

## The Political Economy Consequences of China's Export Slowdown

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## Motivation

- ▶ Negative economic shocks (and to labor markets in particular) can lead to discontent and affect political outcomes
  - ▶ Economic voting (in democracies), conflict, coups, democratic change (in unstable polities)

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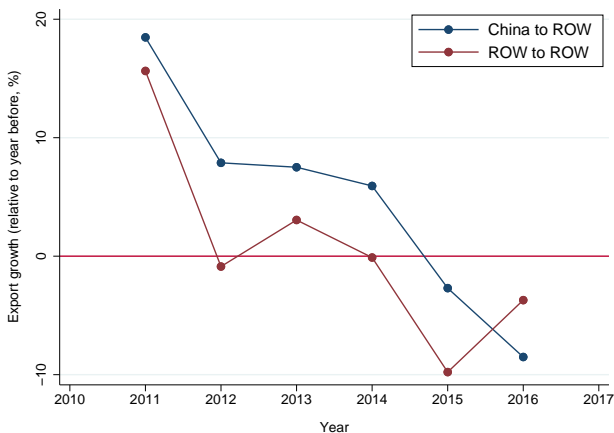
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- ▶ But how about **strong autocracies**? Neither ballot box nor revolution

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  - ▶ Economic voting (in democracies), conflict, coups, democratic change (in unstable polities)
- ▶ But how about **strong autocracies**? Neither ballot box nor revolution
- ▶ Key example: **China**

## Background: China's export slowdown

- ▶ China's export growth has slowed post-Global Financial Crisis, in tandem with a broader slowdown in world trade
- ▶ A far cry from the average annual export growth rate of 18% from 1992-2008 (Hanson 2012)



## Motivation

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

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

(Feenstra and Hong (2010): Export growth explained employment growth of 7.5 million workers per year between 2000-2005.)

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

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— Li Keqiang, 21 Apr 2016, State Council executive meeting

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- ▶ an apparent rise in labor-related incidents and strikes.



## Motivation (cont.)

- ▶ Accounts of labor-related events not difficult to uncover
- ▶ 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

*“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

## This paper

Study the implications of this export slowdown episode – and the accompanying rise in labor strikes – for political economy outcomes in China.

1. Establish this link: from prefectures experiencing more severe export shocks to larger increases in labor events per capita (based on data recorded by the China Labour Bulletin)

- ▶ Identification similar to Autor, Dorn, Hanson (2013):

Instrument the export shock with a Bartik-style variable, constructed from:  
(i) a prefecture's initial product-level export shares; and (ii) rest-of-world product-level trade shocks

Conduct checks that the literature has advised to guard against potential threats to this identification strategy (Borusyak et al. 2022)

## This paper

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2. Uncover the implications of such negative economic shocks for incumbent stability, in the context of China's political system (an autocracy with strong state capacity).

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2. Uncover the implications of such negative economic shocks for incumbent stability, in the context of China's political system (an autocracy with strong state capacity).
  - ▶ In prefectures worse hit by the slowdown, the local party secretary was more likely to be replaced, in a manner detrimental to his/her career prospects (“early lateral movement”).
  - ▶ Supporting evidence that this turnover is attributable in part to his/her handling of the labor strike situation.

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2. Uncover the implications of such negative economic shocks for incumbent stability, in the context of China's political system (an autocracy with strong state capacity).
  - ▶ In prefectures worse hit by the slowdown, the local party secretary was more likely to be replaced, in a manner detrimental to his/her career prospects (“early lateral movement”).
  - ▶ Supporting evidence that this turnover is attributable in part to his/her handling of the labor strike situation.
  - ▶ When faced with a severe export shock, “promotion-age” incumbents were more inclined to take a range of actions – emphasizing 维稳 (“weiwen”), and allocating fiscal resources – to bolster social stability.
  - ▶ Consistent with a model we outline, of career incentives in a political system where local leaders are assessed (“held accountable”) for maintaining stability by a “sophisticated” central government

## Related literature

### 1. Effects of income shocks on political stability:

- ▶ **Voting** – Lewis-Beck (1988), Duch and Stevenson (2008), Leigh (2009), Cole et al. (2012), Nunn et al. (2018); **Democratic change** – Burke and Leigh (2010), Brückner and Ciccone (2011); **Conflict** – Miguel et al. (2004), Hendrix and Salehyan (2012), Dube and Vargas (2013), Bazzi and Blattman (2014), Burke et al. (2015); **Revolution** – Campante and Chor (2012), Jia (2014), Kim (2016)

### 2. Effects of trade on local outcomes viz:

- ▶ **Labor market** – McCaig (2011), Topalova (2010), Autor et al. (2013), Kovak (2013), Pierce and Schott (2016), Dix-Carneiro and Kovak (2017), Dix-Carneiro et al. (2018)
- ▶ **Political economy** – Feingenbaum and Hall (2015), Jensen et al. (2016), Colantone and Stanig (2016), Autor et al. (2020), Che et al. (2020), Dippel et al. (2020), Blanchard et al. (2019), Choi et al. (2020)

### 3. In the China context:

- ▶ **Protests and political controls** – King et al. (2013, 2014), Qin et al. (2017), Wen (2022)
- ▶ **Economic performance and political turnover** – Li and Zhou (2005), Jia et al. (2015), Persson and Zhuravskaya (2016), Chen and Kung (2016, 2018)

## Plan for this talk

1. Background Motivation and Introduction
2. Data Sources
3. Regression Specification
4. Findings I: China's Export Slowdown and Labor-Related Events
5. Findings II: Understanding the Political Response
6. Concluding Remarks



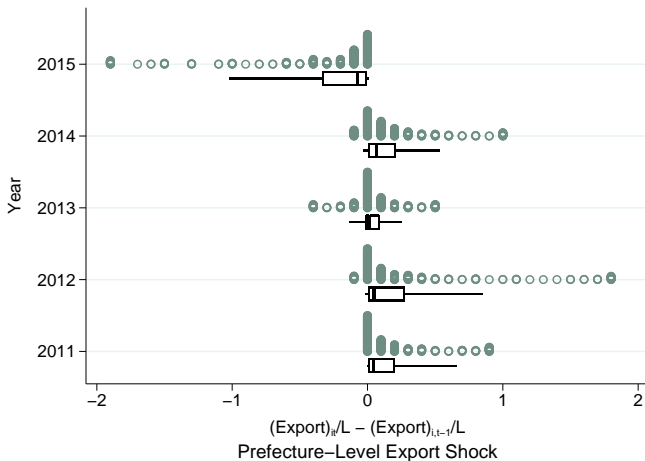
## Key Data Sources and Variables

## Data preliminaries

- ▶ Unit of observation: Chinese **prefectures**, less Tibet; 333 in all
- ▶ Annual data on exports from customs for China (2010-2016)  
Supplement with UN Comtrade product-level trade data for ROW
- ▶ Other prefecture-level variables sourced from:
  - ▶ Population census: 2000, 2010
  - ▶ City Statistical Yearbooks: Annual  
(E.g.: Manufacturing employment share; Gross regional product per capita;  
College enrollment; Mobile subscribers; Internet subscribers)

## Data Preliminaries: The export slowdown across prefectures

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



## Export shock measure

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

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

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

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

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

## Export shock measure

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

Instrumental variables: (based on ADH 2013)

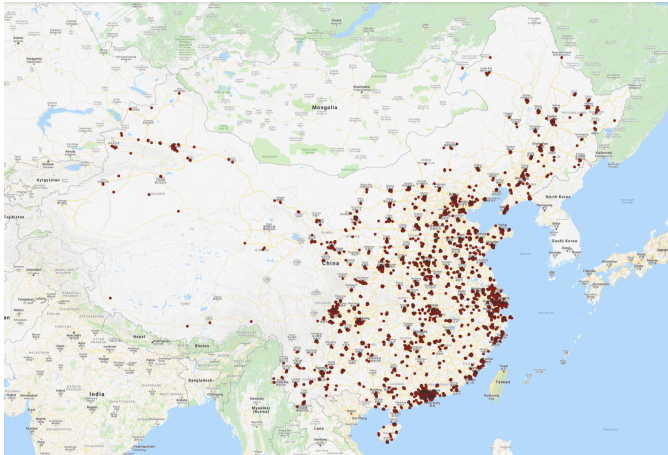
$$\text{ExpShockROW}_{it} = \sum_k \frac{X_{ik,2010}}{\sum_i X_{ik,2010}} \frac{\Delta X_{kt}^{ROW}}{L_{i,2000}}$$

- ▶  $X_{kt}^{ROW}$ : 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.

## China Labour Bulletin (CLB)

NGO based in HK advocating labor rights in mainland China

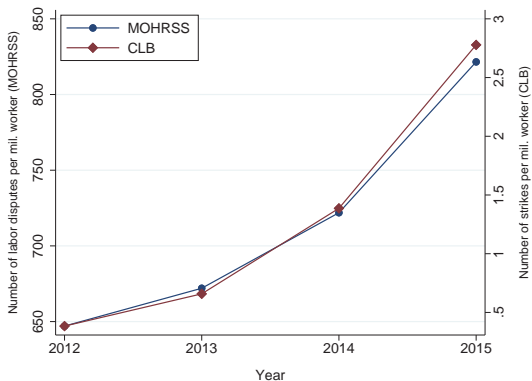


## China Labour Bulletin (CLB)

- ▶ Labor-related incidents (collective actions) from **CLB 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”
- ▶ See Qin, Strömberg and Wu (2020) for other applications.

