The Economics of Nationalism*

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Abstract

This paper provides an economic framework for examining how economic openness affects nationalism. Within a country, a region's level of nationalism varies according to its economic interests in its domestic market relative to its foreign market. A region's nationalism is strongest if the optimal size of its domestic market equals the size of its country. All else being equal, increasing a region's foreign trade reduces its economic interests in its domestic market and thus weakens its nationalism. This prediction holds both cross-sectionally and over time, as evidenced by our empirical study using the Chinese Political Compass data and the World Value Surveys. Our framework also applies to analysis of nationalism across countries and receives support from cross-country data.

Keywords: Nationalism, Economic Openness, Country Size, Gains from Trade, China.
JEL Codes: F52, P16.

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It is not easy to see how the more extreme forms of nationalism can long survive when men have seen the Earth in its true perspective as a single small globe against the stars. (Arthur C. Clarke, 1917–2008, science fiction author)

1   Introduction

Nationalism is a relatively recent but powerful force.[1] It did not exist until the emergence of modern countries (nation states) in the 19th century; since that time, it has played a pivotal role in nearly every country's national politics. Regardless of political regime, coordinating the interests of different groups within a country is easier in the name of "the country" than in the name of one group, even if the coordination is apparently in favor of that group. Throughout the 20th century, nationalism fueled massive government spending, mass education, military rivalry, and even dictatorship.[2] For better or worse, nationalism lays the ideological foundation for political consensus in a country, based on which policies are made and implemented.

This paper seeks to understand the determinants of nationalism. We provide an economic framework to analyze the relationship between a region's local nationalism and its domestic and foreign trade. In a given country, each region has economic interests in both its domestic and foreign markets. The relative importance of domestic and foreign trade changes over time, affecting the optimal size of a region's domestic market. If the optimal size of a region's domestic market coincides with the size of its country, that region will exhibit strong nationalism, which is essentially an endorsement of the country's configuration. Across regions, those engaged in more foreign trade display weaker levels of nationalism, because the domestic market holds less importance to them. As a region's foreign trade increases, its nationalism declines.

We next submit the above prediction to empirical testing. The first dataset we use is the Chinese Political Compass (CPoC), a large-scale survey on Chinese internet users that allows us to construct a nationalism index of 200 Chinese cities. We match the index values with economic openness (imports plus exports weighted by local GDP) and other city-level data. To pinpoint the causality hidden in the association, we instrument city-level economic openness using city-level

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[1]Nationalism in this paper refers to the nationalism specific to a given country (nation state). The term nationalism has three other meanings that should be distinguished from its meaning in this paper: (1) Ethnic sentiments carried by an ethnic group. Ethnic sentiments have no specific relationship with the nation state in which the group is located because a nation state can have multiple ethnic groups, and an ethnic group can live across several nation states. (2) Localism carried by part of a country with certain autonomy. Localism is not the equivalent of our definition of nationalism, although the two are related. At the end of this paper, we discuss how localism and similar phenomena relate to nationalism and propose them as topics for future research. (3) Economic nationalism, which is essentially protectionism. This paper does not examine protectionism, although we do consider the confounding effects of protectionism in our empirical study.

[2]When nationalism is weak, coordinating interests within a country is difficult. Ethnic fragmentation and the lack of a national identity make it difficult to agree on public goods such as infrastructure and education (Easterly and Levine, 1997; Alesina, Easterly, and Matuszeski, 2011). Historically, nationalism also helped to motivate government investment in compulsory mass education under the threat of war (Aghion, Persson, and Rouzet, 2012; Alesina and Reich, 2013). For discussion on nationalism and dictatorship, see Motyl (2000, p.127).

foreign market potential predicted by the gravity model. The gravity model is widely used in the international trade literature to predict trade flows based on the economic sizes of trade partners and the distances between them. Both the least-squares and instrumental variable estimation suggest that foreign trade reduces nationalism. Quantitatively, a one standard deviation increase in economic openness leads to a 0.5-0.9 standard deviation decrease in nationalism, conditional on a wide range of city characteristics. To address potential heterogeneity across cities, we also examine the effects of trade on regional attitudes toward Chinese culture and other political ideologies (populism, conservatism, and collectivism). They do not show the same linkage with economic openness that nationalism does, indicating that the relationship between nationalism and trade is unlikely to result from unobserved cross-city heterogeneity.

The analysis of the CPoC is a cross-sectional test of the prediction. We continue to examine how regional nationalism evolves over time by using the China section of the World Value Surveys (WVS), a dataset that is collected independently from the CPoC and is widely used in the social sciences. The two recent waves of the WVS were conducted in 2001 and 2007. China became a member of the World Trade Organization (WTO) in December 2001. China's WTO accession engendered a boom in its trade volume, especially in provinces with high initial exposure to foreign trade. We divide provinces recorded in the WVS into two groups, those with high and low initial exposure to foreign trade. We then use a difference-in-differences specification to identify the causal effect of trade on nationalism. The WTO-induced rises in foreign trade reduced regional nationalism, reinforcing our cross-sectional findings from the CPoC data.

Our framework for studying regional nationalism within one country can be extended to analyze cross-country nationalism. Countries with greater economic openness have more regions with heavier economic interests in foreign markets, and therefore they tend to be less nationalistic. To address cross-country heterogeneity in history, ethnicity, and geopolitics, we investigate countries covered in both recent waves of the WVS and control for country fixed effects. The results are in line with our findings based on China. Countries with increasing foreign trade have decreasing nationalism.

Our framework builds on the seminal model of Alesina, Spolaore, and Wacziarg (2000), in which countries are endogenously formed by regions in the long run, with a tradeoff between gains from domestic trade and the cost of cross-region conflicts within a country. We argue that in the short run, when country sizes are fixed, nationalism is determined by a similar tradeoff. We concentrate on how regions within a given country respond differently to globalization. To our knowledge, this is the first paper investigating the impact of domestic and foreign trade on within-country nationalism. It joins a fast-growing economic literature examining the effects of trade on national politics, including military conflicts (Martin, Mayer, and Thoenig, 2008a, 2008b, 2012; Skaperdas and Syropoulos, 2001), military spending (Acemoglu and Yared, 2010), contract enforcement (Anderson, 2009; Anderson and Young, 2006), institutional quality (Acemoglu, Johnson, and Robinson, 2005), and protectionism (Blonigen, 2011; Mayda and Rodrik, 2005; O'Rourke and Sinnott, 2001; Scheve

and Slaughter, 2001).[3] Nationalism is a crucial force in modern politics, though it has received little attention among economists, possibly because the economic rationale underpinning it has remained ambiguous. The extant literature has examined how nationalism as a taste shifter influences economic behaviors (Ashenfelter, Ciccarella, and Shatz, 2007; Fisman, Hamao, and Wang, 2012; Hwang, 2011; Michaels and Zhi, 2010). Treating nationalism not as a cause but as a consequence of economic behaviors, we show how nationalism responds to rises and falls in domestic and foreign trade.[4]

This paper also contributes to the understanding of a broader issue: the relationship between ideology and economy. Interest in this relationship dates back to Marx (1859), where the "base" (economy) determines "superstructure" (ideologies). This thesis did not receive much attention until recently. Two eminent studies along this line are Di Tella, Galiant, and Schargrodsky (2007) on how land ownership determines market beliefs and Alesina, Giuliano, and Nunn (2013) on how agricultural practices affect gender norms. Understanding ideologies is important because they have substantial impacts on the institutions and policies of a country, for example, market beliefs on property laws and industrial regulations, and gender norms on gender equality legislation. Nationalism operates in a similar vein. The attitudes held by a region's locals towards their home country determine how they perceive their relationship with the country and therefore how they vote on national issues. All else being equal, a low-nationalism region tends not to underwrite the fiscal deficits of peer regions or the federal/central government. It is also less supportive of a war against a "foreign" country, because it identifies its country less as a "home" in the first place. Understanding the economic fundamentals underpinning nationalism helps us understand these political and policy issues.

The rest of the paper is organized as follows. Section 2 presents our conceptual framework. Section 3 describes the data used in our empirical study. Section 4 reports the empirical results. Section 5 concludes.

2 Conceptual Framework

Each country consists of multiple regions, and the nationalism of each region refers to the degree to which it endorses its country. Each region has its own economic interests in other domestic regions (i.e., its domestic market) and other countries (i.e., its foreign market). The relative importance of the two markets varies from region to region within a country; therefore, regions endorse the extant country to different degrees, leading to variations in nationalism across regions within the country. To formalize this idea, we set up a stylized framework that builds on Alesina, Spolaore,

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[3]Nunn and Wantchekon (2011) examine the effect of slave trade on interpersonal trust in Africa.

[4]This paper is also related to economic studies on right-wing extremism expressed in national elections (de Bromhead, Eichengreen, and O'Rourke, 2012; King, Rosen, Tanner, and Wagner, 2008). That literature demonstrates how recessions are conducive to right-wing extremism among voters. Extremism is a mix of ideologies and sentiments, whereas our focus is on nationalism alone.

and Wacziarg's (2000) model on trade and country size.

2.1 Setup

Consider a world that consists of N symmetric regions, each of which uses a local specific factor K_i to produce a tradable good X_i, where i indexes the region and the tradable it produces as well. $K_1 = K_2 = ... = K_N = K$. Each region also makes and consumes a nontradable good:

$$Y_i = \sum_{j=1}^{N} X_{i,j}^{\alpha}, \tag{1}$$

where $0 < \alpha < 1$ and $X_{i,j}$ is the quantity of tradable X_j used in region i's production. The N regions are grouped into two countries: Home (H) and Foreign (F), with their respective sizes $S_H + S_F = N$. For a given region, its peer regions within the same country constitute its domestic market, while regions in the other country constitute its foreign market.

Production function (1) implies constant elasticity of substitution among tradables. Therefore, each region sells its tradable to all regions in the world and buys tradables from all regions in the world. There is an iceberg attrition β when a tradable moves across the country border; that is, when one unit of the tradable is shipped across the border, only $1 - \beta$ unit reaches the destination. There is no such attrition in domestic trade.[5] Every region i sells its tradable at the same factory-gate price P_i to all domestic and oversea regions. Consider a Home region i's tradable for instance,

$$P_i = \alpha X_{k \in H, i}^{\alpha-1} = \alpha(1-\beta)^{\alpha} X_{k \in F, i}^{\alpha-1}, \tag{2}$$

and a similar condition can be derived for a Foreign region's tradable. The local specific factor $K_i = K$ of region i is exhausted in production:

$$K = \sum_{k \in H} X_{k,i} + \sum_{k \in F} X_{k,i}. \tag{3}$$

By equations (2) and (3), we can solve for the quantities of a Home region's tradable destined for a representative domestic region and a foreign region, respectively:

$$X_{k \in H, i} = \frac{K}{S_H + \theta S_F}, \tag{4}$$

$$X_{k \in F, i} = \frac{\theta K}{S_H + \theta S_F}, \tag{5}$$

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[5]We normalize the attrition in domestic trade to 0 for convenience. Removing this normalization does not change the findings of our model, because the mechanism of our model is through the globalization-induced decrease in β. Adding a positive attrition to domestic trade, say, γ, does not change this mechanism, regardless of the size of γ relative to β.

where $0 < \theta \equiv (1-\beta)^{\alpha/(1-\alpha)} < 1$ is a parameter inversely related to the iceberg attrition β. When the attrition rate β decreases, θ increases and thus foreign trade becomes less costly. The production function (1) of region i's nontradable consumption good can now be rewritten as

$$Y_i = C_i = S_H \left(\frac{K}{S_H + \theta S_F} \right)^\alpha + S_F \theta \left(\frac{K}{S_F + \theta S_H} \right)^\alpha, \tag{6}$$

where on the right side the first (second) term corresponds to Home (Foreign) tradables.

Nationalism of region i in Home represents its endorsement of its country identity S_H—recall that a country is defined as a collection of regions, such that endorsing the Home identity is equivalent to endorsing S_H. Increasing S_H will reduce region i's iceberg attrition in trade and thus raise its output Y_i and consumption C_i; meanwhile, increasing S_H will also cause disutility from cross-region conflicts of interests.[6] This tradeoff is represented by the utility function shared by all regions in the world:

$$U = \ln C - h(S_{H \, \text{or} \, F}), \tag{7}$$

where $h(\cdot) > 0$, $h'(\cdot) > 0$, $h''(\cdot) \geq 0$.

Then we can solve for the initial sizes of countries. In equilibrium, the following condition holds for any region i in the world:

$$\frac{\partial Y_i(S)/\partial S}{Y_i(S)}|_{S=S_{H \, \text{or} \, F}} = h'(S_{H \, \text{or} \, F}). \tag{8}$$

In equilibrium, for each region, the marginal economic gain from a larger domestic market breaks even with the disutility from the corresponding additional pain of cross-region conflicts. Thus, they endorse the equilibrium size, which matches the rationale for nation state and nationalism in the political science literature—each nation state is a coincidence between a "rational" state and a "sentimental" nation, and nationalism is the endorsement of the balance between state and nation.[7] Since regions are symmetric, countries are equal in size in equilibrium. As noted earlier, we consider a two-country world (i.e., $S_H = S_F = \frac{N}{2}$) because this paper focuses on within-country nationalism and thus the number of foreign countries does not matter.[8]

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[6]This disutility is referred to as "the cost of heterogeneity" in Alesina, Spolaore, and Wacziarg (2000).

[7]For example, Handler's (1988) explains the rationale underpinning nation state and nationalism:

> Nationalism is an ideology about individuated being. It is an ideology concerned with boundedness, continuity, and homogeneity encompassing diversity [...] [O]ur notions of "nation" and "state" imply similar senses of boundedness, continuity, and homogeneity encompassing diversity. The state is viewed as a rational, instrumental, power-concentrating organization. The nation is imagined to represent less calculating, more sentimental aspects of collective reality. Yet both are, in principle, integrated: well-organized and precisely delimited social organisms. And, in principle, the two coincide.

