Curriculum and Ideology

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Abstract

We study the causal effect of school curricula on students' stated beliefs and attitudes. We exploit a major textbook reform in China that was rolled out between 2004 and 2009 with the explicit intention of shaping youths' ideology. To measure its effect, we present evidence from a novel survey we conducted among 2000 students at Peking University. The sharp, staggered introduction of the new curriculum allows us to identify the effects of the new educational content in a generalized difference in differences framework, taking into account provincial and cohort fixed effects. We examine government documents articulating desired consequences of the reform, and identify changes in textbook content and in the college entrance exams that reflect the government's aims. We find that these changes were often effective: study under the new curriculum is associated with changed views on political participation and democracy in China, increased trust in government officials, a greater likelihood of viewing ethnic minorities as Chinese, and a more skeptical view of free markets. Our results are robust to a wide range of controls and adjustments for multiple hypothesis testing; they are not driven by pre-existing trends; and, they receive additional support from a variety of placebo exercises.

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1 Introduction

Beliefs, attitudes, and ideology play a fundamental role in human societies: they shape interactions within social networks and in markets; they shape political institutions and policy choices. People's attitudes are shaped by a variety of sources: they are transmitted from parents to children (vertical transmission); from peer to peer (horizontal transmission); from third parties, such as media, experts, or the state (oblique transmission); and, they arise from individual experiences.[1]

In this paper, we use novel survey evidence to study the causal effect of school curricula on students' beliefs and attitudes, examining the impact of a new high school political science curriculum that was introduced by the Chinese Communist Party between 2004 and 2011 with the explicit intention of shaping students' ideology. The State Council (the highest administrative body in the Chinese government) and the Ministry of Education issued documents articulating the government's objectives for the new political science curriculum: among these were teaching students about Chinese democratic institutions; emphasizing the adherence of the Chinese government to the rule of law; cultivating in students a traditional national identity that bridged ethnic groups; teaching students about China's unique economic development path; and, promoting increased concern for the environment. We document the Chinese government's aims in undertaking the curriculum reforms and, based on a thorough reading of political science textbooks, identify a set of specific changes to the high school politics curriculum that reflect the aims of the Chinese government. We describe changes in textbook content across curricula, and changes in the high-stakes college entrance exams (*gaokao*) associated with the old and new curricula.

The curriculum reform we study offers a particularly promising setting in which to estimate the causal effect of educational content on students' beliefs and attitudes. Between 2004 and 2011, the new curriculum (the "8th Curriculum Reform") was sharply introduced to entering cohorts of high school students (but not to older students) in a staggered manner, with different provinces adopting the new curriculum in different years. We test for an impact of studying under the new curriculum by analyzing the responses to a novel survey we conducted with nearly 2,000 Peking University undergraduate students. Our survey allows us to measure the beliefs and attitudes of four cohorts of Chinese students, who entered high school between 2006 and 2009, drawn from 29 Chinese provinces.

We apply a generalized difference in differences framework to test whether students who

[1]Vertical transmission has received considerable attention, for example Bisin and Verdier (2001). Peers' influence on beliefs has been studied by Sacerdote (2001), Sacerdote (2011). DellaVigna and Kaplan (2007), DellaVigna et al. (forthcoming) study the influence of the media on the ideological views we study here; Alesina and Fuchs-Schündeln (2007) study the effects of growing up in a Communist system on policy preferences later in life. Di Tella et al. (2007), Giuliano and Spilimbergo (2013), Malmendier and Nagel (2011), Rao (2013) study the role of individuals' experiences in shaping attitudes and beliefs.

studied under the new curriculum do, in fact, express different views from those who studied under the old curriculum. We find that the new curriculum was generally successful in changing students' preferences and beliefs regarding important issues: controlling for province and cohort fixed effects (and, in various specifications, a range of other controls), students who were exposed to the new curriculum were more likely to view China's political system as democratic; were more likely to trust government officials; were somewhat more likely to view minorities as "Chinese"; and were more likely to view an unconstrained market economy with skepticism. We do not find that students are more in favor of environmental policies, perhaps because these can be seen as opposed to economic growth—another high priority of the government. We find quantitatively large persuasion rates: around 20% of students who would not hold the government's desired views in the absence of exposure to the new curriculum are estimated to change their views.

These findings contribute to a vast social science literature on the ability of educational content to shape individuals' beliefs, preferences and political ideology; prior work ranges across centuries and continents—from studies of the construction of a "national sentiment" through public schooling in 19th century Prussia or France (Weber, 1976) to studies of American schools in the 19th and 20th centuries (Dewey, 1916; Lipset, 1959; Freire, 1970; Bowles and Gintis, 1976), and Communist and Socialist education in the second half of the 20th century (Lott, Jr., 1999).[2] The idea that schooling can be used to mold (more pejoratively, "brainwash") children's views of the their social, economic, and political environment is a powerful one, which resonates across time and space.

Despite this resonance, and despite striking examples of schooling changes being associated with ideological changes (e.g., education in Nazi Germany), it is extremely difficult to determine whether schooling plays a causal role in shaping beliefs or if, instead, changes in curriculum simply coincide with other social, political, or economic changes which themselves shape preferences, perhaps differentially by age. For example, one might wish to study the effects of Nazi education on the attitudes of individuals who were school-aged during the Third Reich. However, observing different attitudes among individuals who studied in Nazi-era schools, one might question whether the schools themselves affected beliefs, or whether young people in the time of the Third Reich were differentially affected by the environment around them, their parents, the media, and what they observed in their daily lives.

Recently, scholars have begun making progress in identifying the causal effect of education on attitudes and ideology. Friedman et al. (2011) exploit experimental variation in access to additional schooling on Kenyan women's political and social views. Their work identifies an effect of schooling on attitudes, but does not identify the effects of particular *content* on attitudes. Fisman et al. (2009) do study variation in educational content, examining the ef-

[2]See also Kremer and Sarychev (1998), Spilimbergo (2009), Friedman et al. (2011), Campante and Chor (2012), Alesina and Reich (2013).

fects of exposure to economics-oriented faculty at Yale Law School on students' behavior in an incentivized game. Their work exploits random assignment to Law School instructors; one drawback, though, is the small size of the sample, especially when considering the possibility of correlated errors within classes. In a fascinating study of the impact of Catalan education on political attitudes, Clots-Figueras and Masella (2013) exploit variation that is similar to ours—cohort-varying exposure to new educational content—but they lack the sharp variation in educational content across cohorts that we can exploit, and they also lack credible cross-sectional variation with which to address concerns about unobservable cross-cohort differences (their work also studies the combined effect of changes in the language of instruction with changes in content, in a context of broad political change).

By examining sharp province×cohort variation in school curricula, we can plausibly identify the causal effect of educational content on attitudes and ideology (we discuss threats to our identification strategy in detail in Section 4.1). Specifically, our identification strategy allows us to rule out as confounding factors: *(i)* province-specific differences (e.g., levels of development); *(ii)* cohort-specific differences (e.g., broad changes in attitudes across time); *(iii)* province×time varying shocks that affect adjacent cohorts similarly (e.g., natural disasters or province-level political shocks that do not differentially affect children of different ages); and *(iv)* province×time varying shocks that affect adjacent cohorts smoothly (e.g., province-specific trends in economic activity), in our specification that includes province×cohort-specific trends.

In addition to identifying the causal effect of typically endogenous curriculum change, we believe our particular setting is of great interest. The variation in educational content we observe is naturally occurring, introduced on a massive scale by an authoritarian state that explicitly aimed to shape children's views. Whether the Chinese government can shape the views of Chinese children is difficult to know *ex ante*: on the one hand, the Chinese government seems to be very effective in many domains; in addition, Chinese children spend a great deal of their time in school, absorbing information on which they will be tested. On the other hand, students know that the Communist Party disseminates information (school curricula and media) in part driven by political concerns. One might believe that students will thus view the official curriculum with skepticism. The new curriculum might also fail to persuade students because the internet allows students to easily access content that differs from official Party positions. Thus, an important question in the internet age is whether school curricula can affect ideology even when students know that their curriculum may be shaped by political concerns, and when students have access to information that differs from the party line.

Our findings of Communist Party success in shaping students' views contributes to a growing empirical literature on "persuasion" (DellaVigna and Gentzkow, 2010), much of which has focused on the persuasive effects of media communications (Bursztyn and Cantoni, 2012; DellaVigna and Kaplan, 2007; DellaVigna et al., forthcoming). A growing literature

is specifically focused on attempts by authoritarian regimes to shape the views of their citizens (Alesina and Reich, 2013), to which we contribute a study of the role of educational content in shaping ideology. Our findings suggest that alongside other mechanisms of social and political control, political elites, indeed, can shape students' attitudes by choosing the content of the education system.

The paper proceeds as follows: in Section 2, we provide an overview of China's education system, and discuss China's 8th Curriculum Reform, which is the focus of our study. In Section 3, we describe our novel survey of Peking University students, which is our primary data source; we also discuss here what can be learned from direct survey questions in this context. In Section 4, we present our empirical model, discuss the identifying assumptions, and present our main results, including a discussion of statistical inference in a setting in which multiple hypotheses are tested. In Section 5, we provide a discussion of our findings: we first present a variety of robustness and placebo tests that support a causal interpretation of our findings; next, we try to benchmark the magnitudes of our results, comparing the "persuasion rates" we find with those found by other scholars, and also presenting evidence from the AsiaBarometer survey of a significant association between reported attitudes and political behavior. Finally, in Section 6, we place our findings within the social science literature on the effects of schooling on beliefs, and conclude.

2 China's Curriculum Reform

The empirical setting we propose to study is China's 8th Curriculum Reform, a nationwide education reform undertaken by the Chinese central government beginning in 2001. Our focus will be the reformed textbooks of senior high school (*gaozhong xinkebiao*) students, corresponding to grades 10–12 in the Chinese educational system (see Figure 1). Before discussing the reforms, we briefly describe the structure of the Chinese high school curriculum.

2.1 The Chinese high school curriculum

All students in the first year of senior high school take the same courses in languages (Chinese and English), math, science, and social studies (Politics, History, and Geography). Students then choose to specialize in either the science track or the humanities track. The choice of track determines both students' coursework in the last two years of senior high school, and the content on which they will be tested in the high-stakes National Higher Education Entrance Examination, known as the *gaokao* (as seen in Figure 1). In our empirical analysis below, we focus on changes to the tenth grade Politics textbooks for senior high school students, before the track split. Importantly, all students face a high-stakes test on the Politics curriculum: students in the science track are examined on the content of the first year Politics textbook in the so-called "little *gaokao*" during eleventh grade, while students in the humanities track

are examined on this material in the *gaokao* exam at the end of senior high school; both exams factor into a student's college admissions prospects.