## China Labour Bulletin (CLB)

- ▶ Corroboration: Strong positive correlation with official data on **labor disputes** (lodged for arbitration/mediation), from the Ministry of Human Resources and Social Security (MOHRSS)



▶ province level



## Regression model

$$\Delta(\text{Events}/L)_{it} = \beta_1 (\text{ExpShock})_{it} + \beta_X X_{it} + D_{prov,t} + D_i + \epsilon_{it}$$

- ▶ Fixed effects:  $D_{prov,t}$ , Province-year (2013-2015);  $D_i$ , Prefecture
- ▶ Weight by prefecture working age population
- ▶ Cluster standard errors by province

## Regression model

$$\Delta(\text{Events}/L)_{it} = \beta_1(\text{ExpShock})_{it} + \beta_X X_{it} + D_{prov,t} + D_i + \epsilon_{it}$$

- ▶ Instrument with:  $\text{ExpShockROW}_{it}$ .
- ▶ Valid to the extent that:  $\Delta X_{kt}^{ROW}$  reflects shifts in product-level trade that are orthogonal to conditions in prefecture  $i$  (c.f., Borusyak et al. 2022)
- ▶ Toward this end:
  - ▶ Broader evidence on the global trade slowdown points to weak import demand as the main driver of  $\Delta X_{kt}^{ROW}$  (c.f., IMF WEO 2016), rather than correlated export supply shocks across CHN and ROW
  - ▶ Results robust to using a gravity approach to parse out destination-specific variation; or to controlling for a proxy for prefecture-specific shocks to domestic output and/or absorption.
  - ▶ Of note: Trade shocks pass a balance test, to verify that they are “as good as randomly assigned” to prefectures (c.f., Borusyak et al. 2022)

## Regression model

$$\Delta(\text{Events}/L)_{it} = \beta_1 (\text{ExpShock})_{it} + \beta_X X_{it} + D_{prov,t} + D_i + \epsilon_{it}$$

- ▶ Additional remarks related to identification:
  - ▶ Initial specialization patterns might be correlated with underlying trends in labor strikes (c.f., Goldsmith-Pinkham et al. 2020).  
  
But... bear in mind that prefecture fixed effects should control for such time trends (to the extent that these are linear).
  - ▶ Moreover, a placebo test: Future export shocks have no significant effects on current-period shifts in labor strikes per capita.

## China's Export Slowdown and Labor Events

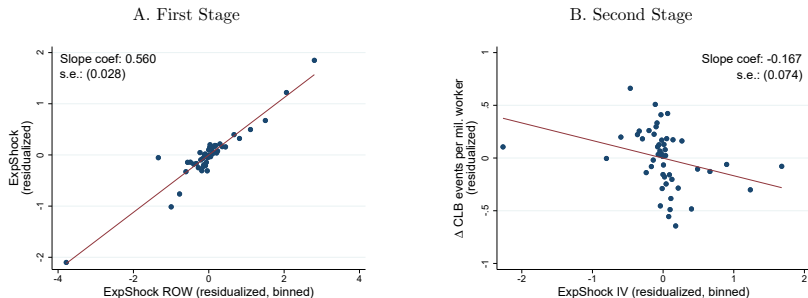
## Effect on labor events per million workers: Panel (2013-2015)

Dependent variable:	$\Delta$ CLB Events per million <sub>it</sub>			
	(1) OLS	(2) IV	(3) IV	(4) OLS-RF
ExpShock <sub>it</sub>	-0.1599*** (0.0346)	-0.1822** (0.0739)	-0.1728** (0.0746)	
ExpShockROW <sub>it</sub>				-0.1035** (0.0477)
$\Delta$ Log College-enrolled share <sub>it</sub>			-0.0679 (0.2199)	-0.0930 (0.2249)
$\Delta$ Log Mobile share <sub>it</sub>			0.8907 (0.8239)	0.4951 (0.9744)
$\Delta$ Log Internet share <sub>it</sub>			0.5258*** (0.1840)	0.6325** (0.2310)
Province-year dummies?	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y
Additional time-t controls?	N	N	Y	Y
First-stage F-stat	-	64.32	105.56	-
Observations	987	987	822	822
R <sup>2</sup>	0.5023	0.5020	0.5264	0.5192

- ▶ One s.d. larger negative export shock corresponds to  $\approx 0.15$  more events per million workers (Median number of events per million: 0.96)

## Effect on labor events per million workers: Panel (2013-2015)

Figure 4: Binned Scatter Plots: Prefecture Export Shocks and Labor Strikes  
(50 bins; based on Column 3, Table 1)



## Underlying causes and mechanisms

- Results particularly strong when focusing on labor events driven by “wage arrears” or “layoffs”

Dependent variable: <b>Sector:</b> <b>Cause:</b> Wage Arrears, Layoffs?	$\Delta$ CLB Events per million <sub>it</sub>					
	All Yes (1) IV	All No (2) IV	Mfg. Yes (3) IV	Mfg. No (4) IV	Non-Mfg. Yes (5) IV	Non-Mfg. No (6) IV
ExpShock <sub>it</sub>	-1.3707** (0.4949)	0.1035** (0.0410)	-1.2700** (0.4903)	-0.0600 (0.0423)	-0.1007*** (0.0255)	0.1634*** (0.0546)
Province-year dummies?	Y	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y	Y
First-stage F-stat	105.56	105.56	105.56	105.56	105.56	105.56
Observations	822	822	822	822	822	822
R <sup>2</sup>	0.5374	0.2850	0.5330	0.4009	0.1884	0.6009

## Underlying causes and mechanisms (cont.)

- ▶ Controlling for spillovers from neighboring-prefecture export shocks [▶ Table](#)
- ▶ Placebo test: No effect of future export shocks [▶ Table](#)
- ▶ More pronounced effects for the component of  $ExpShock_{it}$  due to:  
(i) firms that exit from exporting; (ii) non-state-owned enterprises
- ▶ Effects muted in prefectures where: (i) spending on public security; (ii) state/government employment; is higher.
- ▶ Exacerbated where: (i) non-hukou share; (ii) college-educated share; is higher
- ▶ Responses of other economic outcomes – share of manufacturing employment, night-lights intensity, individual income – consistent with the broader narrative [▶ Table](#)



## Robustness checks

- ▶ Expanding the time frame of the sample [▶ Table](#)
- ▶ Basic checks: (i) Dropping time- $t$  controls; (ii) Unweighted regressions; (iii) Control for lagged-dependent variable, instead of prefecture FEs. [▶ Table](#)
- ▶ Balance checks on initial prefecture variables; Recasting as product-level regressions; Controlling for the “Incomplete Share” in the shift-share weights (c.f., Borusyak et al. 2022) [▶ Table](#)
- ▶ Alternative Bartik IVs: (i) dropping intermediary firms; [▶ Table](#) (ii) destination-specific demand shocks; [▶ Table](#) (iii) gravity-based demand effects [▶ Table](#)
- ▶ Controlling for domestic demand, domestic output and import shocks [▶ Table](#)
- ▶ Dropping HS sections (c.f., Goldsmith-Pinkham et al. 2020) [▶ Table](#)
- ▶ Alternative statistical inference (c.f., Adão et al. 2019) [▶ Table](#)

## Political Responses to the Export Slowdown

## A simple model: Overview

Labor unrest should be bad news for local incumbents: stability as a “veto target” (Edin 2003; Wang 2016)

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Model of political “accountability with Chinese characteristics”:

- ▶ **Local leaders** cannot be voted out, nor need they fear violent ouster
- ▶ ... but they can be removed by a higher authority (“**central government**”).

## A simple model: Overview

- ▶ Building blocks:
  - ▶ A bad export shock has a direct effect of lowering stability
  - ▶ Upper-level government cares only about maximizing expected stability.  
**Turnover decision:** To incentivize local leader's effort to bolster social stability, and to facilitate the retention of better able leaders.  
(e.g., Edin 2003, Heberer and Trappel 2013, Lorentzen 2013, Persson and Zhuravskaya 2016)
  - ▶ Local leaders: Seek to maximize their expected rents from being retained by choosing costly stability-enhancing measures  
Two types:  $G$  and  $B$ , who differ in their marginal cost of delivering stability.

## A simple model: Overview

- ▶ Two types of local leaders:  $\ell = G$  or  $B$ .
  - ▶ Upper-level government observes local conditions, including the export shock, but not local leader's type.

**Assumption:** Stability measures are particularly effective at raising stability in the face of bad economic shocks. However,  $B$  type leaders incur a higher cost of implementing these measures.
- ▶ Distinguish between the case of an “unsophisticated” and a “sophisticated” upper-level government
  - ▶ **Cutoff rule:** Local leader is removed if stability falls below a threshold.
  - ▶ “Sophisticated” central government can condition the threshold on the observed severity of the export shock
  - ▶ “Unsophisticated” does not.

## A simple model: Predictions [▶ Details](#)

- (i) **Stability Measures:** Under a “sophisticated” central government, the use of stability measures rises monotonically with the severity of the export shock.
- ▶ Local leaders are properly incentivized to exert effort in the face of negative export shocks. Tendency is magnified for incumbents with stronger career incentives (e.g., in the prime age for promotion).

By contrast, under an “unsophisticated” central government: stability measures peter out under the most severe export shocks.

- (ii) **Turnover:** Under a “sophisticated” central government, incumbent turnover rises monotonically with the severity of the export shock.
- ▶ *G*-type leaders respond to career incentives, but *B*-type leaders do not as effort is too costly. *B*-type leaders are thus more likely to be screened out when the export shock is more negative.

By contrast, under an “unsophisticated” central government:  
Non-monotonicities are possible.