[8]A specific number of countries can be obtained by choosing a corresponding function form of $h(\cdot)$. The findings from the two-country case will not change if we consider a multi-country world instead.

2.2 Globalization and Nationalism

Country boundaries are exogenously given in the short run. Globalization occurs and changes regions' contemporary endorsements of their countries. In other words, in the short run, regions can not resize their countries but can alter their attitudes towards their countries. Formally, globalization, represented by a decrease in β, occurs to a fraction $0 < \kappa < 1$ of regions in each country. The iceberg attrition of cross-border trade between two globalized regions is $\widetilde{\beta}$, $0 < \widetilde{\beta} < \beta < 1$, and that 1) between a globalized region and an unglobalized region or 2) between two unglobalized regions remains β. Accordingly, we define $\widetilde{\theta} = (1 - \widetilde{\beta})^{\alpha/(1-\alpha)}$, so $\theta < \widetilde{\theta} < 1$.

Since two countries are symmetric, we only discuss the effects of globalization in Home. Globalized regions (g) now export more than unglobalized regions (ng):

$$X_{Fg,Hg} + X_{Fng,Hg} > X_{Fg,Hng} + X_{Fng,Hng}. \tag{9}$$

Meanwhile, in exports, globalized Home regions give a larger share to globalized Foreign regions than to unglobalized Foreign regions, while unglobalized Home regions treat the two types of Foreign regions equally:

$$X_{Fg,Hg} - X_{Fng,Hg} > X_{Fg,Hng} - X_{Fng,Hng} = 0. \tag{10}$$

Notice that, whether a Home region is globalized or not, it treats the two types of Home regions equally (i.e., $X_{Hg,Hg} = X_{Hng,Hg}$, $X_{Hg,Hng} = X_{Hng,Hng}$). In other words, globalization is about trading with Foreign—it affects sales to Foreign relative to Home and relative sales between the two types of regions in Foreign, but it does not affect relative sales between the two types of regions in Home. In Appendix A1, we derive inequalities (9) and (10), and show all possible cases of sales reallocation caused by globalization.

In Home, the difference in output between a globalized region and an unglobalized region is[9]

$$Y_g - Y_{ng} = \kappa S_F (\widetilde{\theta} - \theta) \left(\frac{K}{S_F + S_H[\kappa\widetilde{\theta} + (1 - \kappa)\theta]} \right)^{\alpha} > 0. \tag{11}$$

The difference in output reflects the saved iceberg attrition and resulting additional trade between globalized regions. This equation also implies that globalized regions are less nationalistic than unglobalized regions. Equation (8), when evaluated at the given country size S_H, leads to

$$\frac{\partial Y_{ng}(S)/\partial S}{Y(S)}\Big|_{S=S_H} > h'(S_H),$$

$$\frac{\partial Y_g(S)/\partial S}{Y(S)}\Big|_{S=S_H} < h'(S_H),$$

and thus the optimal size of Home is smaller (larger) than the given Home for the globalized (unglobalized). Intuitively, for globalized Home regions, domestic trade becomes less important in

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[9]Derivation of equation (11) is in Appendix A2.

comparison with overseas trade; consequently, the economic gain from a marginally larger country cannot compensate for their corresponding utility loss. Thus, they endorse their country less. Put differently, if given an opportunity to vote on resizing Home, globalized regions would petition for a smaller country.

For unglobalized regions in Home, domestic trade becomes more important, because globalization causes them to be disadvantaged when trading with Foreign—exports of globalized Foreign regions are now moving away from them towards globalized Home regions. Therefore, domestic tradables become more important for them than for globalized Home regions, such that a counterfactual increase in Home's size would be of net benefit to them. If given an opportunity to vote on decreasing Home's size, unglobalized regions would petition to keep the current size.[10]

2.3 Economic Openness

To empirically test the effect of globalization on nationalism, we need a measure of globalization. When globalization occurs, it affects the trade of globalized regions directly, and affects the trade of unglobalized regions indirectly. Below, we show that region-level economic openness, defined as total trade (imports plus exports) divided by GDP, captures the full impact of globalization on each region.

By equation (5), the exports of regime i in Home to region k in Foreign is $\frac{\breve{\theta}_{k,i}K}{\breve{\Delta}_i}$, where $\breve{\theta}_{k,i}$ equals $\breve{\theta}$ if regions i and k are both globalized, and θ otherwise. For a region l, $l = i$ or k, $\breve{\Delta}_l = S_{D(l)} + S_{\overline{D(l)}}[\kappa\widetilde{\theta} + (1-\kappa)\theta]$ if it is globalized, and $S_{D(l)} + S_{\overline{D(l)}}\theta$ otherwise. $D(l)$ refers to the country where region l resides and $\overline{D(l)}$ refers to the other country. Total exports and imports, in terms of value, of region i in Home are

$$EX_i = \sum_{k \in F} \frac{\breve{\theta}_{k,i}K}{\breve{\Delta}_i} = \sum_{k \in F} \frac{\breve{\theta}_{i,k}K}{\breve{\Delta}_k} = IM_i, \tag{12}$$

A region's total trade is $EX_i + IM_i = 2\sum_{k \in F} \frac{\breve{\theta}_{k,i}K}{\breve{\Delta}_i}$. Dividing region i's total trade by its GDP Y_i (price normalized to 1), we obtain its economic openness:

$$EconOpen_i \equiv \frac{EX_i + IM_i}{Y_i} = \frac{2\sum_{k \in F} \frac{\breve{\theta}_{k,i}K}{\breve{\Delta}_i}}{K} = 2\sum_{k \in F} \frac{\breve{\theta}_{k,i}}{\breve{\Delta}_i}. \tag{13}$$

Note that *EconOpen* can also be derived from a gravity equation. In Appendix A3, we derive the gravity equation from the above theoretical model and demonstrate that a measure of economic

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[10]In fact, they would rather vote to increase Home's size, which is infeasible unless they are able to conquer and colonize abroad (colonialism and chauvinism that usually underpin territorial expansions can be considered as extreme forms of nationalism). Given that such options are absent, unglobalized regions can only endorse the integrity of Home with the current size.

openness, equivalent to the above *EconOpen*, can be derived from that gravity equation.[11] This equivalence helps to motivate the instrument strategy in our later empirical study.

When globalization occurs, a globalized region i in Home does more foreign trade than unglobalized regions because of the following three effects. (i) The portion of its tradable that goes to globalized Foreign regions now melts less on the way. In equation (13), this effect takes the form of a larger $\breve{\theta}_{k,i} = \widetilde{\theta} > \theta$ for globalized k's in Foreign. $\breve{\theta}_{k,i}$ remains θ for unglobalized k's in Foreign. (ii) Because of (i), the Foreign demand for region i's tradable rises relative to the Home demand for region i's tradable.[12] (iii) Because of (i) and (ii) combined, region i receives a larger revenue, enabling it to buy more from Foreign. This effect is represented by the 2 in front of $\sum_{k \in F} \frac{\breve{\theta}_{k,i}}{\breve{\Delta}_i}$, underlying which is the balance-of-trade condition equation (12). In comparison, for an unglobalized region j in Home, effects (i)-(iii) are absent. In particular, as for effect (iii), region j buys less from Foreign, because its globalized domestic peers, such as the above region i, now buy more imports from Foreign using their increased revenue. Viewed from Foreign's perspective, this effect means that globalized Foreign regions, within their total exports to Home, now place a larger weight on globalized Home regions.

In summary, *EconOpen* suffices to capture the differential effects of globalization on regions in Home. Two issues are noteworthy. First, a globalized region does more foreign trade than an unglobalized region, not only due to reduced iceberg attrition (effect (i)) but also because it now exports more to globalized Foreign regions (effect (ii)), an effect that also raises its imports (effect (iii)).[13] To conclude, when a regional economy is more open, the importance of its foreign market increases compared to that of its domestic market, leading to a decline in local nationalism. The theoretical model in this section also informs the empirical testing of its implication by illustrating the micro-foundation of economic openness. Now we move on to the empirical study.

3   Data

The empirical section in this paper includes three studies of three different datasets. The first dataset is from the Chinese Political Compass (CPoC), while the other two datasets are from the World Value Surveys (WVS). This section focuses on describing these two data sources and also

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[11]The equivalence is not a coincidence, as our theoretical model is in nature an Armington model (each region in the world makes one variety of tradable). Armington models generate bilateral trade that follows the gravity equation (Anderson, 1979; Anderson and van Wincoop, 2003). For reviews of the trade literature on gravity, see Anderson (2011) and Head and Mayer (2013).

[12]Formally,

$$\frac{\sum_{k \in F} \frac{\breve{\theta}_{k,i}}{\breve{\Delta}_i}}{\sum_{k \in H} \frac{1}{\breve{\Delta}_i}} = \frac{S_F[\kappa\widetilde{\theta} + (1-\kappa)\theta]}{S_H} > \frac{S_F\theta}{S_H},$$

where the numerator and denominator correspond to foreign and domestic sales, respectively, and the left and right sides of the inequality correspond to globalized and unglobalized Home regions, respectively.

[13]Effects (ii) and (iii) are referred to as multilateral resistance in the trade literature. Multilateral resistance is a component of the gravity equation, a widely used empirical tool in the trade literature.

provides sources of other data we use.

3.1 The Chinese Political Compass (CPoC)

The CPoC is a website that customizes the prototype of the UK website *Political Compass* to the Chinese socio-economic context.[14] The website asks visiting participants to appraise 50 statements on a four-point scale, then maps their responses into a coordinate in a three-dimensional reference system (authoritarianism vs. libertarianism, conservatism vs. liberalism, collectivism vs. neoliberalism). The coordinate evaluates a participant's political stance relative to all other participants. The CPoC keeps all evaluations anonymous to protect privacy and prevent participants from the political risks associated with expressing political attitudes in China. It further assures anonymity by not asking for any personal information. These settings aim to provide participants with incentives to reveal their true attitudes. Appendix B presents a sample report of the CPoC evaluation.

Among the 50 statements, four are concerned with nationalism, corresponding to four dimensions of nationalism in the literature: (1) assertion of national unity (Gellner, 2009), (2) emphasis on protecting national interests from other countries (Hobsbawm, 1990), (3) militarism (Posen, 1993), and (4) antiforeign sentiments.[15] It is noteworthy that antiforeign sentiments is different from xenophobia or other similar sentiments against foreigners. Here, antiforeign sentiments is specific to the potential threat imposed by foreign countries on the home country's interests. The statements are as follows:

[N1] National unity and territorial integrity are the interests of paramount priority for a society.

[N2] Given sufficient comprehensive national power, China has the right to take any measure to protect its interests.[16]

[N3] All students, regardless of whether they are in college, high school, or elementary school, should attend the military training arranged by the government.

[N4] Western countries, headed by the United States, will not really allow China to become a world-class powerful nation.

Participants rate the four statements with "strongly agree," "agree," "disagree," and "strongly disagree," respectively coded as 4, 3, 2, and 1. Panel A of Table 1 shows that, as expected, ratings

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[14]Their web addresses are www.zuobiao.me and www.politicalcompass.org, respectively.

[15]In the context of China, *antiforeign* sentiments particularly imply *anti-Western* sentiments. As Gries (2005, p. 35) states it: "Indeed, the West is central to the construction of Chinese identity today: it has become China's alter ego. As the sole superpower of the post-Cold War world, America symbolizes the West for China and for much of the rest of the non-Western world."

[16]O'Rourke and Sinnott (2001) and Mayda and Rodrik (2005) use responses to a similar statement in the International Social Survey Programme to measure nationalism: "respondent's country should follow its own interests, even if this leads to conflicts with other nations."

of the four statements are positively correlated, though any single statement cannot absorb the information in the other three. A principal component analysis, presented in Panel A of Table A1, shows that the four ratings contain only one common dimension of information but each contains unique variations. For each participant, we average her four ratings into one nationalism index, a standard practice for constructing a single measure with multiple survey questions (e.g., Charles and Guryan, 2008).

*********** Table 1 about here ***********

The CPoC records Internet Protocol (IP) addresses of participants. In 2009, 54,602 participants with IP addresses in mainland China completed their self-evaluations, which constitute the first dataset used in this study.[17] We match these IP addresses to China's prefecture-level cities.[18] In China, a prefecture-level city (city for short) is an administrative division ranking below a province and above a county. For each city, we construct a city-level nationalism index using the mean of the nationalism index of individual participants in the city. Consider Beijing as an example. It has an index value of 2.78 (on a scale of 1 to 4), approximately one standard deviation (0.12) below the national average of 2.91. Figure 1 plots the geographic distribution of the nationalism index across 239 cities.[19] Most cities are located on the east side of Hu's line (also known as the Aihui-Tengchong line), a demarcation that divides China into two halves by population density. The east side of Hu's line includes 43% of China's territory but 94% of its population (Naughton, 2007, p.19).

*********** Figure 1 about here ***********

Participants in the CPoC are internet users, younger and more educated than the average Chinese citizen. Table A2 shows that 60% of Chinese internet users are younger than 30 and older than 10, while this age group accounts for only 28% of the Chinese population overall. 65% of internet users, compared to 21% of the general population, have high school diplomas or higher educational attainment. The focus of the CPoC on internet users is a strength of the dataset. Given China's huge population and the influence of its communist political regime, no database exists of individuals who represent the national population and are also willing to truthfully disclose their political attitudes. Therefore, a large sample with relatively homogeneous demographics is more

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[17] The CPoC was made available online on August 8, 2007. Prior to April 23, 2008, the website did not record any IP address. After 2009, the questions in the questionnaire were restructured and thus are not comparable with those used in 2009.

