Nationalism and international trade: theory and evidence

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Abstract

This paper provides an economic framework to analyze the relationship between nationalistic sentiments and international trade. Nationalistic sentiments respond to economic interests, and in particular they vary according to the relative importance of the domestic market to local economies. Nationalistic sentiments are weaker (stronger) where the local economy relies more on exports (domestic sales). Our paper tests this theory using a unique dataset collected across 218 Chinese cities. We document a negative association between nationalistic sentiments and dependence on exports, conditional on a wide range of city characteristics including political ideologies of residents and local business climate.

Key Words: Nationalism, political economy, trade, conflict, globalization

JEL Classifications: F10, F52, P16, D74

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, British science fiction author, inventor, and futurist)

[T]he economical advantages of commerce are surpassed in importance by those of its effects, which are intellectual and moral. It is hardly possible to overrate the value, in the present low state of human improvement, of placing human beings in contact with persons dissimilar to themselves, and with modes of thought and action unlike those with which they are familiar. (John Stuart Mill, 1806–1873, British philosopher, economist and civil servant)

1 Introduction

Nationalistic sentiments are very influential in shaping politics across time and in all places. Their impacts are evident in wide-ranging political events, from the destruction of the Ottoman Empire to the collapse of the Soviet Union, from the *Buy American Recovery Act* to the contemporary euro crisis. Nationalistic sentiments are known to stem from history, ethnicity, ideology, and geopolitics. In this paper, we ask how nationalistic sentiments respond to economic interests that result from trade. Since the process of globalization is accompanied with the increase in trade volume, understanding the relationship between trade and nationalistic sentiments will predict the future of nationalistic sentiments in the world.

In this paper, we analyze domestic regional economies in a single country, with their respective products supplying each other (*the home market*) and the foreign countries (*the foreign market*). If isolated from the foreign market, these regions in the home autarky will have the strongest nationalistic sentiments, because the home market is the only market on which everybody relies to live and prosper. If this country is open to trade, regions will develop different levels of nationalistic sentiments, depending on the relative importance of domestic sales and exports with respect to their local economies. Regions with a lower ratio of exports to gross domestic product (GDP) will have stronger nationalistic sentiments. Exports weaken the sentiments by reducing common interests shared with the domestic market and raising the common interests with the foreign market.

We then submit the negative association between nationalistic sentiments and exports to empirical tests. We use a unique dataset collected by the website *Zuobiao*, a website in China that follows the prototype of the UK website *Political Compass* to provide an anonymous test for visitors to assess their political stances.[1] In 2009, the Zuobiao website recorded answers given by 54,613 test participants from 239 cities in mainland China.[2] Using their questions and answers related to nationalistic sentiments, we construct a city-level index of nationalistic sentiments in China. An important merit of this dataset is the truth-telling incentive it provides to respondents. The sole purpose for respondents electing to take the 50-question Zuobiao test is to have their political stances assessed; thus, respondents would not benefit from concealing or altering their political beliefs.[3]

We find that at the city level the share of exports in local GDP is negatively associated with nationalistic sentiments. Quantitatively, a one standard deviation increase in exports/GDP is associated with a decrease in nationalistic sentiments by approximately 0.2 standard deviations. This finding is conditional on a wide range of city characteristics (e.g., demographics), especially the ratio of imports to local GDP. Specifically, imports/GDP and exports/GDP are each negatively associated with nationalistic sentiments; but when exports and imports are both included in a regression, the association between nationalistic sentiments and exports/GDP remains, whereas that between nationalistic sentiments and imports/GDP disappears. This is consistent with our theory: exports and imports both vary by local trade costs, while only exports are driven by local comparative advantage. When exports and imports are both included in the regression, only the association between nationalistic sentiments and the exports induced by comparative advantage is identified. This is further corroborated by a negative correlation that we find between net exports and nationalistic sentiments.

Our empirical study aims to document the association between exports and nationalistic sentiments rather than the causal effect of the former on the latter,

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[1]Their web addresses are, respectively, http://www.zuobiao.me and http://www.politicalcompass.org.

[2]Here, cities refer to prefecture-level cities (equivalently, four-digit area codes). In China, a prefecture is composed of an urban center and surrounding rural areas that are larger than the urban center.