## Political turnover

$$(\text{Turnover})_{i,t+1} = \beta_1 (\text{ExpShock})_{it} + \beta_X X_{it} + D_{\text{prov},t} + D_i + \epsilon_{it}$$

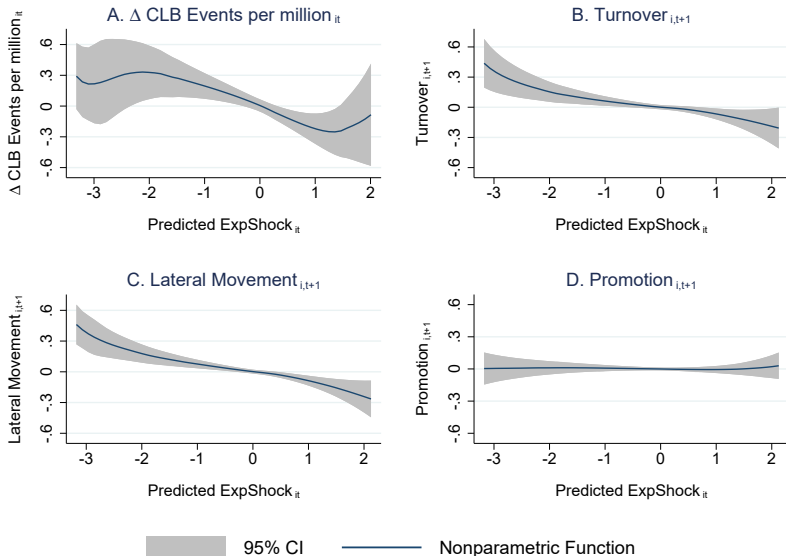
- ▶  $(\text{Turnover})_{i,t+1}$ : Indicator for whether party secretary in prefecture  $i$  was replaced in year  $t + 1$
- ▶ Hand-collected data from cv's.
- ▶ Outright demotions are rare. Lateral movement is considered as de-facto demotion
- ▶ *Regulations for the Selection and Appointment of Party Cadres*:  
Prefectural officials should serve at least three years in a position, before being eligible for promotion  
 $\implies$  “early” lateral movement (i.e., tenure < 3) immediately leaves a dent in promotion prospects. [▶ Details](#)

## Political turnover

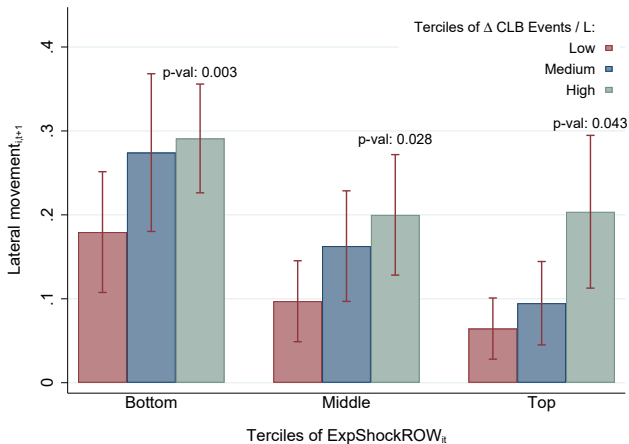
Dependent variable:	Party Secretary Turnover $_{i,t+1}$				
	Turnover	Lateral	Lateral	Lateral	Promotion
	(1)	(2)	(3)	(4)	(5)
	IV	IV	IV	IV	IV
			Tenure $_{i,t+1} < 3$	Tenure $_{i,t+1} \geq 3$	
ExpShock $_{it}$	-0.0750*** (0.0222)	-0.0907*** (0.0314)	-0.0834*** (0.0205)	-0.0073 (0.0408)	-0.0048 (0.0102)
<i>Incumbent Characteristics:</i>					
Tenure $_{i,t+1}$	0.2090*** (0.0167)	0.1138*** (0.0192)	-0.0236* (0.0119)	0.1374*** (0.0147)	0.0344*** (0.0105)
Age $_{i,t+1}$	0.0365** (0.0154)	0.0244* (0.0136)	0.0215** (0.0100)	0.0029 (0.0075)	0.0094 (0.0068)
Born in the same province $_{i,t+1}$	-0.0125 (0.1095)	-0.0917* (0.0524)	-0.0241 (0.0497)	-0.0676* (0.0329)	0.0151 (0.0415)
Master degree or above $_{i,t+1}$	0.1142 (0.1097)	-0.0712 (0.0858)	-0.0481 (0.0537)	-0.0231 (0.0593)	0.0693 (0.0734)
Female $_{i,t+1}$	0.1732 (0.1996)	0.3353 (0.2187)	0.2175 (0.1488)	0.1177 (0.0871)	-0.0368 (0.0714)
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- $t$ controls?	Y	Y	Y	Y	Y
First-stage F-stat	116.76	116.76	116.76	116.76	116.76
Observations	821	821	821	821	821
$R^2$	0.5568	0.4987	0.4759	0.5545	0.4660

- ▶ A standard deviation more negative export shock would raise the likelihood of turnover by 6 percentage points. (Avg. turnover rate is 29.6%.)

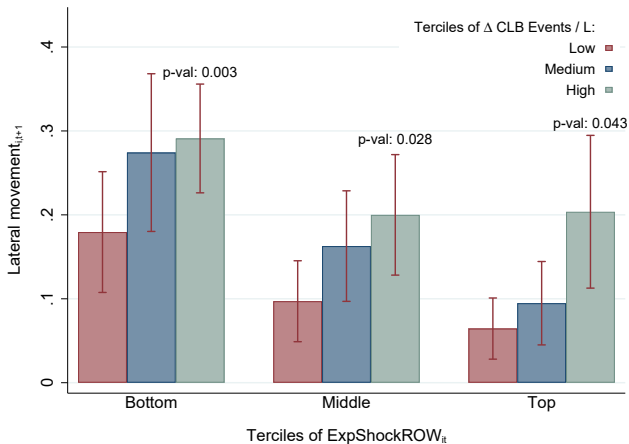
## Political turnover



## Political turnover: The role of labor strikes



## Political turnover: The role of labor strikes



- Consistent with party secretaries being assessed on their ability to manage the strike situation, . . . taking into account the severity of the export shock.

## Further Evidence: Political Career Concerns and Party Secretary Actions

## Background on 维稳 (“weiwen”)

A political watchword for the importance of domestic stability as a policy priority (Qian 2012)

- ▶ 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](#)
- ▶ In the context of labor strikes: Uncovered a temporal correlation between Baidu 维稳 search index and CLB events [▶ Baidu](#)

## Evidence from textual analysis: Data

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; 治安



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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 (MNB)**; 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.

## Evidence from local government spending: Data

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

- ▶ Public security: all expenses by People's Armed Police, public security organs, court system, judicial system, and prosecutorial system.
- ▶ Social spending: public services, social security, education, medical services, public housing
- ▶ For an average prefecture, expenditure on public security amounts to 5.1% of total fiscal expenditure (647 RMB per worker on average); social spending amounts to 54.2%
- ▶ Hand-collected from: Local Ministry of Finance Fiscal Statistics Yearbooks or provincial statistical yearbooks, Prefecture-level statistical yearbooks; Government websites
- ▶ 85% of fiscal spending at the local level is undertaken by subnational layers of government (Wingender 2018)

## Evidence from textual analysis: Results

$$\Delta (\text{"Weiwen"})_{i,t+1} = \beta_1 (\text{ExpShock})_{it} + \beta_X X_{it} + D_{prov,t} + D_i + \epsilon_{it}$$

Dependent variable:	$\Delta$ Textual "weiwen" score $_{i,t+1}$					
	Share of keywords (1) IV	Share of keywords (2) IV	Log MNB (3) IV	Log MNB (4) IV	Log SVM (5) IV	Log SVM (6) IV
ExpShock $_{it}$	-0.0032 (0.0034)	-0.0049* (0.0027)	-0.1988 (0.1393)	-0.2463* (0.1264)	-0.2681 (0.1684)	-0.3260** (0.1397)
(Age $\leq 57$ ) $_{i,t+1} \times$ ExpShock $_{it}$		-0.0084** (0.0036)		-0.3133*** (0.0889)		-0.3504*** (0.1101)
(Age $\leq 57$ ) $_{i,t+1}$		0.0248** (0.0095)		-0.0310 (0.1350)		0.2764 (0.5967)
Province-year dummies?	Y	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y	Y
Additional time- $t$ controls?	Y	Y	Y	Y	Y	Y
Incumbent controls?	Y	Y	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	Y	Y	Y	Y	Y	Y
First-stage F-stat	54.95	14.27	54.95	14.27	54.95	14.27
Observations	801	801	801	801	801	801
R <sup>2</sup>	0.2483	0.2587	0.3082	0.2979	0.2817	0.2893

## Evidence from local government spending: Results

$$\Delta(\text{Fiscal})_{i,t+1} = \beta_1(\text{ExpShock})_{it} + \beta_X X_{it} + D_{\text{prov},t} + D_i + \epsilon_{it}$$

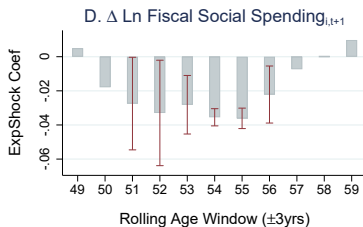
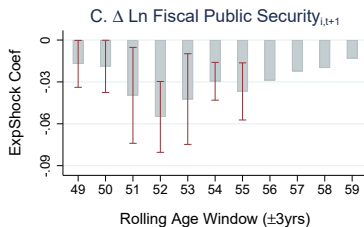
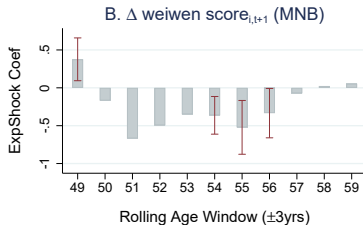
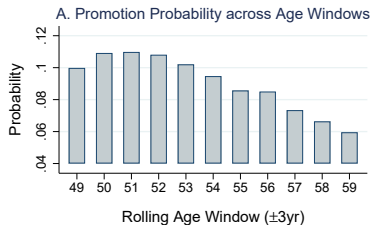
► Hetero.