[18] IP addresses in China are allocated to institutions rather than individuals, and qualified institutions are mostly internet service providers. See "Administration of Record Filing of Internet IP Addresses Procedures," effective as of March 20, 2005. Its English translation can be found at http://www.chinalawedu.com/news/23223/23228/22159.htm. A detailed list of China's IP address allocations, including the total number of addresses and shares of local internet service providers, can be found at http://news.xinhuanet.com/it/2006-01/18/content_4067158.htm.

[19] There are 333 cities in China, and the CPoC covered respondents from 303 cities in 2009. We drop 64 cities due to low participation in them.

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informative than a survey of the general public. Young and educated internet users also constitute the present and future middle class of China, whose political attitudes are of crucial importance, given their economic and social influence in China.[20]

A common concern over data collected through the internet is the possible overrepresentation of extreme opinions. In our context, the concern is whether the CPoC acts as an outlet for extremely strong or weak nationalistic sentiments. Designed as a self-evaluation tool regarding political attitudes, the CPoC is unlikely to serve as an outlet for nationalistic sentiments like online forums or bulletin board systems (BBS), because responses made by participants are never disclosed to the public. Table A3 shows that the percentage of CPoC participants among internet users is not correlated to the city-level nationalism index. Furthermore, we compare the CPoC-based nationalism index with the WVS-based index, an independent data source with an established reputation and a well-designed sampling procedure (discussed in Section 3.2). As shown in Figure A1, they are highly correlated (correlation coefficient 0.7), which suggests that the CPoC index is unlikely to be driven by online political extremism. Furthermore, our instrumental variable strategy in Section 4.2 also helps to correct biases caused by non-random sample selection.

*********** Table 2 about here ***********

We match the city-level nationalism index with city characteristics for the corresponding year. Since not all cities have city characteristics reported, the sample size decreases to 200 cities. The main data source of the city characteristics is China Data Online, a database that combines various statistics published by the government of China, maintained by the China Data Center at the University of Michigan.[21] Panel A of Table 2 reports the summary statistics. The key city characteristic is economic openness (*EconOpen*), defined by the total value of exports and imports of this city divided by its local gross domestic product (GDP).[22] We also construct a measure of each city's geographic openness (*GeoOpen*), which equals its distance (in 1,000 kilometers) to the nearest city that has seaport(s). The measure of local propaganda is constructed using the number of official national education bases in each city divided by the local population (i.e., number per 1,000 persons).[23]

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[20]Easterly (2001) and Banerjee and Duflo (2008) discuss the role of the middle class in political stability and policy-making.

[21]Its web address is http://chinadataonline.org.

[22]This definition of economic openness is standard and widely used in the literature on economic growth and development (Bolaky and Freund 2004; Chang, Kaltani, and Loayza, 2005; Rodrik, Subramanian, and Trebbi, 2004), productivity (Alcalá and Ciccone, 2004), and quality or size of governments (Rodrik, 1998; Wei, 2000). See Harrison and Rodríguez-Clare (2010) for a review of the measure of economic openness.

[23]The number of these bases approximates the government's efforts to reinforce nationalism, because these bases are the only project mentioned by the National Education Outline Plan stipulating the form and organization of national education, which was issued by the Publicity Department of the Communist Party of China in 1994. The full text of the plan can be found at http://baike.baidu.com/view/2825925.htm. The document that regulates the bases was jointly issued by ten branches of China's central government in 2004, including seven ministries and three quasi-official groups. Its full text can be found in the website of the Ministry of Education: http://www.moe.edu.cn/publicfiles/business/htmlfiles/moe/moe_201/200412/5015.html. Those national education

3.2 World Value Surveys (WVS)

The WVS is a cross-country survey coordinated by the World Values Surveys Association, which consists of researchers in the social sciences all over the world.[24] The WVS complements our CPoC data in four ways. First, we use the WVS, an independent data source with a well-established reputation, to cross-check our findings from the CPoC. Second, the two recent waves of the China WVS were conducted in 2001 and 2007, before and after China's accession to the WTO in December 2001. China's foreign trade volume nearly doubled during this time period, which generated an exogenous variation in its economic openness. Third, the WVS collects detailed demographic information on its respondents, which is, for privacy protection reasons, absent in the CPoC. The WVS has collected data in its member countries for nearly three decades. Thanks to its reputation and the involvement of experienced local researchers and institutions, respondents are ensured of relatively risk-free disclosure, and thus the WVS does not need to exclude questions on personal information.[25] Last, we can easily extend our analysis of China's data to a cross-country analysis by including other countries covered by the WVS.

Compared to the CPoC, the WVS does have one key drawback: it records the province rather than city of respondents. The 2001 and 2007 waves of the WVS-China have only 20 provinces in common, out of 31 province-level administrative divisions in mainland China.[26] To implement a difference-in-differences specification, we drop those provinces that were not covered in both the 2001 and 2007 waves. Since we can only match the data on foreign trade at the province level with the WVS-China, we have only 40 units (20 provinces times 2 years) of variations in economic openness, which are not as rich as the city-level CPoC data. Our final sample includes 2,038 individuals, a relatively small size that might be compensated by the well-designed sampling scheme of the WVS.[27]

As with the CPoC, we use responses to multiple statements to measure different dimensions of nationalism: assertion of national unity, emphasis on protecting national interests from other countries, and militarism. Corresponding to the previous [N1]–[N3], the WVS statements are:

[N1'] How proud are you to be Chinese? (very proud=3, quite proud=2, not very or

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bases were mostly built around historic sites where domestic revolutions and anti-colonist conflicts arose, or key battles took place during World War II and the Civil War. A complete list of these bases can be found at http://cpc.people.com.cn/GB/64176/64180/8287041.html.

[24]In the economics literature, the WVS has been used by Alesina and Angeletos (2005) to measure beliefs in fairness, by Guiso, Sapienza, and Zingales (2003) to measure attitudes conducive to economic growth, and by Knack and Keefer (1997) to measure social capital. In the political science literature, it has been used by Inglehart and Welzel (2005) to measure modernization.

[25]Both the 2001 and the 2007 waves of the WVS-China were conducted by the Research Center for Contemporary China at Peking University, one of the two top universities in China.

[26]Mainland China includes 31 province-level administrative divisions: 22 provinces, 4 municipalities, and 5 autonomous regions. We refer to all of them as provinces. The WVS has conducted four waves in China: 1990, 1995, 2001, and 2007. The 1995 wave did not record provinces of respondents, and it only coded the location as North, South, East, or West. The 1990 wave surveyed only 11 provinces and used a questionnaire very different from other waves.

[27]We restrict our sample to respondents aged between 20 and 70.

not at all=1)

[N2'] Strong defense forces rank _____ among important goals of the country, relative to a high level of economic growth, people having more say about how things are done, and trying to make our cities and countryside more beautiful. (the first choice=3, the second choice=2, neither the first nor the second=1)

[N3'] How much confidence do you have in the armed forces, relative to parliament, police, courts and civil service? (a great deal=3, quite a lot=2, not very much or none at all=1)

Panel B of Table 1 shows that, just as in Panel A, responses to different questions are positively correlated, though any single question cannot absorb the information in the other two. As for the CPoC ratings, a principal component analysis shows that the three ratings contain only one common dimension of information, but each contains unique variations (see Panel B of Table A1). We then match the data with province-level GDP per capita and economic openness from China Data Online. Panel B of Table 2 summarizes the matched individual-level sample. The mean and standard deviation of the WVS-based nationalism index (mean 2.1 out of 3; s.d. 0.46) are very close to those of the CPoC-based index (mean 2.8 out of 4; s.d. 0.64).[28] The majority of respondents in the sample are middle aged and married, with a medium level of education and income.

Lastly, we extend our analysis to 15 countries that were covered in both of the two recent waves of the WVS, 2001 and 2007.[29] We use the same statements [N1']-[N3'] to construct the nationalism index, and then match the data to country-level purchasing-power-parity converted GDP and economic openness from the Penn World Table V7.0 (Heston, Summers, and Aten, 2011). Panel C of Table 2 reports the summary statistics.

4   Empirical Evidence

Section 2 predicts that within a country, regions with more economic openness (total foreign trade) have weaker nationalism. The first test uses the CPoC data on cross-city nationalism in China. Sections 4.1-4.2 discuss findings from ordinary-least-squares (OLS) estimation and two-stage least squares (2SLS) estimation. To account for possible city-level heterogeneity, in Section 4.3, we examine the impact of economic openness on cultural attitudes and political ideologies other than nationalism. The previous results for nationalism do not hold for those values, indicating that city-level heterogeneity is not likely to drive our findings. Section 4.4 examines the WVS data on China in two ways. The first is to exploit the variations in economic openness of regions generated

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[28]The mean and standard deviation belong to those of the individual-level nationalism index (54,602 CPoC participants), not to the city-level index summarized in Panel A of Table 2.

[29]The WVS waves are conducted in multiple countries and each wave takes more than one year. The two recent worldwide waves of the WVS are the 2005/2008 wave and the 1999/2001 wave. In our 15-country sample, the surveys were conducted in 2001 and 2007. The 15 countries are Argentina, Canada, Chile, China, India, Indonesia, Japan, Korea, Mexico, Morocco, South Africa, Spain, Sweden, Turkey, and the U.S.

by China's accession into the WTO as an identification strategy alternative to the above 2SLS. The second is to rerun the previous OLS specification with the WVS data as a cross-check.

4.1 The OLS Results

Table 3 reports the OLS regressions of the nationalism index on the measure of economic openness (*EconOpen*) using data from 200 cities in China. Column (1) in Table 3, a univariate regression, shows a negative and statistically significant correlation between the two variables. In terms of magnitude, a one standard deviation increase in *EconOpen* is associated with a 0.22 standard deviation decrease in the nationalism index (-0.124×0.21≃-0.026, divided by 0.12). Column (2) includes in the regression *GeoOpen*, the distance between a city and its nearest city with seaport(s), which controls for possible location-related variations in nationalism. Column (3) adds four more city characteristics: local GDP per capita, education, rural population, and government budget. The first three characteristics may affect nationalism through the composition of local residents. Government budget can affect local levels of nationalism in two ways: spending and fiscal transfer. Provision of public goods by the local government perhaps raises local nationalism, and a city that relies on fiscal transfers from other domestic cities is likely to have strong nationalism.

Compared with the local governments, the central government has more incentives to promote nationalism, especially during crises, in order to divert the public's attention and mute domestic controversies. Although China was not in any nationwide crisis in 2009, we take this concern into account due to the peculiarity of China's political regime. Column (4) controls for political propaganda proxied for by the number of national education bases per 1,000 people, as mentioned in Section 3.1. The estimated coefficients of *EconOpen* are very similar across columns. In the most inclusive column (4), a one standard deviation increase in *EconOpen* is associated with a 0.20 standard deviation decrease in the nationalism index.

*********** Table 3 about here ***********

Another concern over the OLS results is the relationship between nationalism and protectionism, both of which could vary by economic openness. Nationalism in this paper is the endorsement of the home country, whereas protectionism is the advocacy of protecting domestic producers from foreign competition. Nationalism and protectionism are sometimes intertwined because they both emphasize the home country as opposed to foreign countries. Protectionist minds may overstretch their hostility towards foreign competitors to foreign countries. To address this concern, we run an individual-level auxiliary regression of nationalism on protectionist attitudes measured by individual ratings of the following two statements in the CPoC:[30]

[P1] High tariffs should be imposed on foreign counterparts of domestic products, in order to protect national industries.

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[30]The average of the two ratings is used as the protectionism index.

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[P2] Foreign capital in China should be restricted from developing at (their) will.

Then we use the residuals obtained from the auxiliary regression to replace the individual-level nationalism index, average them at the city level, and use this new city-level index as the dependent variable in column (5) instead of the original index; the specification of column (5) is otherwise the same as column (4). With protectionist attitudes filtered out, the effect of *EconOpen* on nationalism remains similar to those documented in columns (1)–(4). Therefore, it is unlikely that association between nationalism and economic openness in effect captures the association between protectionism and economic openness.

4.2   The 2SLS Results

The OLS results in Table 3 could be biased, as some third factor may affect both nationalism and economic openness. We use 2SLS to address this issue. As equation (13) shows, the "true" economic openness of a domestic city i depends on $\sum_{k \in F} \frac{\breve{\theta}_{k,i}}{\breve{\Delta}_i}$, which does not vary by city i's nationalism. Since we do not have inter-city trade data across countries, each $k \in F$ now denotes a foreign country rather than a foreign city. From a domestic city i's viewpoint, the summation of $\breve{\theta}_{k,i}$ over foreign country k's is city i's foreign market potential (MP).[31] Thus, we are able to use the variations in their foreign market potentials to instrument their economic openness. To do this, we take two different approaches.

The first approach is to instrument economic openness using the market potential metric proposed by Harris (1954). This metric and its variants are used by, for example, Helliwell (1998), Hanson (2005), and Donaldson and Hornbeck (2013).[32] It is a GDP-weighted sum of inverse distances between city i and destination country k:

$$MP1_i \equiv \sum_{k \in F} \frac{GDP_k}{Distance_{k,i}}.$$

Having shorter distances with export destinations means a more convenient access to foreign markets, while those distances should be adjusted for their corresponding economic sizes. To construct $MP1$ for each city, we find the GDP of foreign countries in the Penn World Table V7.0 (Heston, Summers, and Aten, 2011) and construct bilateral distance between city i and country k.[33] Using $MP1$ to instrument economic openness, we assume that having a large market potential reduces a city's nationalism only through openness. This is a reasonable assumption because both distance

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[31] For uses of the foreign market potential in the economic geography literature, see Redding and Venables (2004) and Head and Mayer (2011).