2.2 The political backdrop for reform

An explicit goal of the 8th Curriculum Reform was to shape (or reshape) students' political and social beliefs. In a 2001 document preparing the reform ("Framework for Basic Education Curriculum Reform"), the Ministry of Education of the People's Republic of China stated that education should "form in students a correct worldview, a correct view on life, and a correct value system."[3]

While the 8th Curriculum Reform affected the content of textbooks across the high school curriculum (for example, there was an increase in the discussion of Confucianism in the reformed humanities curriculum), we focus on changes made to the Politics curriculum because, in the words of one of the authors of the reformed textbooks, Politics differs from other subjects in that, fundamentally, it is designed for "moral and ideological education."[4] Indeed, the State Council, China's chief administrative authority, issued a memo in 2004 titled "Suggestions on Strengthening the Ideological and Moral Construction of Our Youths," which articulated the government's aims for the reform, and guided the writing of the new Politics textbooks.

The memo declared the socialization of young people to be an "important and urgent strategic task," and saw schools as "the primary channel for transmitting ideological and moral education to young people."[5] The State Council memo and documents from the Ministry of Education outlined the following objectives for the reformed curriculum:

- To foster an awareness of China's democratic political institutions,
- To foster an appreciation of the importance of the rule of law underlying the Chinese government,
- To promote patriotism through pride in China's history and traditional culture,
- To foster an understanding of China's economic development trajectory, and
- To foster environmental awareness.

[3]Translated excerpts from this and other official documents preparing the Curriculum Reform are presented in Appendix **??**.

[4]See Appendix **??** for translated excerpts from an essay written by Tian Xinming, chair of the committee in charge of rewriting the Politics textbook. The original text can be found at `http://www.pep.com.cn/sxzz/js/tbjx/kb/jsys/bx1/201008/t20100830_824446.htm`, last accessed February 9, 2014. Along with changes in the content of the curriculum, there was a desire to change the exam-oriented nature of primary and secondary education through the introduction of new instructional methods. However, this aspect of the reform is acknowledged to have failed, amounting to "wearing new shoes to walk on the old path" (see, for example, Guo (2010)).

[5]The document is available online at `http://www.people.com.cn/GB/jiaoyu/1053/2405224.html`, last accessed February 9, 2014. See Appendix **??** for translated excerpts.

2.3 Changes in textbook content and the *gaokao* framework

To identify specific changes in curriculum content pre- versus post-reform, we performed a comprehensive comparison of the old and new editions of the *Economic Life* and *Political Life* textbooks that made up half of the tenth grade Politics curriculum.[6] The Politics curriculum textbooks are common to all provinces of China, so our analysis was limited to a single textbook for the provinces/cohorts under the new curriculum, and one for the provinces/cohorts under the old curriculum.[7]

While much of the textbooks' content is maintained across editions (for example, there is no perceptible change in the importance placed on citizens' allegiance to the socialist state), some content changed considerably. We identified sections that were entirely new to the reformed textbooks; we also identified sections that were removed from the old curriculum and sections that were extensively revised. Consistent with the textbook authors' claims that they adhered to the State Council's guidelines in producing the new materials, it is clear from our analysis that many curriculum changes were consistent with the State Council memo's broad objectives. Indeed, we find significant changes in textbook content corresponding to each of the broad goals outlined in government documents. For example, the new curriculum includes a predominantly new section on political participation, which discusses how political decision making reflects the will of the people, explains the process of democratic elections in villages and urban resident committees, and describes the channels for voicing one's opinion. Another new section discusses the obligations of the government and the source of its authority, and describes legal procedures for holding the government accountable. We quote extensively from the new textbooks as we present our empirical analyses, below.[8]

Finally, it is important to relate the changes in textbook content to changes in the content of the high-stakes college entrance exam (*gaokao*). The content of the *gaokao* is closely tied to the curriculum students study. Students who studied under the old curriculum were examined based on a *gaokao* framework that included material that was in the old curriculum; students who studied under the new curriculum were examined based on a *gaokao* framework that incorporated the revisions, additions, and deletions of the new curriculum—we extensively cite changes in the *gaokao* framework that match changes in the textbook content, in our empirical analysis, below. The fact that the new content was tested in the *gaokao* indicates that students

[6] The other half of the curriculum is composed of the *Cultural Life* and *Philosophy* textbooks; we felt that these were too nebulous to systematically link to the political objectives of the Chinese government. See Appendix **??** for an item-by-item comparison of relevant sections of the *Economic Life* and *Political Life* textbooks.

[7] The sole exception to the rule of textbook uniformity in the Politics curriculum is Shanghai, which follows its own curriculum.

[8] In addition to the changes that matched the goals articulated in the government documents that shaped the reforms, we identified other changes in content across textbooks that did not receive discussion in the government documents. For example, a section was added to the *Economic Life* textbook on financial markets and financial instruments. While we included survey questions relating to these changes that were not clearly tied to the objectives of the central government, these are not our focus here.

were highly incentivized to learn it, and teachers were incentivized to teach it. Carnoy et al. (2013, ch. 6) describe the importance of the *gaokao* and the *gaokao* framework (or "syllabi") as follows:

> [T]he college entrance exam in China is a two-day high stakes test whose score largely determines into which college and major a student will be admitted. High school students in China have been known to prepare all day, seven days a week for the exam ... Moreover, the curriculum in Chinese academic high schools is heavily structured around the college entrance exam. This is because most provinces in China release syllabi to high school teachers about what will generally be covered on each year's (provincial-level) exam. ... [Teachers] almost entirely mold their twelfth grade lesson plans according to [these syllabi].

2.4 The Introduction of the New Curriculum Across Space and Time

The mode of introduction of the revised curriculum makes China's curriculum reform an especially promising context in which to study the causal effect of a change in curriculum. Between 2004 and 2011, different Chinese provinces, in different years, introduced entirely new high school curricula and textbooks for incoming cohorts of senior high school (*gaozhong*) students.[9] Students entering high school one year would have an entirely different three-year curriculum from that of students who entered high school just the year before. Students in the older, pre-reform cohort would *not* be "partially treated" because the college entrance exam was based either on the old curriculum or on the new one.

The first entering cohorts to study under the new curriculum were students entering high school in 2004 (graduating in 2007) in the provinces of Shandong, Ningxia, Hainan, and Guangdong. Over the next six years, every other province except Shanghai saw the introduction of the new textbooks, with Guangxi, Sichuan, Guizhou, Qinghai, and Tibet finally introducing the new curriculum to entering high school students in 2010 (graduating in 2013). The introduction dates by province are presented in Table 1 and Figure 2.

It is worth stressing that the introduction date of the new curriculum was not randomly assigned across provinces. Provinces introduced the new curriculum when they had successfully trained teachers and developed supplemental materials based on the new textbooks. We discuss how non-random introduction of the new curriculum across provinces affects our identification of the causal effects of the curriculum, below.

[9] The gradual introduction of reforms is typical of Chinese government policy; see, for example, Martinez-Bravo et al. (2011) on the introduction of village elections in rural China.

3 Survey of Peking University Students

We measure students' beliefs using a a web-based survey we conducted with Peking University undergraduate students in April and May 2013. We sent an email invitation to participate in the survey to the complete email list of undergraduate students at Peking University.[10] Students were offered payment for their participation, and were included in a raffle for a number of desirable Apple-brand electronics. We received nearly 2,000 completed surveys, for a response rate of around 15% of the undergraduate population of Peking University. Participants were paid an average of 58 RMB ($9.50), and were awarded 12 iPads and 10 iPods.

The survey collected information about students' backgrounds and demographic characteristics.[11] To determine whether the curriculum reform had the effects that were desired by the Chinese government, we included several questions relating to each of the topics that were mentioned in the government documents that structured the curriculum reform: political participation and electoral institutions; students' trust in government officials; their views on Chinese minorities' positions within Chinese society and culture; their views on markets and state intervention in the economy; and, their views on environmental policy. In addition to these questions, we asked about a broad range of students' preferences and values (asking questions similar to those found in well-known social surveys); we asked questions about students' beliefs about the returns to schooling, and about their preferences regarding the labor market.[12] We also included incentivized games eliciting students' risk preferences and preferences regarding equity and efficiency.

We limit our sample to completed surveys from individuals who entered high school between 2006 and 2009, and are current undergraduate students at Peking University.[13] We present summary statistics describing the demographic characteristics of the students who completed the survey in Table 2, columns 1–2, and show the mean characteristics of students by curriculum (old, then new) in columns 3–4.

3.1 Interpreting the survey responses

Many of our outcome variables are self-reported responses to direct survey questions. It is natural to wonder what exactly is captured by variation in these responses. Here we discuss several concerns with using students' responses to direct survey questions to evaluate the impact of the new curriculum.

[10] The recruitment email (in Chinese and in English translation) can be seen in online appendix **??**.

[11] The "background" questions included questions about students' parents' Communist Party membership, parents' professions and residential status (*hukou*), students' sources of news, and students' majors, among others.

[12] Potentially, answers to these questions could have been affected by curriculum changes not emphasized by government documents. These outcomes are not the focus of this study.

[13] Including incomplete surveys or individuals who did not follow the standard, direct route from high school to college does not change our results (available from the authors upon request).

Do students try to respond "correctly" to exam-style questions? A first concern is that students who study under different curricula may all have the same private views of the world, but they all wish to provide "correct" answers to questions that are similar in structure or content to exam questions. To address this concern, we took care to ask the majority of our questions of interest in a manner that did not look like the questions students would have seen in the *gaokao* or any other exam. Indeed, in addition to asking some factual questions related to the new curriculum, we asked questions explicitly about students' *own opinions*. We also included questions that we felt were important extensions well beyond classroom material. For example, the new curriculum included a greatly expanded discussion of the concept of the rule of law. We ask whether this affected students' trust in government officials—a related set of beliefs, but one quite removed from the specific content of the school curriculum. As will be discussed below, we find evidence that the new curriculum affected not only responses to factual questions, but also stated opinions on questions beyond the curriculum.

Do students try to express socially-acceptable or politically correct views? A second concern is that students who study under the new curriculum may not have their attitudes changed, but respond to survey questions differently after learning about a different set of constraints on the views that they ought to express. While there is always a concern that students will be afraid to reveal stigmatized or politically incorrect beliefs, there are several reasons to take students' responses in our survey at face value.[14] First, none of our questions touched on topics that are taboo in China, such as multi-party elections, views of the Communist Party *per se*, or direct criticism of the leadership of China. All of the questions asked, indeed, were based on topics that were discussed in Chinese high school curricula, and all of our questions were vetted by our mainland Chinese co-author (Chen); by a variety of China scholars; and, by high school teachers with whom we spoke.

