{it}$	-0.3640***	-1.6502***	0.1331*	-0.0116	-0.0178***
	[0.0580]	[0.4420]	[0.0673]	[0.0483]	[0.0027]
Events per million workers$_{i,t-1}$	-0.6465***	-0.6481	-1.3934***	-0.9870***	-1.4334***
	[0.1667]	[0.4907]	[0.1009]	[0.1050]	[0.0734]
Additional controls:	All columns: Δ Log Average wage$_{it}$; Δ Log Gross Regional Product per capita$_{it}$;				
	Δ Log College-enrolled share$_{it}$; Δ Log Mobile share$_{it}$; Δ Log Internet share$_{it}$				
Prefecture dummies?	Y	Y	Y	Y	Y
Province-Year dummies?	Y	Y	Y	Y	Y
Instrumental variable:	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW
First-stage F-stat	93.32	43.80	97.19	102.99	35.22
Observations	809	809	809	809	548
R^2	0.6343	0.5358	0.7072	0.7354	0.7705

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Nature of Labor Events and Other Protest Measures

▶ One s.d. larger negative export shock corresponds to ≈0.31 more events per million workers due to wage arrears (Median=0.49)

Dependent variable:	Δ Events per million$_{it}$				
	CLB: Wage Arrears	CLB: Wage Arrears and Layoffs	CLB: NOT Wage Arrears and Layoffs	GDELT	CLB & GDELT: First PC
	(1)	(2)	(3)	(4)	(5)
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Prefecture dummies?	Y	Y	Y	Y	Y
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Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Robustness checks

Results robust under:

▶ Constructing the export shock variables and its instrument using product-level export growth rates, instead of the change in export value per worker ▸ Tables

▶ Controlling for event spillovers from neighboring prefectures ▸ Tables

▶ Omitting trade by pure intermediaries from the China customs data

▶ Unweighted regressions

▶ Dropping Shenzhen

▶ Dropping one province at a time, incl. Xinjiang
(Export shock coefficient ranges from -0.2903 and -0.3579; always significant)

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

What has been the political response?

- ▶ Initially: Local police would allow leeway for the workers to air their grievances publicly

- ▶ More recently: News reports in Western media and other anecdotes suggest a hardening of attitudes towards labor activism and other expressions of protest

- ▶ Reports of rising expenditure on local security (Domestic security budget in 2013 exceeded that for the military, NYT 6 Mar 2014)

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

What has been the political response?

▶ Initially: Local police would allow leeway for the workers to air their grievances publicly

▶ More recently: News reports in Western media and other anecdotes suggest a hardening of attitudes towards labor activism and other expressions of protest

▶ Reports of rising expenditure on local security (Domestic security budget in 2013 exceeded that for the military, NYT 6 Mar 2014)

Qn: Can export shocks account for such actions by local authorities?

▶ Indirect measure: Emphasis on maintaining security 维稳 ("weiwen"), as captured by textual analysis of prefecture annual work reports

▶ More direct measure: Share of local government expenditures on public security

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Background on 维稳

- ▶ Short form of 维护稳定

- ▶ Etymology:

    The shortened form of "stability preservation," weiwen, was used for the first time in the official People's Daily in 2002, in the explanation accompanying a photograph of armed police.

    — *NYT, 14 Sep 2012*

- ▶ Rising use of the term "weiwen" in the People's Daily especially since 2007 ▶ Graph

- ▶ Not only has the term "weiwen" maintained a high rate of use in China's media, it has also became one of the Party's key political watchwords (Qian, 2012).

- ⇒ View this as a proxy for the importance of domestic security as a policy priority

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Temporal correlation between Baidu 维稳 Search Index and CLB events

Relevance of "维稳" concerns in response to labor-related events.

Use *weekly* data on CLB events and Baidu search index in an "event-study" regression:

$$\Delta Log \, (\text{Search Index})_{i,w} = \beta_0 Log \, (\text{Search Index})_{i,w-1}$$
$$+ \sum_{l=-2}^{6} \lambda_l \, (\Delta \text{CLB events}/L)_{i,w-l}$$
$$+ D_{prov,w} + D_i + \epsilon_{i,w}$$

▶ Key RHS variables are lags and leads of the weekly change in CLB events per million

▶ Run either with or without prefecture fixed effects, D_i

▶ Cluster standard errors by prefecture

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Temporal correlation between Baidu 维稳 Search Index and CLB events

