

# Evaluating Determinants of Political Legitimacy in China

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*Abstract*—Despite being an authoritarian and often repressive regime, the Chinese government enjoys the support of 70 percent of its population. This paper tries to make sense of this support by engaging literature on political legitimacy to evaluate which competing hypotheses about political legitimacy best apply to the Chinese context. Defining political legitimacy as an attitude of diffuse support of the government by the citizenry, this paper constructs a political legitimacy index, and then tests income and education levels' ability to determine the variation in attitude towards the government. This paper finds a significant negative relationship between education and political legitimacy, while also finding no evidence of a link between income and political legitimacy. Tested together, this paper finds that the education effect weakly dominates over and above its well-documented causal effect on income, likely because the more educated an individual is, the more of a role she demands in the political process. These results have significant policy implication for Beijing as it weighs the effects of a more educated yet critical populace that cannot be appeased by just ensuring increasing incomes.

## I. INTRODUCTION

On October 1, 1949, after decades of chaotic national rule torn apart by warlordism, Mao Zedong took to the Gates of Heavenly Peace (*Tiananmen*) in Beijing and proclaimed the formation of the People's Republic of China under the Chinese Communist Party. The mantra of the government was to pursue growth with political stability. The decades since have been marred by manmade catastrophes, including the death of millions due to famine (1958–62), a generation of uneducated youth (1966–76), and repressive policies that came close to crippling the national government at the very place of its announcement: Tiananmen Square (1989). And yet in 2012, the World Values Survey announced that the Chinese government enjoyed the support of 70 percent of its citizens — compared to just 35 percent of Americans reporting confidence in their government (OECD). But fatalistic prognoses about the collapse of political order seem to beset Beijing a lot more than Washington.<sup>1</sup> And so, it appears that the Chinese government must fight to achieve political legitimacy.

This paper tries to unpack the very complex notion of “political legitimacy”, and then seeks to identify and evaluate factors that may explain what makes the national government in Beijing legitimate. Using the Eastonian notion that political legitimacy is a measure of broad and diffuse support

<sup>1</sup>Gordon G Chang notably published *The Coming Collapse of China* (2001) and famously predicted the CCP to collapse in 2006, before revising the schedule to 2011, and then 2012.

towards the political institutions, I construct an index of political legitimacy based on six constituent questions. I use data from the Asian Barometer Survey, which polls a nationally representative sample about their attitudes towards economics, politics, and government. I then choose features — income and education — that can act as proxies to test three competing theories about political legitimacy. The three theories are outcome-based legitimacy, fear of redistribution, and modernization theory. These theories expect that there would be a positive correlation between income and political legitimacy, and negative correlation between education and political legitimacy.

Running simple OLS models of the political legitimacy score on income brackets and education levels reveal a significant negative relationship between increasing education and attitudes towards government, while the effect of various income levels remain insignificant. Comparing the two models simultaneously reveals that while one factor does not strongly overpower the other, the education effect weakly dominates. These results confirm the modernization theory that as people become more educated, they begin demanding more of a say in the political process, which manifests in a negative attitude towards an authoritarian state. The lack of a noticeable income effect counters the outcome-based legitimacy and fear of redistribution hypotheses, insofar as income is considered a valid proxy for outcomes.

In this paper, section 2 introduces the major theories around political legitimacy, and presents the three hypotheses that this paper will test. Section 3 introduces the data source and provides summary statistics to ground the analysis. Section 4 tests the impact of income and education on political legitimacy, and then conducts a horseshoe between the two models. Section 5 then discusses some policy implications that this result might have for the Chinese government, and sections 6 and 7 provide limitations of the analysis in this paper and suggest directions for potential future research.

## II. LITERATURE REVIEW

In 1994, researchers Nannestad and Paldam conceptualized the “vote-popularity function” (VP-function) to “explain support for the government as a function of economic and political outcomes” (Nannestad and Paldam 1994). Focusing their studies exclusively on democracies, they empirically noted that popularity towards a government coincides with the manifested vote during elections, and for that reason,

Vote and Popularity could be used interchangeably. Lewis-Beck et al. (2014) capture Nannestad and Paldam's VP function simply as:

$$\text{Popularity} = f(\text{Society}, \text{Politics}, \text{Economics})$$

The Lewis-Beck et al. paper extends the VP-function to non-democracies, and particularly adapts it to the case of China. They acknowledge the challenge presented by Nannestad and Paldam that since dictatorships often do not provide outlets for public opinion (e.g. polling), it becomes hard to conduct a VP-function analysis in authoritarian settings. But Lewis-Beck et al. posit that it is possible to find other modes of national political expression, and point to extensive research done on gleaning the national mood from online activity, community petitions, village elections, and protests (Lewis-Beck et al. 2014, O'Brien 2008, Tang and Iyengar 2011, Tang et al. 2013). The Lewis-Beck et al. paper, in particular, uses data from the 2008 China Survey conducted by Texas A&M University and the Research Center for Contemporary China at Beijing University to determine how each individual's sociodemographic details, personal political attitudes, and evaluations of government performance, can determine overall satisfaction levels with the government. The paper found that while 35.3 percent of respondents reported "complete satisfaction" with the government, the remaining 64.7 percent allowed for an interesting analysis (Lewis-Beck et al. 2014). I will use this paper's results to choose variables to include in my analysis.

While the Lewis-Beck et al. (2014) paper contends with the question of political popularity, my paper will focus on political legitimacy. Legitimacy, ultimately, is more than just popularity, and often times can even be distinct from popularity. David Easton (1965) proposed that regime legitimacy would depend on "diffuse support" in a society, which is distinct from "specific support." Simply understood, voters can specifically support a party or candidate by casting their ballots. But diffuse support is more latent. It can be understood as a tacit nod of approval towards the values, norms, and institutions of the regime (Chen 2004). In his book *China's quest for political legitimacy*, Baogang Guo labels this tacit, diffuse support "consensual legitimacy", wherein individuals must voluntarily accept a political order (Guo 2010, p.6).