► Share

► Soc. Spending

$\Delta \text{ Log Fiscal measure}_{i,t+1}$ :	Stability Measures (1) IV	Public Security (1a) IV	Social Spending (1b) IV	Other Spending (2) IV	Total Expenditure (3) IV	Total Revenue (4) IV
<b>Panel A: Average Effect</b>						
ExpShock <sub>it</sub>	-0.0208** (0.0083)	-0.0234** (0.0094)	-0.0208** (0.0085)	-0.0049 (0.0083)	-0.0024 (0.0046)	-0.0103 (0.0085)
First-stage F-stat	61.72	55.16	61.31	61.72	54.77	54.47
Observations	759	813	762	759	816	821
R <sup>2</sup>	0.5999	0.6103	0.6084	0.7019	0.7118	0.7617
<b>Panel B: Differential Effect by Age Group</b>						
ExpShock <sub>it</sub>	-0.0238*** (0.0056)	-0.0248*** (0.0071)	-0.0241*** (0.0055)	-0.0090 (0.0076)	-0.0044 (0.0052)	-0.0087 (0.0075)
(Age≤57) <sub>i,t+1</sub> × ExpShock <sub>it</sub>	-0.0221*** (0.0078)	-0.0123* (0.0066)	-0.0244*** (0.0087)	-0.0268*** (0.0080)	-0.0143** (0.0051)	0.0086 (0.0063)
(Age≤57) <sub>i,t+1</sub>	-0.0235** (0.0095)	-0.0299* (0.0157)	-0.0222** (0.0096)	0.0006 (0.0173)	-0.0097 (0.0101)	-0.0202 (0.0123)
First-stage F-stat	20.00	14.42	19.95	20.00	14.36	14.28
Observations	759	813	762	759	816	821
R <sup>2</sup>	0.6042	0.6123	0.6131	0.7012	0.7114	0.7668
Province-year dummies?	Y	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y	Y
Incumbent controls?	Y	Y	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	Y	Y	Y	Y	Y	Y

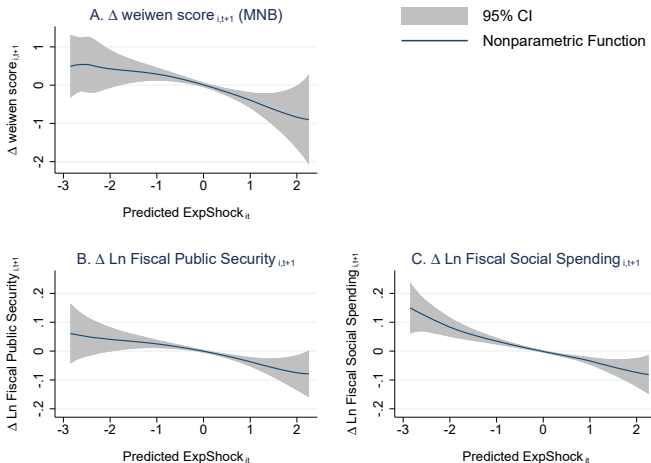
## Heterogeneous responses by age



— 90% CI (when coef. significant)

## Heterogeneous responses by age

- For incumbents aged  $< 57$ , use of “weiben” measures increases monotonically with the severity of the export shock. Consistent career incentives in the shadow of a “sophisticated” central government.



## Concluding Remarks

## Conclusion

- ▶ Between 2013-2015, China's export slowdown associated with increased strike and labor-related unrest 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) increased allocation of fiscal resources towards stability measures; and (iii) greater likelihood of political turnover.
- ▶ Sheds light on the distinctive nature of political responses to negative economic shocks, in the context of an autocratic regime with strong state capacity
- ▶ Local leader turnover increases in the face of adverse economic shocks, as they are held accountable by the central government for their performance in delivering social stability.

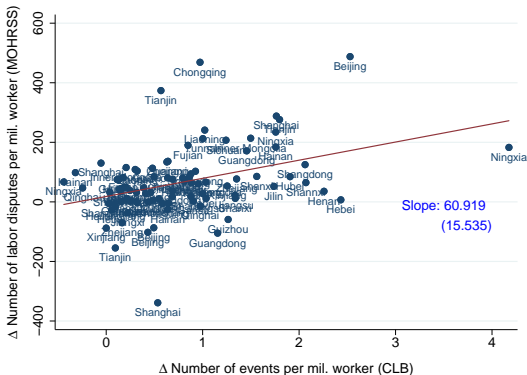


## Supplementary Slides

## Corroborating the China Labour Bulletin (CLB) Data

▶ Back

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



# Exploring Underlying Causes and Mechanisms

▶ Back

Dependent variable:	$\Delta$ CLB Events per million <sub>it</sub>				
	(1) IV	(2) IV	(3) OLS	(4) OLS	(5) IV
ExpShock <sub>it</sub>	-0.1771* (0.0922)				-0.6410** (0.2808)
Neighboring ExpShock <sub>it</sub>	0.0154 (0.1665)				
ExpShock <sub>it,t+1</sub>		0.0613 (0.1065)			
ExpShock <sub>it</sub> <sup>Exit</sup>			-0.2152** (0.0897)		
ExpShock <sub>it</sub> <sup>NonExit</sup>			-0.1515*** (0.0467)		
ExpShock <sub>it</sub> <sup>NonSOE</sup>				-0.2154*** (0.0726)	
ExpShock <sub>it</sub> <sup>SOE</sup>				0.8726 (1.1687)	
ln(Fiscal Pub. Security/L) <sub>i,t-12</sub> × ExpShock <sub>it</sub>					0.7743*** (0.2759)
Share of State Emp <sub>i,t-10</sub> × ExpShock <sub>it</sub>					0.2059** (0.0831)
Share of Non-Hukou <sub>i,t-10</sub> × ExpShock <sub>it</sub>					-0.0582 (0.1887)
Share of College <sub>i,t-10</sub> × ExpShock <sub>it</sub>					-14.9526*** (3.2214)
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
First-stage F-stat	31.85	23.94	–	–	6.81
Observations	822	822	822	820	813
R <sup>2</sup>	0.5266	0.5176	0.5266	0.5248	0.5265

## Other Labor Market and Economic Outcomes

▶ Back

- ▶ Responses of other economic outcomes – esp. share of manufacturing employment, night-lights intensity, individual-level income (from China Family Panel Studies) – consistent with the broader narrative

Dependent variable:	$\Delta$ Economic outcome <sub>it</sub>				
	Share of Mfg. empl. in population (1) IV	Share of non-Mfg. empl. in population (2) IV	Log Industrial output per worker (3) IV	Log Night Lights intensity (4) IV	Log Individual Income (5) IV
ExpShock <sub>it</sub>	0.0118** (0.0054)	0.0023** (0.0010)	0.0027 (0.0123)	0.0237*** (0.0076)	0.0612** (0.0237)
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	N
Individual controls?	N	N	N	N	Y
First-stage F-stat	56.77	101.75	109.25	106.75	9.12
Observations	800	800	804	808	30,957
R <sup>2</sup>	0.5341	0.5943	0.6257	0.8212	0.0387

## Placebo: Future Shocks

▶ Back

Dependent variable:	$\Delta$ CLB Events per million <sub><i>i,t</i></sub>	Party Sec. Lateral Turnover <sub><i>i,t+1</i></sub>	$\Delta$ Log MNB "weiwen" score <sub><i>i,t+1</i></sub>	$\Delta$ Log Fiscal Public Security <sub><i>i,t+1</i></sub>	$\Delta$ Log Fiscal Social Spending <sub><i>i,t+1</i></sub>
	(1)	(2)	(3)	(4)	(5)
	IV	IV	IV	IV	IV
ExpShock <sub><i>i,t+1</i></sub>	0.0613 (0.1065)	-0.0197 (0.0295)	0.0054 (0.0689)	0.0039 (0.0050)	-0.0002 (0.0031)
(Age <sub>≤57</sub> ) <sub><i>i,t+1</i></sub> × ExpShock <sub><i>i,t+1</i></sub>			0.0395 (0.1360)	0.0092 (0.0068)	-0.0025 (0.0061)
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	N	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	N	N	Y	Y	Y
First-stage F-stat	23.94	22.54	6.88	6.82	9.43
Observations	822	821	801	813	762
R <sup>2</sup>	0.5176	0.4984	0.3047	0.6097	0.5789

## Robustness: Sample time frame

▶ Back

Dependent variable:	$\Delta$ CLB Events per million <sub><i>it</i></sub> (1) OLS-RF	Party Sec. Lateral Turnover <sub><i>i,t+1</i></sub> (2) OLS-RF	$\Delta$ Log MNB "weiwen" score <sub><i>i,t+1</i></sub> (3) OLS-RF	$\Delta$ Log Fiscal Public Security <sub><i>i,t+1</i></sub> (4) OLS-RF	$\Delta$ Log Fiscal Social Spending <sub><i>i,t+1</i></sub> (5) OLS-RF
<b>Panel B: Extended Sample Period</b>					
ExpShockROW <sub><i>it</i></sub>	-0.0432** (0.0159)	-0.0489** (0.0231)	-0.0863* (0.0488)	-0.0122*** (0.0037)	-0.0135*** (0.0038)
(Age $\leq$ 57) <sub><i>i,t+1</i></sub> × ExpShockROW <sub><i>it</i></sub>			-0.1129** (0.0410)	-0.0085 (0.0068)	-0.0114* (0.0063)
Data period for outcome variable	2012-17	2013-17	2013-17	2013-17	2013-17
Province dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	N	Y	Y	Y	Y
Prefecture-tier dummies?	N	N	Y	Y	Y
Observations	1,621	1,346	1,309	1,331	1,244
R <sup>2</sup>	0.4810	0.4294	0.2402	0.5127	0.5241