[3]This feature thereby addresses the response bias that usually distresses self-report data; namely, individuals may hide their true attitudes in order to avoid presenting a negative image to data collectors. For a discussion on response bias in the statistics literature, see Bollinger and David (1997).

since exports are not randomly assigned. To ascertain that the association is indeed between these two variables, we have examined various other channels that may cause a correlation between exports and nationalistic sentiments. First, we look into the self-selection of individual test participants. Internet accessibility may impact the types of individuals who participate, thereby affecting the nationalistic sentiments that are recorded. We find that internet accessibility is positively correlated with local income level, but not with local nationalistic sentiments. Furthermore, we investigate the likelihood of visiting Zuobiao in local residents, which also turns out to be uncorrelated with nationalistic sentiments.

Second, we take into account heterogeneity in political ideologies across cities, which may not have been reflected in the city characteristics. We find that the correlation between exports and nationalistic sentiments decreases only slightly in response to including protectionist attitudes; further, city-level exports hold little explanatory power in accounting for political conservatism, adherence to traditions, or opinions toward market-oriented economic reforms, in contrast to its strong power in explaining nationalistic sentiments. This indicates that our results are unlikely to be driven by unobservable heterogeneity in local ideologies.

Third, we take business climate into account. It is possible that the association between exports and nationalistic sentiments reflects the fact that foreign importers feel more comfortable conducting business in cities with weaker nationalistic sentiments. To address this possibility, we check whether forthcoming foreign direct investment (FDI) varies according to nationalistic sentiments across cities. The forthcoming FDI is measured by the number and value of FDI contracts signed after foreign investors finish a comprehensive review of business climates in Chinese cities. Because the forthcoming FDI has not actually occurred yet, it therefore does not affect current nationalistic sentiments. No significant association between forthcoming FDI and nationalistic sentiments is detected, suggesting that (lack of) nationalistic sentiments do not generate relative threats (favors) to foreign commerce.

Last, we use data collected by the well-known World Value Survey (WVS) to rerun our empirical study. The two recent waves of the WVS, conducted in 2001 and 2007, occurred respectively before and after China's accession into the World Trade Organization (WTO). China's exports and imports increased by almost 70% in the six years between the two waves. Using this quasi-exogenous shock in trade, we arrive at the same findings as those obtained using the Zuo-

biao data.

Our paper contributes to the literature by building an economic framework of understanding nationalistic sentiments. Nationalistic sentiments, although important in politics, have been largely neglected by economists and other social scientists. There is not an analytical framework that can address fundamental questions about nationalistic sentiments, such as how they come into being, whether they are rational, and what determine their levels. The existing literature, mostly in political science, concentrates on simply describing nationalistic sentiments in different countries and times.[4] Similar to other economic studies, our paper proposes a theory that is based on homo economicus, uses the minimal number of concepts, and derives findings from a few straightforward assumptions. Our framework analyzes the level of nationalistic sentiments within a single country. In this context, nationalistic sentiments vary according to domestic and foreign trade, which align the interests of regional economies with domestic and foreign markets, respectively. Nationalistic sentiments are rational and vary in response to the relative importance of domestic and foreign markets to local income and jobs.

This paper focuses on within-country nationalistic sentiments. However, we are aware that cross-country nationalistic sentiments are affected by history, ethnicity, ideology, and geopolitics. These parameters have received increasing attention in the economics literature. Take the trade literature for example. Using cross-country data, Acemoglu and Yared (2010) find that nationalism and militarism are negatively associated with trade. Trade has also been found to be related with institutions (Acemoglu, Johnson, and Robinson, 2005), insecurity (Anderson and Marcouiller, 2002), and wars (Blomberg and Hess, 2006; Findlay and O'Rourke, 2007; Glick and Taylor, 2005; Martin, Mary, and Thoenig, 2008, 2010; Skaperdas and Syropoulos, 2001). Our paper adds the economics of trade and nationalistic sentiments to this body of the literature.

Our paper is also related to two other branches of the economic literature. The first branch studies how country boundaries are endogenously determined by democratization and wars (Alesina and Spolaore, 1997, 2005). Our paper takes their (physical) country boundary as given and analyzes how nationalistic sentiments, as a "mental" country boundary, are endogenously determined. The two boundaries are complementary. The physical boundary of a country resulting from political events and wars pinpoints the political identity of

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[4]See Ozkirimli (2010) and Mearsheimer (2011) for surveys on these theories.

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its nationals, who may perceive that identity in different ways due to their own economic interests, leading to different levels of nationalistic sentiments. The second branch involves the determinants of protectionist attitudes (Blonigen, 2010; Mayda and Rodrik, 2005; O'Rourke and Sinnott, 2001; Scheve and Slaughter, 2001). These empirical studies test how protectionist attitudes vary by occupations and human capital. Similar to these studies, we consider political attitudes as a representation of economic interests. Unlike these studies, however, we do not study attitudes toward foreign products, but rather the attitudes toward foreign countries caused by the trade of domestic and foreign products. This is an important distinction, since nationals in a country may dislike the imported foreign products that threaten their interests, but like the foreign countries because other imported foreign products improve their lives and moreover foreign countries buy their local products.