Second, the survey was conducted privately, online, so there would have been no direct social stigma attached to particular responses. We also emphasized the confidentiality of students' responses in the online consent forms read prior to the survey (approved by the UC Berkeley Institutional Review Board).

Third, it is clear from the range of responses received in the survey that responses were not concentrated around a single "acceptable" response. Our questions regarding trust in various government officials and government bodies are perhaps the most politically-sensitive of our survey questions. We asked students to indicate their level of trust in various government institutions, on a 1–5 scale, with 1 indicating complete distrust, and 5 indicating complete trust. Interestingly, we find that 20% of individuals rate the central government at a 3 or be-

[14]Moreover, the state's ability to shape what individuals see as acceptable expression by changing the curriculum is interesting in itself, and may have important consequences for political debate, coordination, and thus political behavior.

low; for the provincial and local governments, this number is 38% and 65%, respectively; for courts, the army, and police, we see responses of 3 or below from 37%, 31%, and 47% of students. Clearly, students were willing to give less than stellar marks to a range of government institutions.

Indeed, the fact that our study was run in Peking University makes it less likely that students would self-censor their beliefs out of fear of government (or peer) reprisals for expressing critical attitudes.[15] Peking University is known to be a setting in which liberal views can expressed, even contrary to government aims. Indeed, the University posted an article from the *Atlantic* magazine on its website stating the following:

> Peking University is known for its politically liberal professors. It was there that many of the student leaders in the 1989 Tiananmen Square democracy protests originated, and it's an open secret that teachers at the school and neighboring Tsinghua University often broach topics critical of the government in the classroom. Earlier this year, a leaked Communist Party memo warned universities that seven topics, including freedom of press and universal values, were banned from class discussions. But even still, the students currently at Peking University said these directives appear to have had little actual effect in the classroom.[16]

A student quoted in the article stated, "We Peking University students are very open; some of the most outstanding students in the country. Most of us are very liberal minded, so it's ok to talk about sensitive political things." Thus, especially given the care we took to ensure that students could complete the survey privately, and the emphasis we placed on protecting the confidentiality of students' responses, we do not believe they would have been afraid to respond honestly.

Finally, we examine whether our estimated effects of the new curriculum were driven by individuals who are more risk averse, and thus plausibly more likely to censor their own attitudes if they were concerned about their social acceptability. We find no evidence that risk averse individuals were differentially affected by the new curriculum, which suggests that the new curriculum changed students' attitudes, not only their views on which attitudes they ought to express (for details, see online appendix **??**).

Stated preferences versus revealed preferences As a final check that the survey responses were meaningful, we can compare students' responses to direct questions about risk preferences to their choices in an incentivized game eliciting risk preferences, which took place after the survey. While questions about risk preferences are not as likely to be associated with stig-

[15] Peking University students are not representative of the Chinese high school graduates. We discuss the virtues and drawbacks of our subject pool, and the external validity of our results, in Section 5.3, below.

[16] The article can be found at `http://english.pku.edu.cn/News_Events/News/Outlook/10590.htm`, last accessed on January 26, 2014.

matized attitudes, this remains a useful check that responses to direct questions correspond to respondents' revealed preferences.

We asked students directly about their risk preferences on a 0 (risk averse) to 10 (risk seeking) scale, and also elicited students' risk preferences using an incentivized game, which allowed us calculate their certainty equivalents based on a series of gambles. We find a highly statistically significant relationship between self-reported risk and the certainty equivalents from the incentivized game ($p<0.001$), which suggests that students' responses to our survey questions are consistent with their behavior.

4 Empirical analysis

4.1 Empirical model

Using our survey data, we estimate a generalized difference in differences model, which controls for cohort and province fixed effects, and examines the effects of exposure to the new curriculum. Our baseline specification is the following:

$$y_{icp} = \sum_{c} \gamma_c + \sum_{p} \delta_p + \beta \, NewCurriculum_{cp} + \varepsilon_{icp}, \tag{1}$$

where y_{icp} is an outcome measure from our survey instrument (i indexes the individual, c the high school graduation cohort, and p the province of high school attendance); γ_c and δ_p are full sets of cohort and province fixed effects; and β is the coefficient of interest, capturing the effect of the new curriculum, conditional on fixed differences across cohorts and fixed differences across provinces. In our main estimates, we allow idiosyncratic differences, ε_{icp}, to be correlated across individuals within a province$\times$cohort (the level at which the curriculum varies).[17] In addition to this baseline specification, we will estimate additional specifications below that include individual-level controls, province$\times$cohort level controls, and a full set of province-specific, cross-cohort trends (in addition to the province and cohort fixed effects).

Our baseline model allows us to address a variety of concerns about our ability to identify the causal effect of the new curriculum. First, one may be concerned that province-level differences in openness, income levels, and policies may be correlated with attitudes; because the introduction of the new curriculum was not randomized across provinces (coastal provinces introduced the curriculum earlier, for example), exposure to the new curriculum is correlated with province characteristics that may shape attitudes. However, fixed differences across provinces cannot drive our estimated effects of the new curriculum, because we control for province fixed effects and exploit cross-cohort variation *within* provinces to identify the effects

[17] We will also show standard error terms clustered at the province level below, and our inferences are very similar.

of the new curriculum. Similarly, one might worry about the evolution of attitudes across cohorts even in the absence of a change in the curriculum; by including cohort fixed effects, we are able to difference out cross-cohort changes that occur even in the absence of a change in the curriculum.

One might still be concerned about time-varying factors that affect different provinces in different years. For example, one may worry about differences in economic growth rates across provinces or about shocks, such as the Sichuan earthquake of 2008, which might differentially affect different provinces. It is important to emphasize, however, that province$\times$*time* varying shocks are not necessarily province$\times$*cohort* varying shocks: a confounding factor would need to differentially affect different high school graduation cohorts within a province to threaten our identification strategy. While some province$\times$time varying shocks certainly may affect different cohorts differently, it is worth emphasizing that the cross-cohort variation we exploit is extremely *sharp*: individuals entering high school just one year apart studied entirely different curricula around the introduction of the new curriculum. This method of introducing the new curriculum considerably reduces concerns about omitted variables, as many time-varying, province-specific shocks seem unlikely to have very different effects across *adjacent* cohorts of students, and so will be absorbed by the province fixed effects.[18] Economic growth rates may differ between two provinces, but the impact of different growth rates on cohorts entering high school just a year apart (or even two or three) are likely to be quite similar; the Sichuan earthquake may have had differential effects across age groups, but it seems likely that 14-, 15-, and 16-year olds would have been very similarly affected.

Finally, even unobserved factors that *do* vary at the province$\times$cohort level are much more likely to affect adjacent cohorts within the same province smoothly, rather than sharply. Our specification that includes controls for province-specific, cross-cohort trends is able to capture smooth, province-specific changes in attitudes across cohorts. This specification is especially demanding (and indeed may be "over-controlling"), as it attributes to the new curriculum only the "jump" in attitudes relative to the cross-cohort trend—in fact, because we only study four cohorts of students, the "trend" estimate may capture the effects of the curriculum change (we thus view this estimate as a robustness specification, rather than use it as our baseline model). Thus, although the introduction of the new curriculum was not random across time and space, many differences across provinces and across cohorts—other than the curriculum change—are likely to be absorbed by our control variables, leaving us more confident that we

[18]It is worth mentioning that while students in different school cohorts may interact, in Chinese high schools, the vast majority of a student's time is spent with other students in the same cohort; thus, there is somewhat less potential for "contamination" of the old curriculum students by those treated by the new curriculum. This suggests that there may, indeed, be observable treatment effects despite the fact that such contamination (both in high school and later in college) would tend to bias estimated effects toward zero. To the extent that students in college sort into social networks according to the curriculum under which they studied, and so reinforce their attitudes, this may generate persistence of any change in beliefs caused by the new curriculum. We leave the study of mechanisms of persistence to other work.

are able to identify the causal effect of the new curriculum.

4.2 Balance of student characteristics

We first check for balance of observable characteristics among survey respondents across new and old curricula. A lack of balance might arise from shifts in matriculation into Peking University as a result of the curriculum change (or some other province×cohort-specific shock). In addition, lack of balance could arise from differential selection into the survey sample; for example, because the new curriculum has an effect on attitudes (e.g., towards foreigners, towards opinion surveys, etc.).

In Table 2, columns 5 and 6, we present the raw differences, and the p-values testing for the statistical significance of these differences in characteristics of students who studied under the old and new curricula in our sample. It is clear from the table that there are significant differences across the two groups. It is worth emphasizing: this *unconditional* imbalance is to be expected. Students who studied under the new curriculum on average are younger (the new curriculum was introduced later in time), and come from provinces where the curriculum was introduced earlier—and there was no random assignment of introduction years across provinces, so differences across students from different provinces appear as well (for example in the fraction of Han Chinese).

In Table 2, columns 7 and 8, we show differences between students in the new and old curricula, conditional on province and cohort fixed effects, and the p-values testing for the statistical significance of these *conditional* differences. One can see that accounting for average characteristics in the province of origin, and accounting for average characteristics of a cohort, those individuals in our sample who have studied under the new curriculum look nearly identical on observable characteristics to those who studied under the old curriculum. This suggests that our difference in differences design will compare outcomes across individuals whose demographic characteristics—generally pre-determined—look identical.[19]

4.3 Baseline results

Here we present baseline estimates of the effects of the new curriculum on our full set of outcomes. Our baseline specification includes our entire sample of surveys; we estimate equation 1 and present standard errors clustered at the province×cohort level. In section 5.1, we show a broad range of additional specifications.

We present results for five categories of outcomes: (i) views on political participation and democracy; (ii) trust in government officials; (iii) views of minorities; (iv) views on unconstrained markets; and (v) views on the environment. The shaping of each category of attitudes

[19] Because these variables are nearly all pre-determined, one can think of Table 2, columns 7 and 8, as providing a set of falsification tests, all of which are passed.

was explicitly mentioned in government document describing the objectives of the reform. It is worth noting again that this is not an exhaustive examination of our survey outcomes, nor is it an exhaustive analysis of the changes in the textbooks. Rather, it is a comprehensive analysis of changes in students' attitudes in response to curriculum changes that matched the political aims of the government in designing the reformed curriculum.