## Robustness: Basic checks

Dependent variable:	$\Delta$ CLB Events per million <sub><i>t</i></sub>	Party Sec. Lateral Turnover <sub><i>i,t+1</i></sub>	$\Delta$ Log MNB "weiben" score <sub><i>i,t+1</i></sub>	$\Delta$ Log Fiscal Public Security <sub><i>i,t+1</i></sub>	$\Delta$ Log Fiscal Social Spending <sub><i>i,t+1</i></sub>
	(1)	(2)	(3)	(4)	(5)
	IV	IV	IV	IV	IV
<b>Panel A: Drop Additional Time-<i>t</i> Controls</b>					
ExpShock <sub><i>t</i></sub>	-0.1822** (0.0739)	-0.0768*** (0.0243)	-0.2105 (0.1351)	-0.0241*** (0.0069)	-0.0248*** (0.0052)
(Age $\leq$ 57) <sub><i>i,t+1</i></sub> × ExpShock <sub><i>t</i></sub>			-0.3000*** (0.0969)	-0.0108 (0.0066)	-0.0237*** (0.0082)
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	N	N	N	N	N
Incumbent controls?	N	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	N	N	Y	Y	Y
First-stage F-stat	64.32	71.38	9.88	9.61	12.56
Observations	987	974	919	956	905
R <sup>2</sup>	0.5020	0.4899	0.2894	0.6036	0.5866
<b>Panel B: Unweighted Regressions</b>					
ExpShock <sub><i>t</i></sub>	-0.1744** (0.0787)	-0.0689*** (0.0189)	-0.1277 (0.1374)	-0.0198* (0.0110)	-0.0151*** (0.0043)
(Age $\leq$ 57) <sub><i>i,t+1</i></sub> × ExpShock <sub><i>t</i></sub>			-0.2150* (0.1085)	-0.0092 (0.0091)	-0.0177* (0.0093)
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	N	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	N	N	Y	Y	Y
First-stage F-stat	53.44	51.11	9.79	10.23	12.93
Observations	822	821	801	813	762
R <sup>2</sup>	0.4481	0.5080	0.2936	0.5850	0.5534

## Robustness: Basic checks

▶ Back

Dependent variable:	$\Delta$ CLB Events per million <sub><i>it</i></sub> (1) IV	Party Sec. Lateral Turnover <sub><i>i,t+1</i></sub> (2) IV	$\Delta$ Log MNB "weiwen" score <sub><i>i,t+1</i></sub> (3) IV	$\Delta$ Log Fiscal Public Security <sub><i>i,t+1</i></sub> (4) IV	$\Delta$ Log Fiscal Social Spending <sub><i>i,t+1</i></sub> (5) IV
<b>Panel C: Include One-Period Lagged Dependent Variable and Drop Prefecture FEs</b>					
ExpShock <sub><i>kt</i></sub>	-0.2494*** (0.0555)	-0.0728*** (0.0227)	-0.2071 (0.1281)	-0.0189* (0.0093)	-0.0257*** (0.0081)
(Age $\leq$ 57) <sub><i>i,t+1</i></sub> × ExpShock <sub><i>it</i></sub>			-0.1928** (0.0876)	-0.0082 (0.0049)	-0.0259*** (0.0070)
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	N	N	N	N	N
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	N	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	N	N	Y	Y	Y
First-stage F-stat	122.20	135.99	22.51	24.31	59.59
Observations	825	823	788	814	739
R <sup>2</sup>	0.3522	0.2721	0.3490	0.5292	0.4594



Regress industry-specific weighted-averages of initial prefecture characteristics  
 ... against product level export shocks and year fixed effects.

Panel A: Balance Test of Industry Shocks	Coef.	SE
<i>Predetermined Prefecture Characteristics:</i>		
Share of college educated (%)	0.0068	(0.0051)
Manufacturing employment share (%)	0.0396	(0.0293)
Export to GDP ratio (%)	0.1427	(0.1090)
Share of population without Hukou (%)	0.0961	(0.0712)
Log GDP per capita	0.0011	(0.0009)
Party secretary age	0.0062	(0.0046)
Party secretary age ≤ 57 (indicator variable)	-0.0002	(0.0002)
Log fiscal revenue per capita	0.0019	(0.0014)
<i>Pre-trends in Outcomes:</i>		
Δ Event per mill., 2011-12 (×100)	0.0145	(0.0354)
Δ Event per mill., 2012-13 (×100)	0.0349	(0.0504)
Δ Party secretary turnover, Lateral, 2011-12 (×100)	0.0027	(0.0029)
Δ Party secretary turnover, Lateral, 2012-13 (×100)	0.0060	(0.0060)
Δ Log "weiwu" score, MNB, 2011-12 (×100)	-0.0026	(0.0066)
Δ Log "weiwu" score, MNB, 2012-13 (×100)	-0.0046	(0.0165)
Δ Log fiscal expenditure, Public Security, 2011-12 (×100)	-0.0027	(0.0034)
Δ Log fiscal expenditure, Public Security, 2012-13 (×100)	-0.0025	(0.0025)
Δ Log fiscal expenditure, Social Spending, 2011-12 (×100)	0.0012	(0.0012)
Δ Log fiscal expenditure, Social Spending, 2012-13 (×100)	-0.0015	(0.0015)

Joint significance test:  $\chi^2(18)=4.29$ , p-value=0.9996

## Robustness: Product-level regressions

▶ Back

<b>Panel B: Product-Level Regressions</b>					
Dependent variable:	$\Delta$ CLB Events per million $_{kt}^{\perp}$ (1) IV	Party Sec. Lateral Turnover $_{k,t+1}^{\perp}$ (2) IV	$\Delta$ Log MNB "weiwen" score $_{k,t+1}^{\perp}$ (3) IV	$\Delta$ Log Fiscal Public Security $_{k,t+1}^{\perp}$ (4) IV	$\Delta$ Log Fiscal Social Spending $_{k,t+1}^{\perp}$ (5) IV
ExpShock $_{kt}^{\perp}$	-0.1728*** (0.0285)	-0.0907*** (0.0124)	-0.1988** (0.0776)	-0.0234*** (0.0019)	-0.0208*** (0.0030)
First-stage F-stat	33.36	34.55	29.97	29.97	29.30
Observations	13,197	13,197	13,197	13,197	13,197
$R^2$	0.1721	0.0723	0.0570	0.2292	0.4312

# Robustness: “Incomplete Share”

▶ Back

Dependent variable:	$\Delta$ CLB Events per million <sub><i>it</i></sub> (1) IV	Party Sec. Lateral Turnover <sub><i>i,t+1</i></sub> (2) IV	$\Delta$ Log MNB “weiwen” score <sub><i>i,t+1</i></sub> (3) IV	$\Delta$ Log Fiscal Public Security <sub><i>i,t+1</i></sub> (4) IV	$\Delta$ Log Fiscal Social Spending <sub><i>i,t+1</i></sub> (5) IV
<b>Panel B: Controlling for Terciles of Initial Export Exposure <math>\times</math> Year FEs</b>					
ExpShock <sub><i>it</i></sub>	-0.1016 (0.0677)	-0.0695** (0.0332)	-0.2286* (0.1154)	-0.0250*** (0.0069)	-0.0236*** (0.0052)
(Age $\leq$ 57) <sub><i>i,t+1</i></sub> $\times$ ExpShock <sub><i>it</i></sub>			-0.3327** (0.1250)	-0.0167** (0.0074)	-0.0261** (0.0100)
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	N	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	N	N	Y	Y	Y
First-stage F-stat	108.45	123.78	14.82	15.08	21.15
Observations	822	821	801	813	762
R <sup>2</sup>	0.5461	0.5229	0.3095	0.6253	0.6203

## Robustness: Excluding intermediary firms [▶ Back](#)

Dependent variable:	$\Delta$ CLB Events per million <sub><i>it</i></sub> (1) IV	Party Sec. Lateral Turnover <sub><i>i,t+1</i></sub> (2) IV	$\Delta$ Log MNB "weiwen" score <sub><i>i,t+1</i></sub> (3) IV	$\Delta$ Log Fiscal Public Security <sub><i>i,t+1</i></sub> (4) IV	$\Delta$ Log Fiscal Social Spending <sub><i>i,t+1</i></sub> (5) IV
<b>Panel A: Excluding Trade by Intermediary Firms</b>					
ExpShock <sub><i>it</i></sub>	-0.1620 <sup>†</sup> (0.0996)	-0.0705* (0.0344)	-0.2720* (0.1487)	-0.0258*** (0.0091)	-0.0233*** (0.0070)
(Age $\leq$ 57) <sub><i>i,t+1</i></sub> × ExpShock <sub><i>it</i></sub>			-0.3414*** (0.1156)	-0.0165** (0.0069)	-0.0253** (0.0101)
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	N	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	N	N	Y	Y	Y
First-stage F-stat	178.59	123.33	12.13	12.22	22.59
Observations	822	821	801	813	762
R <sup>2</sup>	0.5220	0.5129	0.2960	0.6099	0.6189