[32] Donaldson and Hornbeck (2013) argue that this reduced-form market potential is a first-order approximation of the market potential structurally derived from the gravity model.

[33] Distances between cities and countries are constructed using the longitudes and latitudes of cities and capitals of foreign countries. This is similar to the method used in Hering and Poncet (2010) and Mayneris and Poncet (2014), where distances between Chinese provinces and foreign countries are constructed using the longitudes and latitudes of provincial capital cities and capitals of foreign countries.

and GDP of foreign countries are relevant to a city only when there are economic linkages between them.[34]

$MP1$ is reduced-form oriented, not relying on a specific theory to establish its relationship with economic openness. It has two shortcomings. First, GDP as weights are proportionally larger for larger foreign economies, though larger foreign economies do not conduct proportionally more foreign trade. Second, it takes distance as the sole determinant of trade costs. Although distance is a crucial determinant of trade costs, other factors also affect trade costs. To account for these shortcomings, our second approach is to compile a structure-based measure of foreign market potential, based on the gravity model in the trade literature. A gravity equation can be derived from our theoretical model (see Appendix A3 for details). A globalized foreign destination k (having large $\breve{\theta}_{k,i}$ with all globalized i's) is expected to have a large $\breve{\Delta}_k$.[35] Being close to destinations boost a Chinese city's economic openness, but such closeness should not affect the exporting city's nationalism other than through trade itself. Based on this idea, we follow Redding and Venables (2004) to estimate a gravity equation

$$\ln \widehat{X_{k,i}} = \widehat{\breve{\Delta}_k} + \widehat{\breve{\Delta}_i} + \hat{\delta} \ln Distance_{k,i} + \hat{b} B_{k,i},$$

where the dummy variable B_{ki} equals 1 if city i is in a contiguous province of its export destination k, and construct an alternative instrument $MP2$ for economic openness:[36,37]

$$MP2_i = \sum_{k \in F} \{\exp[I(k \in i)]\}^{\widehat{\breve{\Delta}_k}} \times Distance_{k,i}^{\hat{\delta}} \times \exp[B_{k,i}]^{\hat{b}}.$$

Table 4 reports the baseline 2SLS results, with a similar column structure as Table 3. The findings are very close across columns. The first stage results show that a larger market potential leads to a higher *EconOpen*, which implies more common economic interests shared by a city with foreign countries. Quantitatively, a one standard deviation increase in *EconOpen* is associated with a 0.5-0.9 standard deviation decrease in the nationalism index. Overall, the 2SLS estimates based on $MP2$ are larger than those based on $MP1$, though they are both asymptotically consistent. Speaking of the effect of *EconOpen* on nationalism, both 2SLS estimates are larger than the OLS estimate in magnitudes. The downward bias of the OLS estimate is likely driven by the association between nationalism and industrialization. Regions with fast industrialization tend to have

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[34]Social and cultural exchanges usually take place along with business transactions, but these exchanges are byproducts of trade and sometimes simply take the form of trade (e.g., trade in exotic artware, movies and other media products). They do not contradict the effect of economic openness argued in this paper.

[35]This is because $\breve{\Delta}_l = S_{D(l)} + S_{\overline{D(l)}}[\kappa\widetilde{\theta} + (1 - \kappa)\theta]$ if it is globalized, and $S_{D(l)} + S_{\overline{D(l)}}\theta$ otherwise.

[36]Gravity equation is widely used in the literature to instrument openness. See, e.g., Dollar and Kraay (2004), Frankel and Romer (1999), Frankel and Rose (2005), Hall and Jones (1999), Irvin and Terviö (2002), and Alcalá and Ciccone (2004).

[37]The gravity equation is estimated using data on exports from Chinese cities to various destination countries, reported by the China Customs Statistics Information Service (CCSIS). The number of border cities in our sample is very small, only 4 out of 200. Our OLS and 2SLS results are robust to excluding them.

elevated nationalism because there has been an ingrained belief in China that booming manufacturing industries mean strong national powers, a doctrine that was similarly popular in Germany, Italy, Japan, and Russia (Soviet Union) during their processes of industrialization (Gellner, 2009). Meanwhile, industrialized regions have better trade performance. Thus, industrialization varies positively with both nationalism and economic openness, tending to cause a toward-zero bias in the OLS estimate.

*********** Table 4 about here ***********

One possible exception to the exclusion premise of the 2SLS is when a trade partner has had wars or other forms of tensions with China; then nationalism may affect foreign trade because historical memories can hamper current business. The US and several large European countries raced to seize spheres of influence in China in the middle 19th century and the early 20th century.[38] Later, China confronted the US in the Korean War and much of the Cold War period. China was occupied by Japan during World War II and has had territorial disputes with Japan since then. Columns (1)-(6) of Table 5 serve as a check on whether these historical factors contaminate the 2SLS results. Specifically, we re-construct two instruments without the US, the EU, and Japan, respectively, and rerun the 2SLS regressions with the specifications of column (4) in Table 4. The estimates turn out to be close to those in Table 4.

*********** Table 5 about here ***********

Going further in this direction, we re-construct $MP1$ and $MP2$ by excluding members of the Organisation for Economic Co-operation and Development (OECD), the Eight-Nation Alliance (War8), and the North Atlantic Treaty Organization (NATO). The OECD contains countries, apart from those in columns (1)-(6), that had military conflicts with China, including Australia, Canada, South Korea and Turkey. The Eight-Nation Alliance is a full list of countries that had colonial interests in China in the late 19th century and early 20th century, and NATO, as an alliance resulting from military rivalry during the Cold War, represents the countries that may have potential military tensions with China in the future.[39] As shown in columns (7)-(12) of Table 5, these counter-checks find no essential difference in coefficients, indicating that the instruments are unlikely to be endogenous with respect to nationalism.[40]

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[38] See Keller, Li, and Shiue (2011, 2013) for a summary of these economic and political conflicts.

[39] The eight countries were Austria-Hungary, France, Germany, Italy, Japan, Russia, the UK and the US. They all intervened in the suppression of the Boxer Rebellion in China between 1899 and 1901, and claimed benefits as signatory countries in the Boxer Protocol. Later, Austria-Hungary divided into a number of regions and countries. We match them to the Austria, Hungary, Czech Republic, Slovakia, and Poland of today.

[40] As an additional robustness check, we also code both "strongly agree" and "agree" as 2, and both "strongly disagree" and "disagree" as 1, in order to mitigate the variations that possibly stem from extremist opinions. Using the city-level nationalism index averaged from those muffled responses leads to very similar findings as in the text. Details are available upon request.

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4.3 Heterogeneity in Cultural Attitudes and Political Ideologies

We next examine whether the results in Tables 3–4 also apply to cultural attitudes and other political ideologies. Cultural attitudes are not nationalism because they are not specific to a country (nation state). For example, Chinese culture is appreciated by Chinese communities all over the world; their appreciation of Chinese culture does not necessarily extend to appreciation of China as a nation state. Thus, attitudes toward Chinese culture provide a good opportunity to check whether the previous results capture the interest-based rationale modeled in Section 2 or openness-related heterogeneity across cities. We apply the OLS and 2SLS specifications above to investigate the effect of *EconOpen* on attitudes towards Chinese culture measured by city-average ratings of the following three statements in the CPoC:

> [Traditional Medicine] Traditional Chinese medicine exceeds modern mainstream medicine in a number of ways.

> [Zhou-yi] Zhou-yi/Ba-gua is a great achievement of our forefathers and can explain a wide range of phenomena.[41]

> [Confucianism] Modern China needs Confucianism.

Panel A of Table 6 shows that *EconOpen* has no effect on the ratings of these statements, conditional on the same set of control variables as in Tables 3–4. The sociocultural counterpart of nationalism does not display the relationship with economic openness that nationalism does. This suggests that nationalism captured by the previous index refers to China as a nation state, and thus its empirical relationship with economic openness is not driven by cultural diversity that may stem from economic openness.

*********** Table 6 about here ***********

We also investigate the effect of *EconOpen* on political ideologies that resemble nationalism, including populism (Hellinger, 1984; Marton, 2007), conservatism (Mudde, 1995; Knigge, 1998), and collectivism (Lingle, 1992). These three political ideologies are measured in the CPoC as ratings of the following three statements:[42]

> [Populism] The fruits of China's recent economic reforms have been grabbed by a few people; the majority have received hardly any benefits.

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[41]Zhou-yi is one of the Five Chinese Classics. Its contents are seen as the foundation of Chinese philosophy and cosmology. One of its applications is Ba-gua, the Chinese counterpart of horoscope.

[42]It should be noted that the measurement of these ideological orientations is not the focus of our study and deserves another paper (in fact, the definitions of populism, conservatism, and collectivism are more ambiguous than the definition of nationalism). The experiment presented here serves only as a robustness check of the results in Tables 3–4.

[(counter-)Conservatism] The primary way of helping low-income people is fiscal support and subsidies.

[Collectivism] Individual interests should yield to social interests in the decision-making process of major infrastructure projects.

As shown in Panel B of Table 6, *EconOpen* has little significant impact on these ideologies; that is, the effect of *EconOpen* on nationalism is unlikely to capture the effect of *EconOpen* on ideologies that are similar to nationalism.[43]

4.4 The Difference-in-Differences Results

In this section, we exploit the variations in economic openness across regions created by China's accession into the WTO. China became the 143rd member of the WTO on December 11, 2001. The WTO membership lowers both inward and outward trade barriers on China's foreign trade, and its effect on trade volume varies by region (Han, Liu, and Zhang, 2012).[44] The following analysis employs a difference-in-differences (DD) identification strategy using the two recent waves of China WVS in 2001 and 2007, which were conducted before and after China's WTO accession, respectively. The WVS reports the province rather than the city of respondents. We divide the surveyed provinces into two groups based on whether they are located in the "trading deltas," the Yangtze River Delta and the Pearl River Delta. These two deltas are China's most active regions in international trade, and they host two trade centers of Asia, Shanghai and Hong Kong, respectively.[45] We use those four provinces in the two deltas (the Shanghai Municipality, Zhejiang, Jiangsu, and Guangdong) as the treatment group, or the *high (foreign trade) exposure* provinces, and the other 16 provinces as the control group, or the *low (foreign trade) exposure* provinces.[46]

*********** Figure 2 about here ***********

The economic openness of high-exposure provinces is expected to increase more than that of low-exposure provinces, because high tariffs faced by both importers and exporters prior to the

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[43]We conduct another robustness check that addresses possible influences of opinion dispersion on the city-level nationalism index. Nationalism may have a larger dispersion in cities that are more globalized, representing a pro-diversity effect of nationalism. We extract the standard deviation of the original individual-level nationalism index for each city, and use it as the dependent variable to rerun the main regressions in Tables 3–4. *EconOpen* turns out not to have similar effects. See Table A4 for details.

[44]See http://www.wto.org/english/news_e/pres01_e/pr243_e.htm for a full list of the eliminated restrictions on both exports and imports.

[45]For the crucial roles of Shanghai and Hong Kong in the trade of China and Asia overall, see Keller, Li, and Shiue (2013) and Feenstra and Hanson (2004), respectively.

[46]The Shanghai Municipality refers to the province-level administrative division that contains the city of Shanghai. The 16 provinces in the control group are Anhui, Beijing, Fujian, Guangxi, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangxi, Liaoning, Shaanxi, Shandong, Shanxi, and Yunnan. Another way to define high-exposure provinces is to use the level of per capita trade *before* the WTO accession. In this case, the top five provinces are the four provinces located in the two deltas plus the Beijing Municipality. The findings discussed in this section are robust to the inclusion of the Beijing Municipality in the high-exposure group.

WTO accession were more binding for the former than for the latter.[47] Panel A of Figure 2 shows that, between 2001 and 2007, the economic openness of the high-exposure provinces increased by 58 percentage points, in comparison with an increase of only 10 percentage points in the low-exposure provinces. Panel B of Figure 2 shows that during the same period, the average level of nationalism decreased in both groups but by a larger magnitude in the high-exposure group.[48] Overall, the trade liberalization resulting from the WTO accession had a larger impact on the level of nationalism in high-exposure provinces than in low-exposure provinces. This pattern suggests a negative impact of economic openness on nationalism.

Next, we specify the following DD regression:

$$\begin{aligned} Nationalism \quad = \quad & \phi_0 + \phi_1 HighExposure + \phi_2 AfterWTO \\ & + \phi_3 HighExposure \times AfterWTO + \varepsilon \end{aligned} \qquad (14)$$

where $HighExposure$ equals 1 for a high-exposure province and 0 for a low-exposure province, $AfterWTO$ equals 1 for the year 2007 and 0 for the year 2001. ϕ_3 is the coefficient of interest, which captures the additional change in nationalism in high-exposure provinces that did not occur in low-exposure provinces. The DD specification differences out the group-specific nationalism as well as the countrywide time trend in nationalism. Regression (14) can be run at either the province level or the individual level. When it is run at the individual level, $HighExposure$=1 (or 0) refers to the treatment of living in a high-exposure (or low-exposure) province.

Column (1) of Table 7 reports the province-level DD regression, which has controlled for province-level GDP per capita. $\hat{\phi}_3$ is negative and statistically significant, indicating that high-exposure provinces have a larger decrease in nationalism. Column (2) reports individual-level regression with only province-level variables, which is equivalent to a province-level regression weighted by the number of observations in each province-year pair.[49] Column (3) further controls for individual characteristics, including age, gender, marital status, education, and income.[50] The results are similar across columns. Take column (3) for example, $\hat{\phi}_3$ is -0.215, indicating a further 0.47 standard deviation decrease in nationalism for the high-exposure group during the same time period. Nationalism slightly increases with age, which might be the result of communist education prior to the 1978 reform that preached hatred against foreign capitalist (imperialist) countries.