Seymour Lipset defines "legitimacy" as "involv[ing] the capacity of the system to engender and maintain the belief that the existing political institutions are the most appropriate ones for the society" (Lipset 1960, p. 77). This definition comfortably rests on the evaluation of the government by the citizenry and is the definition that broadly motivates several research papers, including mine. Researchers Chen and Dickson (2008) operationalize this definition of legitimacy by articulating it as an "affect tied to evaluation of how well institutions conform to a person's sense of what is right; affect tied to evaluation of how well the system of government upholds basic political values in which a person believes; affect tied to evaluation of how well the authorities conform to a person's sense of what is right

and proper conduct" (Chen and Dickson 2008). I will use this precise articulation to construct an outcome variable of political legitimacy for the purposes of my analysis.

In authoritarian regimes like China, where legitimacy is conferred by the tacit and diffuse support of the people — rather than the active act of voting — it becomes important to understand the diffuse support base. There are several hypotheses that exist to explain what factors can predict an individual's affect towards government. This paper will present and test the following hypotheses:

- 1) **Outcome based legitimacy**
- 2) **Fear of redistribution**
- 3) **Modernization Theory**

#### A. *Outcome based legitimacy*

In modern political theory, political legitimacy can be understood as a function of the broad benefits afforded to the people (Lipset 1959). But the term "benefits" is in itself broad, and would require further unpacking. The metrics by which individuals measure government performance, and thus ascribe legitimacy, can be highly varied. Leniently classifying these metrics, we can come to say that governments achieve legitimacy either through procedure or outcomes (Kohli 2015).

Procedure-based legitimacy holds that a government achieves legitimacy if the political structures and institutions are governed in a predictable and fair manner. For instance, he discusses the virtues of a highly bureaucratized state, which would function dispassionately to efficiently service the needs of the people (Weber 2009 p. 50). Democratic governments theoretically achieve legitimacy based on the institution of free-and-fair elections that allow for voters to voice their satisfaction or dissatisfaction at policies aimed at their wellbeing.

Outcome-based legitimacy is a more modern construction. Of course, "outcomes" is a broad categorization, and can include many types of outcomes. T.H. Marshall introduced social outcomes in a redistributive sense — i.e. redistributing benefits to coopt more of the populace into supporting the state — but upon the advent of the developmental state<sup>2</sup> in the 20th century, scholars began to look at economic growth as outcomes that may determine political legitimacy (Marshall 1950, p. 30–39). Chalmers Johnson (1987), for instance, measured legitimacy against economic indicators, such as poverty alleviation and rapid industrial growth, being the outcomes of importance.

Conventional wisdom surrounding China suggests that it has achieved legitimacy through outcome, especially in the last three decades, in which the country successfully lifted 680 million persons out of poverty (The Economist, Tao et al. 2014, Li 2013, Shi 2001, Tang 2005). Using household income as a proxy of personal outcomes, this outcome-based legitimacy approach would predict that there would

<sup>2</sup>"Developmental states" is the term given by international political economists to characterize countries that adopted strong state-led macroeconomic planning to chart its developmental trajectory

be a positive correlation between income and government legitimacy in China.

### B. Fear of redistribution

Closely related to the outcome-based approach to determining legitimacy is the fear of redistribution, as articulated by Acemoglu and Robinson in their book *Economic Origins of Dictatorship and Democracy* (2006).

Acemoglu and Robinson classify regime types simply as Democratic and Nondemocratic. They also classify the population as “elites” and “citizens”, and “rich” and “poor”, pointing to strong association between rich and elite (Acemoglu and Robinson 2006, p. 15-16). And as a result, “stated simply and extremely, nondemocracy is generally a regime for the elite and the privileged; comparatively, democracy is a regime more beneficial to the majority of the populace, resulting in policies relatively more favorable to the majority” (p. 16).

Since the economic benefit of government policies have disproportionately been received by few — manifest in the high gini coefficient of 0.49<sup>3</sup> (Financial Times) — those individuals experiencing the positive economic outcomes would be prodded to see the government as being more legitimate than individuals who did not experience the same positive economic outcomes. Acemoglu and Robinson suggest that these elite individuals who experience these positive economic outcomes would support the government fearing that without the government status quo, another usurping political order might force redistribution of their accumulated wealth.

Chen and Dickson (2008, 2010) and Tang and Parish (2000, p. 77) confirm this hypothesis linking income with government favor, showing how upper classes show more support to the government because “their future rests on maintaining the existing political order”(Lewis-Becks et al. 2014).

Thus Acemoglu and Robinson’s fear of redistribution hypothesis also predicts a positive correlation between income and government legitimacy in China.

### C. Modernization Theory

In his seminal work, *Political Man*, Seymour Lipset introduced Modernization Theory to chart out a country’s development. Simply put, as a country develops, it empowers its people with increasing benefits and resources. But ultimately, it becomes insufficient to just ensure the delivery of tangible goods, and so the populace begins to demand a greater voice in governance.

Building on this idea is the work of Inglehart (2007) who further develops Modernization Theory by discussing the concept of postmaterialism. “Postmaterialist values emerge as people shift from giving top priority to “materialist” values

<sup>3</sup>The gini coefficient is measure from 0 to 1 of inequality in a country. With a gini coefficient of 0, there is perfect income equality, while with a gini coefficient of 1, all the income accrues to a single individual. For perspective, China’s gini coefficient is one of the highest in the world, with just Brazil (0.63) and South Africa (0.53) notably higher. The US records a gini coefficient of 0.41, while Germany records just 0.3 (Financial Times)

such as economic and physical security, toward increasing emphasis on “postmaterialist” priorities such as autonomy, selfexpression and the quality of life” (Inglehart 2007). This idea suggests that as a country develops and can ensure reliable delivery of tangible goods, its people begin demanding more intangible goods, like personal participation in the political process.