## Robustness: Destination-specific demand shocks

▶ Back

$$ExpShockROW_{it} = \sum_k \sum_{d \neq CHN} \frac{X_{idk,2010}}{\sum_i X_{idk,2010}} \frac{\Delta \hat{X}_{dkt}^{ROW}}{L_{i,2010}} \quad (1)$$

Dependent variable:	$\Delta$ CLB Events per million <sub>it</sub> (1) IV	Party Sec. Lateral Turnover <sub>i,t+1</sub> (2) IV	$\Delta$ Log MNB "weiwen" score <sub>i,t+1</sub> (3) IV	$\Delta$ Log Fiscal Public Security <sub>i,t+1</sub> (4) IV	$\Delta$ Log Fiscal Social Spending <sub>i,t+1</sub> (5) IV
<b>Panel B: Destination-specific Demand Shocks</b>					
ExpShock <sub>it</sub>	-0.1630*** (0.0536)	-0.1004*** (0.0318)	-0.1591* (0.0808)	-0.0236** (0.0084)	-0.0237*** (0.0075)
(Age ≤ 57) <sub>i,t+1</sub> × ExpShock <sub>it</sub>			-0.2237*** (0.0751)	-0.0231* (0.0112)	-0.0256*** (0.0084)
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	N	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	N	N	Y	Y	Y
First-stage F-stat	35.46	40.63	10.68	10.74	12.22
Observations	822	821	801	813	762
R <sup>2</sup>	0.5265	0.4937	0.3154	0.6108	0.6134

## Robustness: Gravity-based demand effects

▶ Back

$$\ln X_{odkt} = \alpha_1 \ln Dist_{od} + \alpha_2 B_{od} + \alpha_3 Col_{od} + \alpha_3 Lang_{od} + \varphi_{okt} + \varphi_{dkt} + \varepsilon_{odkt} \quad (2)$$

$$ExpShockROW_{it} = \sum_k \frac{X_{ik,2010}}{\sum_i X_{ik,2010}} \frac{\Delta \hat{X}_{kt}^{ROW}}{L_{i,2010}} \quad (3)$$

where  $\Delta \hat{X}_{kt}^{ROW} = \sum_{d \neq CHN} X_{dk,t-1}^{ROW} \Delta \varphi_{dkt}$ .

Dependent variable:	$\Delta$ CLB Events per million <sub>it</sub> (1) IV	Party Sec. Lateral Turnover <sub>i,t+1</sub> (2) IV	$\Delta$ Log MNB "weiwen" score <sub>i,t+1</sub> (3) IV	$\Delta$ Log Fiscal Public Security <sub>i,t+1</sub> (4) IV	$\Delta$ Log Fiscal Social Spending <sub>i,t+1</sub> (5) IV
<b>Panel C: Gravity-based Instrument</b>					
ExpShock <sub>it</sub>	-0.1609** (0.0764)	-0.0766 <sup>†</sup> (0.0503)	-0.1864 (0.1522)	-0.0229 <sup>†</sup> (0.0146)	-0.0454*** (0.0125)
(Age <sub>≤57</sub> ) <sub>i,t+1</sub> × ExpShock <sub>it</sub>			-0.3142** (0.1153)	-0.0168 <sup>†</sup> (0.0107)	-0.0403*** (0.0089)
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	N	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	N	N	Y	Y	Y
First-stage F-stat	79.76	94.33	16.77	17.11	23.34
Observations	822	821	801	813	762
R <sup>2</sup>	0.5265	0.5042	0.3087	0.6140	0.5019

## Robustness: Controlling for domestic demand and output

Data on output of CSIC industry  $j$ : From China Industry Statistical Yearbooks.

- ▶ Construct Bartik proxies for the domestic output shock and domestic absorption shock experienced by each prefecture  $i$ .

$$OutputShock_{it} = \sum_j \frac{L_{ij,2010}}{\sum_i L_{ij,2010}} \frac{\Delta Output_{jt}}{L_{i,2010}}. \quad (4)$$

$$AbsorptionShock_{it} = \sum_j \frac{L_{ij,2010}}{\sum_i L_{ij,2010}} \frac{\Delta Output_{jt} - Export_{jt} + Import_{jt}}{L_{i,2010}}. \quad (5)$$

# Robustness: Controlling for domestic demand and output

[▶ Back](#)

Dependent variable:	$\Delta$ CLB Events per million <sub><i>it</i></sub>	Party Sec. Lateral Turnover <sub><i>i,t+1</i></sub>	$\Delta$ Log MNB "weiben" score <sub><i>i,t+1</i></sub>	$\Delta$ Log Fiscal Public Security <sub><i>i,t+1</i></sub>	$\Delta$ Log Fiscal Social Spending <sub><i>i,t+1</i></sub>
	(1)	(2)	(3)	(4)	(5)
	IV	IV	IV	IV	IV
<b>Panel A: Domestic Absorption Shocks</b>					
ExpShock <sub><i>it</i></sub>	-0.1556 <sup>†</sup> (0.0915)	-0.0906** (0.0380)	-0.2695* (0.1417)	-0.0258*** (0.0072)	-0.0226*** (0.0066)
(Age <sub>≤57</sub> ) <sub><i>i,t+1</i></sub> × ExpShock <sub><i>it</i></sub>			-0.3161*** (0.0975)	-0.0124* (0.0065)	-0.0245** (0.0091)
AbsorptionShock <sub><i>it</i></sub>	-0.0696 (0.1615)	-0.0005 (0.0613)	0.1134 (0.1107)	0.0049 (0.0097)	-0.0081 (0.0104)
First-stage F-stat	71.85	80.40	12.65	12.85	16.85
Observations	822	821	801	813	762
R <sup>2</sup>	0.5268	0.4987	0.2937	0.6111	0.6170
<b>Panel B: Domestic Output Shocks</b>					
ExpShock <sub><i>it</i></sub>	-0.2024** (0.0905)	-0.0896*** (0.0307)	-0.2344* (0.1212)	-0.0226*** (0.0070)	-0.0185** (0.0070)
(Age <sub>≤57</sub> ) <sub><i>i,t+1</i></sub> × ExpShock <sub><i>it</i></sub>			-0.3183*** (0.0950)	-0.0132* (0.0070)	-0.0281*** (0.0094)
OutputShock <sub><i>it</i></sub>	0.0794 (0.1445)	-0.0031 (0.0526)	-0.0332 (0.1194)	-0.0060 (0.0118)	-0.0167** (0.0075)
First-stage F-stat	31.91	34.71	8.43	8.54	10.38
Observations	822	821	801	813	762
R <sup>2</sup>	0.5262	0.4992	0.3003	0.6154	0.6251
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	N	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	N	N	Y	Y	Y



# Robustness: Controlling for import

▶ Back

Dependent variable:	$\Delta$ CLB Events per million <sub><i>it</i></sub> (1) IV	Party Sec. Lateral Turnover <sub><i>i,t+1</i></sub> (2) IV	$\Delta$ Log MNB "weiben" score <sub><i>i,t+1</i></sub> (3) IV	$\Delta$ Log Fiscal Public Security <sub><i>i,t+1</i></sub> (4) IV	$\Delta$ Log Fiscal Social Spending <sub><i>i,t+1</i></sub> (5) IV
<b>Panel D: Import Shocks</b>					
ExpShock <sub><i>it</i></sub>	-0.1675** (0.0784)	-0.0915** (0.0345)	-0.2462* (0.1275)	-0.0248*** (0.0076)	-0.0243*** (0.0060)
(Age <sub>≤57</sub> ) <sub><i>i,t+1</i></sub> × ExpShock <sub><i>it</i></sub>			-0.3106*** (0.0969)	-0.0140* (0.0074)	-0.0266** (0.0110)
ImpShock <sub><i>it</i></sub>	-0.1669 (0.3400)	0.0246 (0.1100)	-0.0455 (0.2086)	0.0289 (0.0271)	0.0265 (0.0291)
First-stage F-stat	166.23	190.30	17.64	17.72	22.41
Observations	822	821	801	813	762
R <sup>2</sup>	0.5267	0.4984	0.2981	0.6131	0.6134
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	N	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	N	N	Y	Y	Y

## Robustness: Dropping one HS section at a time

▶ Back

Dependent variable:	$\Delta$ CLB Events per million <sub><i>it</i></sub> (1) IV	Party Sec. Lateral Turnover <sub><i>i,t+1</i></sub> (2) IV	$\Delta$ Log MNB "weiwēn" score <sub><i>i,t+1</i></sub> (3) IV	$\Delta$ Log Fiscal Public Security <sub><i>i,t+1</i></sub> (4) IV	$\Delta$ Log Fiscal Social Spending <sub><i>i,t+1</i></sub> (5) IV
Range of Estimates:					
Min ExpShock <sub><i>it</i></sub> coef.	-0.3908*** (0.1288)	-0.1594** (0.0618)	-0.5220* (0.3038)	-0.0422*** (0.0179)	-0.0375*** (0.0131)
Max ExpShock <sub><i>it</i></sub> coef.	-0.1615** (0.0724)	-0.0890*** (0.0296)	-0.1500** (0.0756)	-0.0240*** (0.0071)	-0.0237*** (0.0054)
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	N	Y	Y	Y	Y
(Age $\leq$ 57) <sub><i>i,t+1</i></sub> , (Age $\leq$ 57) <sub><i>i,t+1</i></sub> × ExpShock <sub><i>it</i></sub> ?	N	N	Y	Y	Y
Prefecture-tier-by-year dummies?	N	N	Y	Y	Y