[47]In the high-exposure group, the openness in 2001 was 0.73, lower than 0.75, the median of the economic openness of all countries in 2001 (Heston, Summers, and Aten, 2011). The range of the openness measure is (0,2) (see equation (13)). Thus, there remained large potentials for openness to grow when foreign trade barriers were eliminated by the WTO accession.

[48]The difference between the two groups in 2001 is statistically insignificant. In column (1) of Table 7, the coefficient of the high-exposure dummy is also statistically insignificant.

[49]The econometric equivalence between weighted-least squares and using aggregated regressors is discussed in Angrist and Pischke (2008, pp.39-40). The number of observations in each province-year cell ranges from 14 to 201, with a mean of 51 and a standard deviation of 34.

[50]In the WVS data, the education variable is discrete (low, middle and high) and coded here as two dummy variables; the income variable is also discrete (ten levels), which is coded here as nine dummy variables. For brevity, we do not report the estimated coefficients of these dummy variables.

Women are less nationalistic than men, possibly because of their less important economic role in the household.

************ Table 7 about here ************

The above DD estimates are not directly comparable to our previous regressions using the CPoC data. Columns (4)-(6) of Table 7 revert to a specification that is comparable with the previous results:

$$Nationalism = \gamma_0 + \gamma_1 EconOpen + \eta_{province} + \eta_{wave} + \varepsilon,$$

where $\eta_{province}$ is a province fixed effect, η_{wave} is a wave (year) fixed effect, and γ_1 is the coefficient of interest. With province and wave fixed effects, this regression estimates the effect of the *change* in economic openness on the *change* in nationalism. As before, we start with a province-level regression (column (4)), then an individual-level regression without individual characteristics (column (5)), and lastly an individual-level regression with individual characteristics (column (6)). Again, column (5) is equivalent to a weighted regression. The three columns show very similar results, which are also quite close to those in city-level regressions. Take column (4) for example, which is more comparable to city-level results since it also uses region-level data. A one standard deviation increase in *EconOpen* is associated with a 0.67 standard deviation decrease in nationalism. The estimated magnitude lies between the OLS and 2SLS estimates of city-level regressions (closer to the 2SLS estimates). This also lends support to the findings from the CPoC data, considering that the WVS, as a separate data source, is different from the CPoC in terms of design, coverage, and collection method.

5   Extension: Nationalism and Economic Openness across Countries

Our theory in Section 2 on regional nationalism within a country sheds light on country-level nationalism. Nationalism in a country can be considered as the average of nationalism across regions in the country. We now introduce the two margins of globalization that are exclusive of each other: the share of globalized regions in the country (κ) and the intensity of globalization for globalized regions (the previous $\widetilde{\theta}$). Then, average nationalism in the country is the κ-weighted average of nationalism in domestic regions with θ and $\widetilde{\theta}$, respectively. The κ margin is straightforward. Suppose that κ rises while $\widetilde{\theta}$ is constant, the share of globalized regions in the country rises and thus the cross-region nationalism average decreases. The $\widetilde{\theta}$ margin is slightly complex. Suppose that κ is constant while $\widetilde{\theta}$ rises—that is, globalized regions do not grow in number but the globalization is more intense—then globalized regions have even less nationalism. With their shares constant, the cross-region nationalism average decreases as well.[51] To summarize, if globalization deepens at

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[51]We derive the second case formally in Appendix A4.

either margin or a combination of the two, average nationalism in the country will decrease more.

This predicted effect of globalization on country-level nationalism is testable using country-level data. As before, the effect of globalization can be measured using economic openness. Average nationalism at the country level can be calculated using the WVS data. The WVS data are collected to represent values in surveyed countries through well-designed sampling scheme.[52] Thus, average nationalism expressed by a representative sample in a surveyed country is by design weighted across regions with different levels of globalization.

Before proceeding to the empirical results, we would like to make a note of the caveat associated with this empirical exercise. Across countries, there are historical, ethnic and geopolitical factors intertwined with nationalism. These factors also affect trade and trade policies of countries.[53] Addressing these factors and their interactions is extremely difficult. Therefore, the empirical identification in this section is weaker than in our previous within-country study. Hereafter, we assume the cross-country differences in these factors to be time-invariant. Specifically, we use the 15 countries that were covered in both of the two recent waves of the WVS (2001 and 2007) and thereby control for country fixed effects. The construction of their nationalism indices follows the same practice as described in Section 3.2.[54]

Panel A of Figure 3 shows the country-level average nationalism across the 15 countries for the year 2007. Panel B of Figure 3 plots the detrended change in nationalism against the detrended change in economic openness. The signs of the two changes are opposite as expected; specifically, points cluster in Quadrants II and IV, except for Turkey and Argentina. Turkey in Quadrant I has two positive changes, because during this period its accession to the EU was repeatedly stalled by extant EU members despite Turkey's bullish trade performance. Turkish nationals criticized the EU's discriminatory standards against Turkey's accession, which strengthened the country's nationalistic sentiments (Keyman and Yilmaz, 2006). In contrast, Argentina in Quadrant III has two negative changes, because of its 2001 economic collapse and its default on external debts in 2002, which damaged its national pride. Indeed, "for a while it was as though Argentina had no possible future and was doomed to descend into poverty and shame" (Domingues, 2006).

*********** Figure 3 about here ***********

We use the following regression to examine the relationship between nationalism and economic openness across 15 countries in 2001 and 2007:

$$Nationalism = \delta_0 + \delta_1 EconOpen + \chi_{country} + \chi_{wave} + \varepsilon,$$

---

[52]A sample document on the sampling method of the WVS can be found at http://www.worldvaluessurvey.org/SebTest/wvs/articles/folder_published/survey_2005/files/WVS-rules_for_PIs_wave5.pdf.

[53]For instance, Guiso, Sapienza and Zingales (2009) find that lack of bilateral trust reduces bilateral trade and direct investment.

[54]In addition, among countries covered in both waves, we keep only those that were surveyed twice with the same three nationalism-relevant questions (see Section 3.2).

where $\chi_{country}$ is a country fixed effect and χ_{wave} is a wave (year) fixed effect. With country and wave fixed effects, this regression estimates the effect of the *change* in economic openness on the *change* in nationalism. It can be run at either the country level or the individual level. When it is run at the individual level, individual characteristics are included.

*********** Table 8 about here ***********

Column (1) of Table 8 reports the country-level regression, which shows a negative and significant association between nationalism and economic openness. Columns (2)-(3) are the individual-level regressions. They show that nationals living in a country with a more open economy exhibit weaker levels of nationalism, conditional on their age, gender, marital status, education, and income. Take column (1) for example, quantitatively, a one standard deviation increase in *EconOpen* is associated with a 0.54 standard deviation decrease in nationalism. This is close to the results from China (using both the CPoC dataset and the WVS-China dataset). Also, nationalism is higher among older and married people, but weaker among women.

The above results lend preliminary support to what the theory implies at the cross-country level. However, we are aware that the results in this section are insufficient to establish the causal effect of foreign trade on nationalism across countries. Finding exogenous variations in cross-country openness, such as China's WTO accession, will be an interesting empirical exercise for future research.

6 Concluding Discussion

This paper provides an economic framework to rationalize different levels of nationalism across regions within a country, as well as empirical evidence for this framework. The level of nationalism exhibited by a region is its endorsement of the status-quo country as its optimally sized domestic market. The extent of the endorsement varies by the region's economic interests in its domestic and foreign markets. In an era of globalization, regions with easier access to foreign markets see their domestic markets as less important and thus have weaker nationalism. This can also explain changes in nationalism exhibited by various countries over time.

This paper has several implications for the political economics of contemporary globalization. First, it suggests that regions with more economic openness prefer their country to be smaller, which helps to explain the growth of localism across the globe. Localism prioritizes the interests of the local region. In this paper, we argue that globalized regions have increased joint interests with the foreign world and thus decreased nationalism. The other flipside of this phenomenon is that globalized regions have fewer joint interests with the rest of the country, and thus should have elevated localism. This is supported by anecdotes about Londoners, New Yorkers, and Shanghainese. Using the WVS data on 43 countries, we find preliminary evidence that economic openness increases the

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odds of identifying oneself as "a member of the local community" relative to "as a world citizen" (see Table A5). That is, the rise of localism relative to nationalism may outpace that of globalism relative to nationalism. Future research along this line will be interesting.

Second, our work can be extended to rationalize the platform design of politicians regarding economic openness and nationalism in national elections. Policies that promote free trade are favored by regions with high-level openness, and nationalistic advocacy is favored by regions with low-level openness. Thus, promoting free trade and nationalism together represents a tradeoff between the two types of regions. This tradeoff follows the median-voter theorem and is anecdotally supported regarding conservative parties in the Anglosphere. Lastly, this paper may also prove useful in analyzing the interplay between nationalism and tolerance of cross-region conflicts within a country (i.e., $-h(\cdot)$ in Section 2). According to our model, conflict tolerance may mitigate the effect of trade on nationalism, because domestic regions will then think more positively of the status-quo country.

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Appendices

A1. Derivation of inequalities (9) and (10)

Consider Home without loss of generality. Denote globalized and unglobalized by g and ng, respectively. The sales by an unglobalized region in Home (Hng) to a globalized Home region (Hg), to another unglobalized Home region (Hng), to a globalized Foreign region (Fg), and to an unglobalized Foreign region (Fng) stay the same as before, namely,

$$
\begin{aligned}
X_{Hg,Hng} &= \frac{K}{S_H + S_F\theta}, \\
X_{Hng,Hng} &= \frac{K}{S_H + S_F\theta}, \\
X_{Fg,Hng} &= \frac{\theta K}{S_H + S_F\theta}, \\
X_{Fng,Hng} &= \frac{\theta K}{S_H + S_F\theta}.
\end{aligned}
$$

In comparison, the sales of a globalized region in Home to the four destinations are

$$
\begin{aligned}
X_{Hg,Hg} &= \frac{K}{S_H + S_F[\kappa\widetilde{\theta} + (1-\kappa)\theta]} < X_{Hg,Hng}, \\
X_{Hng,Hg} &= \frac{K}{S_H + S_F[\kappa\widetilde{\theta} + (1-\kappa)\theta]} < X_{Hng,Hng}, \\
X_{Fg,Hg} &= \frac{\widetilde{\theta} K}{S_H + S_F[\kappa\widetilde{\theta} + (1-\kappa)\theta]} > X_{Fg,Hng}, \\
X_{Fng,Hg} &= \frac{\theta K}{S_H + S_F[\kappa\widetilde{\theta} + (1-\kappa)\theta]} < X_{Fng,Hng}.
\end{aligned}
$$

A2. Derivations of equation (11)

The output of an unglobalized region is

$$
\begin{aligned}
Y_{ng} &= \kappa S_H \left(\frac{K}{S_H + S_F[\kappa\widetilde{\theta} + (1-\kappa)\theta]} \right)^\alpha + (1-\kappa)S_H \left(\frac{K}{S_H + S_F\theta} \right)^\alpha, \\
&\quad + \kappa S_F\theta \left(\frac{K}{S_F + S_H[\kappa\widetilde{\theta} + (1-\kappa)\theta]} \right)^\alpha + (1-\kappa)S_F\theta \left(\frac{K}{S_F + S_H\theta} \right)^\alpha,
\end{aligned}
$$

while the output of a globalized region is

$$
\begin{aligned}
Y_g &= \kappa S_H \left(\frac{K}{S_H + S_F[\kappa\widetilde{\theta} + (1-\kappa)\theta]} \right)^\alpha + (1-\kappa)S_H \left(\frac{K}{S_H + S_F\theta} \right)^\alpha \\
&\quad + \kappa S_F\widetilde{\theta} \left(\frac{K}{S_F + S_H[\kappa\widetilde{\theta} + (1-\kappa)\theta]} \right)^\alpha + (1-\kappa)S_F\theta \left(\frac{K}{S_F + S_H\theta} \right)^\alpha.
\end{aligned}
$$

The difference between Y_{ng} and Y_g is the third term on their right sides.

A3. Gravity in our setup and gravity-based economic openness

Below, we first derive a gravity equation from our model in Section 2, and then derive *EconOpen* from the gravity equation.

1. Gravity equation derived from our model

For the moment, ignore the h part in equation (7) and focus on the utility from consumption. With $C = Y$ inserted, the utility function can be considered as one with constant elasticity of substitution. A gravity equation refers to the fact that, without loss of generality, exports from a Home region i to a Foreign region k equals

$$
X_{k,i} = \frac{K_k K_i}{\sum_l K_l} \left(\frac{\breve{\theta}_{k,i}}{\breve{\Delta}_i \breve{\Delta}_k} \right). \tag{15}
$$

Notice that K_l refers to the value, rather than quantity, of tradables in region l. By equations (4)-(5), we have

$$
X_{k,i} = \frac{\breve{\theta}_{k,i}}{\breve{\Delta}_i} K_i;
$$

thus, deriving equation (15) is equivalent to proving

$$
K_k = \breve{\Delta}_k \sum_l K_l. \tag{16}
$$

Define $s_k \equiv K_k / \sum_l K_l$. Proving (16) is now equivalent to proving $s_k = \breve{\Delta}_k$.

We now prove $s_k = \breve{\Delta}_k$ by demonstrating that it holds if and only if region k's accounting

identity (balance of payment) holds. The value of region k's exported tradable is

$$\sum_l \frac{\breve{\theta}_{l,k}}{\breve{\Delta}_k} K_k = \sum_l \frac{\breve{\theta}_{l,k}}{\breve{\Delta}_k} K_k \frac{s_l}{\breve{\Delta}_l} = \sum_l \frac{\breve{\theta}_{l,k} K_l K_k}{\breve{\Delta}_k \breve{\Delta}_l \sum_l K_l} = \sum_l \frac{\breve{\theta}_{l,k} s_k K_l}{\breve{\Delta}_k \breve{\Delta}_l} = \sum_l \frac{\breve{\theta}_{l,k} K_l}{\breve{\Delta}_l}.$$

Recall that $\breve{\theta}_{lk}$ is symmetric between l and k. Therefore, the above $\sum_l \frac{\breve{\theta}_{l,k} K_l}{\breve{\Delta}_l} = \sum_l \frac{\breve{\theta}_{k,l} K_l}{\breve{\Delta}_l} = K_k$, which equals the value of region k's imported tradables. The identity is established. Since every step is reversible, the "if and only if" relation is also established. This finishes the proof.