For each category, we present our findings one outcome (that is, one survey question) at a time. We also construct an index of the various outcomes within a category following Anderson (2008), which both captures broad attitude changes that are only imperfectly captured by any single outcome and also helps address concerns about multiple hypothesis testing by reducing the number of hypotheses we test (this is especially important given the range of robustness specifications we examine, below). Because our analysis involves testing multiple hypotheses, an important question is how to make appropriate statistical inferences in face of the greater likelihood of Type I error. In addition to examining the effects of the new curriculum on broad indices, we present for each of our individual outcomes p-values which are adjusted using the false discovery rate (FDR) procedure (Anderson, 2008; Benjamini et al., 2006), in addition to standard p-values calculated using clustered standard errors.[20]

4.3.1 Outcome category 1: Views on political participation and democracy

The first set of attitudes we examine is views on political participation and democracy, the shaping of which was a high priority for the Chinese government. Reflecting this, the new *Political Life* textbook includes entirely new sections on political participation and supervision of government. Importantly, the new curriculum did not simply advocate unfettered political expression and action—it highlights the institutions allowing for political participation in China, while drawing a clear distinction between orderly and disorderly civil participation. The new *Political Life* textbook specifically discusses civic participation at the local and township levels, discussing local elections, and the supervision of the local government. For example, the *Political Life* textbook, pp. 17–18, includes a section titled, "Cherish your voting rights," which states:

> Voters' attitudes and abilities towards elections are the key factors that influence the impact of elections. Citizens have to continue improving themselves in participating in democratic elections, so that they can exercise their voting rights well. Only then can citizens be able to better manage China's national and social affairs, as well as its economic and cultural matters. [...] Whether one actively participates in elections is a critical measurement of a citizen's sense of participation and responsibility.

[20] There are still other, even more conservative, methods (e.g., the Bonferroni correction) that could be used to adjust our statistical inference. Given the size of our sample and the estimated treatment effect sizes, we believe that our approach appropriately balances concerns about Type I and Type II errors.

These new sections in the textbook are reflected in the *gaokao* framework for the new curriculum, as well. The new framework includes the following modules in the *Political Life* component: government exercising its rights and powers, and the supervision of government; the significance and requirement of rule of law; the need to improve government's ability to ensure rule of law; the significance of anchoring and supervising the government's power.

Based on the curriculum changes, we asked students a broad range of survey questions related to democracy and political participation, to determine whether their knowledge of, and views on, Chinese political institutions were affected. Some of these were explicitly factual in nature, to allow us to observe whether details of China's political system were differentially *known* by individuals who studied under the new curriculum (questions 3.1 and 3.2). We also asked students for their *own opinions* about Chinese political institutions (questions 3.3 and 3.4). Finally, we asked students about their own *actions* (questions 3.5). Note that, throughout the paper, we code all variables such that the expected effect of the new curriculum is positive.

3.1	Were you aware that the village head is elected by ordinary people through voting (one-man one-vote)?
3.2	Were you aware that one can participate in the voting for local (county or district) People's Congress representatives?
3.3	In reality, ordinary people are able to influence who becomes the village head. (1= totally disagree, 5=fully agree)
3.4	Where would you place our country under the present government? (1 = completely undemocratic, 10 = completely democratic)
3.5	Have you ever participated in political groups other than CCP and Communist Party Youth Organization?

Results As discussed above, we begin by presenting our findings one outcome at a time; then, because we are testing multiple hypotheses throughout our work, we also collapse the various groups of questions into an index for that group, and test for the curriculum's effect on the index. In Table 3, columns 1 and 2, we examine the impact of the new curriculum on *factual* knowledge regarding Chinese political institutions. We expect, given the additional content on elections in the new curriculum, that students who studied under the new curriculum would be more likely to report being aware of village level and People's Congress representatives' elections. Indeed, one can see that for both of these outcomes, study under the new curriculum is associated with greater reported knowledge of Chinese elections. Note that for each outcome, in addition to showing the coefficient estimate and clustered standard error, we also show the p-value associated with our estimate *and* the adjusted p-value that takes into account the multiple hypotheses being tested in a particular category of outcomes, following Anderson (2008).

In columns 3 and 4, one can see that studying under the new curriculum leaves students more likely to believe that in reality, ordinary people have influence over who become village heads, and that in reality, China is more democratic (both results are statistically significant at 5% or less using standard p-values, and at 10% using the FDR-adjusted p-value). In Table 3, column 5, we turn to actual changes in student *behavior*, testing whether students were more likely to participate in political organizations if they studied the new curriculum. The new curriculum appears to have a substantial effect on behavior, increasing the likelihood of political participation by 3 percentage points, relative to an overall average of 5%. The estimate nearly reaches conventional levels of significance.

In Table 3, column 6, we present the results using an index constructed from the 5 outcomes related to political participation and democracy.[21] To construct the index, we standardize each component and sum individuals' standardized outcomes, weighting each outcome by the inverse of the covariance matrix of the standardized outcomes, following Anderson (2008).[22] The rationale for this procedure is twofold. First, one avoids the pitfalls of "overtesting" that occur when many single hypothesis tests are conducted. Second, the index provides a test of whether the new curriculum has an effect on a set of related outcomes, which might all be caused by one underlying latent variable.[23] The results from a regression using this z-score index point to a strong and highly significant effect of the curriculum in the expected direction, resulting in a change in the dependent variable of about one third of a standard deviation.

Persuasion rates In order to quantify the magnitude of the effect of the new curriculum, we also compute persuasion rates. The persuasion rate (DellaVigna and Gentzkow, 2010) is the estimated percentage of individuals who did not initially hold the view that the new curriculum aimed to instill (the "desired belief"), but who did hold the belief if they were exposed to the new curriculum. For a binary outcome variable we calculate it as the estimated treatment effect of the new curriculum divided by the share of students who do not hold the desired belief in the entire sample; we call this the "unconditional" persuasion rate.

A more correct definition of the persuasion rate would require us to divide the effect by the share of students without the desired belief among individuals who studied under the old curriculum; however, the compositional differences (by province and cohort) in the sample between old and new curriculum students would bias the results. As an alternative, we esti-

[21] To focus only on changes in beliefs and actions, rather than changes in factual knowledge, one can also construct an index using only the non-factual questions (those presented in columns 3–5). This index yields nearly identical results (available from the authors upon request).

[22] Other methods used to construct a single variable that summarizes a set of related outcomes, for example, an equally-weighted average of the standardized outcomes, or the first principal component of the set of outcome variables, generate very similar results (available from the authors upon request).

[23] Such index variables have been used elsewhere to evaluate the effectiveness of policy interventions on a set of related outcomes; see, for example, Kling et al. (2007).

mate the fraction of individuals who would hold the desired belief in the absence of the new curriculum. To do so, we predict students' beliefs using our baseline regression model, but for students who studied under the new curriculum, we subtract the treatment effect of the new curriculum. We then average the predicted outcomes for those who studied under the new curriculum and the old curriculum, and use this to calculate the fraction of the sample who do not hold the desired view. We then use this share to compute the "conditional" persuasion rate.

For questions that do not have a binary outcome we calculate the persuasion rate based on a transformed dependent variable, which equals one if the outcome is greater or equal to the median answer. In our tables, we always present the the main regression result, i.e., the estimate of the treatment effect of the new curriculum, based on the original data (for example, on a scale from 1 to 10), while the persuasion rate reported at the bottom of the table is calculated with the binary analog.[24] We discuss the magnitudes of the persuasion rates we calculate in more detail in Section 5, below.

4.3.2 Outcome category 2: Trust in government bodies

It is clear from the government documents on curriculum reform that a high priority was to teach students about institutions that legitimated the Chinese government and its officials, especially adherence to rule of law. Thus, the second set of attitudes we examine is trust in government officials and in a range of government bodies—a natural outcome of viewing government institutions as more legitimate. The new curriculum's *Political Life* textbook includes a new section focused on the legitimacy of China's political institutions stemming from participation of, and monitoring by, the people, and a commitment to adhere to the constitution and to the rule of law. The new *Political Life* textbook (pp. 47–48), includes a section titled,"The significance of constraining and supervising government's power," which states:

> Government subject to supervision is necessary for the rule of law. Only when the government subjects itself to supervision, can it improve its administrative ability and efficiency. Supervision ensures that the government will adhere to integrity, because it prevents government from making mistakes, abusing its power, trading power with money, and other corrupt behaviors.

Another section in the new *Political Life* textbook (p. 49), titled, "Where does government's authority come from?" includes the following:

> Where does the Chinese government's authority manifest itself? A government with authority must be a government under the rule of law. It guards the ultimate authority of the constitution and the legal system, and hence protects people's fundamental rights and benefits.

[24] Treatment effects and standard errors using the binary outcomes are available from the authors upon request.

The new curriculum's *gaokao* framework reflects the changes to the textbook, with added sections in the *Political Life* module on the functions and duty of Chinese government, the principles of the Chinese government, and the significance and necessity of rule of law. To gauge students' trust in a range of government bodies, we asked students:

On a 1–5 scale, with 1 meaning complete distrust, and 5 meaning complete trust, describe your level of trust in the following institutions:
4.1 Central government
4.2 Provincial government
4.3 Local government
4.4 Courts
4.5 Armed forces
4.6 Police

Results We will again present our results for one survey outcome at a time, then show results for a weighted index of the standardized outcomes. One can see in Table 4, columns 1–6, that each category of government official or institution is more trusted by students exposed to the new curriculum. When we estimate the effect of the new curriculum on an index variable constructed from the six individual components, we find a positive, highly significant effect as well, amounting to about one fourth of a standard deviation of the outcome.

These results suggest a causal effect of the new curriculum on how students view government officials and government bodies. A natural question that arises in interpreting the results on trust in government officials, and putting them in context, is whether the new curriculum also changed trust more broadly, beyond government officials. We thus asked students about their trust in a variety of non-governmental entities (NGOs, banks, foreign investors). An aggregate index of trust in these non-governmental entities is not affected by the introduction of the new curriculum (the point estimate close to zero and not significant), reinforcing our prior that the new textbooks would only increase trust in government officials and their authority.

4.3.3 Outcome category 3: Views on minorities

The Chinese government made it a high priority to cultivate a traditional national spirit; the government's aim was to teach Han Chinese students that minority groups within China share with them a Chinese ethnic heritage, and to increase minorities' identification with being "Chinese." Our third set of outcomes examines the effects of the new curriculum on Han students' views on minorities, as well minorities' views on their own identity. The new *Political Life* textbook adds (p. 72) an entire section titled "Principles of dealing with relationships among ethnic groups: equality, unity, all prosperous together." The new *Cultural Life* textbook adds two sections (pp. 71–81) titled: "The Eternal Chinese Ethnic Spirit" and "Promoting the

Chinese Ethnic Spirit." The main argument in these sections is that multi-ethnic unity is the core of Chinese culture. The emphasis on ethnic and national "unity" in the new curriculum is striking: the new curriculum's *Political Life* textbook (p. 75) states:

> It is every Chinese citizen's responsibility to abide by the Constitutional duty that one has to guard national and ethnic unity and harmony. As a youth in China today, we need to put our responsibility to develop Socialist multi-ethnic harmony into action.