# Robustness: Alternative Clustered Standard Errors

▶ Back

Dependent variable:	$\Delta$ CLB Events per million <sub><i>it</i></sub>	Party Sec. Lateral Turnover <sub><i>i,t+1</i></sub>	$\Delta$ Log MNB "weiben" score <sub><i>i,t+1</i></sub>	$\Delta$ Log Fiscal Public Security <sub><i>i,t+1</i></sub>	$\Delta$ Log Fiscal Social Spending <sub><i>i,t+1</i></sub>
	(1) IV	(2) IV	(3) IV	(4) IV	(5) IV
ExpShock <sub><i>it</i></sub>	-0.1728	-0.0907	-0.2463	-0.0248	-0.0241
<i>Robust Standard Errors Clustered at:</i>					
(i) province	(0.0746)**	(0.0314)***	(0.1264)*	(0.0071)***	(0.0055)***
(ii) export similarity	[0.0681]***	[0.0276]***	[0.0930]***	[0.0074]***	[0.0072]***
(iii) two-way clustering: (i) and (ii)	{0.0591}***	{0.0233}***	{0.1066}***	{0.0059}***	{0.0063}***
(iv) export similarity: outside prov.	<0.0714>***	(0.0338)**	<0.1057>***	(0.0075)***	(0.0071)***
(v) two-way clustering: (i) and (iv)	[[0.0557]***	[[0.0227]***	[[0.1063]**	[[0.0074]***	[[0.0061]***
<i>Wild cluster bootstrap-t (Cameron et al. ,2008):</i> p-value of two-sided tests:	0.0178	0.0031	0.0451	0.0003	0.0000
$(Age \leq 57)_{i,t+1} \times ExpShock_{it}$			-0.3133	-0.0123	-0.0244
<i>Robust Standard Errors Clustered at:</i>					
(i) province			(0.0889)***	(0.0066)*	(0.0087)***
(ii) export similarity			[0.0960]***	[0.0076]	[0.0042]***
(iii) two-way clustering: (i) and (ii)			{0.0978}***	{0.0070}*	{0.0067}***
(iv) export similarity: outside prov.			<0.0881>***	<0.0087>	<0.0049>***
(v) two-way clustering: (i) and (iv)			[[0.0816]***	[[0.0058]**	[[0.0049]***
<i>Wild cluster bootstrap-t (Cameron et al. ,2008):</i> p-value of two-sided tests			0.0003	0.0550	0.0038
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	N	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	N	N	Y	Y	Y
Observations	822	821	801	813	762
R-squared	0.5264	0.4987	0.2979	0.6123	0.6131

## Evidence from local government spending: Other measures

[▶ Back](#)

Dependent variable:	$\Delta \text{Log Fiscal measure}_{i,t+1}$					
Fiscal measure:	Other Spending	Other Spending	Total Expenditure	Total Expenditure	Total Revenue	Total Revenue
	(1)	(2)	(3)	(4)	(5)	(6)
	IV	IV	IV	IV	IV	IV
ExpShock <sub>it</sub>	-0.0085 (0.0063)	0.0087 (0.0060)	-0.0097*** (0.0025)	0.0011 (0.0063)	-0.0110 (0.0082)	-0.0153** (0.0070)
(Age <sub>it</sub> ≤ 57) <sub>i,t+1</sub> × ExpShock <sub>it</sub>		-0.0270*** (0.0055)		-0.0165*** (0.0035)		0.0068 (0.0048)
Province-year dummies?	Y	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y	Y
First-stage F-stat	75.40	19.85	62.20	11.80	62.30	11.82
Observations	790	790	836	836	840	840
R-squared	0.7104	0.7091	0.7115	0.7067	0.7606	0.7656

## Evidence from “weiben” measures: Heterogeneous Effects

▶ Back

Dependent variable:	Panel A: $\Delta$ Textual “weiben” score $_{i,t+1}$		
	Share of keywords (1) IV	Log MNB (2) IV	Log SVM (3) IV
ExpShock $_{it}$	-0.0019 (0.0188)	-0.7277 (0.6458)	0.2761 (0.7164)
$\Delta(\text{Events}/L)_{it} \times \text{ExpShock}_{it}$	0.0014 (0.0060)	-0.0469 (0.0928)	0.0360 (0.1014)
$\ln(\text{FiscalRev}/L)_{i,2012} \times \text{ExpShock}_{it}$	-0.0029 (0.0112)	0.3560 (0.3567)	-0.4291 (0.4195)
$(\text{Age} \leq 57)_{i,t+1} \times \text{ExpShock}_{it}$	-0.0079** (0.0031)	-0.3578*** (0.1138)	-0.3244** (0.1501)
First-stage F-stat	6.33	6.33	6.33
Observations	801	801	801
$R^2$	0.2574	0.2680	0.3018
Province-year dummies?	Y	Y	Y
Prefecture dummies?	Y	Y	Y
Additional time- $t$ controls?	Y	Y	Y
Incumbent controls?	Y	Y	Y
Prefecture-tier-by-year dummies?	Y	Y	Y

## Evidence from “weiben” measures: Heterogeneity effects

► Back

Dependent variable:	Panel B: $\Delta$ Log Fiscal measure $_{i,t+1}$		
Fiscal measure:	Stability Measures	Public Security	Social Spending
	(1)	(1a)	(1b)
	IV	IV	IV
ExpShock $_{it}$	0.0168 (0.0142)	-0.0911*** (0.0282)	0.0347* (0.0173)
$\Delta(\text{Events}/L)_{it} \times \text{ExpShock}_{it}$	-0.0140*** (0.0021)	-0.0053 (0.0033)	-0.0156*** (0.0023)
$\ln(\text{FiscalRev}/L)_{i,2012} \times \text{ExpShock}_{it}$	-0.0195** (0.0087)	0.0484*** (0.0168)	-0.0310*** (0.0106)
$(\text{Age} \leq 57)_{i,t+1} \times \text{ExpShock}_{it}$	-0.0174*** (0.0042)	-0.0190** (0.0077)	-0.0179*** (0.0040)
First-stage F-stat	7.11	6.32	7.22
Observations	759	813	762
$R^2$	0.6052	0.5781	0.6098
Province-year dummies?	Y	Y	Y
Prefecture dummies?	Y	Y	Y
Additional time- $t$ controls?	Y	Y	Y
Incumbent controls?	Y	Y	Y
Prefecture-tier-by-year dummies?	Y	Y	Y

## Robustness: Effect on fiscal expenditure shares

▶ Back

Dependent variable:	$\Delta \text{Log (Share of Fiscal share)}_{i,t+1}$			
Fiscal measure:	Stability Measures	Public Security	Social Spending	Other Spending
	(1)	(1a)	(1b)	(2)
	IV	IV	IV	IV
<b>Panel A: Average Effect</b>				
ExpShock <sub>it</sub>	-0.0184** (0.0080)	-0.0210** (0.0095)	-0.0184** (0.0083)	-0.0024 (0.0052)
First-stage F-stat	61.72	55.16	61.31	61.72
Observations	759	813	762	759
R <sup>2</sup>	0.6616	0.6975	0.6436	0.6214
<b>Panel B: Differential Effect by Age Group</b>				
ExpShock <sub>it</sub>	-0.0193** (0.0073)	-0.0203** (0.0094)	-0.0197** (0.0073)	-0.0045 (0.0042)
(Age≤57) <sub>i,t+1</sub> × ExpShock <sub>it</sub>	-0.0073* (0.0042)	0.0022 (0.0066)	-0.0099* (0.0049)	-0.0120*** (0.0043)
(Age≤57) <sub>i,t+1</sub>	-0.0115 (0.0079)	-0.0201* (0.0104)	-0.0105 (0.0087)	0.0125 (0.0101)
First-stage F-stat	20.00	14.42	19.95	20.00
Observations	759	813	762	759
R <sup>2</sup>	0.6379	0.6956	0.6100	0.6379
Province-year dummies?	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y
Additional time-t controls?	Y	Y	Y	Y
Incumbent controls?	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	Y	Y	Y	Y

# Fiscal expenditure: Social spending breakdown

▶ Back

Dependent variable:	$\Delta \text{ Log Fiscal measure}_{i,t+1}$				
Fiscal measure:	Public Services	Education	Social Security	Medical Services	Public Housing
	(1)	(2)	(3)	(4)	(5)
	IV	IV	IV	IV	IV
<b>Panel A: Average Effects</b>					
ExpShock <sub>it</sub>	-0.0074 (0.0126)	-0.0238** (0.0089)	0.0082 (0.0099)	-0.0150*** (0.0047)	-0.0442 (0.0392)
First-stage F-stat	54.78	54.77	54.76	54.77	61.35
Observations	813	816	815	816	766
R <sup>2</sup>	0.5479	0.6747	0.4517	0.6207	0.4111
<b>Panel B: Heterogeneous Effects</b>					
ExpShock <sub>it</sub>	-0.0075 (0.0123)	-0.0264*** (0.0070)	0.0040 (0.0104)	-0.0147*** (0.0042)	-0.0476 (0.0363)
(Age≤57) <sub>i,t+1</sub> × ExpShock <sub>it</sub>	0.0013 (0.0101)	-0.0221** (0.0086)	-0.0249 (0.0169)	-0.0028 (0.0060)	-0.0294 (0.0310)
(Age≤57) <sub>i,t+1</sub>	0.0152 (0.0154)	-0.0403** (0.0148)	0.0263 (0.0322)	-0.0382* (0.0202)	-0.0605 (0.0659)
First-stage F-stat	14.36	14.36	14.36	14.36	19.95
Observations	813	816	815	816	766
R <sup>2</sup>	0.5484	0.6853	0.4611	0.6256	0.4122
Province-year dummies?	Y	Y	Y	Y	Y
Prefecture dummies?	Y	Y	Y	Y	Y
Additional time- <i>t</i> controls?	Y	Y	Y	Y	Y
Incumbent controls?	Y	Y	Y	Y	Y
Prefecture-tier-by-year dummies?	Y	Y	Y	Y	Y



▶ Two periods:

1. Period 1: Export shock  $x \in [0, 1]$  is observed.
2. Local leader selects  $s$  (“stability measures”), knowing that realized stability is:

$$y = x + (1 - x)s + \varepsilon$$

where  $\varepsilon$  is a stochastic draw from a normal distribution with mean 0 and standard deviation  $\sigma$ .