Both Seymour Lipset and the United Nations Development Programme’s Human Development Index use education as one of the metrics to measure a country’s development (Lipset 1960, p. 47 and UNDP). In work assessing the effects of education reform in China (2013), Xiaobo Lu finds that it is “policy awareness, instead of policy benefits” that determine citizen affect towards the government (Lu 2013). This evidence supports Lewis-Beck et al.’s summary of Inglehart’s postmaterialism, that “education can increase one’s awareness of political rights and make people more critical of the authoritarian political system in China” (Lewis-Beck et al. 2014, Inglehart 2007).

And so, modernization theory would hold that as individuals become more educated, they begin demanding a greater voice in government. This result would strengthen the survival rates of democracies, but actually lowers the legitimacy of authoritarian governments. In other words, we should expect to observe a negative correlation between education levels and government legitimacy in China.

## III. DATA

In evaluating the determinants of political legitimacy, I construct an index of political legitimacy from a series of survey questions, and regress the legitimacy score against income and education levels.

The data for my paper comes from the Asian Barometer Survey (ABS), which is a project started in 1994 by Professor Fu Su in the Institute for Advanced Studies in Humanities and Social Sciences and National Taiwan University. The three main objectives of the Asian Barometer Survey are: “1) To generate a region-wide base of scientifically reliable and comparable data; 2) To strengthen intellectual and institutional capacity for research on democracy; 3) To disseminate survey results to academics and policy circles” (Asian Barometer). It periodically conducts mammoth surveys across thirteen countries in East Asia in order to develop some basis for qualitative and quantitative comparison. It is currently on its fourth wave of questionnaires, with the first three waves of Mainland China surveys conducted in 2003, 2008, and 2011. I will be using data from 2011, which is the most recent available year of data.

The ABS sampled respondents by using the China Family Panel Studies (CFPS), Institute of Social Science Survey, Peking University framework over a survey area that included 25 provinces in China, amounting to 94.87% of the Chinese population. ABS would use the CFPS framework to sample households, within which it would randomly select an individual who met the criterion of being over the age of 18, who would be surveyed through face-to-face interviews. After cleaning the data, the third wave (in 2011) produced

3473 successful samples, which was then weighted to ensure it was representative of the Chinese population across several criteria, such as gender, age, and urban-rural composition (Asian Barometer).

I used the Lewis-Beck et al. (2014) paper to guide my variable-selection process, and used the Chen et al. paper (1997) to construct an outcome index of political legitimacy, based on six questions.

*A. Dependent Variable: Political Legitimacy Score*

In their paper “The Level and Sources of Popular Support for China’s Current Political Regime” (1997), researchers Chen et al. define regime legitimacy based on the “diffuse or generalized attachments members of a polity have for the government and political system in general” — captured by the Eastonian idea of diffuse support mentioned earlier — and not a short-term evaluation of an incumbent’s performance (Chen et al. 1997). The paper uses work by Muller and Jukam (1977) to propose that there are three dimensions that constitute regime legitimacy:

- 1) Affect tied to evaluation of how well political institutions conform to a person’s sense of what is right
- 2) Affect tied to evaluation of how well the system of government upholds basic political values in which a person believes
- 3) Affect tied to evaluation of how well the authorities conform to a person’s sense of what is right and proper behavior [or conduct]

Inspired by Gibson et al.’s evaluation of political attitudes in the former Soviet states (1992), Chen et al. ask respondents in Beijing to assess six questions on a 4-point scale, which capture each of the three sentiments that constitute regime legitimacy. Because my data source differs from the one used by Chen et al., the specific questions that I must use to construct the political legitimacy score vary slightly from Chen et al.’s. But the variation is slight, and I follow their methodology of choosing questions that sufficiently capture each of the three defining sentiments. I use the following six statements — evaluated on a 4-point scale — to construct my political legitimacy index:

- 1) How much trust do you have in: The courts?
- 2) How much trust do you have in: The national government?
- 3) Evaluate: “In general, I am proud of our system of government”
- 4) How well do you think the government responds to what people want?
- 5) How widespread do you think corruption and bribe-taking are in the national government in Beijing?
- 6) Evaluate: “You can generally trust the people who run our government to do what is right”

While each of these questions’ responses are different — e.g. “no trust in courts” to “a great deal of trust”, or from “strongly disagree” to “strongly agree” when evaluating a

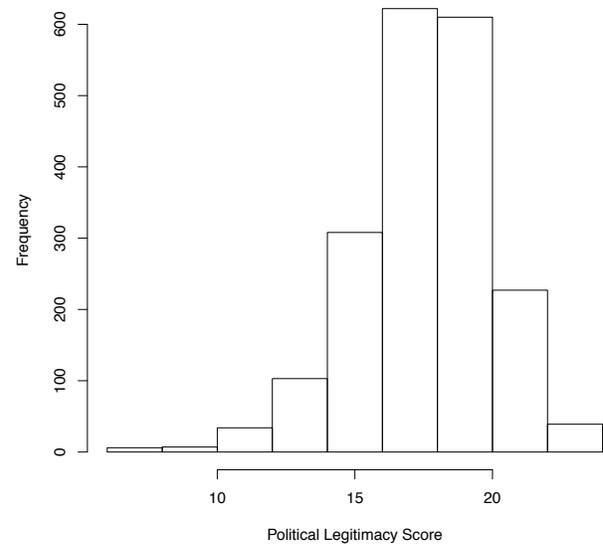
statement — I standardize them to a 1-4 scale, with 1 being a negative outlook towards the government — e.g. low trust in institutions, high perception of corruption, etc — and 4 being a positive outlook the government — e.g. high trust in institutions, low perception of corruption, etc. I take each of these six 4-point scores to create an additive index of political legitimacy, with the scores ranging from 6 to 24.

Table 1 and Figure 1 present the distribution of the political legitimacy index, and its constituent questions. The distribution of political scores is relatively normal with a slight left skew, suggesting that on the whole, the median citizen has relatively high trust in government.

