Curriculum and National Identity: Evidence from the 1997 Curriculum Reform in Taiwan

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Research Question

General
Could curriculum affect the formation of national identity?
If so, by what mechanisms?

- Clots-Figueras and Masella (2013, EJ): students under bilingual system feel more Catalan and are more likely to vote for Catalan parties

- Cantoni *et al* (2016, JPE): The effect of high school curriculum reform on ideology

Cantoni *et al* (2016)

- Results
  - High school curriculum reform in China causally changed Peking University student's political institution preference
  - More trust in government, less trust in unconstrained democracy and market economy
  - No effect on identity
- Potential limitations
  - How generalizable are these findings to other students?
  - How persistent are these effects?

This Paper

Contribution:

- ▶ Use representative sample of the whole population in Taiwan, not just sample from elite school
- ▶ Longer data period to investigate how curriculum effects change over time
- ▶ Focus on national identity

This Paper

Textbook Reform:

- In September 1997, the Taiwanese government published new textbooks for junior high school students

  - *Knowing Taiwan* series of textbooks for social studies: history, geography, and civics

- The history curriculum adopted a new perspective on the nation's history, and provided abundant Taiwan-related content

  - All of which had been absent from previous textbooks

- Students enrolled after September 1997 were exposed; earlier education cohorts read old textbooks for examination

This Paper

Research Design:

- ▶ Regression Discontinuity Design
    - ★ Children born after September are required to enter next education cohort
    - ★ Those who entered junior higher school after September 1997 should be born after September 1984
    - ★ Running variable: birth cohort (birth year-month)
    - ★ Cut-off: September 1984

Comparison of the Textbooks

- Old Textbook focused on history of mainland China

  - Students have to learned the history of China during their first two year

  - Only 16 pages on Taiwan

    - Describe how to develop Taiwan as a base for recovering China

- New Textbook content focuses on history of Taiwan

  - Students have to learned the history of Taiwan during their first year

  - Now 116 pages on Taiwan

    - It has eleven chapters and each chapter described how ancestors of different ethnic groups made developments in Taiwan

Old Textbook: 16 Pages about Taiwan

One chapter and a section

New Textbook: 116 pages about Taiwan

A whole year

目 次

認識臺灣（歷史篇）

Comparison of the Textbooks

- Term usage also changed
- Examples:
  - Old textbook: 'our country' for both China and Taiwan
  - New textbook: 'China' 'Taiwan'

國中歷史（第一冊）

大概的活動情形了。

史前時代的人類，先是體質特徵介於人形猿和現代人之間的「猿人」，後有「眞人」的出現。我們從地下發現的史前人類化石之中，知道了很多猿人和眞人的情形。目前已經發現的猿人，比較有名的至少有四種：一是在非洲東岸發現的「東非人」；二是在印尼發現的「爪哇人」；三是在我國發現的「北京人」；四是在德國發現的「尼安德人」。在各種眞人當中，有兩種比較著名：一是在我國發現的「山頂洞人」；另一是在法國發現的「克魯麥襄人」。猿人的形態比起現代人尚有一段距離，而眞人則已具有現代人的形態了。

> 我國歷史的特色

我國歷史悠久，是東亞文明的主體，在世界歷史上占有重要的地位。歸納起來，其特色有下列四點：

一、時間悠久　我國的歷史，從黃帝建國算

New Textbook: China

用火取暖、照明和燒烤食物。

　　至於中國境內舊石器時代晚期的人類，則以「山頂洞人」為代表。「山頂洞人」距今約兩萬年，體質已和現代人差不多。他們已知埋葬死者，還會用獸骨作成骨針，用獸齒製成裝飾品，生活比「北京人」進步得多。

　　由這些舊石器時代人類化石的發現，可知中國是人類的主要起源地之一；但他們和現代中國人有無直接關係，目前仍無法確定。要追究中國文化的源頭，比較可靠的線索是新石器時代的考古發現。

「北京人」頭蓋骨
從復原的「北京人」頭蓋骨化石可知，「北京人」兩眉相連，前額低平，腦容量不如現代人。

破。

重大建設。六十二年十一月，行政院院長蔣經國鄭重宣布：政府除積極興建核能發電廠外，並限期五年內完成南北高速公路、臺中港、北迴鐵路、蘇澳港、石油化學工業、大煉鋼廠、大造船廠、鐵路電氣化及桃園國際機場等重要建設；合稱十大建設，皆陸續完成。六十八年，政府又推動交通、工業、農業等十二項建設。七十三年，又推出十四項重要建設計畫，多為前述十大、十二項建設的延續，具有前瞻性的大工程。

目前，我國由於雄厚的工業基礎與外貿潛力，躋身「亞洲四小龍」之列，經濟方面的成就，已為舉世所公認。

文教建設　　普及教育方面：民國三十九學年度，臺灣地區六至十一歲學齡兒童的就學率為百分之八十左右；至七十九學年度業已近於百分之

New Textbook: Taiwan

圖10-7
花蓮國際港開放

化方面，積極致力於對外貿易、金融、產業經營的自由化。具體作法分別為解除進口管制、大幅降低關稅稅率、取消銀行利率的管制、大幅放寬外匯管制①、開放民間設立銀行，以及推動公營事業民營化等。