**Assumption:** stability measures are particularly effective at raising stability in the face of bad economic shocks, but incur a cost to the local leader

3. Period 2: Central government decides whether or not to retain the local incumbent, with its goal being to maximize (expected) period 1 stability.

Can show formally that she adopts a **cutoff rule** to retain if  $y > \bar{y}(x)$ . (Importantly,  $\bar{y}(x)$  can depend on observed shock.)

If retained, local incumbent gets utility  $R$  in period 2.

- ▶ Local leader's problem: To maximize

$$\begin{aligned} U &= \Pr(y > \bar{y}(x)) R - g_\ell(s) \\ &= (1 - \Phi[\bar{y}(x) - x - (1-x)s]) R - g_\ell(s) \end{aligned}$$

where  $g_\ell(s)$  is an increasing and convex cost;  $g'_\ell(s) = a_\ell + \delta s$ .

- ▶ Assume:  $a_G = 0$  and  $a_B > R\sqrt{2\pi\sigma^2}$ , so very costly for low types to adopt stability measures. Yields perfect separation in choice of  $s$ , with  $s_B = 0$ .

- ▶ The first-order condition for  $G$ -type incumbents is then:

$$\phi [\bar{y}(x) - x - (1 - x)s] (1 - x)R = g'_G(s),$$

- ▶ To maximize first-period expected utility, the central government would like  $G$ -type local leaders to select an  $s$  that is as high as possible.

This is achieved by setting:

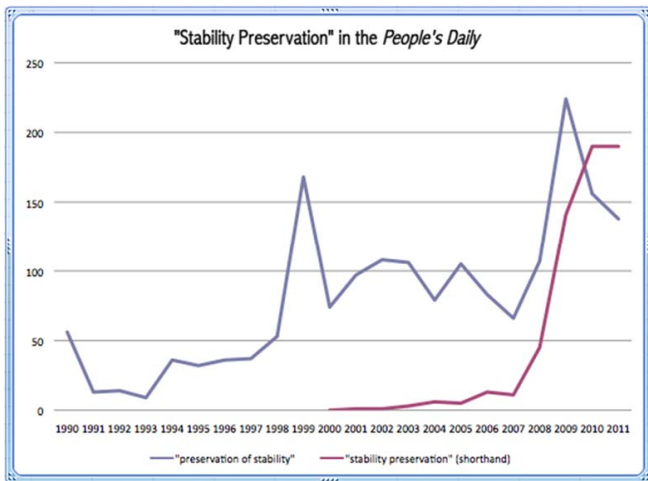
$$\bar{y}(x) = x + (1 - x)s_G^*. \tag{6}$$

$G$ -type's optimal effort is then determined by:

$$s_G^* = \frac{(1 - x)R}{\delta\sqrt{2\pi\sigma^2}}.$$

## "Weiwen" in the People's Daily

▶ Back



Source: NYT, 14 Sep 2012

## Temporal correlation: Baidu 维稳 Search Index and CLB events

▶ Back

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

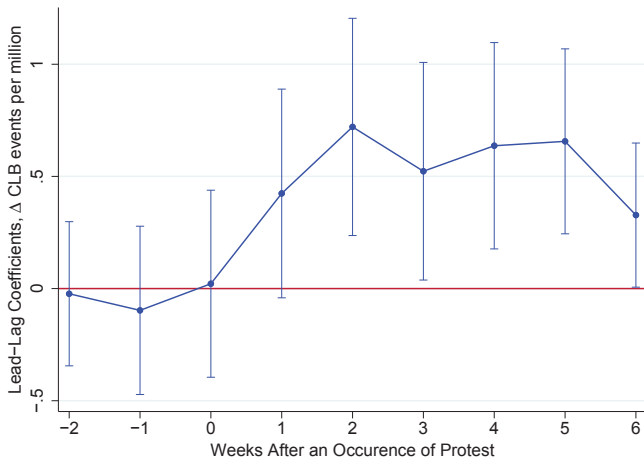
Use *weekly* data on CLB events and Baidu search index in an “event-study” regression:

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

- ▶ 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

## Temporal correlation: Baidu 维稳 Search Index and CLB events

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# Event-study regressions for Baidu “Weiwen” search index

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Dependent variable:	$\Delta \text{ Log Baidu "weiwen" search index}_{i,w}$			
	(1) OLS	(2) OLS	(3) OLS	(4) OLS
$\Delta \text{ CLB Events per million workers}_{i,w-6}$	0.3207 (0.2123)	0.5673** (0.2696)	0.3275* (0.1953)	0.5071** (0.2409)
$\Delta \text{ CLB Events per million workers}_{i,w-5}$	0.7145*** (0.2340)	0.9824*** (0.3061)	0.6563*** (0.2506)	0.7871** (0.3367)
$\Delta \text{ CLB Events per million workers}_{i,w-4}$	0.7669*** (0.2562)	1.1771*** (0.3115)	0.6367** (0.2796)	0.7774** (0.3662)
$\Delta \text{ CLB Events per million workers}_{i,w-3}$	0.6308** (0.2585)	0.9596*** (0.3042)	0.5231* (0.2949)	0.4811 (0.3697)
$\Delta \text{ CLB Events per million workers}_{i,w-2}$	0.9440*** (0.2569)	1.1208*** (0.3351)	0.7206** (0.2944)	0.4865 (0.4031)
$\Delta \text{ CLB Events per million workers}_{i,w-1}$	0.7674*** (0.2540)	0.9930*** (0.3279)	0.4240 (0.2828)	0.1984 (0.3724)
$\Delta \text{ CLB Events per million workers}_{i,w}$	0.3650 (0.2248)	0.4586 (0.3199)	0.0216 (0.2534)	-0.2494 (0.3503)
$\Delta \text{ CLB Events per million workers}_{i,w+1}$	0.1573 (0.2002)	0.2432 (0.2858)	-0.0972 (0.2280)	-0.2595 (0.3184)
$\Delta \text{ CLB Events per million workers}_{i,w+2}$	0.1358 (0.1957)	0.1424 (0.2537)	-0.0231 (0.1953)	-0.1362 (0.2419)
Log Baidu “weiwen” search index $_{i,w-1}$	-0.6120*** (0.0260)	-0.5687*** (0.0307)	-0.9053*** (0.0056)	-0.9132*** (0.0065)
Weighted?	N	Y	N	Y
Prefecture dummies?	N	N	Y	Y
Province-week dummies?	Y	Y	Y	Y
Observations	63,232	63,232	63,232	63,232
$R^2$	0.3840	0.3698	0.5144	0.5217

## “Weiwen”: Example of training paragraph

▶ Back

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

▶ Back

*We shall Improve the monitor and evaluation system on public security. The procuratorial office, judicial administrative department, and public security department shall work collectively and, in accordance with other departments, to carry out all-round dynamic monitoring and put forward suggestions and advice. The public security department shall uphold intelligence-led policing. Establish and enhance the mechanism for analyzing, inspecting, and reviewing criminal intelligence on social stability. Regularly examine and monitor the situation of public security. We shall improve the system of analyzing and predicting the trend of social opinions, hotspot security problems, and sensitive issues. Strengthen the analysis and examination on the major fields of social stability in order to timely uncover the emerging and hidden risks that endanger social stability, and to improve the ability of coping with such issues. We shall establish and improve the monitoring and early-warning mechanisms for public security, and enhance people's awareness for self-protection.*

— State Council, Apr 2015

## Early lateral movement and career prospects

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(According to *Regulations for the Selection and Appointment of Party Cadres*, need at least 3 years before being eligible for promotion. Based on observed career trajectories, early lateral movement is associated with a lower probability of eventual promotion.)

Table: Future Promotion Probability of Lateral Movers

Dependent variable:	Promotion: in the next movement (1) OLS	Promotion: ever in the future (2) OLS	Highest rank: sub-province level or above (3) OLS	Highest rank: province level or above (4) OLS
Tenure=3	0.3149*** (0.0603)	0.2937*** (0.1004)	0.1525 (0.1054)	0.1280* (0.0714)
Tenure $\geq$ 4	0.0925 (0.0573)	0.0126 (0.0892)	0.0210 (0.0833)	0.0473 (0.0404)
Incumbent characteristics?	Y	Y	Y	Y
Year dummies?	Y	Y	Y	Y
Province dummies?	Y	Y	Y	Y
Observations	275	275	275	275
$R^2$	0.3139	0.2838	0.3595	0.2106

## Classifying the nature of incumbent turnover

▶ Back

- ▶ Ladder of political positions in China:  
national; sub-national; province (ministry); sub-province (sub-ministry);  
prefecture (bureau); sub-prefecture (sub-bureau), etc.
- ▶ Consider all party secretaries in our sample to be prefecture-level appointments, except 4 province-level municipalities (Beijing, Shanghai, Tianjin, Chongqing) and 15 sub-provincial prefectures
- ▶ Promotion: About 10-15% of sample. Appointment to a higher-ranking post (except to several honorary retirement positions)
- ▶ Lateral movement: Most common. To a post within the same rank.  
  
(If already holding simultaneously a sub-province level position, a move to another position at that level is considered a lateral.)