The new curriculum's *gaokao* framework also added new sections regarding Chinese ethnic unity: "promote Chinese ethnic spirit" and, "the core of Chinese ethnic spirit." We evaluate the impact of the new curriculum on both (majority) Han Chinese students' views on minorities, and also on the views of minority students on their own identities. We asked students the following questions[25]:

5.1/5	China is a country made up of multiple ethnic groups. Which one of the following statements regarding ethnic minority groups do you agree with more? *(a)* Ethnic minority groups share the same historic heritage and cultural traditions as the Han Chinese. *(b)* Ethnic minority groups have different historic heritage and cultural traditions from the Han Chinese.
5.2/6	Can you imagine yourself marrying a member of a different ethnic group in the future?
5.3	Have you worked with minority group students at school before (in study groups or class projects)?
5.7	Where would you place your identity on a spectrum, with being Chinese on one end (1) and being a world citizen on the other end (5)?

Results We begin by studying the new curriculum's effects on Han Chinese students. We consider Han students' views on whether minorities share their ethnic heritage with the majority Han; whether Han Chinese would be willing to marry someone from a different ethnic group; and, whether Han students have cooperated in school with any minority students. In Table 5, columns 1–2, one can see that Han Chinese who studied under the new curriculum are more likely to view minorities as sharing the same heritage as themselves, and they report being more willing to marry a minority. In column 3, one can see that Han Chinese are not more likely to have cooperated in school with a minority student if they studied under the new curriculum. The index combining these three individual outcomes shows an overall effect of the new curriculum in the intended direction, marginally significant at around 10% (Table 5, column 4).

We next examine the new curriculum's effects on minority Chinese students. We consider minority students' views on whether minorities share their ethnic heritage with the majority Han; whether minorities would be willing to marry someone from a different ethnic group

[25]Table 5 is divided into Han Chinese responses (columns 1–4) and minority responses (columns 5–8); some questions appear in both sections of the table.

(though not specifically Han); and, the degree to which minority students feel that their identity is Chinese.[26] In Table 5, columns 5–7, one can see that the new curriculum did not have clear effects on minority students' view of their own ethnic heritage, nor on their willingness to marry outside their ethnic group, but it did strengthen their sense of Chinese identity relative to having an international identity. The index combining these three individual outcomes shows a statistically significant increase as well (Table 5, column 8).

4.3.4 Outcome category 4: Views on markets

Government documents shaping the new curriculum emphasized the importance of the "socialist market economy" for economic and social development, and also pointed to the potential social dangers (especially for youths) associated with rapid development and greater openness. We next consider the impact of the new curriculum on students' views on the free-market economic system. In the new *Economic Life* textbook, many sections emphasize the "socialist market economy," in which markets are complemented by state or socialist institutions. For example, the important role of state-owned enterprises is made clear in the new curriculum's *Economic Life* textbook (p. 31):

> Just like the pillars that support skyscrapers, state-owned-enterprises (SOEs) are the backbone of China's domestic economy. They control the life vessels of the economic system, and play a vital and leading role in the system. To develop, expand and strengthen the SOEs is of critical importance, to demonstrate the superiority of socialist system, to strengthen China's economic power, national defense power, as well as ethnic unity. They can also elevate the international position of China.

Social inequality—a major threat to Chinese political and social stability—is explicitly linked to market institutions. The new *Economic Life* textbook (p. 81) states:

> Therefore, allowing market alone to allocate resources will lead to inefficiency and waste, as well as socioeconomic instability. Market functioning alone can also result in economic fluctuations and chaos, unfair redistribution, widening income gaps, and even cause severe polarization.

In addition, the new curriculum cut out an entire section on the market economy that emphasized its virtues. The *old* curriculum's section titled "General characteristics of a market economy" described markets as "equal (or just)," "competitive," "under rule of law," and "open." This material was removed from the new curriculum. Many changes in the *gaokao* framework also emphasize the importance role of the state in the economic system. In the

[26] Note that we do not include in Table 5 the estimated effect of the new curriculum on Han Chinese students' degree of Chinese identity, as we did not expect this to be affected by the new curriculum. We also do not include estimates of the effect of the new curriculum on minority students' experience cooperating with minority students, as we did not expect this to be affected either. All results are available upon request from the authors.

Economic Life section of the framework, new sections include "sustainable and balanced economic development;" "public-ownership structure should play a major role;" and, "multiple ownership structures develop simultaneously."

To test whether exposure to the new curriculum shaped students' views on economic institutions, we asked the following survey question:

6.1 From the following statements on a market economy, choose one that you agree with the most:
(a) A market economy is preferable to any other form of economic system.
(b) For people like me, it does not matter whether the economic system is organized as a market economy or as a planned economy.
(c) Under some circumstances, a planned economy may be preferable to a market economy.

We convert students' responses into a dummy variable indicating skepticism of the market economy, equal to 1 if individuals *did not* select the "market economy preferable" response.[27]

Results In Table 6, we show the estimated effect of the new curriculum on students' skepticism of the market economy. One can see that significantly more students who study under the new curriculum reject the view that a market economy is preferable to any other economic system (statistically significant at 5%).

4.3.5 Outcome category 5: Views on the environment

Government documents structuring the curriculum reform mention consciousness of the environment as a value that ought to be instilled in Chinese students. While not a prominent element of these documents, environmental issues were highlighted by former President Hu Jintao; also, attitudes toward the environment will shape public policy on a critical domestic and global issue, so we feel they are of special interest. The new curriculum, indeed, includes additional content discussing environmental issues, in the *Economic Life* textbook (pp. 87–90). The new curriculum's *gaokao* framework includes new sections in the *Economic Life* module titled "scientific outlook on development" and "sustainable and balanced economic development", which include environmental issues.

To gauge how students prioritize environmental concerns, we included the following sur-

[27] Coding the survey responses in other ways—for example, a dummy variable indicating support for a planned economy or running a multinomial logit—yields very similar results (available from the authors upon request).

vey items:

7.1	People often talk about what the goals of this country should be for the next ten years. Listed below are some common goals for a nation. Please pick the one that you consider as primary for a nation. *(a)* A high level of economic growth; *(b)* Maintaining economic stability; *(c)* Maintaining order in the nation; *(d)* Giving people more say in important government decisions; *(e)* Protecting the environment.
7.2	Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to your own point of view? *(a)* Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs. *(b)* Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent.

Results In Table 7, columns 1–2, we show the estimated effect of the new curriculum on the two survey questions. As a dependent variable, we use a dummy indicating whether option (e) was chosen in the first question, or option (a) in the second question. In neither case do we find a significant effect—in fact, in both cases, preferences are if anything slightly less "pro-environment" among students who studied under the new curriculum. The aggregate z-score index (column 3) also shows no discernible effect.

5 Discussion

5.1 Robustness checks and ruling out alternative hypotheses

We next explore the robustness of the results seen above for all five of the categories examined, and also try to rule out alternatives to our interpretation of our estimates as the *causal* effects of the curriculum change. Rather than present every robustness specification for each individual outcome in all categories, we show robustness specifications only for the z-score indices constructed to summarize each category's outcomes.[28]

Clustering of standard errors We first consider alternative standard error calculations. In our baseline estimates (reproduced in Table 8, Panel A), we chose to cluster our standard error estimates at the province×cohort level both because the variation in the explanatory variable of interest—the curriculum—occurs at the province×cohort level, and because we have a relatively small number of provinces (only 29). A concern with our baseline analysis is that while we allow error terms to be correlated across individuals belonging to the same province *and* cohort, one might believe that error terms might be correlated across individuals

[28] For the single outcome relating to attitudes to the market economy, we use the question asked (rather than an index) for all the robustness specifications. Results from estimating robustness specifications for each individual outcome variable are available from the authors upon request.

from the same province, but belonging to *different* cohorts. We thus estimate standard errors clustered at the province level; we find that our statistical inferences are not affected by this change (see Table 8, Panel B).

Including control variables We next include student-level controls for the individual characteristics reported in Table 2. In Table 8, Panel C, one can see that including these individual-level controls does not change our findings. In fact, the balancedness of individual-level covariates across curricula (conditional on province and cohort fixed effects) suggested that individual controls should not affect our results very much; it is reassuring to see that our estimated coefficients are nearly identical to the baseline.

We are also able to control for provincial spending on secondary education at the province×cohort level (we use a province's average level of spending during the three years of senior high school for each cohort). Adding controls for these time-varying and cohort-varying province characteristics to equation 1 barely affects the point estimates, as seen in Table 8, Panel D.

Including province-specific cross-cohort trends One important concern when interpreting our results is that differences across curricula, within provinces, may arise from different trends in attitudes across cohorts in different provinces. For example, it may be the case that views on markets follow different trends in different provinces, and that these trends show up as effects of the new curriculum. To address concerns about differences in cross-cohort trends in attitudes driving our results, we estimate equation 1, but include a full set of province fixed effects interacted with cohort-level trends. That is, we allow each province to have its own (linear) trend in attitudes across cohorts, and we identify the effect of the new curriculum as a *deviation from the trend*.[29]

In Table 8, Panel E, one can see that controlling for province-specific cross-cohort trends does not greatly affect our estimates of the effects of the new curriculum. We continue to see that the new curriculum is associated with changed views on political participation, government elites, minorities, and markets; and, we continue to find no effect on views on the environment.

Testing for pre-treatment trends in outcomes We find that our sample of students is balanced (conditional on province and cohort fixed effects) across curricula, and that our results are quite robust to the inclusion of province-specific cross-cohort trends. Still, one might be concerned about pre-curriculum changes in trends affecting our results. Thus, we estimate

[29]Note that this may be "over-controlling", given that we only have 4 cohorts per province, and limited variation in the timing of the new curriculum's introduction across provinces. It is not unlikely that the province-specific trend picks up some part of the variation actually due to the (sharp) introduction of the curriculum.

the model in equation 1, but rather than pool the students who studied under the old curriculum into a single category, we allow students to have different views depending on the distance between their cohort and the first cohort that studies under the new curriculum in their province to try to tease out any evidence of a pre-treatment change in outcomes. We treat the last cohort studying under the old curriculum in a particular province as the omitted category, and estimate the new curriculum's effect relative to that omitted group. At the same time, we estimate the (placebo) treatment effect of being two cohorts ahead of the introduction of the new curriculum, and of being 3 or more cohorts ahead.

We present the results in Table 9, columns 1–6. One can see that across categories, there are no significant (placebo) treatment effects estimated for cohorts earlier than the first treated cohort. All estimates are orders of magnitude smaller than the actual effect of the new curriculum, and not statistically significant. We continue to find significant treatment effects for several of our outcomes of interest, for the *new* curriculum cohorts, whether compared to the last cohort under the old curriculum, or to the earlier cohorts.