國際化方面，具體作法包括放寬外國公司在臺投資、設立臺灣境外金融中心、致力使新臺幣國際化等。近年又籌設亞太營運中心，期使臺灣成為亞太地區的運輸、金融、資訊的重鎮。

Preview of Results

Main Results

- 18 percentage points increase of reporting holding Stronger Taiwanese identity out of control group mean 0.6

- Heterogeneity: Education track

  - **Hard working** (academic track) students are affected, while vocational track students are not

- Heterogeneity: Hometown Ethnic distribution

  - Students lived in areas with **less Taiwanese identity** (less Hoklo people) are affected

Preview of Results

Does curriculum effect persists?

- The effect of new curriculum is persistent
- However, the effect of old curriculum is overcome by social trend

Data

- Taiwan Social Change Survey

  - Repeated Cross section, representative sample of total population, aged 18 above

  - Sample for main results: 2003–2005 (age 18-22)

  - Sample for long run effect: 2009–2014 (age 23-32)

- Individuals born close to September 1984

  - Four education cohorts: September 1982 – September 1986

The Identity Question

"In our society, somebody call themselves "Taiwanese," some body call themselves "Chinese," and somebody call themselves "both." Do you consider yourself as "Taiwanese," "Chinese," or "both"?"

$$\text{Taiwanese Identity} = \begin{cases} 1 & \text{if Taiwanese,} \\ 0 & \text{Both or Chinese} \end{cases}$$

- Less than 5% of the sample respond with Chinese
- Stronger vs Weaker Taiwanese identity

Taiwanese Identity
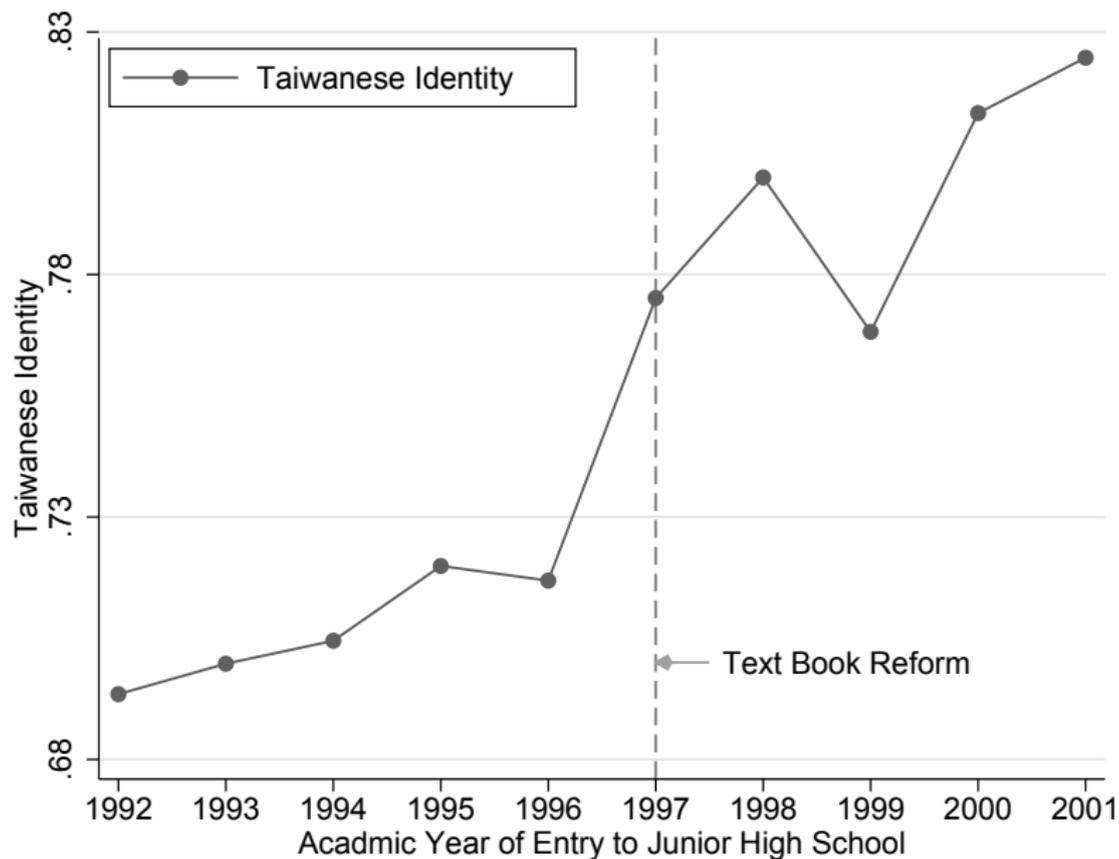
Regression Discontinuity Design

$$Identity_i = \alpha_0 + \alpha_1 TextBook_i + f(m; \beta) + \gamma X_i + \eta_j + \delta_t + \epsilon_i$$