TABLE I  
SUMMARY STATISTICS FOR POLITICAL LEGITIMACY SCORE

Statistic	N	Mean	St. Dev.	Min	Median	Max
TrustInCourts	3,148	3.079	0.653	1	3	4
TrustInGovt	3,337	3.494	0.578	1	4	4
ProudOfSystem	3,032	2.997	0.484	1	3	4
Responsive	3,204	3.099	0.694	1	3	4
Corruption	2,290	2.953	0.799	1	3	4
Right	3,267	2.435	0.681	1	2	4
Score	1,956	18.034	2.446	6	18	24

Fig. 1. Distribution of political legitimacy score



The fact that the political legitimacy score is relatively normally distributed, and that we do not observe a vastly inflated number of respondents with a score of 24, allow us to conduct meaningful analysis to test what factors play a role in determining the variance in the legitimacy score.

*B. Independent Variable: Income*

In testing the outcome-based legitimacy and fear of redistribution hypotheses, the independent variable of interest

I use is income. The ABS asks respondents to consider all wages, salaries, pensions, dividends, and any other form of incomes before taxes and deductions, to categorize their household’s income level. The five income brackets available are: lowest, low, middle, high, highest.

I code income as variable of ordered factors from 1 to 5, with 1 being “lowest” income bracket, and 5 being “highest” income bracket.

TABLE II  
DISTRIBUTION OF INCOME LEVELS

Statistic	N	Mean	St. Dev.	Min	Median	Max
Income	2,218	2.900	1.400	1	3	5

Table 2 contains the summary statistics for income. Reassuringly, we can note that the median respondent income-bracket is 3, standing for “middle”.

### C. Independent Variable: Education

In testing the modernization theory hypothesis, the independent variable of interest I use is the highest level of education attained by the respondent. The ABS asks respondents “what is your highest level of education?” with ten possible response buckets, ranging from “No formal education” to “Post-graduate degree.”

I reduce the number of groupings by pairing overlapping buckets together, for instance “Complete secondary/high school: technical/vocational type” with “Complete secondary/high school”, and “University education completed” with “Post-graduate degree”. Noting that no respondent recorded “No formal education”, I did away with that category, and was left with six ordered factors ranging from [1] “Incomplete primary” to [6] “Complete University or more”.

TABLE III  
DISTRIBUTION OF EDUCATION LEVELS

Statistic	N	Mean	St. Dev.	Min	Median	Max
Education	3,455	3.240	1.458	1	4	6

Table 3 shows us the distribution of the highest levels of education attained by respondents. The median respondent falls into the fourth bin for education level: which is complete secondary/high schooling (both technical/vocational and otherwise).

### D. Controls

**Age** is the first variable I control for, keeping in mind that evidence suggests the older a person is, the more likely he or she is to be more supportive of the government (Jennings and Zhang 2005). Older generations of Chinese citizenry would have been more politically socialized in the 1960s and 1970s, beginning with Mao’s infamous Cultural Revolution, before Deng Xiaoping’s market reforms (Lewis-Beck et al. 2014). In addition to its direct effect on legitimacy scores, generational differences may account for high

variance in education levels as well, given the changing nature of state-led educational policies. For instance, the Cultural Revolution, which started in 1966, resulted in an entire generation of Chinese students missing several years of schooling (Meng and Gregory 2002); and less-dramatically, in 1978 onwards, Deng Xiaoping embarked on the path of “Four Modernizations” which included an emphasis on education in the sciences.

I also control for **Gender** because researchers like Tang and Parish (2000) and Lewis-Beck et al. (2013) empirically find that women are significantly less satisfied with the government as compared to men. At first glance, this result may be a reflection of the systemic male-preference that persists in China, leading to pernicious practices such as female infanticide, and warped outcomes like unbalanced sex ratios <sup>4</sup> (O’Meara 2015).

I also control for **Occupation** and **Employment** because work done by Chen and Dickson (2008) shows how specific groups of occupations — in their study, entrepreneurs — were more likely to be supportive towards the government than others. Similarly, others have shown how farmers are more likely to show satisfaction towards the government, potentially as a result of favorable central government policies, such as abolishing agricultural tax in 2006 (Whyte 2010, Lewis-Beck et al. 2014).

Finally, I control for **Geography** because certain regions in China have experienced differentiated economic outcomes as opposed to others. However, owing to the pan-national nature of the *Asian* Barometer Survey, the questionnaire cannot ask respondents to specify their subnational geography — like provinces or counties — as it would not be meaningful for comparison across other East Asian countries. Instead, the survey does instruct the surveyors to record, for each respondent, a geographic indicator of the rural/urban landscape of the respondent’s place of living. Specifically, the questionnaire asks “which of the following levels within the country the respondent live?” with options ranging from [1] “Capital or Megacity (1 million population plus)” to [4] “Village or countryside”.

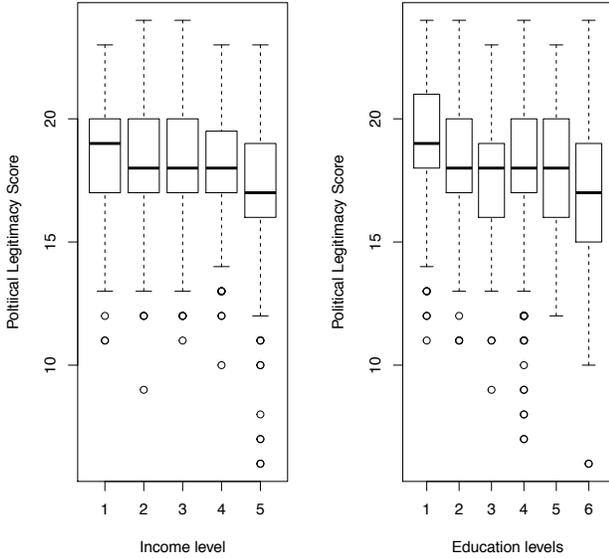
## IV. ANALYSIS

The boxplots of political legitimacy scores against income and education levels (Figure 2) provide a rudimentary, yet informative, analysis. At first glance, it seems that there is indeed a negative relationship between education levels and political legitimacy scores, confirming Seymour Lipset’s modernization theory. However, the first boxplot of income levels weaves a less-definitive story. It does not appear that there is a strong relationship between income and political legitimacy, and in fact, contrary to the outcome-based and fear of redistribution hypotheses, it even appears weakly negative.