Falsification exercises using placebo treatments We next make our statistical inferences in an alternative manner, by comparing the treatment effect we estimate for each index outcome to the distribution of placebo treatment effects we estimate when *randomly* assigning new curriculum introduction dates to provinces. To be precise, we randomly assign new curriculum introduction dates to provinces, with the dates drawn from the *actual* set of introduction dates of the new curriculum, without replacement (so in a given year, the same number of provinces have the placebo new curriculum introduced as had the actual new curriculum introduced, but the placebo assignment will be to a random selection of provinces). We randomly draw 10,000 sets of placebo treatment assignments, and estimate equation 1, with the six summary measures as the outcomes.

We plot the distribution of t-statistics from the 10,000 estimated placebo treatment effects for each outcome, in Figure 3, and mark in the figure the location of the t-statistic of the *actual* treatment effect within the placebo treatment effect distribution. We also report the share of the placebo t-statistics that is larger than the actual statistic, in absolute value. One can view this measure as analogous to a p-value in this placebo exercise. Across the six outcomes considered, one can see that the inferences drawn are similar to the standard regressions: under the null of no effect of the curriculum change, random variation in attitudes across provinces and cohorts would very rarely produce t-statistics as large as the ones we find resulting from the actual curriculum change.

5.2 Benchmarking the effect sizes

Persuasion rates Throughout the regression results in Tables 3–6 we presented estimates of the persuasion rates implied by the treatment effects found. We define the persuasion rate,

as discussed in more detail in section 4.3.1, as the share of individuals not holding the new curriculum's "desired view" who are moved to change their stated attitude as a result of exposure to the new curriculum. Note that in some settings (e.g., DellaVigna and Kaplan, 2007) calculating the persuasion rate requires an estimate of the fraction of those not initially holding the desired view who were exposed to the (potentially) persuasive message. In our setting, all students under the new curriculum (whether or not they initially held the desired view) were exposed to the persuasive message.

The persuasion rates we estimate are substantial: among the outcomes for which we find some evidence of persuasion (i.e., treatment effects with the "right" sign, from the government's perspective) the median persuasion rate was 27.8% (unconditional persuasion rates) or 24.2% (conditional persuasion rates). (It is important to note that "persuasion" did not occur for some outcomes, e.g., survey questions about the environment.) These numbers are high relative to estimates of persuasion rates found for various media in prior work; for example, DellaVigna and Kaplan (2007) find a persuasion rate from Fox News of approximately 3–8%, and DellaVigna et al. (forthcoming) find a persuasion rate of 4–5% for Serbian radio in Croatia. Our estimated of persuasion rates are novel in that they come from a type of oblique belief transmission different from mass media. It is plausible that persuasion rates for educational content are considerably larger than those for media—owing, for example, to the intensity of exposure, and perhaps to the greater pliability of youths' views.

Stated preferences and behavior Many of the views elicited in our survey are on topics that are of great political, economic, and social importance, and understanding how educational content shapes these views is of interest *per se*. It is also interesting to consider how differences in political attitudes correspond to differences in political behavior. While the students in our Peking University survey have had little opportunity to engage in many political activities of interest—because of their status as Peking University students, because of their workloads, because of their ages, and because they live far from home—we can examine the association between political attitudes and reported political behavior using data from the AsiaBarometer social survey.

The AsiaBarometer survey asks respondents about their trust in various government officials—central government, local government, courts, armed forces, and police—just as we asked the students in our sample.[30] We examine the association between reported levels of trust in government officials and reported political actions; to ensure comparability with our survey sample, we limit our analysis to Chinese respondents with at least 12 years of schooling. In addition to examining trust in these individual government bodies, we construct an index of

[30]The only differences between our survey questions and the AsiaBarometer questions are, first, that AsiaBarometer respondents indicate their level of trust on a 1–4 scale, rather than a 1–5 scale; and, second, that we specifically ask about trust in both local and provincial governments, while AsiaBarometer only asks about trust in local government.

trust in government officials, just as we did in our analysis of our own survey sample.

Unlike our analysis above, in which trust in government officials was our outcome variable, we now treat reported levels of trust as our explanatory variable of interest, and examine whether reported levels of trust are significantly associated with reported political activities. The AsiaBarometer survey asks respondents in China the following two questions about political action:

> Here is a list of actions that people sometimes take as citizens. For each of these, please tell me whether you, personally, have never, once, or more than once done any of these things during the past three years:
>
> 1. Attended a demonstration or protest march.
> 2. Refused to pay taxes or fees to the government.

We regress reported political actions on reported levels of trust in government officials, controlling for respondents' age (and age squared) and gender.[31] In Table 10, columns 1–6, we present estimated coefficients on our various measures of individuals' trust of government officials, with attending a demonstration or protest march as the outcome variable. Across trust measures, we find that greater trust in government officials is associated with significantly less frequent participation in demonstrations and protests. In Table 10, columns 7–12, we repeat the exercises in columns 1–6, but examine the association between our measures of trust in government officials and individuals' refusal to pay taxes or fees. We find that across our measures of trust in government officials, greater self-reported trust is associated with significantly less self-reported refusal to pay taxes and fees.

In relative terms, these results from the AsiaBarometer survey indicate that increasing the summary trust index by one standard deviation makes an individual 13.5 percentage points less likely to attend a demonstration, or 5 percentage points less likely to refuse to pay taxes or fees. The effect of the new curriculum, as estimated in Table 4, column 7, is to increase the summary trust index by around 25% of a standard deviation. Under the assumption that the relationship between an individual's trust in officials and their political action is similar for students in our survey to that for the broader set of individuals in the AsiaBarometer sample, we estimate that the new curriculum made students around 3 percentage points less likely to attend a demonstration, and around 1 percentage point less likely to refuse to pay taxes and fees.

5.3 External validity

As with any study that relies on quasi-experimental variation, our estimated effects are "local" to our particular context. We believe this context is of special interest: not only do we study a naturally-occurring policy change, but we also study a group of students whose views are

[31] Excluding these controls does not affect our results.

most likely to shape Chinese political discourse—China's educated, urban elite. In addition, we study the impact of a change in educational content during students' critical years (Giuliano and Spilimbergo, 2013; Krosnick and Alwin, 1989), with a lag of several years. This is of some interest—beliefs shaped by the curriculum would need to be persistent in order to be observed in our survey, and beliefs formed in students' late teens and early twenties may be most likely to persist into adulthood. Of course, one should use caution when considering whether our results are representative of the effect of the curriculum change on other Chinese students exposed to it, the effects of educational content on the beliefs of students in other societies, the effects of curriculum changes at other stages of life, or effects observed after more time has elapsed.

There is reason to think that our estimates may be lower bounds of the curriculum change's effects on other Chinese students: students who choose to enter Peking University are seen as China's most liberal, and critical of government.[32] On the other hand, Peking University students uniformly excelled in their high school studies, and so are more likely than other students to have *learned* the material in the high school curriculum. This might lead our estimated effects to be larger than for other samples of Chinese high school graduates (let alone for non-graduates).

When considering the effects of educational content on ideology in other settings, one has to be even more cautious. Our finding that educational content significantly affects attitudes will depend on students' skepticism of the material that is produced by their government; by their ability to access contrary sources of information outside of school; by the role of parents in shaping students' views; and, by the efficacy of the state and schooling system in tailoring a curriculum to achieve particular goals. Finally, one can imagine that the impact of curriculum change in primary schooling might be less persistent than what we observe; it may also be the case that some of the differences we observe across cohorts will fade as they age. Thus, one can imagine both settings in which educational content is more effective in shaping beliefs than in the setting we study, and settings in which it is less effective. Our results represent credible causal estimates of the effects of one curriculum reform, in a setting of particular interest; examining the effects of educational content on student beliefs in other settings—and in particular, considering sources of heterogeneous effects across settings—is an important next step for future work.

6 Conclusion

The State Council of the Chinese government laid out a set of ambitious goals for curriculum reform in the early 2000s: the government wanted to shape students' views on political

[32] An *Atlantic* article posted on the Peking University website makes this point very explicitly (`http://english.pku.edu.cn/News_Events/News/Outlook/10590.htm`).

participation and democracy in China, the legitimacy of the Chinese government, the relationship between the majority Han Chinese and minority groups; and, the role of the state in the economy. In all of these aims, we find evidence that the government successfully changed students' views of fundamental aspects of the society in which they lived. The magnitudes of the effects were both statistically significant and quite large: persuasion rates for a variety of important social and political issues are estimated to be larger than those estimated in other settings, from other sources of information, such as television. The State Council also indicated, with less emphasis, the goal of changing students' views on the environment. In this they were less successful, perhaps because of a perceived policy tradeoff between their priorities of economic development and environmental protection. These results are robust to a variety of specification checks and corrections for testing multiple hypotheses, and are striking compared to distributions of "placebo" treatment effects.

Our findings provide support for three broad theories of the roles played by school curricula in shaping political attitudes. First, and most broadly, they suggest that the state can effectively indoctrinate students. Chinese students who studied under the new curriculum viewed Chinese political institutions differently, trusted a broad range of government officials more, and viewed minorities as belonging to the majority's ethnic traditions. The Chinese government, probably wary of increased economic inequality and the downsides of unconstrained market activity, changed students' views of the value of government intervention in the economy. These are precisely the sorts of outcomes that scholars suspicious of elite control of educational institutions would fear (for example, Freire, 1970; Bowles and Gintis, 1976; Lott, Jr., 1999).

But there is also a brighter side to our findings: scholars who have argued that education can be crucial to the development of a functional democracy (e.g. Dewey, 1916; Lipset, 1959; Glaeser et al., 2007) also find support in our results, which suggest that educational content can shape students' views of political institutions. Finally, our results support a range of historical work arguing that education can play a crucial role in forming national identities (Weber, 1976; Clots-Figueras and Masella, 2013; Alesina and Reich, 2013): the new curriculum strengthened students' views of minorities as "Chinese."

While we find causal effects of curriculum on students' ideology, the social welfare consequences of these effects depend on the political economy of curriculum choice: to the extent that educational content is selected to shape ideology, rather than to produce human capital, there is obviously a cost of using the education system to indoctrinate—certainly to students being educated, and perhaps to elites as well, if they benefit from more productive workers. On the other hand, the beliefs shaped by the schooling system might be extremely beneficial, as they may reduce social friction, improve coordination in a variety of settings, and establish socially-valuable norms. Of course, the norms instilled in school may be disproportionately beneficial to the seated elite, who have the ability to shape what is taught.

These results thus suggest an analysis of the political economy nexus when thinking about the government's incentives to provide education. Cantoni and Yuchtman (2013) examine elites' choices of whether to introduce particular educational content in important historical settings, but political choices are made regarding educational content around the world shaping political outcomes as well as human capital accumulation. We believe that choices that elites make regarding educational content deserve further study.