- $Identity_{ijt}$: a dummy variable indicating Taiwanese for identity an individual i

- $TextBook_i$: a dummy variable indicating an individual i born after September 1984

- $f(m; \beta)$: first-order polynomial of birth cohort m interacting fully with $TextBook$

Regression Discontinuity Design

$$Identity_{ijt} = \alpha_0 + \alpha_1 \, TextBook_i + f(m; \beta) + \gamma X_i + \eta_j + \delta_t + \epsilon_{ijt}$$

- X_i: gender, parents' edu, parents' ethnicity, Hoklo people ratio (dummy) ▸ Sample
- η_j: home county fixed effect
- δ_t: survey year fixed effect
- Clustered s.e: birth cohort (birth year-month)
- Bandwidth: 24 months (2 academic year)

Main Result: Graph
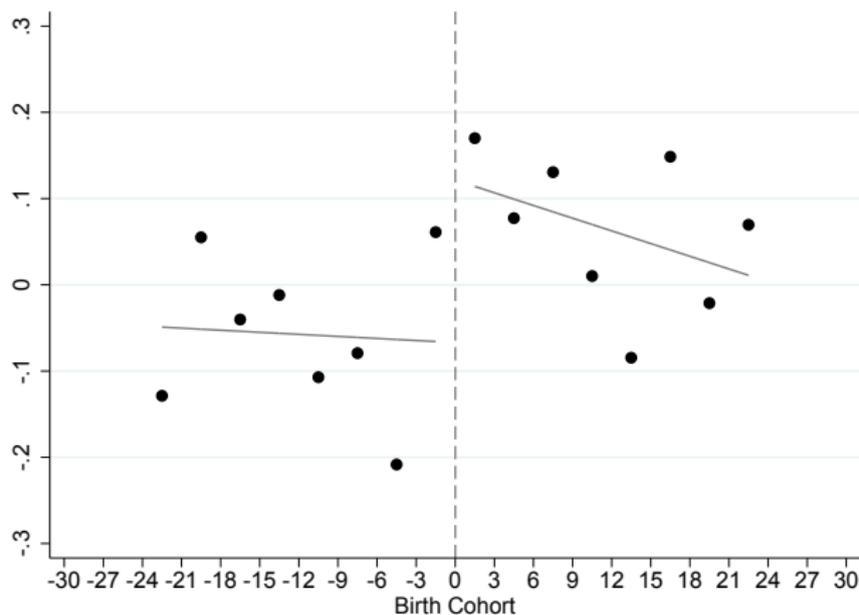
- Survey year fixed effects controlled, 15-20 percentage points increase

Main Result

Table 1: The Effects of the Textbook Reform on Taiwanese Identity: Main Results

	Taiwanese Identity			
	(1)	(2)	(3)	(4)
$TextBook$	0.162**	0.178**	0.184**	0.176**
	(0.0795)	(0.0796)	(0.0747)	(0.0770)
Baseline Mean	0.610	0.610	0.608	0.608
Persuasion Rate	42.6	45.7	46.9	44.8
Sample Size	427	427	417	417
R-squared	0.050	0.109	0.160	0.176
Linear Spline	Yes	Yes	Yes	Yes
Survey FE	Yes	Yes	Yes	Yes
Hometown FE	No	Yes	Yes	Yes
Demographic	No	No	Yes	Yes
Less-Hoklo-Hometown	No	No	No	Yes

RD Assumptions

- Survey sample is balanced around the cut-off
  - ▸ Number of observations
  - ▸ Parents' ethnicity, Parents' education level, Self education level
  - ▸ $Home - Hoklo - Ratio$ is not balanced, control in the regression
    ▸ Observables
- Parents do not control birth month precisely in Taiwan
  - ▸ Quarter of birth endogeneity (Fan et al, 2014)

Robustness Check

- Bandwidth Choice (▸ bandwidth)
    - 48 Months $\rightarrow$ 24 months
- Falsification Test (▸ falsification)
    - 1996, 1995, 1994 September as fake reform year
    - Use 1983, 1982, 1981 September as cutoffs

Mechanism: Memorization

Hypothesis

If students study the material more (higher intensity of exposure),
their national identity are more affected by the content of textbook.