▸ Table

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Evidence from textual analysis

Examine prefecture annual work reports:

1. Keyword count normalized by character length of report.

   ▶ 维稳; 维护稳定; 保持稳定; 社会稳定; 和谐稳定; 安全稳定; 安定和谐; 社会和谐; 公共安全; 和谐平稳; 维稳处突

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover
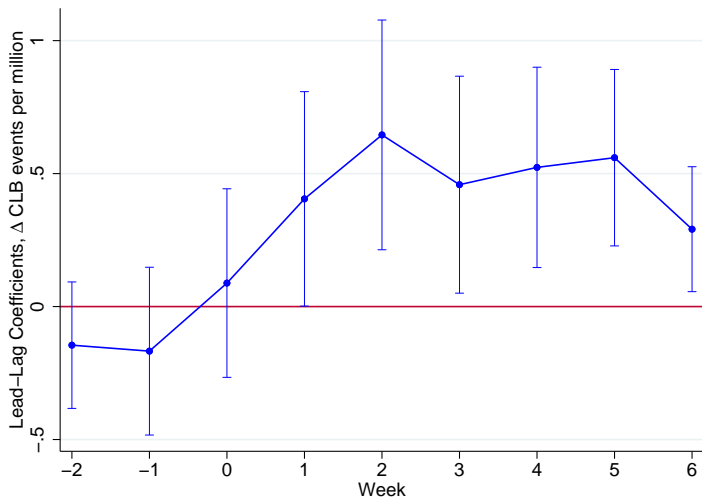
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2. Machine learning algorithm

   ▶ Identify training paragraphs for "weiwen" and "not-weiwen", based on 20 pre-sample period prefecture reports ▶ Para Eg.

   ▶ "Tokenize" the text using an online Chinese word library

   ▶ Two models: (i) Multinomial Naive Bayes; and (ii) Support Vector Machines (SVM)

   ▶ Generate posterior probability of a paragraph being "weiwen"; compute a weighted-average paragraph score for the entire report

   ▶ Smell test: Algorithm does very well at distinguishing paragraphs on economic stability from those on political stability.

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Evidence from textual analysis (cont.)

$$\Delta Log\left(\text{``Weiwen''}\right)_{i,t+1} = \beta_0 Log\left(\text{``Weiwen''}\right)_{it} + \beta\left(\text{ExpShock}\right)_{it}$$
$$+\beta_X X_{it} + D_{prov,t} + D_i + \epsilon_{it}$$

Dependent variable:	Δ **Log Textual "weiwen" score**$_{i,t+1}$					
	Share of keywords	Share of keywords	Multinominal Naive Bayes	Multinominal Naive Bayes	SVM	SVM
	(1)	(2)	(3)	(4)	(5)	(6)
	IV	IV	IV	IV	IV	IV
Export shock$_{it}$	-0.0597**	-0.0542**	-0.0616***	-0.0700***	-0.0182*	-0.0145†
	(0.0226)	(0.0250)	(0.0218)	(0.0235)	(0.0098)	(0.0094)
Log Textual "weiwen" score$_{it}$	-1.3429***	-1.3408***	-1.3522***	-1.3863***	-1.3003***	-1.3112***
	(0.0288)	(0.0301)	(0.0596)	(0.0587)	(0.0362)	(0.0405)
Additional time-t controls?	N	Y	N	Y	N	Y
Prefecture dummies?	Y	Y	Y	Y	Y	Y
Province-year dummies?	Y	Y	Y	Y	Y	Y
Instrumental variable:	Bartik:ROW	Bartik:ROW	Bartik:ROW	Bartik:ROW	Bartik:ROW	Bartik:ROW
First-stage F-stat	73.46	99.70	72.65	105.03	61.77	92.03
Observations	887	762	939	811	939	811
R^2	0.7721	0.7777	0.7682	0.7752	0.7395	0.7438

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Evidence from local government spending

Examine fiscal data on the composition of expenditure to shed light on prefecture government priorities:

▶ Public security vs other uses (public services, social security, education, medical services,. . .)

▶ Public security: all expenses by People's Armed Police, public security organs, court system, judicial system, prosecutorial system and national security.