Separate ordinary least squares regressions for income and education broadly confirm these visual results.

<sup>4</sup>As of 2015, China’s gender gap produced 116 boys for every 100 girls — far exceeding the natural ratio of 105 boys to 100 girls

Fig. 2. Boxplot of income and education levels against political legitimacy score



#### A. Evaluating the effect of income on legitimacy

To evaluate income levels as a determinant of political legitimacy, I run a simple OLS model regressing the “Score” against ordered factors of income-levels. Table 4 presents the finding for the following statistical model — equation (1).<sup>5</sup>

$$Score = \beta_0 + \beta_1 Income + BX \quad (1)$$

The regression coefficients in Table 4 compute the change, *ceteris paribus*, in the political legitimacy score as a result of moving from the base income level — assigned to be the lowest income level — to any other income level. It can be seen that moving from the lowest income level to any other income level has no significant effect on the legitimacy score, except when moving from the lowest to the highest income brackets.

This result directly opposes the predictions of outcome-based legitimacy and fear of redistribution hypotheses. Expecting a positive correlation between income and legitimacy, and instead noting insignificant results — and even one result significant in the opposite direction — we cannot reject the null hypothesis that there is no broad relationship between income and political legitimacy in China.

One interesting result from this regression is the fact that moving from the lowest to the highest income bracket is associated with a significant 0.637-point decrease in expected political legitimacy score. Acemoglu and Robinson make the claim that an individual who is economically empowered

<sup>5</sup>N.B.  $B$  represents the matrix of coefficients on  $X$  which includes the variables age, gender, employment status, occupation and geography. This makeup of  $X$  does not change, and I use this notation in the rest of my paper too

TABLE IV  
EVALUATING INCOME AS A DETERMINANT OF LEGITIMACY

		<i>Dependent variable:</i>
		Score
Income: Low		0.026 (0.203)
Income: Middle		-0.101 (0.201)
Income: High		0.185 (0.207)
Income: Highest		-0.637*** (0.218)
Constant		15.699*** (0.397)
Age	Yes	
Gender	Yes	
Employed	Yes	
Occupation	Yes	
Geography	Yes	
Observations		1,320
R <sup>2</sup>		0.119
Adjusted R <sup>2</sup>		0.110
Residual Std. Error		2.254 (df = 1306)
F Statistic		13.534*** (df = 13; 1306)

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

in a regime is unlikely to support regime change because he or she is able to flourish in the status quo (Acemoglu and Robinson 2006). But the one significantly negative coefficient, coupled with the insignificant other coefficients, contradict this view. One way to make sense of this result is to contextualize it amongst the changing nature of elite decision-making in China.

In his book, *Reform Without Liberalization: China’s National People’s Congress and the Politics of Institutional Change* (2008), Kevin O’Brien discusses the changing role of the National People’s Congress (NPC) — the legislative organ previously dismissed as a rubber stamp parliament. With evidence suggesting that in the 11th NPC (2008–2012), 500 out of 3000 NPC deputies were CEOs, chairmen, and leaders of various companies (Truex 2014), it can be argued that the national government is trying to coopt the economically elite class, potentially so as to avoid scuffles with those individuals with means. The negative coefficient on the highest income bracket in Table 4 might be capturing the upper class criticism towards the government, which prodded their inclusion into the legislative fold. However, this explanation is just a hypothesis, and in fact, other research shows how there are significant financial and reputational returns that accrue to the economically elite as a result of joining the NPC (Truex 2014).

#### B. Evaluating the effect of education on legitimacy

Methodologically similar to the case with income, I run a simple OLS model of “Score” against education levels to evaluate education as a determinant of political legitimacy — equation (2). Table 5 presents the result from this statistical

model.

$$Score = \beta_0 + \beta_1 Education + BX \quad (2)$$

TABLE V  
EVALUATING EDUCATION AS A DETERMINANT OF LEGITIMACY

	<i>Dependent variable:</i>	
	Score	
Complete Primary	-0.785***	(0.203)
Incomplete Secondary	-1.005***	(0.254)
Complete Secondary	-0.389**	(0.185)
Some University	-0.520	(0.406)
Complete University or more	-1.078***	(0.255)
Constant	16.294***	(0.379)
Age	Yes	
Gender	Yes	
Employed	Yes	
Occupation	Yes	
Geography	Yes	
Observations	1,917	
R <sup>2</sup>	0.114	
Adjusted R <sup>2</sup>	0.108	
Residual Std. Error	2.312 (df = 1902)	
F Statistic	17.507*** (df = 14; 1902)	

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table 5’s coefficients articulate the change, *ceteris paribus*, in political legitimacy score, as a result of moving up from the base education level — incomplete primary education — to any other education level. Barring the move to “some university education”<sup>6</sup>, all increases in education result negatively impact the political legitimacy score to a significant degree.

This result confirms the modernization theory hypothesis, which predicted a negative correlation between education and political legitimacy. Modernization theory posits that as individuals become more educated, they demand more of a say in the political process. This demand for political participation serves to bolster democracies, but hurt authoritarian regimes (Acemoglu and Robinson 2005). Given China’s decidedly authoritarian government, the findings in Table 5 broadly allow us to accept the hypothesis that there is a negative relationship between education and political legitimacy.