- In Taiwan, high school exams rely on a lot of memorization.
  - Students going to general high school will need to study it more
  - Students opting for vocational training do not
- Subgroup analysis by education track
  - Academic track
  - Vocational track

Subgroup Analysis: Education Track

Academic (214 obs)
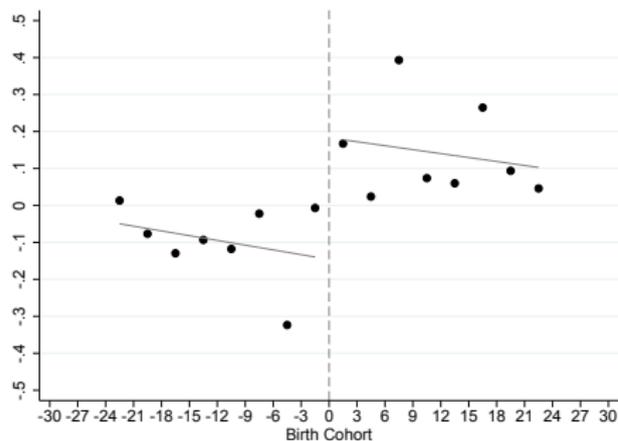
Vocational (203 obs)
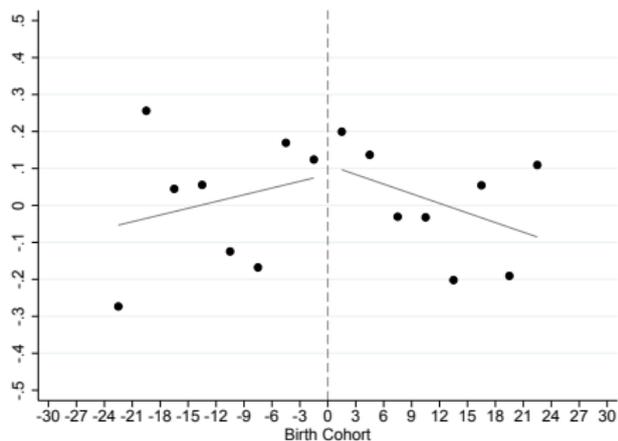
Subgroup Analysis: Education Track

Table 5: Subgroup Analysis: By Education Track

|	Taiwanese Identity			
	(1)	(2)	(3)	(4)
Panel A: Academic Track				
$TextBook$	0.279**	0.305**	0.283**	0.276**
	(0.113)	(0.124)	(0.122)	(0.126)
Baseline Mean	0.583	0.583	0.580	0.580
Sample Size	219	219	214	214
R-squared	0.077	0.128	0.212	0.213
Panel B: Vocational Track				
$TextBook$	0.0546	0.0510	0.0500	0.0464
	(0.104)	(0.103)	(0.112)	(0.112)
Baseline Mean	0.639	0.639	0.638	0.638
Sample Size	208	208	203	203
R-squared	0.069	0.182	0.301	0.313
Linear Spline	Yes	Yes	Yes	Yes
Survey FE	Yes	Yes	Yes	Yes
Hometown FE	No	Yes	Yes	Yes
Demographic	No	No	Yes	Yes
Less-Hoklo-Hometown	No	No	No	Yes

Mechanism: Change People's Prior Belief

Hypothesis

Students lived in areas with **less Taiwanese identity** are originally endowed with less Taiwan-oriented information, and thus would be affected more once exposed to the new textbook

- Subgroup analysis by hometown ethnic distribution

- There are four major ethnic groups in Taiwan

  - Hoklo, Mainlanders, Hakka, Aborigines

- Hoklo people are more likely to recognize themselves as Taiwanese

  - Living in hometown with high Hoklo ratio v.s. low Hoklo ratio

  - Hoklo ratio median: 77.1%

# Taiwanese Identity: Low Hoklo Ratio v.s. High Hoklo Ratio
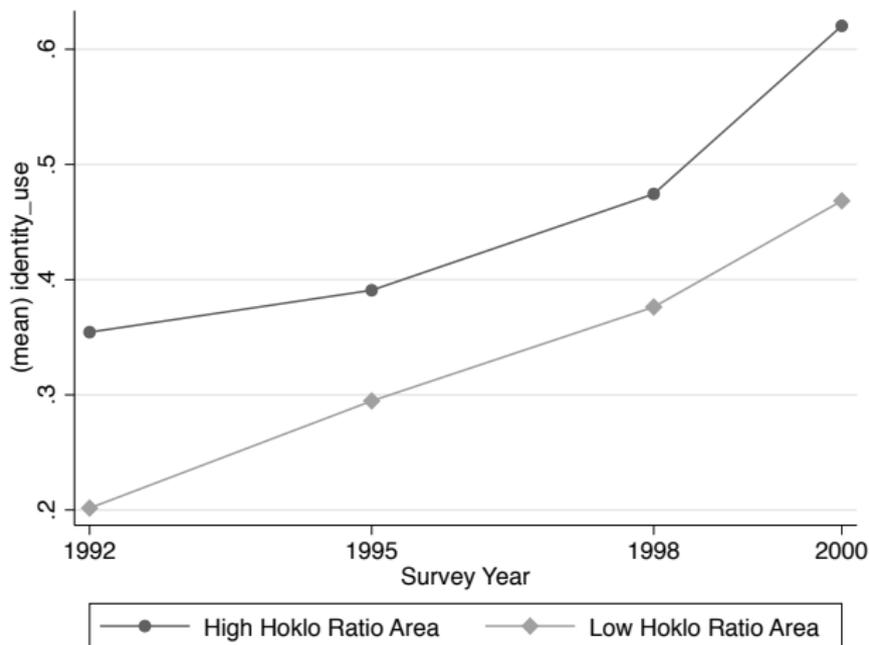
- 1992, 95, 98, 2000, sample aged 30 above