▶ For an average prefecture, expenditure on public security amounts to 5.24% of total fiscal expenditure. (647 RMB per worker on average)

▶ Hand-collected from: Local Ministry of Finance Fiscal Statistics Yearbooks or provincial statistical yearbooks, Prefecture-level statistical yearbooks; Government websites

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Evidence from local government spending (cont.)

$$\Delta \left(\text{Fiscal}\right)_{i,t+1} = \beta_0 \left(\text{Fiscal}\right)_{it} + \beta \left(\text{ExpShock}\right)_{it} + \beta_X X_{it} + D_{prov,t} + D_i + \epsilon_{it}$$

Dependent variable:	Δ Fiscal measure$_{i,t+1}$						
			Expenditure share on:				
Fiscal measure:	Public security	Public services	Education	Social security	Medical services	Others	Deficit/GRP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	IV	IV	IV	IV	IV	IV	IV
Export shock$_{it}$	-0.0924***	0.1444**	-0.0151	0.1485*	-0.0609	-0.0784	-0.0014
	[0.0327]	[0.0527]	[0.0611]	[0.0867]	[0.0571]	[0.1030]	[0.0011]
Log Fiscal measure$_{it}$	-0.0279	-0.3211***	-0.4207***	-0.0779	-0.2737**	-0.4078***	-0.0658
	[0.0256]	[0.0620]	[0.0760]	[0.0866]	[0.1019]	[0.1014]	[0.2363]
Additional controls:	All columns: Δ Log Average wage$_{it}$; Δ Log Gross Regional Product per capita$_{it}$;						
	Δ Log College-enrolled share$_{it}$; Δ Log Mobile share$_{it}$; Δ Log Internet share$_{it}$						
Prefecture dummies?	Y	Y	Y	Y	Y	Y	Y
Province-Year dummies?	Y	Y	Y	Y	Y	Y	Y
Instrumental variable:	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW
First-stage F-stat	103.76	105.46	102.73	102.88	102.14	105.38	102.34
Observations	748	763	759	762	762	732	765
R^2	0.6973	0.6700	0.6630	0.4700	0.5921	0.6827	0.6097

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Evidence from local government spending (cont.)

▶ A negative export shock associated with ↑ share of spending on "public security", and a ↓ share on "public services" and "social security"

▶ (No significant effect on the overall fiscal deficit position.)

Dependent variable:	Δ Fiscal measure$_{i,t+1}$						
			Expenditure share on:				
Fiscal measure:	Public security	Public services	Education	Social security	Medical services	Others	Deficit/GRP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	IV	IV	IV	IV	IV	IV	IV
Export shock$_{it}$	-0.0924***	0.1444**	-0.0151	0.1485*	-0.0609	-0.0784	-0.0014
	[0.0327]	[0.0527]	[0.0611]	[0.0867]	[0.0571]	[0.1030]	[0.0011]
Log Fiscal measure$_{it}$	-0.0279	-0.3211***	-0.4207***	-0.0779	-0.2737**	-0.4078***	-0.0658
	[0.0256]	[0.0620]	[0.0760]	[0.0866]	[0.1019]	[0.1014]	[0.2363]
Additional controls:	All columns: Δ Log Average wage$_{it}$; Δ Log Gross Regional Product per capita$_{it}$;						
	Δ Log College-enrolled share$_{it}$; Δ Log Mobile share$_{it}$; Δ Log Internet share$_{it}$						
Prefecture dummies?	Y	Y	Y	Y	Y	Y	Y
Province-Year dummies?	Y	Y	Y	Y	Y	Y	Y
Instrumental variable:	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW
First-stage F-stat	103.76	105.46	102.73	102.88	102.14	105.38	102.34
Observations	748	763	759	762	762	732	765
R^2	0.6973	0.6700	0.6630	0.4700	0.5921	0.6827	0.6097

Background and Introduction   Occurrence of Labor Events
Data and Empirical Strategy   Attention to Domestic Security
Findings: Effects on. . .   Political Turnover

Evidence from political turnover

Examine data on turnover in political officeholders:

$$(\text{Turnover})_{i,t+1} = \beta_0 (\text{Turnover})_{it} + \beta (\text{ExpShock})_{it} + \beta_X X_{it} + D_{prov,t} + D_i + \epsilon_{it}$$