It is noteworthy that the export- and import-side multilateral resistance terms in equation (15) correspond to their import- and export-side counterparts in the gravity equation of Anderson and van Wincoop (2003). This is because the substitution among varieties in their paper occurs on the import-side, while our model, following Alesina et al., (2000) lets the substitution occur on the export-side. This difference is only a matter of interpretation, as the gravity equation is symmetric.

2. Derivation of EconOpen from the gravity equation

According to the above gravity equation (15), $EconOpen_i \equiv \frac{IM_i + EX_i}{Y_i}$ equals

$$\frac{\sum_k X_{k,i} + \sum_k X_{i,k}}{Y_i} = \frac{2}{Y_i} \sum_{k \in F} \frac{K_k K_i}{\sum_l K_l} \left(\frac{\breve{\theta}_{k,i}}{\breve{\Delta}_i \breve{\Delta}_k} \right). \tag{17}$$

With equation (16) inserted, we obtain

$$EconOpen_i = \frac{2}{Y_i} \sum_{k \in F} \left(\frac{\breve{\theta}_{k,i}}{\breve{\Delta}_i} \right) K_i = 2 \sum_{k \in F} \left(\frac{\breve{\theta}_{k,i}}{\breve{\Delta}_i} \right).$$

This is the same as the $EconOpen_i$ derived in text through equation (13).

A4. Cross-region nationalism average and the intensity of globalization

Since losses from decreased domestic trade are equal between globalized and unglobalized regions, the nationalism of globalized regions relative to unglobalized regions is decreasing in their relative gain from increased foreign trade:

$$\frac{|\kappa S_F \widetilde{\theta} \left(\frac{K}{S_F + S_H[\kappa \widetilde{\theta} + (1-\kappa)\theta]} \right)^\alpha - \kappa S_F \theta \left(\frac{K}{S_H + S_F \theta} \right)^\alpha |}{|\kappa S_F \theta \left(\frac{K}{S_F + S_H[\kappa \widetilde{\theta} + (1-\kappa)\theta]} \right)^\alpha - \kappa S_F \theta \left(\frac{K}{S_H + S_F \theta} \right)^\alpha |} > 1. \tag{18}$$

The numerator and denominator in expression (18) correspond to globalized and unglobalized regions, respectively. In either of them, the first (second) term is linked to the post-(pre-) globalization period. We include κ in all terms because in Foreign, only globalized regions (fraction is κ as well) change behaviors. Since $\widetilde{\theta} > \theta$, the ratio is greater than 1. Clearly, if globalization is more intense, the ratio will be even greater than 1, as the numerator increases but the denominator stays the same. This will reduce the weighted average of region-level nationalism in the country.

Appendix B
A Sample Report from the CPoC

Your Evaluation Results:
Political Coordinate: 0.1; Cultural Coordinate: -0.4; Economic Coordinate: 0.1

All coordinates are within range [-2,2].

Political Coordinate: authoritarianism vs. libertarianism (positive value refers to libertarianism, zero means neutral)
Cultural Coordinate: conservatism vs. liberalism (positive value refers to liberalism, zero means neutral)
Economic Coordinate: collectivism vs. neoliberalism (positive value refers to neoliberalism, zero means neutral)

Notes: The above sample report indicates that this participant leans towards libertarianism (slightly), conservatism (moderately), and neoliberalism (slightly). The CPoC also provides the following histograms of evaluation results from all participants, for the convenience of self-evaluation.
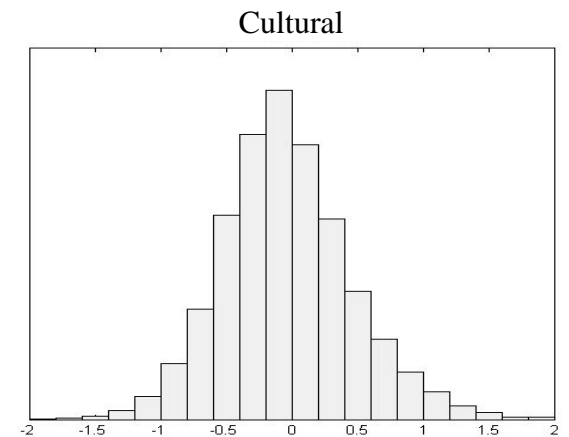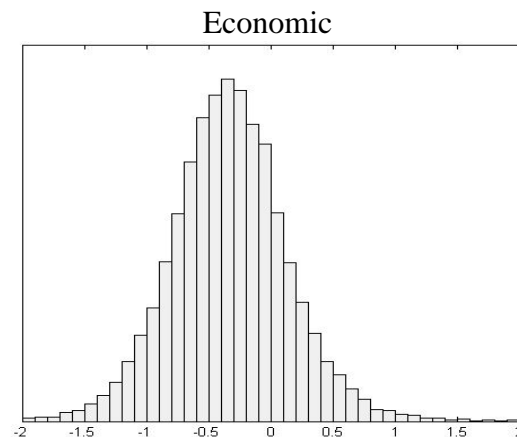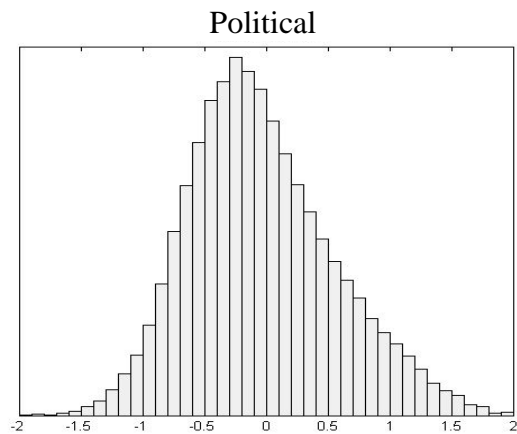
Figure 1: Distribution of China's Nationalism
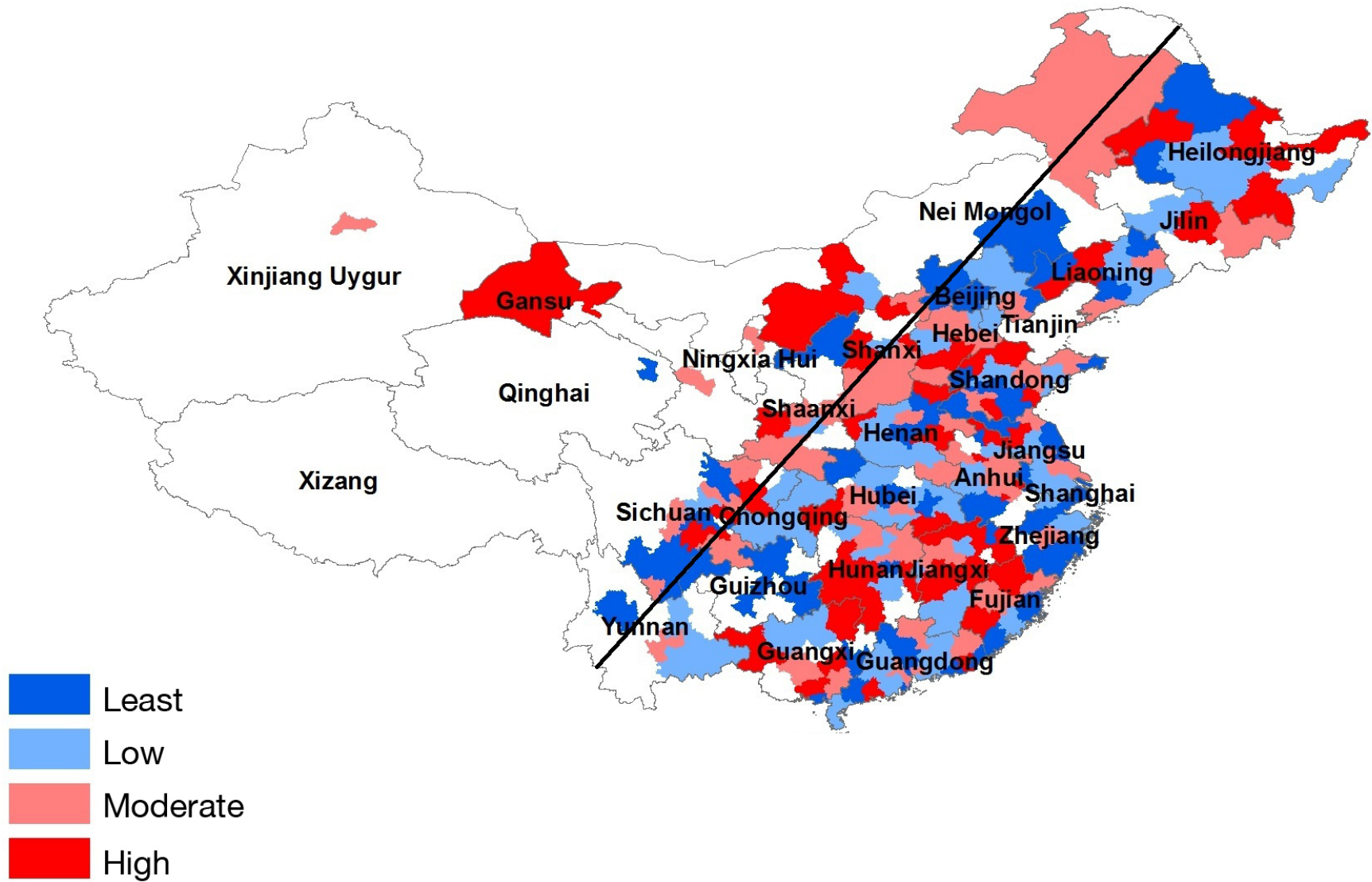
Notes: Only mainland China is included in this study. The straight line in the map is the Hu's Line. The east side of the line includes 43% of China's territory but 94% of its population. The range of the city-level nationalism index is [2.45, 3.22], and the four levels of nationalism are divided by quartiles.
Source: China Political Compass.

**Figure 2: Economic Openness and Nationalism Pre- and Post-WTO Accession
20 Provinces in China (from 2001 to 2007)**

Panel A: Changes in economic openness
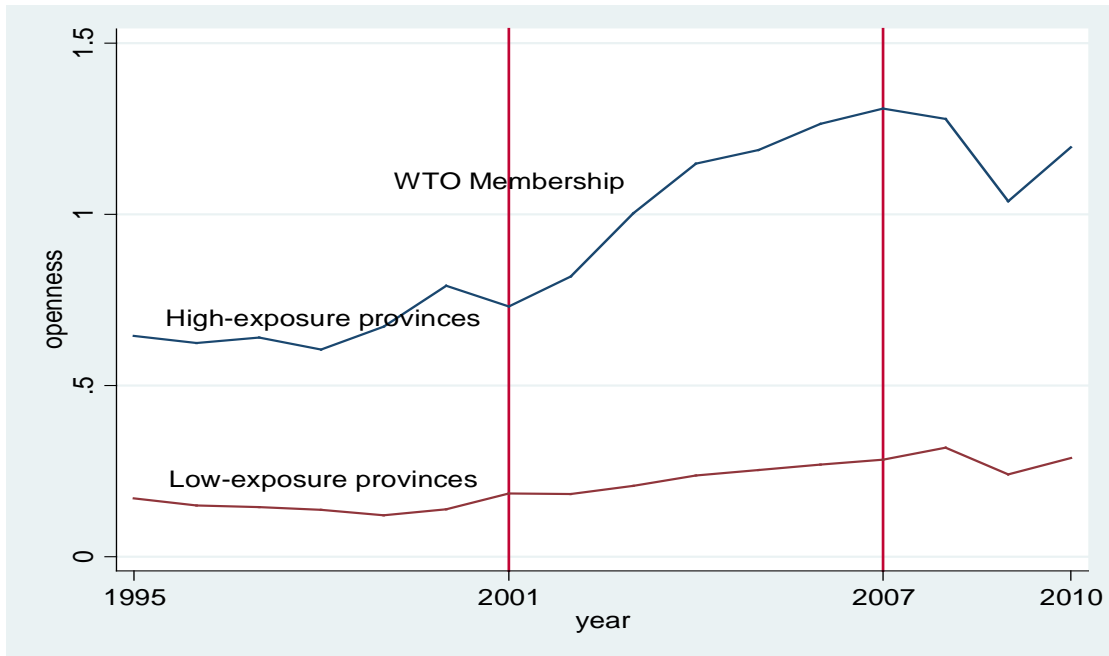
Panel B: Changes in nationalism
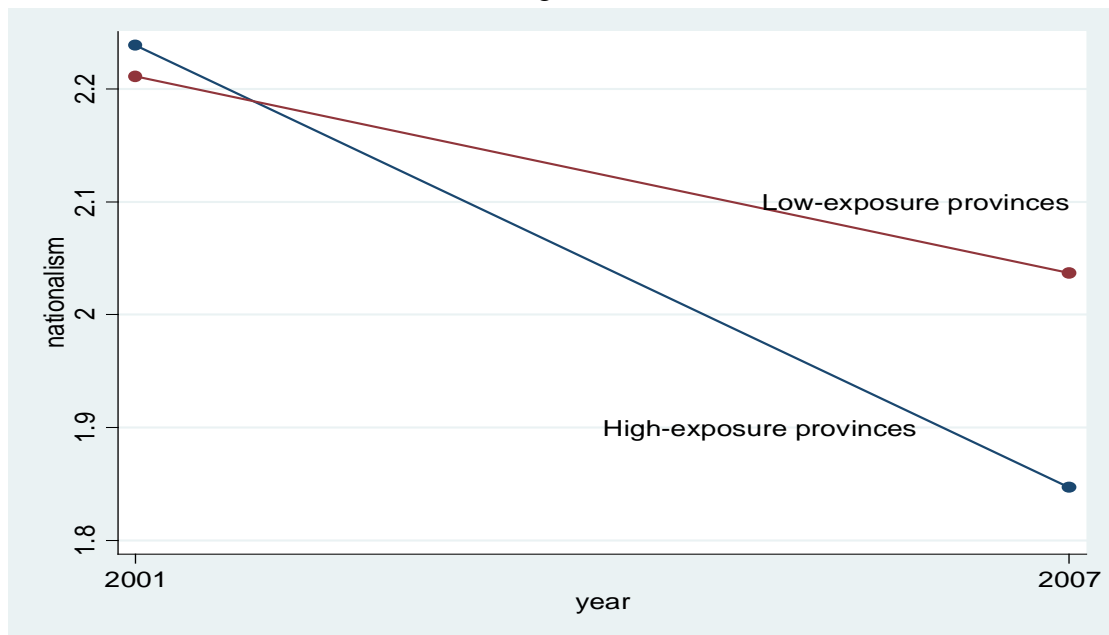
Note: the difference between the two groups in 2001 is statistically insignificant.