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Figures and Tables

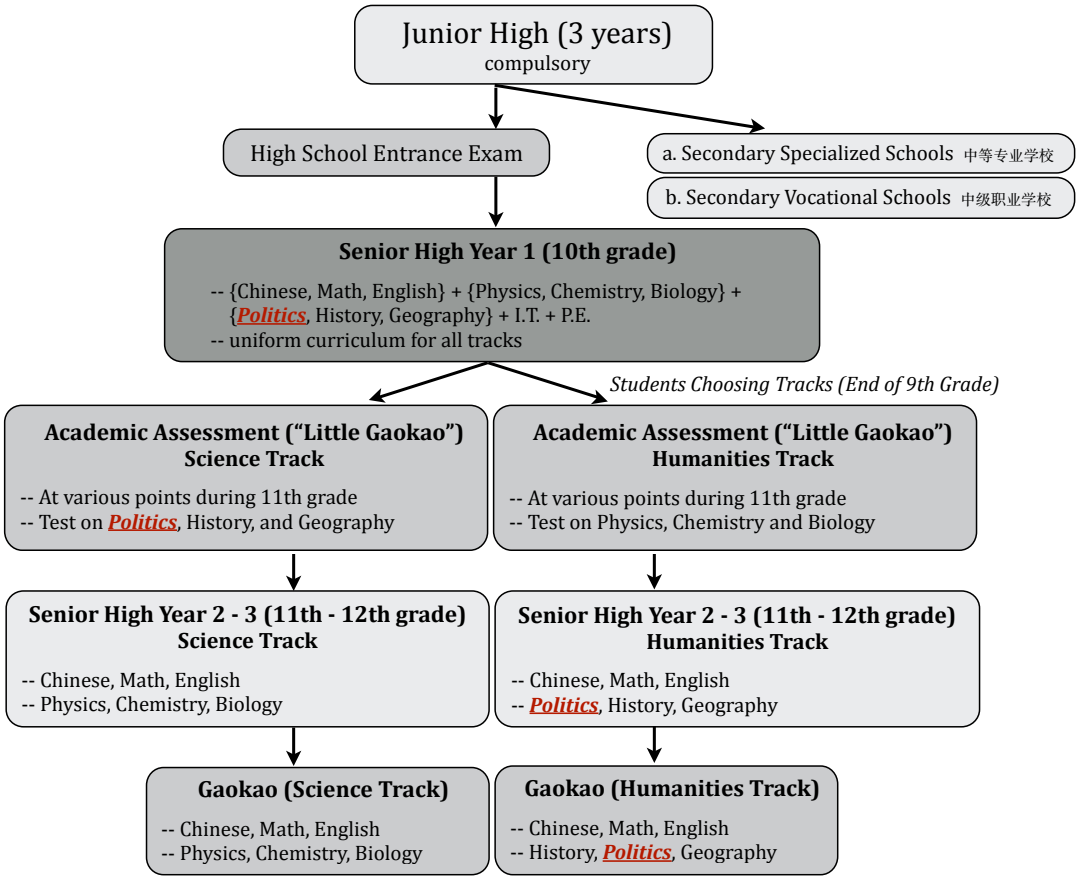


Figure 1: The Chinese secondary education system

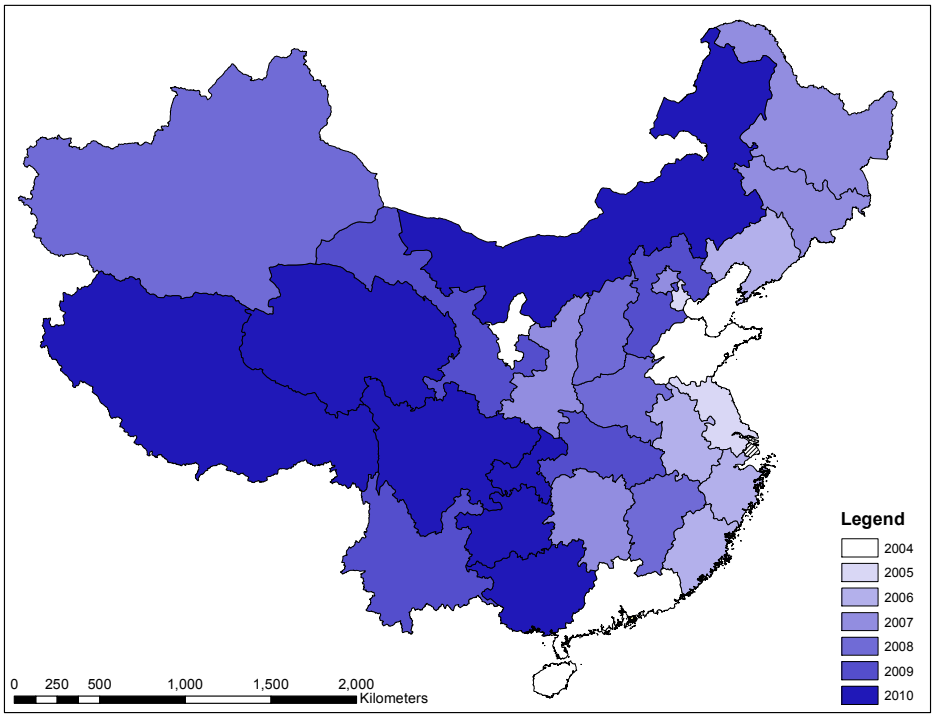


Figure 2: Years of introduction of the new curriculum textbooks

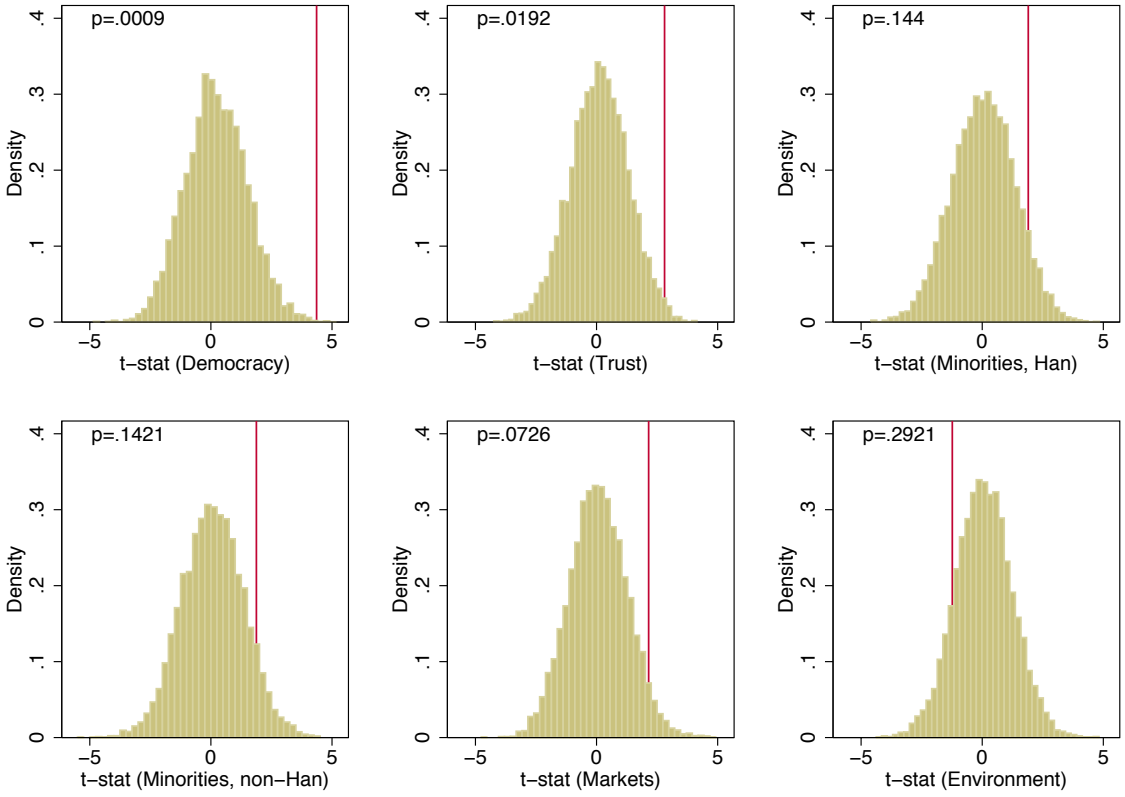


Figure 3: Distribution of t-statistics resulting from 10,000 random assignments of provinces to treatment status

Table 1: Timeline – China's 8th Textbook Reform

Date of introduction	Provinces
2004 (class of 2007):	Shandong, Ningxia, Hainan, Guangdong
2005 (class of 2008):	Jiangsu
2006 (class of 2009):	Anhui, Tianjin, Zhejiang, Fujian, Liaoning
2007 (class of 2010):	Beijing, Hunan, Heilongjiang, Jilin, Shaanxi
2008 (class of 2011):	Henan, Xinjiang, Jiangxi, Shanxi
2009 (class of 2012):	Hubei, Yunnan, Inner Mongolia, Hebei
2010 (class of 2013):	Guangxi, Sichuan, Guizhou, Qinghai, Tibet, Gansu, Chongqing

Table 2: Summary statistics

	All		Old Curr.	New Curr.	Unconditional		Conditional	
	Mean	Std.Dev.	Mean	Mean	Diff.	p-value	Diff.	p-value
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Age	20.8	1.7	21.8	20.2	-1.6	0.000	-0.1	0.270
Height	169.7	8.1	169.4	169.8	0.4	0.223	0.2	0.724
Female	0.456	0.498	0.441	0.469	0.028	0.197	-0.034	0.419
# of siblings	0.428	0.824	0.524	0.371	-0.153	0.000	-0.036	0.545
Urban	0.774	0.418	0.735	0.788	0.053	0.004	0.030	0.371
Father high edu.	0.784	0.412	0.763	0.791	0.027	0.132	0.038	0.212
Mother high edu.	0.722	0.448	0.683	0.739	0.056	0.005	0.040	0.219
Parents in CCP	0.529	0.499	0.518	0.539	0.021	0.332	-0.013	0.769
Han	0.917	0.276	0.900	0.924	0.024	0.047	0.004	0.842
HS science track	0.685	0.465	0.690	0.696	0.006	0.796	0.003	0.923
HS humanities track	0.308	0.462	0.315	0.310	-0.005	0.817	-0.006	0.859
New curriculum	0.617	0.486	0	1	1	—	—	—

Columns 5 and 6 report raw (unconditional) differences in means across curricula, and the p-value for a t-test of differences in means. Columns 7 and 8 report differences conditional on cohort and province fixed effects.