Dependent variable:	Political Turnover$_{i,t+1}$			
	Party Secretary	Party Secretary	Mayor	Mayor
	(1)	(2)	(3)	(4)
	IV	IV	IV	IV
Export shock$_{it}$	-0.0396**	-0.0525**	-0.0252	-0.0297
	[0.0176]	[0.0220]	[0.0285]	[0.0282]
Political Turnover$_{it}$	-0.3698***	-0.3768***	-0.3366***	-0.3490***
	[0.0316]	[0.0325]	[0.0340]	[0.0365]
Additional time-t controls?	N	Y	N	Y
Prefecture dummies?	Y	Y	Y	Y
Province-Year dummies?	Y	Y	Y	Y
Instrumental variable:	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW
First-stage F-stat	73.99	104.01	73.73	106.83
Observations	972	809	972	809
R^2	0.4020	0.4264	0.4586	0.4746

Background and Introduction | Occurrence of Labor Events
Data and Empirical Strategy | Attention to Domestic Security
Findings: Effects on. . . | Political Turnover

Evidence from political turnover

Examine data on turnover in political officeholders:

▶ A negative export shock associated with an ↑ likelihood the party secretary is replaced one year after (but not for the mayor)

Dependent variable:	Political Turnover$_{i,t+1}$			
	Party Secretary	Party Secretary	Mayor	Mayor
	(1)	(2)	(3)	(4)
	IV	IV	IV	IV
Export shock$_{it}$	-0.0396**	-0.0525**	-0.0252	-0.0297
	[0.0176]	[0.0220]	[0.0285]	[0.0282]
Political Turnover$_{it}$	-0.3698***	-0.3768***	-0.3366***	-0.3490***
	[0.0316]	[0.0325]	[0.0340]	[0.0365]
Additional time-t controls?	N	Y	N	Y
Prefecture dummies?	Y	Y	Y	Y
Province-Year dummies?	Y	Y	Y	Y
Instrumental variable:	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW
First-stage F-stat	73.99	104.01	73.73	106.83
Observations	972	809	972	809
R^2	0.4020	0.4264	0.4586	0.4746

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Evidence from political turnover (cont.)

Investigate the effect of *excess* protests:

▶ ExcessProtest$_{it}$ = 1 if residual $\hat{\nu}_{it}$ is above the median and 0 otherwise:

$$\Delta \left(\text{Events}/L\right)_{it} = \beta_0 \left(\text{Events}/L\right)_{i,t-1} + \beta \left(\text{ExpShockROW}\right)_{it} + \beta_X X_{it}$$
$$+ D_{prov,t} + D_i + \nu_{it}$$

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Evidence from political turnover (cont.)

Investigate the effect of *excess* protests:

$$
\begin{aligned}
(\text{Turnover})_{i,t+1} = & \ \beta_0 \, (\text{Turnover})_{it} + \beta_1 \, (\text{ExpShockROW})_{it} \times (\text{ExcessProtest})_{it} \\
& + \beta_2 \, (\text{ExpShockROW})_{it} + \beta_3 \, (\text{ExcessProtest})_{it} + \beta_X X_{it} \\
& + D_{prov,t} + D_i + \epsilon_{it}
\end{aligned}
$$

Dependent variable:	Political Turnover$_{i,t+1}$			
	Party Secretary (1)	Party Secretary (2)	Mayor (3)	Mayor (4)
ExpShockROW$_{it}$ × ExcessProtest$_{it}$	-0.0890*	-0.0844**	0.0445	0.0269
	(0.0432)	(0.0368)	(0.0295)	(0.0432)
ExpShockROW$_{it}$	0.0344	0.0240	-0.0414	-0.0321
	(0.0325)	(0.0211)	(0.0252)	(0.0354)
ExcessProtest$_{it}$	-0.0007	0.0271	0.0451	0.0320
	(0.0316)	(0.0332)	(0.0438)	(0.0452)
Political Turnover$_{it}$	-0.3815***	-0.3867***	-0.3360***	-0.3476***
	(0.0294)	(0.0306)	(0.0356)	(0.0383)
Additional time-t controls?	N	Y	N	Y
Prefecture dummies?	Y	Y	Y	Y
Province-year dummies?	Y	Y	Y	Y
Observations	972	817	972	817
R^2	0.4233	0.4546	0.4640	0.4838

Background and Introduction
Data and Empirical Strategy
Findings: Effects on. . .

Occurrence of Labor Events
Attention to Domestic Security
Political Turnover

Concluding Remarks

Conclusion

What have we found?

▶ Between 2013-2015, China's export slowdown associated with increased strike and labor-related protest activity at the local level

▶ Causal evidence from a Bartik-style instrumental variable (constructed from trade shocks in the rest of the world)

▶ Export slowdown also associated with: (i) increased attention on preserving stability ("维稳"); (ii) a reallocation of fiscal resources towards public security; and (iii) greater likelihood of political turnover.