Source: World Value Surveys and China Data Center.

Figure 3: Economic Openness and Nationalism across 15 Countries, 2001 to 2007

Panel A: Levels of nationalism in 2007
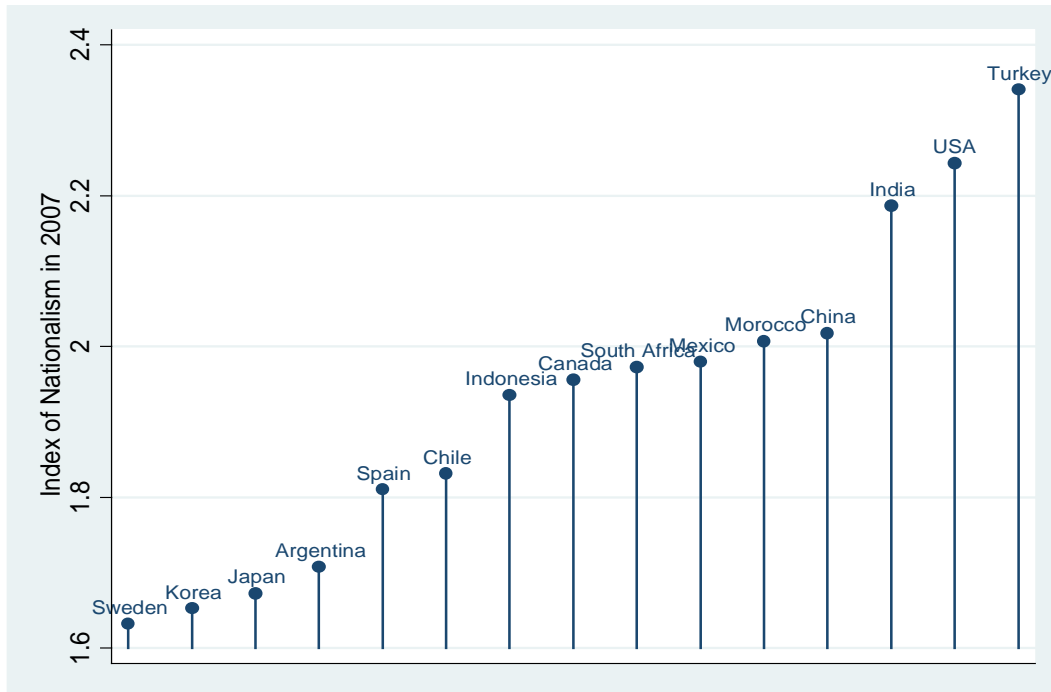
Panel B: Changes in nationalism and changes in economic openness, 2001 to 2007
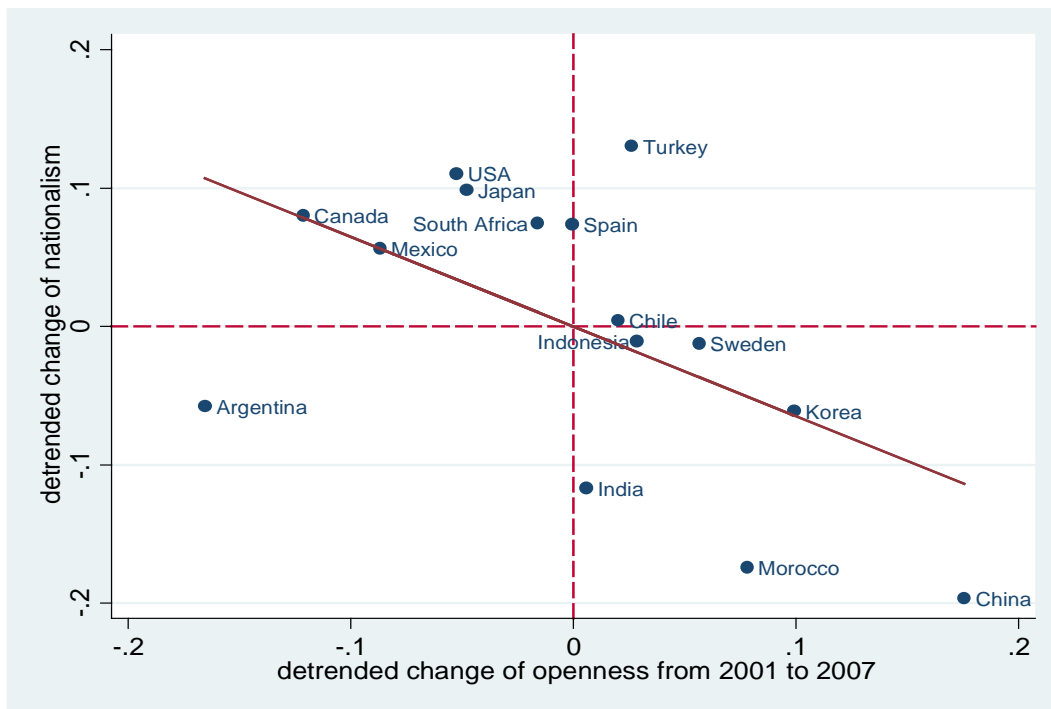
Source: World Value Surveys and Penn World Table.

Table 1: Correlation Matrix of Responses to Nationalistic Statements

	N1	N2	N3	N4
Panel A: Four Statements in the CPoC Number of Observations=54,602				
N1	1			
N2	0.339	1		
N3	0.392	0.237	1	
N4	0.384	0.299	0.289	1

	N1'	N2'	N3'	
Panel B: Three Statements in the WVS-China Number of Observations=2,038				
N1'	1			
N2'	0.099	1		
N3'	0.197	0.157	1	

Table 2 Summary Statistics

Panel A: City-Level CPoC Data, 2009							
Variable	Obs	Mean	Std. Dev.	Variable	Obs	Mean	Std. Dev.
Nationalism	200	2.907	0.123	Rural residents/population	200	0.678	0.213
Economic openness (*EconOpen*)†	200	0.183	0.210	Government spending/GDP	200	0.058	0.022
log(GDP per capita)	200	9.997	0.572	Geographic openness (*GeoOpen*)†	200	0.356	0.356
College students/population	200	0.016	0.022	Local propaganda††	200	0.025	0.033
Panel B: China WVS Data, 2001 and 2007 (Number of Provinces=20)							
Nationalism	2038	2.089	0.458	Female or not	2038	0.487	0.500
Economic openness (*EconOpen*)†	2038	0.379	0.468	Education†††	2021	1.650	0.604
log(GDP per capita)	2038	9.592	0.699	Income†††	1832	4.824	2.153
Age	2038	42.7	12.5	Married	2026	0.916	0.278
Panel C: World WVS Data, 2001 and 2007 (Number of Countries=15)							
Nationalism	78978	1.954	0.466	Female or not	78970	0.499	0.500
Economic openness (*EconOpen*)†	78978	0.536	0.167	Education†††	76690	1.864	0.739
log(GDP per capita)	78978	9.211	0.921	Income†††	70792	4.731	2.393
Age	78978	40.4	13.5	Married	78858	0.767	0.423

† *Economic openness (EconOpen)* of a given city is the total value of local exports and imports divided by local GDP. *Geographic openness (GeoOpen)* is the distance (in 1,000 kilometers) between a city and its nearest city with seaports.
†† *Local propaganda* is the number of official national education bases in each city, divided by local population (1,000 persons)
††† *Education* is a categorical variable with three levels; *income* is a categorical variable with ten levels.

Source: Chinese Political Compass; China Data Center; Penn World Table; and World Value Surveys.

Table 3: Nationalism and Economic Openness across 200 Cities in China, OLS Estimates

	(1) Original Index	(2) Original Index	(3) Original Index	(4) Original Index	(5) Residual-based Index
EconOpen	-0.124***	-0.102**	-0.113**	-0.113**	-0.106**
	(0.037)	(0.039)	(0.053)	(0.055)	(0.049)
GeoOpen		0.036	0.042*	0.042*	0.041*
		(0.022)	(0.025)	(0.025)	(0.022)
log (GDP per capita, GDPPC)			0.017	0.017	0.016
			(0.021)	(0.024)	(0.025)
Share of college students			-0.748	-0.764**	-0.658**
			(0.516)	(0.337)	(0.322)
Share of rural population			-0.013	-0.013	-0.009
			(0.053)	(0.053)	(0.047)
Share of government budget in GDP			0.243	0.229	0.426
			(0.441)	(0.423)	(0.419)
Number of national education bases per 1,000 people				0.035	-0.067
				(0.236)	(0.209)
Constant	2.930***	2.913***	2.752***	2.752***	-0.095
	(0.012)	(0.017)	(0.223)	(0.255)	(0.259)

Robust standard errors in parentheses. *** $p<0.01$,** $p<0.05$,* $p<0.1$.

Notes: The dependent variable in columns (1)-(4) is the original city-level nationalism index (see Section 3.1 for details). The dependent variable in column (5) is the nationalism index constructed using residuals from the individual-level auxiliary regression of nationalism ratings on protectionism ratings (see Section 4.1 for details). *EconOpen* is the measure of economic openness, constructed using (exports+imports)/GDP. *GeoOpen* is the distance between a city and its nearest city with seaport(s). The number of observations is 200 in all columns.

Source: Chinese Political Compass and China Data Center.

Table 4: Nationalism and Economic Openness across 200 Cities in China, 2SLS Estimates

	(1) Original Index	(2) Original Index	(3) Original Index	(4) Original Index	(5) Residual-based Index
Panel A: Instrumental variable is MP1 (reduced-form oriented)					
EconOpen	-0.279***	-0.287**	-0.468**	-0.473**	-0.327**
	(0.087)	(0.129)	(0.211)	(0.213)	(0.161)
MP1 (the first stage)	0.166***	0.148***	0.101***	0.104***	0.104***
	(0.023)	(0.032)	(0.029)	(0.030)	(0.030)
Panel B: Instrumental variable is MP2 (structure oriented)					
EconOpen	-0.323***	-0.345***	-0.500**	-0.497**	-0.428**
	(0.086)	(0.122)	(0.209)	(0.210)	(0.178)
MP2 (the first stage)	3.455***	2.905***	2.034***	2.056***	2.056***
	(0.499)	(0.522)	(0.489)	(0.500)	(0.500)
Control variables (for both panels)	None	*GeoOpen*	Column (2) plus GDPPC, college students, rural population, gov't budget	Column (3) plus national education bases per 1,000 people	As column (4)

Robust standard errors in parentheses. *** p<0.01,**p<0.05.

Notes: The dependent variable in columns (1)-(4) is the original city-level nationalism index (see Section 3.1 for details). The dependent variable in column (5) is the nationalism index constructed using residuals from the individual-level auxiliary regression of nationalism ratings on protectionism ratings (see Section 4.1 for details). *EconOpen* is the measure of economic openness, constructed using (exports+imports)/GDP. The number of observations is 200 in all regressions.

Source: Chinese Political Compass, China Data Center, Penn World Table, and China Customs Statistics Information Service.

Table 5: Nationalism and Economic Openness across 200 Cities in China, 2SLS Estimates

	(1)	(2)	(3)	(4)	(5)	(6)
Instrumental variable (IV):	*MP1*	*MP2*	*MP1*	*MP2*	*MP1*	*MP2*
EconOpen	-0.488**	-0.498**	-0.487**	-0.487**	-0.553***	-0.497**
	(0.193)	(0.210)	(0.192)	(0.205)	(0.211)	(0.210)
IV constructed without	US	US	EU	EU	Japan	Japan
	(7)	(8)	(9)	(10)	(11)	(12)
Instrumental variable (IV)	*MP1*	*MP2*	*MP1*	*MP2*	*MP1*	*MP2*
EconOpen	-0.600**	-0.491**	-0.562***	-0.499**	-0.500***	-0.488**
	(0.272)	(0.205)	(0.206)	(0.211)	(0.178)	(0.205)
IV constructed without	OECD countries	OECD countries	War8 countries	War8 countries	NATO countries	NATO countries

Robust standard errors in parentheses. *** $p<0.01$, **$p<0.05$.

Notes: The dependent variable is the city-level nationalism index (see Section 3.1 for details). *EconOpen* is the measure of economic openness, constructed using (exports+imports)/GDP. The specifications in this table are the same as that in column (4) of Table 4. The number of observations is 200 in all regressions.