The rest of the paper is organized as follows. Section 2 builds a model of common interests that connect nationalistic sentiments with trade. Section 3 describes the data used in our empirical study. Section 4 reports the empirical results. Section 5 concludes.

2 A Model of Common Interests

This section analyzes nationalistic sentiments by showing how economic interests in a regional economy relate to foreign countries. Products of a regional economy serve domestic and foreign markets, and meanwhile consumption goods are from these two markets. Nationalistic sentiments reflect how a given regional economy relies on its domestic market; in other words, exports decrease local reliance on the domestic market and increase that on the foreign market. Therefore, the variation in nationalistic sentiments translates into common interests shared by a regional economy with one market relative to the other.

Consider a world with two countries, $i = H$ or F, each of which has a continuum of cities. Each city in the world makes one variety;[5] for convenience, let varieties and cities share the same index j, and country name and set of varieties share the same label H or F. All residents in the world have a love-of-

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[5]This is the Armington assumption literature widely used in the trade literature; see, e.g., Anderson and van Wincoop (2003).

variety (Dixit-Stiglitz) preference. For city j, the utility function is

$$U_j = \left[\int_{j'} x_j(j')^\alpha dj' \right]^{1/\alpha}, \ j, j' \in H \cup F, \tag{1}$$

where $x_j(j')$ is the quantity of variety j' (i.e., made in city j') consumed in city j, $\sigma \equiv 1/(1-\alpha)$ is the constant elasticity of substitution among varieties.

The demand for variety j' in city j is

$$x_j(j') = \frac{[\tau_j(j')p(j')]^{-\sigma}}{P_j^{1-\sigma}} E_j, \tag{2}$$

where $\tau_j(j')p(j')$ is the delivery price of variety j' in city j,

$$P_j \equiv \left[\int_{j' \in H} p(j')^{1-\sigma} dj' + \int_{j' \in F} \tau_j(j')^{1-\sigma} p(j')^{1-\sigma} dj' \right]^{1/(1-\sigma)} \tag{3}$$

is the price level in city j, and E_j is the total expenditure in city j. The delivery price has two components, an iceberg trade cost $\tau_j(j')$ and the producer price $p(j')$. The cost of within-country trade is zero; the cost of trade across countries depends on the source and destination cities. For simplicity, we assume that country F has a focal port such that exports from all cities of country H to country F end up at that port and then enter into costless trade within country F. Thus, for city j in country H,

$$\tau_j(j') = \tau_{j'}(j) = \begin{cases} 1, & if \quad j' \in H \\ \tau_j > 1, & if \quad j' \in F. \end{cases} \tag{4}$$

Producer prices are determined by exogenous *extended* comparative advantage. A lower $p(j)$ is an extended comparative advantage of city j in production. Recall that by assumption cities make only their unique varieties; underlying this assumption is a cost advantage for each city in making its own variety. The lower $p(j)$ signifies a further (i.e., extended) cost advantage in making city j's variety. Say, cities j and k are the best in making varieties j and k, respectively. If $p(j) < p(k)$, city j is better in making its own variety j than city k in making its own variety k.

The production of all varieties is constant return to scale, and uses labor as the only input. Therefore, the wage rate in a city is equal to the price of the variety that the city produces. Each city has one unit of labor (i.e., residents),

which is inelastically supplied to the production of its variety. Not all the labor can be employed in the variety-production sector, the employment of which is $L_j < 1$; thus, L_j is also the probability for city-j residents to be employed in the variety-production sector. The rest of the labor is employed in an informal sector that pays a lower wage than the variety-production sector, and we normalize this informal wage to be zero. Labor cannot migrate across cities or countries.[6]

The total income, or equivalently gross domestic product (GDP), of city j is

$$w_j L_j = \frac{p(j)^{1-\sigma}}{P_H^{1-\sigma}} E_H + \frac{\tau(j)^{1-\sigma} p(j)^{1-\sigma}}{P_F^{1-\sigma}} E_F, \tag{5}$$

where

$$P_i^{1-\sigma} = \int_{j' \in i} p(j')^{1-\sigma} dj' + \int_{j \in i, j' \in -i} [\tau_j(j') p(j')]^{1-\sigma} dj' \tag{6}$$

and $E_i = \int_{j' \in i} w_{j'} L_{j'} dj'$. The second term on the right side of equation (5) is city j's total exports (in value),[7] denoted by EXP_j.[8]

The welfare in city j is measured by its real income $w_j L_j / P_j$, or equivalently, E_j / P_j. From city j's perspective, its welfare is affected by the foreign country F through two parameters, foreign expenditure E_F and price level of foreign goods $P_{Fj}^* \equiv \int_{j' \in F} [\tau_j p(j')]^{1-\sigma} dj'$. Notably, P_{Fj}^* is not P_F but the trade-cost adjusted component of P_F corresponding to country F goods; it is essentially $\int_{j' \in F} p(j')^{1-\sigma} dj'$, or P_F^* conditional on τ_j, because τ_j is specific to the importing city j.