Table 3: Democracy and political participation

Dependent variable:	Know VH elected	Know that able to vote local PCR	People influence VH in reality	Chinese democracy in reality	Join non-CCP political groups	z-score index
	(1)	(2)	(3)	(4)	(5)	(6)
New Curriculum	0.0793**	0.0378	0.199**	0.246**	0.0289	0.150***
	[0.0342]	[0.0283]	[0.0784]	[0.122]	[0.0181]	[0.0344]
p-value	(0.022)	(0.183)	(0.012)	(0.046)	(0.115)	(0.000)
adj. p-value	*(0.060)*	*(0.085)*	*(0.060)*	*(0.060)*	*(0.085)*	·
Observations	1754	1755	1753	1724	1698	1698
Mean DV	0.765	0.871	3.202	5.180	0.0578	0.002
Std.Dev. DV	0.424	0.335	0.976	1.686	0.233	0.495
Persuasion rate (uncond.)	0.345	0.291	0.345	0.199	0.0306	·
Persuasion rate (cond.)	0.279	0.243	0.279	0.175	0.0300	·

*: Significant at 10%; **: 5%; ***: 1%. All regressions include a full set of province and cohort fixed effects (not reported). Robust standard errors in brackets, clustered at the province×cohort level. The z-score index in column 6 (weighting by the inverse covariance of the standardizes outcomes) and the adjusted p-values are computed following Anderson (2008). The persuasion rates computed for columns 3 and 4 are based on the binary analogue of the dependent variable (a dummy taking the value 1 for outcomes above the median value). Number of clusters: 116.

Table 4: Trust

Dependent variable:	Trust central government	Trust provincial government	Trust local government	Trust courts	Trust armed forces	Trust police	z-score index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
New Curriculum	0.127**	0.126*	0.229***	0.0784	0.172***	0.122*	0.190***
	[0.0545]	[0.0747]	[0.0690]	[0.0546]	[0.0644]	[0.0703]	[0.0678]
p-value	(0.022)	(0.094)	(0.001)	(0.154)	(0.009)	(0.085)	(0.006)
adj. p-value	*(0.030)*	*(0.060)*	*(0.008)*	*(0.085)*	*(0.023)*	*(0.060)*	·
Observations	1767	1766	1766	1767	1766	1767	1765
Mean DV	3.981	3.619	3.169	3.630	3.816	3.486	-0.000
Std.Dev. DV	0.748	0.770	0.819	0.755	0.838	0.799	0.770
Persuasion rate (uncond.)	0.520	0.228	0.683	0.145	0.241	0.107	·
Persuasion rate (cond.)	0.384	0.197	0.466	0.132	0.207	0.099	·

*: Significant at 10%; **: 5%; ***: 1%. All regressions include a full set of province and cohort fixed effects (not reported). Robust standard errors in brackets, clustered at the province×cohort level. The z-score index in column 7 (weighting by the inverse covariance of the standardizes outcomes) and the adjusted p-values are computed following Anderson (2008). Persuasion rates are based on the binary analogue of the dependent variable (a dummy taking the value 1 for outcomes above the median value). Number of clusters: 116.

Table 5: Minorities

	Views from Han Chinese				Views from minorities			
Dependent variable:	Minority same as Han Chinese	Willing to marry other ethnic group	School cooper. with minorities	z-score index	Minority same as Han Chinese	Willing to marry other ethnic group	Feel Chinese	z-score index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
New Curriculum	0.0579	0.0642**	-0.000777	0.0937	0.0639	-0.0456	0.554**	0.357**
	[0.0421]	[0.0276]	[0.0336]	[0.0568]	[0.106]	[0.0648]	[0.267]	[0.157]
p-value	(0.172)	(0.022)	(0.982)	(0.102)	(0.549)	(0.484)	(0.042)	(0.046)
adj. p-value	*(0.208)*	*(0.070)*	*(0.487)*	·	*(0.578)*	*(0.578)*	*(0.145)*	·
Observations	1654	1654	1558	1558	149	149	141	141
Mean DV	0.780	0.840	0.831	-0.003	0.826	0.926	3.546	0.121
Std.Dev. DV	0.414	0.367	0.375	0.634	0.381	0.262	0.760	0.554
Persuasion rate (uncond.)	0.268	0.405	n/a	·	0.366	n/a	0.339	·
Persuasion rate (cond.)	0.226	0.317	n/a	·	0.298	n/a	0.280	·

*: Significant at 10%; **: 5%; ***: 1%. All regressions include a full set of province and cohort fixed effects (not reported). Robust standard errors in brackets, clustered at the province×cohort level. The z-score index in column 6 (weighting by the inverse covariance of the standardizes outcomes) and the adjusted p-values are computed following Anderson (2008). The persuasion rate computed for column 7 is based on the binary analogue of the dependent variable (a dummy taking the value 1 for outcomes above the median value). No persuasion rates are computed where the point estimates indicate an effect opposite to the one intended by the curriculum reform. Number of clusters: 115 (cols 1–4), 64 (cols 5–8).

Table 6: Markets

Dependent variable:	Skeptical of market economy
	(1)
New Curriculum	0.0873**
	[0.0406]
Observations	1625
Mean DV	0.698
Std.Dev. DV	0.459
Persuasion rate (uncond.)	0.288
Persuasion rate (cond.)	0.240

**: Significant at 5%. All regressions include a full set of province and cohort fixed effects (not reported). Robust standard errors in brackets, clustered at the province×cohort level. Number of clusters: 116.

Table 7: Environment

Dependent variable:	Environment primary goal	Environment over economic growth	z-score index
	(1)	(2)	(3)
New Curriculum	-0.0340	-0.0340	-0.0906
	[0.0276]	[0.0444]	[0.0734]
p-value	(0.219)	(0.446)	(0.220)
adj. p-value	*(0.780)*	*(0.780)*	·
Observations	1708	1708	1708
Mean DV	0.113	0.694	0.000
Std.Dev. DV	0.317	0.461	0.782

*: Significant at 10%; **: 5%; ***: 1%. All regressions include a full set of province and cohort fixed effects (not reported). Robust standard errors in brackets, clustered at the province×cohort level. Number of clusters: 116.

Table 8: Robustness

Dependent variable:	z-score index democracy	z-score index trust	z-score index minorities (Han)	z-score index minorities (non-Han)	Skeptical of market economy	z-score index environment
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Baseline						
New Curriculum	0.150***	0.190***	0.0937	0.357**	0.0873**	-0.0906
	[0.0344]	[0.0678]	[0.0568]	[0.175]	[0.0406]	[0.0734]
Panel B: Province-level clustering						
New Curriculum	0.150***	0.190**	0.0937	0.357	0.0873*	-0.0906
	[0.0362]	[0.0908]	[0.0712]	[0.214]	[0.0490]	[0.0836]
Panel C: With individual-level controls						
New Curriculum	0.189***	0.234***	0.119*	0.298	0.0508	-0.0474
	[0.0398]	[0.0642]	[0.0617]	[0.197]	[0.0444]	[0.0738]
Panel D: With province×cohort-level controls						
New Curriculum	0.148***	0.191***	0.0943*	0.387**	0.0854**	-0.0905
	[0.0340]	[0.0680]	[0.0564]	[0.188]	[0.0390]	[0.0738]
Panel E: Province-specific cohort trends						
New Curriculum	0.128***	0.170**	0.0701	0.550**	0.0901*	-0.0385
	[0.0407]	[0.0728]	[0.0584]	[0.228]	[0.0504]	[0.0931]
Observations	1698	1765	1558	141	1625	1708
Mean DV	0.002	-0.000	-0.023	0.121	0.698	0.000
Std.Dev. DV	0.495	0.770	0.645	0.554	0.459	0.782

*: Significant at 10%; **: 5%; ***: 1%. All regressions include a full set of province and cohort fixed effects (not reported). Robust standard errors in brackets, clustered at the province×cohort level (Panel B: province level). Number of clusters: 116; 64 (column 4); 29 (Panel B).

Table 9: Pretrends

Dependent variable:	z-score index democracy	z-score index trust	z-score index minorities (Han)	z-score index minorities (non-Han)	Skeptical of market economy	z-score index environment
	(1)	(2)	(3)	(4)	(5)	(6)
$\geq$3 years before introduction	0.00975	0.0223	-0.0503	0.0755	0.0301	0.0227
	[0.0463]	[0.0856]	[0.0824]	[0.189]	[0.0543]	[0.102]
2 years before introduction	-0.0788*	-0.0774	-0.0886	0.0505	0.0658	-0.0823
	[0.0401]	[0.0669]	[0.0641]	[0.144]	[0.0468]	[0.0873]
New Curriculum	0.125***	0.164**	0.0750	0.357*	0.102**	-0.119
	[0.0348]	[0.0686]	[0.0556]	[0.188]	[0.0396]	[0.0790]
Observations	1698	1765	1558	141	1625	1708
Mean DV	0.002	-0.000	-0.023	0.121	0.698	0.000
Std.Dev. DV	0.495	0.770	0.645	0.554	0.459	0.782

*: Significant at 10%; **: 5%; ***: 1%. All regressions include a full set of province and cohort fixed effects (not reported). Robust standard errors in brackets, clustered at the province$\times$cohort level. Number of clusters: 116; 64 (column 4). Reported coefficients are estimated relative to the final cohort studying under the old curriculum (1 year before introduction).

Table 10: Outcomes from AsiaBarometer

Dependent variable:	Attended a demonstration or protest march						Refused to pay taxes or fees to the government					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Trust central government	-0.0168*						0.00158					
	[0.00954]						[0.0107]					
Trust local government		-0.0199**						-0.0233***				
		[0.00855]						[0.00789]				
Trust courts			-0.0210**						-0.0180*			
			[0.00942]						[0.00998]			
Trust armed forces				-0.00508						-0.0162		
				[0.00727]						[0.0135]		
Trust police					-0.0195**						-0.0149*	
					[0.00934]						[0.00788]	
z-score Index						-0.0217**						-0.0105
						[0.00907]						[0.00864]
Observations	956	958	953	953	955	875	956	958	953	953	955	875
Mean DV	0.0166	0.0166	0.0166	0.0166	0.0166	0.0166	0.0313	0.0313	0.0313	0.0313	0.0313	0.0313
Std.Dev. DV	0.160	0.160	0.160	0.160	0.160	0.160	0.208	0.208	0.208	0.208	0.208	0.208

*: Significant at 10%; **: 5%; ***: 1%. All regressions control for gender, age, and age^2. Samples restricted to individuals completed at least high school education. The z-score index in column 6 and 12 (weighting by the inverse covariance of the standardizes outcomes) is computed following Anderson (2008).

A Supplementary Materials

(to be added)