Another mechanism by which education affects regime legitimacy is political awareness. Hakhverdian and Mayne (2012), Inglehart (2007), Lu (2013), and Lipset (1959), all

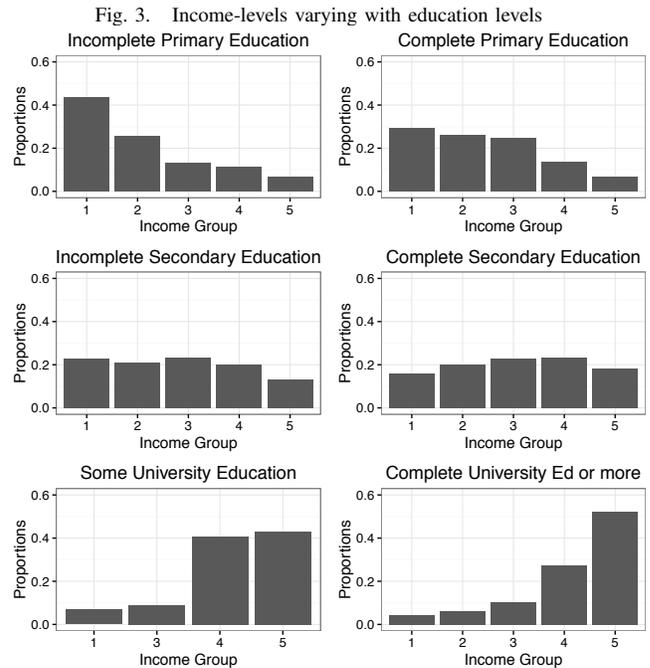
<sup>6</sup>The category “some university education” is the most sparsely populated education level, with a total of just 61 survey respondents falling into that category. That number falls to 42 when counting just those respondents who satisfactorily answered all questions to construct a legitimacy score for them. As a result, standard errors might be overstated for this group, lowering significance

find that education makes individuals more political aware of their rights, and thus more critical of government functioning and rent-seeking corruption. Jennings (2007) does provide the counterargument that a state may be able to indoctrinate its citizenry with prolonged education, and thus augment state legitimacy — as evaluated by the people (Lewis-Beck et al. 2014). However, the findings in this paper show that completing primary schooling and attaining more education is generally associated with lower political legitimacy scores.

### C. Possible simultaneity bias

Evaluating separately income and education as determinants of political legitimacy presupposes their independence. Such a test assumes that income and education are, in a sense, substitutes, and do not inform each other. But it is a well-known fact that income and education are correlated. Education, as a function of skill development, receives increasing returns in the form of higher incomes. And vice versa, one can expect richer individuals have the ability to send their children to school for longer.

The ABS data confirms that income and education are in fact, co-determined. Figure 3 plots the proportion in each income bracket across education levels, making the correlation clear. Table 6 presents an ordered logistic model that regresses income on education levels to reinforce the visual evidence that education and income are, indeed, highly correlated.



A solution to the simultaneity bias would be to try to control for the other variable in a horseshoe between models to determine the dominant effect.

TABLE VI

ORDERED LOGISTIC REGRESSION OF INCOME LEVELS ON EDUCATION LEVELS

	<i>Dependent variable:</i>
	Income
Complete Primary	0.502*** (0.135)
Incomplete Secondary	0.985*** (0.166)
Complete Secondary	1.352*** (0.114)
Some University	2.829*** (0.291)
Complete University or more	2.986*** (0.184)
Observations	2,209

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

#### D. Horserace between income effect and education effect

Model (1) and Model (2) evaluate income and education, respectively and separately, as determinants of political legitimacy. It makes sense to conduct a horserace between these two models to evaluate which variable has more predictive power on determining political legitimacy. Model (3) runs a simple OLS model that evaluates the impact of income and education, controlling for the other, on political legitimacy. Model (3) is represented by equation (3) below, and the results of the horserace are presented in Table 7:

$$Score = \beta_0 + \beta_1 Income + \beta_2 Education + BX \quad (3)$$

Despite a photo finish, there is ultimately no winner in this horserace. An outright winner of the horserace would severely reduce the significance on the coefficients on the other variable, while bolstering its own. However, moving from columns (1) and (2) to (3), most coefficients retain their respective directions and levels of significance. And so, holding education along with the other factors constant, moving from the lowest income-level to the highest income-level remains negatively associated with political legitimacy scores by the same mechanisms previously discussed — that economic elite are more able to voice dissatisfaction. Similarly, increasing levels of education in almost each case maintains its negative correlation with political legitimacy by the mechanism of greater political awareness.

One interesting result is that the coefficient on “Complete Secondary” dropped its slight significance. The category “Complete Secondary” level of education captures the largest number of respondents (1618 out of a total of 3455) and thus sub-setting by this response may not meaningfully describe the respondents in this category.

Despite no clear winner of the horserace, Table 6 does allow us to conclude that the education effect weakly dominates. Even after controlling for education in column (3), the income coefficients remain unresponsive and generally insignificant, while on the other hand despite controlling for

TABLE VII

HORSERACE TO DECIDE THE DOMINANT EFFECT BETWEEN INCOME AND EDUCATION ON POLITICAL LEGITIMACY

	<i>Dependent variable:</i>		
	(1)	(2)	(3)
Income: Low	0.026 (0.203)		0.022 (0.202)
Income: Middle	-0.101 (0.201)		-0.118 (0.202)
Income: High	0.185 (0.207)		0.181 (0.208)
Income: Highest	-0.637*** (0.218)		-0.579*** (0.222)
Complete Primary		-0.785*** (0.203)	-0.670*** (0.239)
Incomplete Secondary		-1.005*** (0.254)	-0.845*** (0.301)
Complete Secondary		-0.389** (0.185)	-0.315 (0.215)
Some University		-0.520 (0.406)	0.033 (0.455)
University or more		-1.078*** (0.255)	-1.212*** (0.316)
Constant	15.699*** (0.397)	16.294*** (0.379)	16.413*** (0.469)
Age	Yes	Yes	Yes
Gender	Yes	Yes	Yes
Employed	Yes	Yes	Yes
Occupation	Yes	Yes	Yes
Geography	Yes	Yes	Yes
Observations	1,320	1,917	1,316
R <sup>2</sup>	0.119	0.114	0.137
Adjusted R <sup>2</sup>	0.110	0.108	0.126
Residual Std. Error	2.254 (df = 1306)	2.312 (df = 1902)	2.236 (df = 1297)

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

income, the education coefficients remain generally significant, suggesting that on net, the education effect on political legitimacy dominates, over and above its causal effect on education.