The common interests shared by city j with country F are represented by the connection between $w_j L_j$ and E_F through exports, as well as the connection between P_j and P_{Fj}^* through imports. We start with the export side. $w_j L_j$ is connected to E_F through equation (5).[9] Define the exports/GDP share to be

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[6] Migration across cities within a country can be easily added to the model. In that case, all domestic cities are grouped into a nation-wide city. In that case, we should consider a world of multiple countries, where our city-level findings still hold, simply with the term city replaced by country (i.e., nation-wide city).

[7] The share of each city in the continuum of cities is zero; therefore, the demand for a domestic variety in all domestic cities conditional on its price can be approximated by total domestic expenditure over price level in the country P_H, or $\int_{j' \in H} w_{j'} L_{j'} / P_{j'}^{1-\sigma} dj' \simeq E_H / P_H^{1-\sigma}$.

[8] In this paper, exports and imports refer only to cross-country trade.

[9] $w_j L_j$ is the expected wage of all residents in city j, including those in the informal sector, such that $w_j L_j$ also represents the welfare of those in the informal sector.

$EX_j \equiv EXP_j/GDP_j$. The elasticity of $w_j L_j$ with respect to E_F is[10]

$$\frac{d \ln w_j L_j}{d \ln E_F} = \frac{\tau(j)^{1-\sigma} p(j)^{1-\sigma} E_F}{w_j L_j P_F^{1-\sigma}} = EX_j; \tag{7}$$

thus, we have

Proposition 1. *Among cities in country H, those with high exports/GDP ratios (EX) share more common interests with the foreign country F resulting from exports.*

Proposition 1 is the central prediction in this paper, and the reasoning behind it can be further illustrated with the following example. Consider a negative shock that reduces E_F. Residents in city j would incur a welfare loss together with country F, and the welfare loss of city j will be larger if it has been more intensively exporting to country F.

Next we move on to the import side. First, the total imports of city j is

$$IMP_j = \int_{j' \in F} \frac{[\tau_j p(j')]^{1-\sigma}}{P_j^{1-\sigma}} E_j dj',$$

where $E_j = w_j L_j$ in equilibrium. Similar to EX_j, the share of imports of city j in its local expenditure (i.e., GDP) is denoted by $IM_j \equiv IMP_j/GDP_j$. Thus,

$$IM_j = \int_{j' \in F} \frac{[\tau_j p(j')]^{1-\sigma}}{P_j^{1-\sigma} E_j} E_j dj' = \int_{j' \in F} \frac{[\tau_j p(j')]^{1-\sigma}}{P_j^{1-\sigma}} dj'.$$

By equation (3), the elasticity of P_j with respect to P_{Fj}^* is equal to the share of imported goods in city j's expenditure:

$$\frac{\ln P_j}{\ln P_{Fj}^*} = IM_j; \tag{8}$$

thus, we have

Proposition 2. *Among cities in country H, those with high imports/GDP ratios (IM) share more common interests with the foreign country F resulting from imports.*

Propositions 1–2 present the relationship between the variations in trade (EX and IM) and the variation in common interests shared with the foreign

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[10]We do not consider the case that foreign income affects city j through affecting other cities in the home country, which is essentially a multiplier effect.

country. We now examine the source of variations in EX and IM. Comparing EX and IM of two cities j and k in country H, $\tau_j \neq \tau_k$, we obtain

$$\frac{EX_j}{EX_k} = \left(\frac{\tau_j}{\tau_k}\right)^{1-\sigma} \left(\frac{p(j)}{p(k)}\right)^{1-\sigma}, \tag{9}$$

and

$$\frac{IM_j}{IM_k} = \left(\frac{\tau_j}{\tau_k}\right)^{1-\sigma}. \tag{10}$$

Equations (9) and (10) demonstrate that a higher EX could result from either a lower trade cost or a lower price of the city's variety, while a higher IM is only due to a lower trade cost. Put differently, a low τ_j raises the common interests shared by city j with country F, but one cannot tell whether it is exports or imports that lead to the increase in common interests. In contrast, a low $p(j)$ also raises the common interests shared by city j with country F, and the channel can only be exports. In summary,

Proposition 3. *The common interests resulting from imports cannot be separated from those resulting from exports; but the common interests resulting from exports can be separated from those resulting from imports.*

Proposition 3 points out a key identification issue when one estimates the association between common interests and exports. Larger exports can result from either comparative advantage in production (lower $p(j)$) or trade cost advantage (low τ_j); only the former is specific to exports and thus identified by the association between common interests and exports.