What next?

▶ Decomposing the effect on political outcomes: How much of this works through the effect of the export shock on strikes/protests?

▶ Better understanding the determinants of political turnover

Supplementary Slides

$$\text{g\_ExpShock}_{it} = \kappa_{it} \sum_k \frac{X_{ik,2012}}{\sum_k X_{ik,2012}} g(X_{ikt})$$

$$\text{g\_ExpShockCHN}_{it} = \kappa_{it} \sum_k \frac{X_{ik,2012}}{\sum_k X_{ik,2012}} g(X_{kt}^{CHN-i})$$

$$\text{g\_ExpShockROW}_{it} = \kappa_{it} \sum_k \frac{X_{ik,2010}}{\sum_k X_{ik,2010}} g(X_{kt}^{ROW})$$

where: $g(X_{ikt}) = 2\left(\frac{X_{ikt} - X_{ik,t-1}}{X_{ikt} + X_{ik,t-1}}\right)$.

Interpretation: Weighted-average product-level export growth rate, scaled by the importance of total exports in prefecture i (κ_{it}).

Export Shock: Alternative construction based on export growth rates ⏵ Back

$$
\begin{aligned}
\text{g\_ExpShock}_{it} &= \kappa_{it} \sum_k \frac{X_{ik,2012}}{\sum_k X_{ik,2012}} g(X_{ikt}) \\
\text{g\_ExpShockCHN}_{it} &= \kappa_{it} \sum_k \frac{X_{ik,2012}}{\sum_k X_{ik,2012}} g(X_{kt}^{CHN-i}) \\
\text{g\_ExpShockROW}_{it} &= \kappa_{it} \sum_k \frac{X_{ik,2010}}{\sum_k X_{ik,2010}} g(X_{kt}^{ROW})
\end{aligned}
$$

where: $g(X_{ikt}) = 2\left(\frac{X_{ikt} - X_{ik,t-1}}{X_{ikt} + X_{ik,t-1}}\right)$.

Remark: $\text{g\_ExpShockROW}_{it} = \text{ExpShockROW}_{it}$ if:

(i) an exact growth rate is used in place of $g(\cdot)$;

(ii) κ_{it} is equal to one-year lagged total prefecture exports divided by $L_{i,2000}$; and

(iii) the export-share weights in both $\text{g\_ExpShockROW}_{it}$ and ExpShockROW_{it} are constructed using time-$(t-1)$ instead of 2012 exports.

Cleaning steps: (Painful!)

► Extract events with CAMEO code 14 ("PROTEST") and action country code "CH"

► Use ArcGIS to locate prefecture based on geographical coordinates of event

► Exclude events that involve Tibet, Uigher, Taiwan or foreign actors.

► De-duplicate entries with identical day, action and protagonist information

▶ Shenzhen influential for the magnitude of the effect, but not its sign and significance

Dependent variable:	Δ Events per million$_{it}$				
	CLB: Wage Arrears	CLB: Wage Arrears and Layoffs	CLB: NOT Wage Arrears and Layoffs	GDELT	CLB & GDELT: First PC
	(1)	(2)	(3)	(4)	(5)
	IV	IV	IV	IV	IV
Export shock$_{it}$	-0.4268***	-0.8255*	0.1224	0.0479	-0.0219***
	[0.1433]	[0.4643]	[0.0989]	[0.0800]	[0.0078]
Events per million workers$_{i,t-1}$	-0.7221***	-0.9853***	-1.2977***	-0.9866***	-1.4466***
	[0.1230]	[0.2904]	[0.0388]	[0.1052]	[0.0731]
Additional controls:	All columns: Δ Log Average wage$_{i,t}$; Δ Log Gross Regional Product per capita$_{i,t}$;				
	Δ Log College-enrolled share$_{i,t}$; Δ Log Mobile share$_{i,t}$; Δ Log Internet share$_{i,t}$				
Prefecture dummies?	Y	Y	Y	Y	Y
Province-Year dummies?	Y	Y	Y	Y	Y
Instrumental variable:	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW
First-stage F-stat	29.48	37.21	30.06	28.10	30.33
Observations	806	806	806	806	546
R^2	0.6506	0.5446	0.7200	0.7359	0.7637