High Hoklo Ratio
Low Hoklo Ratio
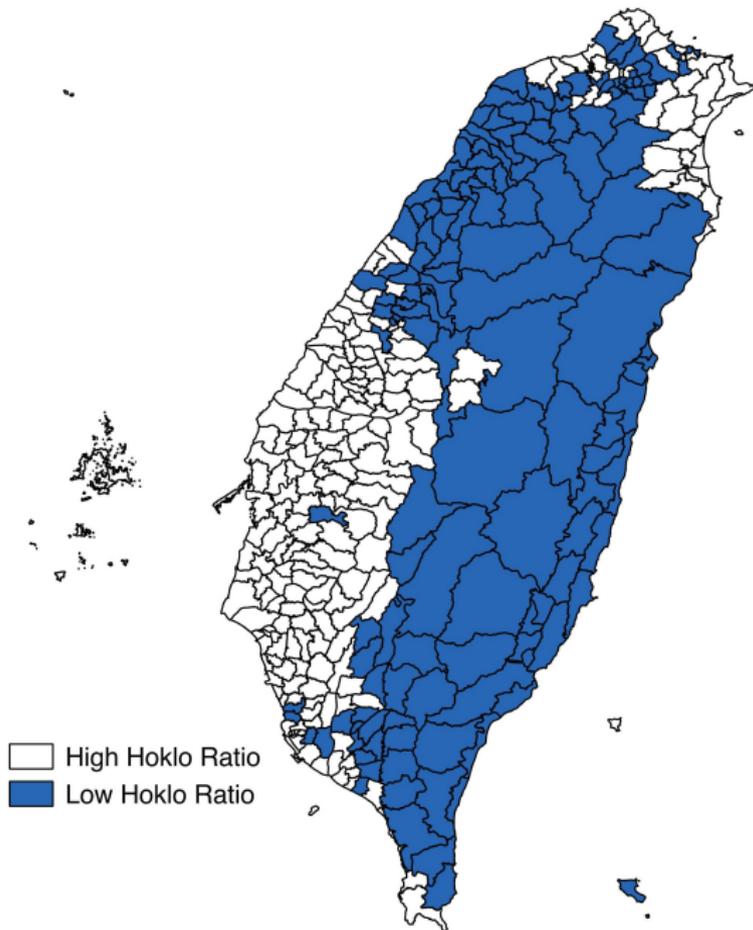
Subgroup Analysis: Hometown Ethnic Distribution

Low Hoklo Ratio (186 obs)
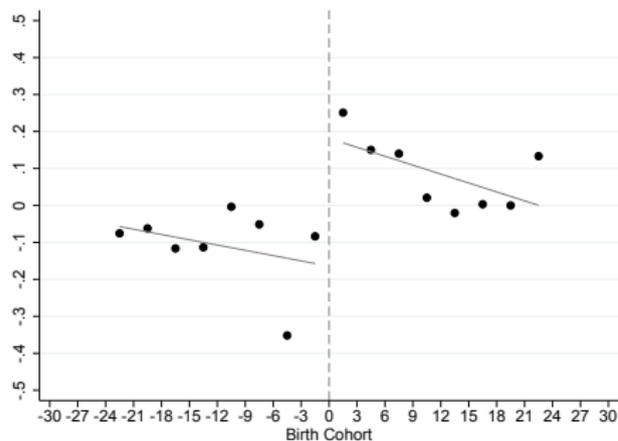
High Hoklo Ratio (231 obs)
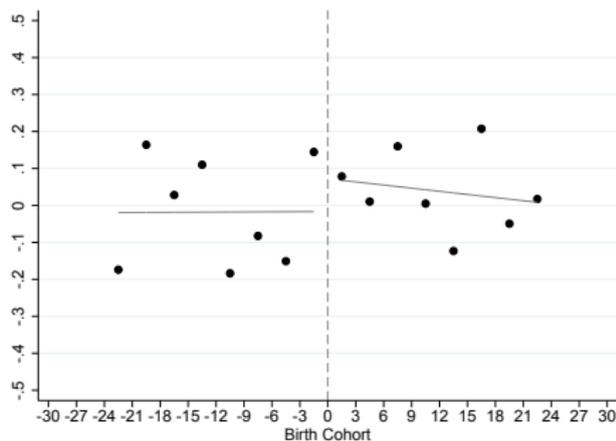
Subgroup Analysis: Hometown Ethnic Distribution