Trade cost in the trade literature refers to tariff rate and transport cost. Tariff rate in our context is held constant because the same tariff rate applies to all domestic cities. Transport cost in our context is broadly defined, which includes all factors that discourage trade and meet conditions (a) city-specific and (b) independent from local comparative advantage in production. Transport cost satisfies (a) and (b), while numerous other factors potentially and arguably do. Then how to control for trade cost? A solution stands out from equations (9) and (10): to use $EX - IM$, namely net exports/GDP, to pin down the comparative-advantage induced common interests.[11]

The above model is deliberately kept simple—in a word, trade generates common interests that regional economies share with the foreign market, which

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[11]We do not use EX/IM because very small values of IM cause extremely large values of the ratio, and the ratio also magnifies measurement errors in both EX and IM.

reduce the common interests that regional economies share with the domestic market, and lead to a negative association between nationalistic sentiments and trade. Propositions 1–3, can be transformed into three hypotheses:

I. A negative correlation between nationalistic sentiments and either EX or IM. This negative association could be through either exports (induced by comparative advantage and trade cost) or imports (induced by trade cost).

II. A negative correlation between nationalistic sentiments and EX, conditional on IM, but not vice versa. The negative association is through exports (induced by comparative advantage). With EX controlled for, the association between nationalistic sentiments and IM will disappear, because the variation in trade cost has been absorbed by the negative association between nationalistic sentiments and EX.

III. A negative association between nationalistic sentiments and $EX - IM$. This negative association is through exports (induced by comparative advantage).

Hypothesis I illustrates the common interests built on trade but cannot specify which form of trade, exports or imports, is causing the common interests. Hypothesis II demonstrates exports as a channel of common interests. Hypothesis III presents the comparative advantage induced exports as the channel of common interests. When submitted to testing, these hypotheses will be confounded by a series of other factors as detailed in Section 4. For now, we move on to describe the data that are used.

3 Data

3.1 Overview

Our data on nationalistic sentiments were obtained from the website *Zuobiao*, a website that follows the prototype of the UK website *Political Compass* but has test questions customized to the Chinese socio-economic context. A test participant is asked to appraise 50 statements on a four-point scale (strongly agree, agree, disagree, or strongly disagree). Her responses are then mapped by the website using an algorithm into a coordinate in a three-dimensional reference system (authoritarianism vs. libertarianism, conservatism vs. liberalism,

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collectivism vs. neoliberalism) to generate a test report. Appendix A1 provides a sample test report on a participant's quantitative political stance. A crucial advantage of using test data is that tests provide participants with incentives to reveal their true attitudes: they have to reply honestly in order to have their stances evaluated.

Responses made on the Zuobiao test are strictly anonymous. Anonymity protects privacy and prevents test participants from the political risks associated with expressing political attitudes. The website records the Internet Protocol (IP) addresses of participants, which are not linkable to individual identities.[12] Zuobiao further assures anonymity by not asking for demographic information, including income, age or gender. This additional measure provides extra protection for participants, although it does create a data limitation that we will discuss later.

Although demographic data are absent, we are able to determine the locations of the participants by mapping the IP addresses to Chinese prefecture-level cities.[13] Only IP addresses associated with mainland China are included in our sample. Each IP address is counted as one participant. In the end, our sample contains 54,613 participants. Our measure of individual nationalistic sentiments is an index averaged from each person's responses to the following four statements:

> [N1] Given sufficient comprehensive national power, China has the right to take any measure to protect its interests.

> [N2] Western countries, headed by the United States, will not really allow China to become a world-class strong nation.

> [N3] State unity and territorial integrity are the interests of paramount priority for a society.

> [N4] All students, regardless of whether they are in college, high school, or elementary school, should attend the military training arranged by the government.

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[12]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 20 March 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.

[13]See footnote 2 for the definition of prefecture.