In other words, becoming more educated has a negative effect on political legitimacy — by the mechanism of increased demand for intangible political participation (Inglehart 2007) and increased political awareness (Lipset 1959) — which is not dampened by income effects.

#### V. IMPLICATIONS

This result joins the concert of similar research that sings the tune of modernization theory. In the particular case of China too, Shi (2001) showed that “increased formal education increased alienation from the government.”

Such a result puts Beijing in an awkward spot, where it must evaluate the tradeoff between a more educated populace, and a more acquiescent populace. Jennings (2007) has suggested that education can act as a medium for propaganda, given state-led curriculum, and so can actually boost government support in certain cases. This does not appear

to hold in the case of China, and with the advent of private schools (Shadbolt 2014) that design their own curriculum, it might become harder to prescribe such a simplistic solution.

Scalded by the student demonstrations at Tiananmen in 1989, the Chinese government has since established sophisticated machinery designed to maintain its political power. This machinery even includes allowing individuals to voice opposition towards the government, just not at the risk of collective action. And so, in past years, the Chinese government has taken steps to introduce civil societies as mouthpieces to appease the educated and disgruntled masses (Ye 2003). This action of the government does suggest that the negative correlation between education and political legitimacy is a cause of concern for some in Beijing.

This paper also found that there is no significant correlation between income and political legitimacy.

The hypothesis of outcome-based legitimacy represents the dominant view amongst of China observers who believe that by having delivered immense tangible outcomes to the people — in the form of mass poverty alleviation, and dynamic growth stories — the Communist Party has been able to seize legitimacy. Using income as a proxy for “outcomes”, we can see that there is no significant confirmation of that hypothesis. Thus, we cannot reject the null hypothesis that there is no effect of income on political legitimacy.

But this is a modest claim, because the assumption in the model was that income is a valid proxy to measure outcome. While income might be a good measure of personal outcome, the outcome-based-legitimacy model does not specify *which* outcomes drive attitudes towards the government. Returning back to the “vote-popularity function” (Nannestad and Paldam 1994, Lewis-Beck et al. 2014), there are more outcomes than just one that comprise a government’s popularity function. Public goods provisions, for instance, might be an outcome along which citizens evaluate government performance and legitimacy. That being said, the fact that this paper shows that rising income has no meaningful effect on political legitimacy implies that, from the national government’s point of view, it is not sufficient to just deliver the upward clip of income to ensure political legitimacy.

## VI. LIMITATIONS

The first general limitation around a paper of this nature is that it makes use of survey data. Political scientist Timur Kuran coined the phrase “preference falsification” to describe how individuals may hide their true feelings and put on an outward “public lie” owing to societal influences and preferences (Kuran 1997). This matter especially holds true in the case of authoritarian regimes where the fear of speaking out against the government can force preference falsification.

That being said, countless researchers use survey data, and just normalize responses based on the particular cultural context. And so, even though we see the median political legitimacy score was an 18, giving the distribution a left skew (Figure 1), it does not preclude us from trying to explain the variation in scores.

Another general limitation is that this paper may not achieve external validity to cases outside China. While the question that motivates the paper is one without geographic limitations — which factors explain political legitimacy? — the context of the survey limits its applicability. Individuals in different countries might internalize the questions of political legitimacy differently, resulting in incomparable outcomes between countries.

A methodological limitation is that the data sometimes suffer from missing data points, which might bias the result.

### Missingness

Missingness<sup>7</sup> afflicts any large dataset. And of course, in constructing the political legitimacy score, I needed to ensure that each respondent had valid answers for each of the six constituent questions. Table 1 showed how each constituent question received between 2,290 and 3,337 valid responses. But when this number was combined into the legitimacy score, the number of valid responses dropped to 1,956.

If the quality of being missing is randomly assigned across income and education levels, then missingness would not bias the results. But this is an assumption that is worth testing, and so Tables 8 and 9 show the proportions of missing data by income and education levels. At first glance, these tables suggest a trend that richer and more educated individuals are less likely to refrain from responding, or provide invalid responses.

TABLE VIII

PROPORTION OF MISSING DATA ACROSS INCOME LEVELS

	Income	Count	Missing	Proportion Missing
1	1	487	233.00	0.48
2	2	454	196.00	0.43
3	3	450	170.00	0.38
4	4	447	164.00	0.37
5	5	380	113.00	0.30

TABLE IX

PROPORTION OF MISSING DATA ACROSS EDUCATION LEVELS

	Ed	Count	Missing	Proportion Missing
1	1	605	375.00	0.62
2	2	590	269.00	0.46
3	3	285	136.00	0.48
4	4	1618	623.00	0.39
5	5	61	20.00	0.33
6	6	296	83.00	0.28

Tables 10 and 11 test whether the difference in proportions of missing data is significant. They apply a linear probability model to record whether moving from the base level income and education to another level is associated with a significantly different probability that the individual will provide missing information.

Table 10 shows that controlling for the suite of variables (age, gender, employment status, occupation, geography)

<sup>7</sup>“Missingness” is what I will label the feature of data to have lots of missing data points. For instance, the variable “Income” may suffer from high amounts of missingness if many respondents fail to report a valid answer, and thus leave the data with many NA values.

only slightly dampens the significance of the difference. Table 11 shows that even controlling for the suite of variables does not reduce the significance.