Dependent variable:	Δ CLB Events per million$_{it}$				
	(1) OLS	(2) IV	(3) IV	(4) IV	(5) IV
Export shock (growth version)$_{it}$	-0.1988*** [0.0273]	-0.4141*** [0.1057]	-0.3388*** [0.0576]	-0.3361*** [0.0604]	-0.3585*** [0.0633]
CLB Events per million workers$_{i,t-1}$	-0.9076*** [0.1600]	-0.8980*** [0.1746]	-0.9013*** [0.1701]	-0.9303*** [0.1926]	-1.0060*** [0.1526]
Δ Log Average wage$_{i,t}$				-0.5077 [0.5799]	-1.3998* [0.6887]
Δ Log Gross Regional Product per capita$_{i,t}$				1.6331 [1.5852]	0.7626 [1.6911]
Δ Log College-enrolled share$_{i,t}$				0.4697** [0.1964]	0.2055 [0.1987]
Δ Log Mobile share$_{i,t}$					1.4287* [0.7649]
Δ Log Internet share$_{i,t}$					0.4019*** [0.1179]
Prefecture dummies?	Y	Y	Y	Y	Y
Province-Year dummies?	Y	Y	Y	Y	Y
Instrumental variable:	---	Bartik: CHN	Bartik: ROW	Bartik: ROW	Bartik: ROW
First-stage F-stat		5.7907	15.0350	15.5689	17.9914
Observations	978	978	978	822	808
R^2	0.6210	0.6090	0.6159	0.6345	0.6570

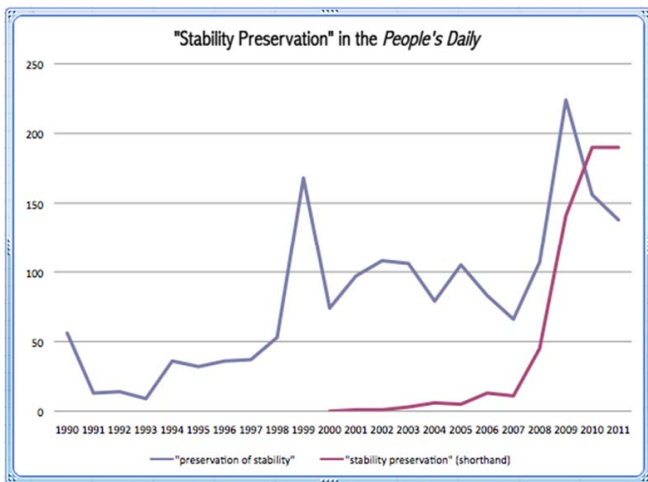| Dependent variable:	Δ Events per million$_{it}$				
	Neighboring prefecture spillovers	Less trade by intermediaries	Unweighted	Drop Shenzhen	Drop Xinjiang
	(1)	(2)	(3)	(4)	(5)
	IV	IV	IV	IV	IV
Export shock$_{it}$	-0.2024**	-0.3150***	-0.2273**	-0.3724***	-0.3082***
	[0.0852]	[0.0591]	[0.0862]	[0.1287]	[0.0580]
CLB Events per million workers$_{i,t-1}$	-1.0613***	-1.0244***	-1.2622***	-1.1275***	-1.0251***
	[0.1187]	[0.1566]	[0.1175]	[0.1163]	[0.1560]
CLB Events per million workers$_{i,t-1}$ (in neighboring prefectures)	0.5169***				
	[0.1531]				
Additional controls:	All columns: Δ Log Average wage$_{i,t}$; Δ Log Gross Regional Product per capita$_{i,t}$; Δ Log College-enrolled share$_{i,t}$; Δ Log Mobile share$_{i,t}$; Δ Log Internet share$_{i,t}$				
Prefecture dummies?	Y	Y	Y	Y	Y
Province-Year dummies?	Y	Y	Y	Y	Y
Instrumental variable:	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW	Bartik: ROW
First-stage F-stat	18.88	69.42	60.68	31.19	76.87
Observations	809	809	809	806	805
R^2	0.6740	0.6522	0.6575	0.6491	0.6528