These four statements are concerned with four different aspects of nationalistic sentiments: the supremacy of national interests, xenophobia, state sovereignty and territorial integrity, and compulsory militarism. N4, in particular, addresses the linkage between nationalism and militarism raised by Acemoglu and Yared (2010). Response options provided by Zuobiao are "strongly agree," "agree," "disagree," and "strongly disagree," respectively coded as 4, 3 , 2 and 1.[14] Table 1 shows that responses to statements N1–N4 are positively correlated, though any one of the four cannot absorb the information in the other three. This points to the need to use an average of responses. As done in previous studies (e.g., Charles and Guryan, 2008), the arithmetic mean of responses to these four statements is used as the measure of individual nationalistic sentiments.

Individual nationalistic sentiments are then averaged to the city level. Figure 1 shows the geographic distribution of nationalistic sentiments across 239 cities. Blank spaces (white areas) in the map refer to cities where fewer than ten individuals took the test. Most cities in our sample are located on the east side of Hu's line, a demarcation that divides China into two halves by population density. The east side of Hu's line accounts for 25.2% of China's territory and 79.1% of its population.[15] Figure 1 delivers two clear messages: first, nationalistic sentiments have a large within-province variation;[16] and second, coastal provinces do not show less nationalistic sentiments.

We next match city-level nationalistic sentiments with various city characteristics, obtained from the *China City Statistical Yearbook 2009* (National Bureau of Statistics in China, henceforth, NBSC, 2009a) and the *China Province Statistical Yearbook 2009* (NBSC, 2009b). These city characteristics, such as GDP per capita, share of rural population, and gender ratio, describe economic environments in which test participants reside. In particular, they proxy for individual characteristics such as income, job type and gender, the absence of which causes a limitation of the Zuobiao data. The other remedy we use to overcome the absence of individual characteristics is to employ the WVS data, which report individual-level information, as we discuss in section 4.2. Descriptive statistics of the variables are reported in Table A2.

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[14]We will use a two-point scale in robustness checks; see section 4.

[15]See http://www.ncbi.nlm.nih.gov/pubmed/12285649.

[16]Province borders in Figure 1 are gray.

3.2 Sample selection

The Zuobiao test does not represent a random sample of China's general populace because the majority of China's citizens have no access to the internet. We consider the sample selection caused by internet access as a strength of the data. Given China's sizable population and communist political regime, there does not exist a database of individuals who represent the national population and are meanwhile willing to truthfully disclose their political attitudes. Thus, a sample with known and relatively homogeneous demographics is more informative than alternative data sources that cover the general public, such as the WVS. Internet users in China are documented to be young and educated, and this group constitutes the present and future middle class.[17] A comparison between Chinese internet users and the general population is presented in Table A3.

A natural question that follows is whether participants in the Zuobiao test represent a random sample of Chinese internet users. An ideal test is to compare the demographics of these visitors with that of all internet users; however, the absence of individual characteristics in the Zuobiao test discussed earlier prevents us from conducting such a test. We instead examine whether nationalistic sentiments vary by internet accessibility and test participation. Specifically, at the city level, we compute two ratios, (1) number of internet accounts to population and (2) number of test participants to the number of internet accounts, and then regress nationalistic sentiments on these two ratios. The regression using ratio (1) illustrates whether internet access is associated with nationalistic sentiments. If so, sample selection becomes an important concern because nationalistic sentiments may have been either muted or exaggerated by the lack of internet access. The regression using ratio (2) aims to examine whether the Zuobiao test particularly attracts individuals with extremely strong or weak nationalistic sentiments.

The results are reported in Table 2. Columns 1–2 show that, with city characteristics held constant, there is no correlation between internet accessibility and nationalistic sentiments. As expected, internet accessibility is positively correlated with local GDP per capita and negatively correlated with the share of rural population, the latter of which is due to the relatively undeveloped state of China's rural areas in terms of infrastructure and education.[18] Like-

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[17]See, e.g., Easterly (2001) and Banerjee and Duflo (2008) for discussions on the importance of the middle class in maintaining political stability and improving policy making.

[18]See Naughton (2007, Chapter 5) for a discussion on the underdeveloped rural areas in

wise, columns 3–4 demonstrate the absence of correlation between the incidence of participating in the Zuobiao test and nationalistic sentiments, such that the responses collected by Zuobiao are unlikely to represent extreme political attitudes. The incidence of participation appears to be lower among the rural population, possibly due to the same issues with development. In columns 3–4, local GDP per capita loses the significance it has in columns 1–2, indicating that test participation, unlike internet accessibility, does not result from better or worse local economic performance. Since economic performance is an important local characteristic, this finding substantially mitigates the concern over sample selection.