Table 6: Subgroup Analysis: By Hometown Ethnicity Distribution

| | Taiwanese Identity | | | |
	(1)	(2)	(3)	(4)
Panel A: Hometown with Low Hoklo Proportion				
$TextBook$	0.328***	0.341***	0.366***	0.366***
	(0.113)	(0.120)	(0.125)	(0.125)
Baseline Mean	0.558	0.558	0.555	0.555
Sample Size	193	193	186	186
R-squared	0.113	0.147	0.222	0.222
Panel B: Hometown with High Hoklo Proportion				
$TextBook$	0.0239	0.0208	0.0321	0.0321
	(0.103)	(0.100)	(0.0980)	(0.0980)
Baseline Mean	0.650	0.650	0.647	0.647
Sample Size	234	234	231	231
R-squared	0.023	0.139	0.213	0.213
Linear Spline	Yes	Yes	Yes	Yes
Survey FE	Yes	Yes	Yes	Yes
Hometown FE	No	Yes	Yes	Yes
Demographic	No	No	Yes	Yes
Less-Hoklo-Hometown	No	No	No	Yes

Long-Run: RD Graph
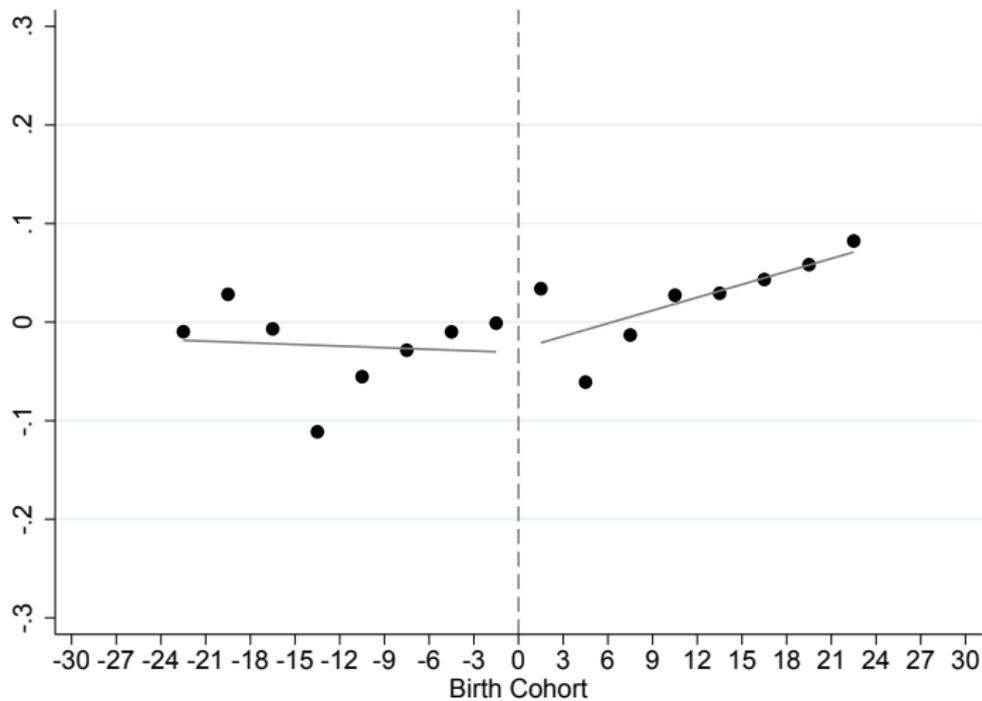
Long-Run Effect of Curriculum and Social Trend

Table 7: The Effects of the Textbook Reform on Taiwanese Identity: Long-Term Results

| | Taiwanese Identity | | | |
	(1)	(2)	(3)	(4)
TextBook	0.0089	-0.0021	-0.0269	-0.0252
	(0.0497)	(0.0499)	(0.0583)	(0.0589)
Baseline Mean	0.771	0.771	0.784	0.784
Sample Size	963	963	655	655
R-squared	0.018	0.058	0.152	0.153
Linear Spline	Yes	Yes	Yes	Yes
Survey FE	Yes	Yes	Yes	Yes
Hometown FE	No	Yes	Yes	Yes
Demographic	No	No	Yes	Yes
Less-Hoklo-Hometown	No	No	No	Yes

Long-Run Effect

- In the long run, people hold similar identity with regardless of the textbooks they read