TABLE X  
PROBABILITY OF INVALID LEGITIMACY RESPONSES: BY INCOME

	<i>Dependent variable:</i>	
	Missing	
	(1)	(2)
Income: Low	-0.047 (0.032)	-0.030 (0.032)
Income: Middle	-0.101*** (0.032)	-0.078** (0.033)
Income: High	-0.112*** (0.032)	-0.080** (0.034)
Income: Highest	-0.181*** (0.033)	-0.146*** (0.037)
Constant	0.478*** (0.022)	0.244*** (0.067)
Age	No	Yes
Gender	No	Yes
Employed	No	Yes
Occupation	No	Yes
Geography	No	Yes

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

TABLE XI  
PROBABILITY OF INVALID LEGITIMACY RESPONSES: BY EDUCATION

	<i>Dependent variable:</i>	
	Missing	
	(1)	(2)
Complete Primary	-0.164*** (0.028)	-0.135*** (0.028)
Incomplete Secondary	-0.143*** (0.035)	-0.075** (0.036)
Complete Secondary	-0.235*** (0.023)	-0.161*** (0.026)
Some University	-0.292*** (0.065)	-0.215*** (0.067)
Complete University or more	-0.339*** (0.035)	-0.226*** (0.040)
Constant	0.620*** (0.020)	0.424*** (0.058)
Age	No	Yes
Gender	No	Yes
Employed	No	Yes
Occupation	No	Yes
Geography	No	Yes

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

And so, there is evidence that the political legitimacy score suffers from the bias of sampling from those individuals in the higher income bracket and higher education bracket.

A solution to missingness in datasets is to replace NA's with the mean value of the particular variable. But in an environment with large numbers of NA's, such a decision

biases the result towards the mean of available respondents. This call undermines the more interesting story behind missing data, which often can be data itself.

It is hard to decompose the direction that this sampling bias would impact the outcome variable because "invalid" responses include "do not understand", "cannot choose", and "decline to answer". Each one of those responses is different and tells a different story. The "decline to answer" response is most pernicious and suggestive of active preference falsification. Table 12 presents the proportions of each kind of "invalid" response, across questions. Here we can take comfort in the fact that across questions, "decline to answer" is the one that occurs with least frequency.

TABLE XII  
PROPORTION OF TYPES OF "INVALID" RESPONSES ACROSS  
CONSTITUENT QUESTIONS

	Trust in Courts	Trust in Govt	Proud of System	Responsive	Corruption	Do What's Right
Don't Understand	0.18	0.17	0.38	0.0	0.08	0.28
Can't Choose	0.74	0.69	0.46	0.84	0.85	0.60
Decline to Answer	0.08	0.14	0.16	0.16	0.06	0.13

## VII. OPPORTUNITIES FOR FUTURE WORK

A more methodologically thorough way to evaluate income as a determinant of political legitimacy would be to conduct an instrumental variable analysis.

An IV approach would choose a variable that is correlated with the independent variable, but not the dependent variable, and see how an exogenous shock creates ripple effects. In order to evaluate the impact of incomes on political legitimacy, I would use the 2008 recession.

China is, of course, a major trading partner of the US, but even within China, there are certain provinces — typically the special economic zones on the eastern shore — that are more exposed to international commerce than others (Sun and Heshmati 2010). As a result, the incomes of individuals in these commercially active cities would be more susceptible to the changing international trade climate. The 2008 recession started with the collapse of Lehman Brothers in New York, but soon spread across the globe. The impact on China was felt particularly on trade. Appendix 1 shows sizeable negative impact of the 2008 crisis on China's trade balance, which persisted for several years before picking up and surpassing 2008 levels. And so, I would use the 2008 recession as an instrument to test how exogenous changes to income impacts political legitimacy.

The 2008 recession is a valid instrument because it satisfies both necessary conditions: relevance and exogeneity (Stock and Watson 2007). Relevance means  $cov(Recession, Income) \neq 0$ , which is true given how it impacted international trade. Also, it achieves exogeneity  $cov(Recession, LegitimacyScore) = 0$ , because a recession cannot have any impact on legitimacy score without

first impacting the people's attitudes. We can expect that during rough economic patches, individuals might look to the government for support or protection. Such an IV approach would allow us to precisely quantify the impact of changing income has on affect towards the government.

#### VIII. CONCLUSION

Political legitimacy is a loaded and puzzling concept that varies by context. But by defining political legitimacy broadly as a diffuse affect that people have towards their government, we are able to construct an index of political legitimacy that can quantify this attitude. The literature on political legitimacy suggests that a government can achieve it by procedure — with the right reliable institutions — or by delivering favorable outcomes to its people. The dominant view on China is that that the Communist Party in Beijing has achieved legitimacy through outcomes, lifting hundreds of millions of Chinese citizens out of poverty, and embarking on massive growth projects, just in the last thirty years. This paper was motivated to tell a more generalized story by testing this hypothesis against other competing hypotheses of political legitimacy in the context of China as a whole.

In using income-brackets and education-levels as variables of interest, this paper ran a horserace between three political

legitimacy hypotheses — outcome-based legitimacy, fear of redistribution, and modernization theory. I found striking evidence that being more educated is associated with a significantly negative attitude towards the government, but no strong evidence suggesting a link between income-levels and political legitimacy.

It might be worth Beijing's attention to take note of these findings because it suggests there might be an undesirable tradeoff between education and citizen acquiescence, which must be calibrated. It also problematically — for the government — suggests that it is not sufficient to just ensure rising incomes to satisfy the masses: it appears, they might want more.

Ultimately, these findings fit in perfectly to describe any general arc of development. After people's primary interests — food, security, and shelter — are met, they begin to demand more, like political participation. It's harder for a government to deliver these postmaterial demands. That being said, this paper's results are just preliminary results of testing multiple hypotheses. There is ample room to discover what kinds of education policies inform varying attitudes towards government, and if not income, what other outcomes may satisfy the masses.

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## APPENDIX

Fig. 4. China: trade balance from 2004-2014; (WTO and Statista)