The regressions in Table 2 are not a determinant screening test for sample selection, though we believe sample selection does not drive the results for three reasons. First, as shown in Table 2, our sample does not show selection toward or against nationalistic sentiments, in either internet accessibility or test participation. Second, the association between trade and nationalistic sentiments relies on the variation in nationalistic sentiments rather than the average level of nationalistic sentiments. Third, non-randomness of the sample does not bias our results in a certain direction and therefore does not threaten our identification. For instance, taking the Zuobiao test may result from political consciousness, which does not necessarily mute or exaggerate nationalistic sentiments.[19]

4 Empirical Results

4.1 Baseline results

We start with Hypotheses I and II on page 10 using the regression

$$NATION_c = \beta EX_c + \gamma IM_c + \bar{\zeta}' X_c + \varepsilon_c, \tag{11}$$

where c is the city index, $NATION$ is the city-level measure of nationalistic sentiments constructed in section 3.1. EX (IM) is the exports/GDP (imports/GDP) ratio as defined in the theoretical model, X_c includes a set of city characteristics, and ε is the error term. The city characteristics include GDP per capita, gender ratio, share of rural population, share of college students, share of government budget in GDP, travel intensity, and labor intensity in

China.

[19]Also, their attitudes are arguably more important than the general public, because they are more politically influential than others.

production.[20]

Hypothesis I says that if $NATION$ is regressed on EX (IM) alone, the coefficient $\hat{\beta}$ ($\hat{\gamma}$) will be negative. The results are reported in Table 3.[21] Column 1 includes only EX, whose coefficient is negative and statistically significant. Column 3 includes only IM, whose coefficient is also negative and statistically significant. Both columns have controlled for X_c and are consistent with Hypothesis I. Hypothesis II says that if $NATION$ is regressed on both EX and IM, then $\hat{\beta} < 0, \hat{\gamma} = 0$, which is supported by column 5, where $\hat{\beta} < 0$ remains statistically significant but $\hat{\gamma}$ is not significantly different from zero. Quantitatively, a one standard deviation increase in EX is associated with a decrease in nationalistic sentiments by approximately 0.23 standard deviations (column 5, -0.113×0.250/0.121≃-0.233).[22]

A test participant may view foreign countries negatively because she holds protectionist attitudes. To address this concern, columns 2, 4, and 6 in Table 3 include protectionist attitudes (in favor of high tariff and high barrier to inward FDI).[23] They reach the same findings as columns 1, 3, and 5; meanwhile, protectionist attitudes slightly reduce the coefficient of EX, indicating that protectionist attitudes may indeed explain some of the negative views about foreign countries. Now, a one standard deviation increase in EX is associated with a decrease in nationalistic sentiments by approximately 0.18 standard deviations (column 6, -0.091×0.250/0.121≃-0.188). In addition, protectionist attitudes are, as expected, positively correlated with nationalistic sentiments, a finding that is consistent with Mayda and Rodrik (2005) and O'Rourke and Sinnott (2001). Nationalistic sentiments show little variation with city characteristics other than EX and IM.[24]

Two-point scale We also conduct a robustness check that addresses the trade-off between two scales of responses: the four-point scale used by the Zuobiao algorithm or the two-point scale (i.e., (dis)agree and strongly (dis)agree

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[20]Travel intensity is defined as the ratio of number of travelers to total population. Labor intensity is defined as the ratio of total wages to GDP. If production in a local economy is approximated by a Cobb-Douglas production function $Q = K^{1-\alpha_L} L^{\alpha_L}$, the labor intensity refers to α_L.

[21]Sample size in regressions is smaller than in Figure 1, because data on trade or other city characteristics are unavailable for some cities.

[22]Standard deviations can be found in Table A2.

[23]Protectionist attitudes are measured by responses to the following two statements: "high tariffs should be imposed on foreign counterparts of domestic products, in order to protect national industries" and "foreign capital in China should be restricted from developing at (their) will." The same scale and averaging method are used as in section 3.1.

[24]Not reported due to space limitation; available upon request.

both considered as (dis)agree). On the one hand, the two-point scale could incur a loss of information, because "strongly (dis)agree" reflects a sharper stance; on the other hand, it is unclear whether the numeric difference captured by the four-point scale (e.g., strongly disagree=4 points, disagree=3 points) has a cardinal meaning.[25] As a compromise, we use the four-point scale in Table 3 and the two-point scale in Table 4 as a robustness check. Table 4 presents the same findings as Table 3 in both signs and significance levels of coefficients. As expected, the coefficient magnitudes of EX and IM in Table 4 are smaller, since the two-point scale is a more conservative measure of attitudes.