"Stability Preservation" in the *People's Daily*

Source: NYT, 14 Sep 2012

Dependent variable:	Δ Log Baidu "weiwen" search index_{i,w}					
	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS
Δ CLB Events per million workers_{i,w-6}	0.0308	0.2261	0.1538	0.0310	0.2910**	0.1541
	[0.1924]	[0.1485]	[0.1738]	[0.1924]	[0.1428]	[0.1738]
Δ CLB Events per million workers_{i,w-5}	0.3266*	0.5235***	0.4241*	0.3272*	0.5599***	0.4248*
	[0.1908]	[0.1769]	[0.2182]	[0.1909]	[0.2017]	[0.2183]
Δ CLB Events per million workers_{i,w-4}	0.3136	0.5089***	0.2922	0.3144	0.5234***	0.2931
	[0.2068]	[0.1957]	[0.2375]	[0.2069]	[0.2290]	[0.2375]
Δ CLB Events per million workers_{i,w-3}	0.0929	0.4027**	0.2663	0.0941	0.4584*	0.2676
	[0.1859]	[0.1942]	[0.2170]	[0.1858]	[0.2480]	[0.2170]
Δ CLB Events per million workers_{i,w-2}	0.5354***	0.6761***	0.7293***	0.5368***	0.6456**	0.7308***
	[0.1771]	[0.2064]	[0.2185]	[0.1771]	[0.2626]	[0.2185]
Δ CLB Events per million workers_{i,w-1}	0.5912***	0.5260***	0.7170***	0.5924***	0.4050*	0.7182***
	[0.1825]	[0.1988]	[0.2144]	[0.1825]	[0.2451]	[0.2143]
Δ CLB Events per million workers_{i,w}	0.5022***	0.2691	0.4680**	0.5032***	0.0884	0.4690**
	[0.1833]	[0.1799]	[0.2049]	[0.1832]	[0.2155]	[0.2048]
Δ CLB Events per million workers_{i,w+1}	0.2074	-0.0217	0.0950	0.2080	-0.1676	0.0956
	[0.1849]	[0.1697]	[0.2053]	[0.1850]	[0.1918]	[0.2054]
Δ CLB Events per million workers_{i,w+2}	0.0807	-0.0623	-0.0916	0.0810	-0.1451	-0.0913
	[0.1850]	[0.1484]	[0.1754]	[0.1849]	[0.1445]	[0.1754]
Log Baidu "weiwen" search index_{i,w-1}		-0.5884***			-0.8970***	
		[0.0273]			[0.0062]	
Δ Log Baidu "weiwen" search index_{i,w-1}			-0.4556***			-0.4556***
			[0.0042]			[0.0042]
Additional controls:	All columns: Δ Log Average wage_{i,t}; Δ Log Gross Regional Product per capita_{i,t}; Δ Log College-enrolled share_{i,t}; Δ Log Mobile share_{i,t}; Δ Log Internet share_{i,t}					
Prefecture dummies?	N	N	N	Y	Y	Y
Province-Year-Week dummies?	Y	Y	Y	Y	Y	Y
Observations	63,232	63,232	63,232	63,232	63,232	63,232
R²	0.1052	0.3686	0.2911	0.1052	0.5068	0.2911

"Weiwen": Example of Training Paragraph

　　健全社会治安形势分析研判机制。政法综治机构要加强组织协调，会同政法机关和其他有关部门开展对社会治安形势的整体研判、动态监测，并提出督办建议。公安机关要坚持情报主导警务的理念，建立健全社会治安情报信息分析研判机制，定期对社会治安形势进行分析研判。加强对社会舆情、治安动态和热点、敏感问题的分析预测，加强对社会治安重点领域的研判分析，及时发现苗头性、倾向性问题，提升有效应对能力。建立健全治安形势播报预警机制，增强群众自我防范意识。

— State Council, Apr 2015

"Weiwen": Example of Training Paragraph

Improve society's security situation analysis and judgment mechanism. Comprehensive treatment of political and legal institutions should strengthen organization and coordination, together with political and legal organs and other relevant departments to carry out the overall situation and society's security situation in the overall judgments, dynamic monitoring, and put forward suggestions. Public security organs must uphold the concept of intelligence-led policing, establish and improve the mechanism for analyzing and reviewing information on social order intelligence, and conduct regular analysis and judgment on the situation of public order. We will strengthen the analysis and forecast of social public opinion, public order dynamics and hot spots and sensitive issues, strengthen the analysis and forecasting of key areas of social order, find out signs and tendencies in time, and enhance effective coping skills. Establish and improve the early warning mechanism for public security to broadcast the situation and enhance people's awareness of self-protection.

— State Council, Apr 2015