Abbreviations: European Union (EU), Economic Co-operation and Development (OECD), the Eight-Nation Alliance (War8), and North Atlantic Treaty Organization (NATO). (See Section 4.2 for details).

Source: Chinese Political Compass, China Data Center, Penn World Table, and China Customs Statistics Information Service.

Table 6: Cultural Attitudes and Political Ideologies, OLS and 2SLS

	Panel A: Attitudes towards Chinese culture as dependent variables								
	Traditional medicine			Zhou-yi			Confucianism		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS	2SLS	2SLS	OLS	2SLS	2SLS	OLS	2SLS	2SLS
EconOpen	-0.054	-0.017	0.227	-0.036	0.072	-0.262	0.005	-0.215	-0.012
	(0.055)	(0.204)	(0.204)	(0.038)	(0.212)	(0.178)	(0.057)	(0.243)	(0.197)
Instrumental variable	NA	*MP1*	*MP2*	NA	*MP1*	*MP2*	NA	*MP1*	*MP2*
	Panel B: Populism, conservatism, and collectivism as dependent variables								
	Populism			Conservatism			Collectivism		
	OLS	2SLS	2SLS	OLS	2SLS	2SLS	OLS	2SLS	2SLS
EconOpen	-0.082*	0.024	-0.126	-0.061	0.014	-0.097	-0.088	-0.171	-0.195
	(0.048)	(0.211)	(0.215)	(0.053)	(0.187)	(0.223)	(0.061)	(0.198)	(0.216)
Instrumental variable	NA	*MP1*	*MP2*	NA	*MP1*	*MP2*	NA	*MP1*	*MP2*

Robust standard errors in parentheses. *$p<0.1$.

Notes: The dependent variables are labeled in the first rows. *EconOpen* is the measure of economic openness, constructed using (exports+imports)/GDP. The specifications in this table are the same as that in column (4) of Table 4. The number of observations is 200 in all regressions.

Source: Chinese Political Compass, China Data Center, Penn World Table, and China Customs Statistics Information Service.

Table 7: Nationalism and Economic Openness across 20 Provinces in China in 2001 and 2007
Difference-in-Differences and Fixed Effect Estimation

	(1)	(2)	(3)	(4)	(5)	(6)
	Difference in differences			Fixed effects		
	Province-level	Individual-level		Province-level	Individual-level	
EconOpen				-0.212*	-0.247**	-0.208**
				(0.110)	(0.105)	(0.095)
High trade exposure dummy	0.077	0.059	0.057			
	(0.051)	(0.048)	(0.059)			
After WTO dummy	-0.103**	-0.137***	-0.076	0.407	0.313	0.502**
	(0.047)	(0.043)	(0.049)	(0.282)	(0.223)	(0.201)
High trade exposure dummy	-0.155**	-0.220***	-0.215***			
x After WTO dummy	(0.072)	(0.065)	(0.064)			
log(GDP per capita)	-0.067*	-0.036	-0.060*	-0.630**	-0.522**	-0.679***
	(0.036)	(0.030)	(0.035)	(0.295)	(0.228)	(0.206)
Age			0.005***			0.005***
			(0.001)			(0.001)
Female			-0.072***			-0.071***
			(0.022)			(0.022)
Marital status dummy			-0.058			-0.058
(married at least once=1)			(0.041)			(0.041)
Education and income dummies†	NO	NO	YES	NO	NO	YES
Province fixed effect	NO	NO	NO	YES	YES	YES
Observations	40	2,038	1,806	40	2,038	1,806

Robust standard errors in parentheses, clustered at province-year level in individual-level regressions. *** p<0.01, ** p<0.05, * p<0.1.

Notes: The dependent variable is the nationalism index; columns (2)-(3) and (5)-(6) use the individual-level index, while columns (1) and (4) use its province-level average.

† The WVS provides a discrete education variable with three levels (low, middle and high) and a discrete income variable with ten levels. They are transformed into dummy variables.

Source: World Value Surveys and China Data Center.

Table 8: Nationalism and Economic Openness across 15 Countries, 2001 and 2007

	(1) Country level	(2) Individual level	(3) Individual level
EconOpen	-0.648**	-0.916***	-0.714***
	(0.274)	(0.131)	(0.203)
log(GDP per capita)			-0.166
			(0.123)
Age		0.003***	0.003***
		(0.001)	(0.001)
Female		-0.026***	-0.026***
		(0.008)	(0.008)
Marital status (married at least once=1)		0.031**	0.030**
		(0.012)	(0.012)
Education and Income dummies	NO	YES	YES
Year fixed effect	YES	YES	YES
Country fixed effects	YES	YES	YES
Observations	30	68,862	68,862

Robust standard errors in parentheses, clustered at country-year level in individual-level regressions. *** $p<0.01$, ** $p<0.05$.

Notes: The dependent variable is the nationalism index at either the country level (column (1)) or the individual level (columns (2) and (3)).

† Education has three levels, low, middle and high, measured by two dummies. Income has ten levels, measured by nine dummies.

Source: World Value Survey and Penn World Table.

Figure A1: Nationalism, the CPoC index versus the WVS index
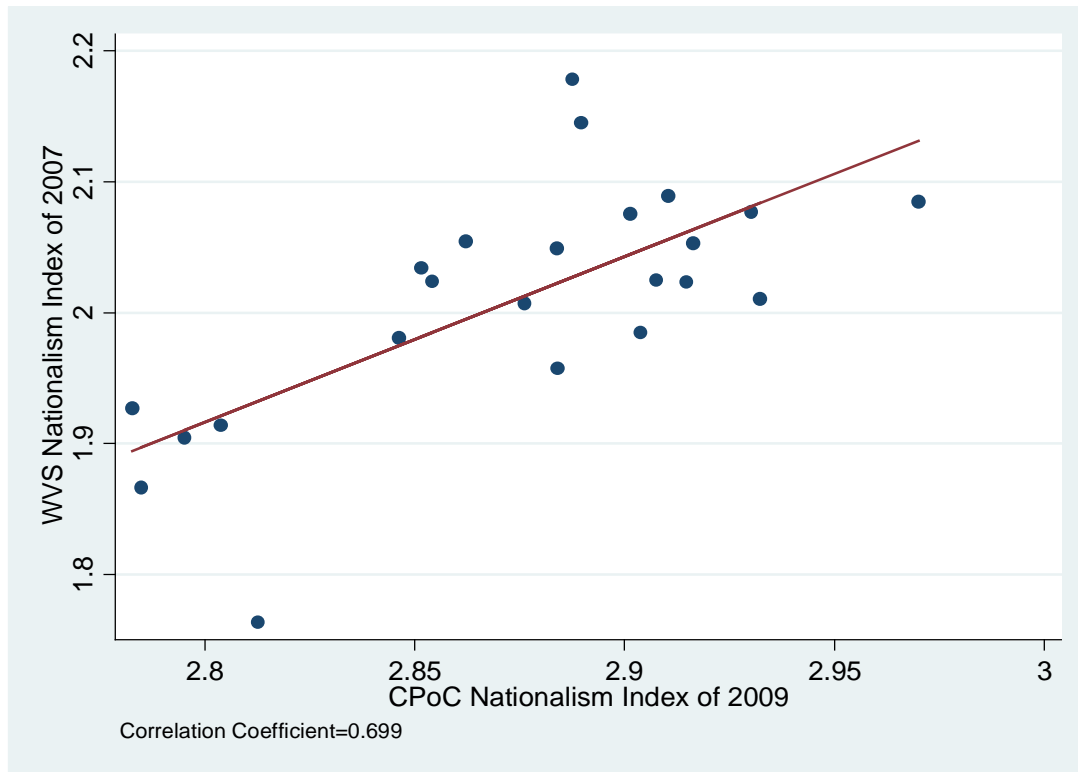
Note: To make the two indices comparable, both the WVS index and the CPoC index are averaged to the province level.

Table A1: Principal Component Analysis of the CPoC and the WVS Responses

Panel A: The CPoC Responses to [N1]-[N4] Number of Observations =54,602					
Principal Component Factors			Factor Loading		
	(1)	(2)		(3)	(4)
	Eigenvalue	(%) total variance		Factor 1	(%) Uniqueness
Factor 1	1.976	49.4	N1	0.775	40.0
Factor 2	0.769	19.2	N2	0.649	57.9
Factor 3	0.686	17.1	N3	0.678	54.1
Factor 4	0.569	14.2	N4	0.704	50.4

Panel B: The WVS Responses to [N1']-[N3'] Number of Observations =2,038					
Principal Component Factors			Factor Loading		
	(1)	(2)		(3)	(4)
	Eigenvalue	(%) total variance		Factor 1	(%) Uniqueness
Factor 1	1.306	43.5	N1'	0.659	56.7
Factor 2	0.904	30.2	N2'	0.726	47.3
Factor 3	0.790	26.3	N3'	0.587	65.6

Notes: The principal component analysis pinpoints the latent information dimensions of multiple variables (here, ratings of multiple statements related to nationalism) by decomposing the covariance matrix of the variables. Take Panel A for example. The four variables, responses to [N1]-[N4], are transformed into four orthogonal and normalized factors (Factors 1-4) using a transformation matrix. The transformation matrix is specified to ensure that (i) Factor k accounts for the k-th maximum of the variance in the covariance matrix; and (ii) each factor is scaled such that its variance equals to the share of the total variance in the variables (i.e., column (2)). It consists of the normalized eigenvectors of the correlation matrix (the corresponding eigenvalues are reported in column (1)). Simply put, the eigenvalue of factor k reflects the variance in all the four variables that is accounted for by factor k. Factors with an eigenvalue smaller than one is dropped (the Kaiser criterion). Column (1) in Panel A suggests that only one dimension of information, or one index, can be singled out of the four variables. Column (3) reports the correlation coefficients between the singled out factor (Factor 1) and the four ratings, and column (4) reports the variation in a given statement rating that cannot be explained by the common Factor 1. In this case, each rating has unique variations.

In summary, Panel A reveals that there is only one common factor shared by the four ratings, though each of the four contains additional information. Panel B on the three WVS ratings can be interpreted in the same fashion, which reaches a similar conclusion as Panel A.

Table A2: Profiles of Chinese Internet Users and the General Population (2010)

	Internet Users	General Population
Population (million)	384	1335
Gender Ratio (female=100)	118.3	105.9
Urban Residents (%)	72.2	46.6
Age Distribution (%)		
Age 10-19	31.8	13.5
Age 20-29	28.6	14
Age 30-39	21.5	15.9
Age 40-49	10.7	17.8
Education Distribution (%)		
Elementary school and below	8.8	37.2
Middle school	26.8	41.7
High school	40.2	13.8
College and above	24.3	7.3

Source: Data on internet users are from the *Statistical Survey Report on Internet Development in China* (China Internet Network Information Center, 2010). Data on general population are from the *China Statistical Yearbook 2010* (NBSC, 2010).

Table A3: Sample Selection and Nationalism across Cities

VARIABLES	(1)	(2)	(3)	(4)	(5)
The nationalism index	0.228	0.266	0.275	0.273	0.260
	(0.583)	(0.563)	(0.586)	(0.561)	(0.549)
log (GDP per capita, GDPPC)		0.089		-0.008	-0.006
		(0.071)		(0.099)	(0.097)
Share of rural population			-0.470***	-0.482**	-0.478**
			(0.135)	(0.219)	(0.216)
Constant	-0.289	-1.290	-0.107	-0.011	-0.001
	(1.662)	(1.129)	(1.645)	(0.758)	(0.748)
Observations	200	200	200	200	200

Robust standard errors in parentheses. *** p<0.01, ** p<0.05.

Notes: The dependent variable in columns (1)-(4) is (number of the CPoC participants in the city)/(number of internet accounts in the city). Considering that some people may use dial-up landlines or mobile phones to access the internet, the dependent variable in column (5) is (number of CPoC participants in the city)/(number of internet accounts+number of landlines and mobile phones in the city).

Source: Chinese Political Compass and China Data Center.

Table A4: Using Standard Deviation of Nationalism as Dependent Variable

	(1) OLS	(2) 2SLS	(3) 2SLS
EconOpen	0.036	0.187*	0.134
	(0.033)	(0.111)	(0.118)
Instrumental variable	NA	*MP1*	*MP2*

Robust standard errors in parentheses. *p<0.1.

Notes: The dependent variable is the standard deviation of the individual-level nationalism index in each Chinese city (see Section 4.2 for details). *EconOpen* is the measure of economic openness, constructed using (exports+imports)/GDP. The specifications in this table are the same as that in column (4) of Table 4. The number of observations is 200 in all regressions.

Source: Chinese Political Compass, China Data Center, Penn World Table, and China Customs Statistics Information Service.

Table A5: Localism relative to Globalism and Economic Openness across 43 Countries (year 2007)

	localism relative to globalism
EconOpen	0.422***
	(0.127)
log(GDP per capita)	-0.026
	(0.029)
Age	0.004***
	(0.001)
Female	0.008
	(0.014)
Marital status (married at least once=1)	0.076***
	(0.027)
Education and Income dummies†	YES
Observations	47,575

Standard errors in parentheses, clustered at country level. *** p<0.01.

Notes: "Globalism" is the response to the statement "I see myself as a world citizen", and "localism" is the response to the statement "I see myself as member of my local community". Survey participants rate the two statements with "strongly agree," "agree," "disagree," and "strongly disagree," respectively coded as 4, 3, 2, 1. "Localism relative to globalism" is measured by localism minus globalism. A higher value of this relative term suggests a higher localism relative to globalism.

† Education has three levels, low, middle and high, measured by two dummies. Income has ten levels, measured by nine dummies.

Source: World Value Survey and Penn World Table.