- Two possibilities

  - Taiwanese identity of those who read new textbooks decline

 - Taiwanese identity of those who read old textbooks catch up

Long-Run: RD Graph
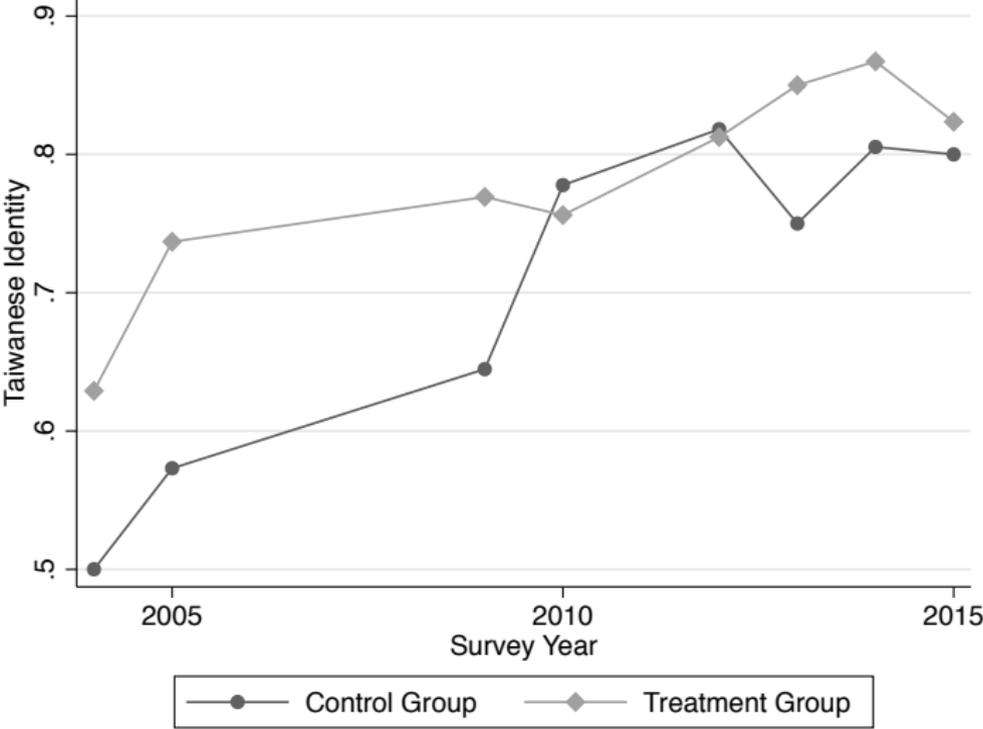
Long-Run Effect

- Possible Channel
  - Old textbook effect overwhelmed by the society trend
  - Spillover effect of *Knowing Taiwan* series through peer interaction

Society Trend
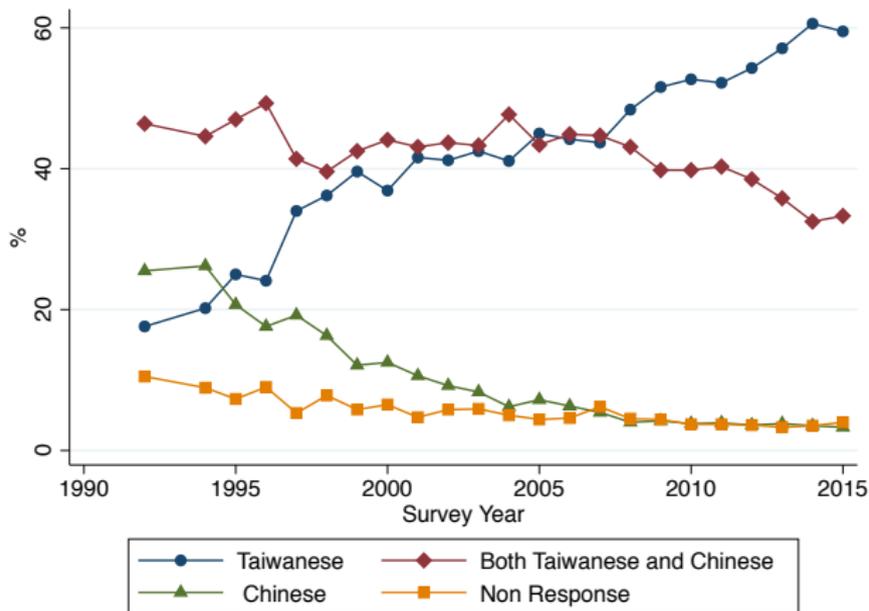
- Taiwanese government tried to sign FTA with China in 2010
- Many young people are against this agreement and induce a lot of protests

Wrap Up

- Curriculum can affect one's national identity

  - By making students memorize materials

  - By changing students' prior belief

- In the long run, whether curriculum has persistent effect on one's national identity depends on social trend

Thank you

The Textbook Reform

- Democratization Process
  - 1987 martial law lift, 1996 president election.

  Kuomintang
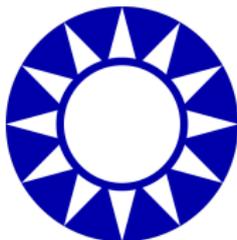
  Democratic Progress Party

  - Increase of Taiwanese identity: Taiwanese identity is strong enough to tolerate the attack from people holding Chinese identity
  - Ethnicity in Taiwan: Hoklo, Hakka, Mainlanders, Aborigines

- Research of Historians on Taiwan history: new perspective

Sample selection

- People born outside of Taiwan or lived longest outside Taiwan before 15
- Missing values in demographic variable
- Answer Other in identity question
- Total: $\frac{19}{417} = 4.5\%$ ▶ back

Bandwidth Choice
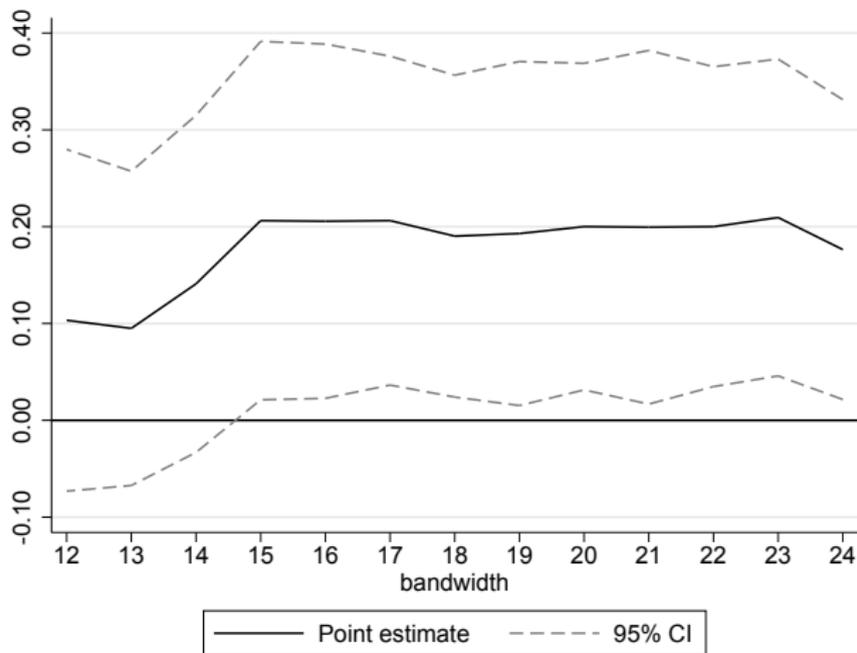
Falsification Test

Table 4: Robustness Check: Placebo Test of Fake Textbook Reform

	Taiwanese Identity			
	(1)	(2)	(3)	(4)
Panel A: Use September 1983 as Cut-Off				
TextBook	-0.0552	-0.0482	-0.0588	-0.0449
	(0.0730)	(0.0685)	(0.0782)	(0.0804)
Sample Size	487	487	479	479
R-squared	0.032	0.070	0.131	0.135
Panel B: Use September 1982 as Cut-Off				
TextBook	-0.0085	0.0100	-0.0056	-0.0050
	(0.0919)	(0.0986)	(0.0956)	(0.0994)
Sample Size	509	509	500	500
R-squared	0.030	0.066	0.131	0.131
Panel C: Use September 1981 as Cut-Off				
TextBook	-0.0184	-0.0124	0.0276	0.0150
	(0.0686)	(0.0686)	(0.0710)	(0.0736)
Sample Size	519	519	509	509
R-squared	0.020	0.060	0.158	0.172
Linear Spline	Yes	Yes	Yes	Yes
Survey FE	Yes	Yes	Yes	Yes
Hometown FE	No	Yes	Yes	Yes
Demographic	No	No	Yes	Yes
Less-Hoklo-Hometown	No	No	No	Yes

Robustness Check: Higher Polynomial Order

Table 2: Robustness Check: Higher Polynomial Order

| | Taiwanese Identity | | | |
	(1)	(2)	(3)	(4)
TextBook	0.186	0.251**	0.222**	0.213*
	(0.107)	(0.112)	(0.102)	(0.110)
Baseline Mean	0.610	0.610	0.608	0.608
Persuasion Rate	46.9	61.9	56.6	54.3
Sample Size	427	427	417	417
R-squared	0.054	0.117	0.158	0.165
Linear Spline	Yes	Yes	Yes	Yes
Quadratic Spline	Yes	Yes	Yes	Yes
Survey FE	Yes	Yes	Yes	Yes
Hometown FE	No	Yes	Yes	Yes
Demographic	No	No	Yes	Yes
Less-Hoklo-Hometown	No	No	No	Yes

Robustness Check: Examine Smoothness of Observable Covariates at Cutoff

Table 3: Robustness Check: Examine Observables Continuity

VARIABLES	gender	Father Ethnicity	Mother Ethnicity	Father Edu Level	Mother Edu Level	Father Edu Years	Mother Edu Years	Self Edu Level	Self Edu Years	Hometown Hoklo Proportion
$TextBook$	0.0478	0.00106	0.0542	-0.0703	-0.0229	-0.0997	0.0348	0.0331	-0.122	0.155***
	(0.0601)	(0.0495)	(0.0572)	(0.0773)	(0.0485)	(0.484)	(0.238)	(0.0850)	(0.208)	(0.0512)
Sample Size	417	417	417	417	417	417	417	417	417	417
R-squared	0.012	0.008	0.004	0.009	0.002	0.005	0.010	0.084	0.028	0.010