Ideological heterogeneity   Apart from protectionist attitudes, heterogeneity in other political ideologies may be confounded with nationalistic sentiments. To address this, we undertake two empirical exercises. The first is to use trade to explain a set of values potentially related to nationalistic sentiments:[26]

> (Conservatism) "Robbing from the rich and giving to the poor" is a heroic deed.

> (Tradition) Chinese traditional medicine exceeds mainstream Western medicine in a number of ways.

> (Tradition) "Feng-shui" (Chinese astrology) is a great achievement of our forefathers' wisdom and can explain a wide range of phenomena.

> (Criticism on reforms) The fruits of China's recent economic reforms have been grabbed by a few people; the majority hardly received any benefits.

> (Criticism on reforms) Frustratingly, economists are becoming spokespersons of the rich.

If responses to these statements do not vary with exports, our previous findings are further supported, because these values are not heterogeneous across cities in a way that is related to trade. Table 5 reports the results. Exports are shown to have no significant association with any of these variables, while cities with more imports appear to have fewer believers in "feng-shui" (column 2), possibly because "feng-shui" has to compete against its counterpart in other cultures such as the Western astrology.[27] Protectionist attitudes are positively

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[25]Since regressions are run at the city level, neither ordered probit nor logit can solve the problem.

[26]Labels in parentheses are added by the authors.

[27]With education already controlled for, this is not likely due to heterogeneity in education.

correlated with the trust in Chinese traditional medicine (column 3), as well as the distrust in economists (column 5). The latter is possibly because economists are usually proponents of free trade and FDI.

Next, we exploit the variation in nationalistic sentiments that cannot be fitted by a linear combination of these values. Specifically, we run an individual-level regression,

$$NATION_{ic} = \vec{\iota}' Z_{ic} + \nu_{ic},$$

where Z_{ic} is a vector consisting of individual i's responses to the statements above. The residual $\hat{\nu}_{ic}$ is then averaged to the city level:

$$\widetilde{NATION}_c = \frac{1}{n_c} \sum_{i \in c} \hat{\nu}_{ic},$$

where n_c is the number of respondents in city c. This procedure removes components in $NATION$ that vary with value heterogeneity potentially related to nationalistic sentiments. We then use $\widetilde{NATION}$ as the dependent variable and rerun regression (11). The results, reported in Table 6, support previous findings (columns 5–6 in Table 3). In particular, as before, protectionist attitudes reduce the magnitude of the coefficient of EX.

Net exports We then move on to test Hypothesis III, which subtracts IM from EX to remove the variation in EX induced by trade cost and keeps the variation induced by comparative advantage.[28] Another merit of using $EX - IM$ is its similarity with the definition of trade balance in economic statistics: since GDP must be positive, a trade surplus (deficit) is by definition equivalent to $EX_j - IM_j > 0 \ (< 0)$. The results are reported in Table 7, where the coefficient of $EX - IM$ is negative and statistically significant, lending support to Hypothesis III. We have experimented as before with and without control variables, and in addition cities with trade surpluses and deficits; they all lead to the same finding. Notably, only 41 out of 218 cities (less than 20%) have trade deficits. Next, we define an indicator that equals 1 if a city has a "large" trade surplus, with "large" alternately defined as the top 75%, top 50%, and top 25% values of $EX - IM$, and then rerun the regressions in Table 7 using this indicator instead of $EX - IM$. The results are reported in Table 8. As the trade surplus rises, the indicator's coefficient rises from insignificant in column 1

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[28]The reason for not using EX/IM has been discussed in footnote 11. EX/IM has mean 5.69, standard deviation 13.35, and range [0, 100.0]. In comparison, $EX - IM$ has the mean 0.007, standard deviation 0.02, and range [-0.15, 0.12].

to strongly negative and significant in column 3. This corroborates the negative association between nationalistic sentiments and common interests shared with foreign countries through exports.

4.2 Two additional robustness checks

Business climate We next examine the possibility that nationalistic sentiments reduce exports. For instance, foreign importers may prefer to undertake business travel to cities with less nationalistic sentiments. Although our paper does not claim the association between exports and nationalistic sentiments to be causal, we address this reverse causality because, if it is the case, exports would become merely another measure of nationalistic sentiments. We investigate the relationship between nationalistic sentiments and forthcoming FDI, since foreign investors are more sensitive to local business climate than foreign importers. If the forthcoming FDI does not vary with nationalistic sentiments, it is then reasonable to assume that local nationalistic sentiments do not reduce exports. The forthcoming FDI is measured with "newly contracted FDI" (ncFDI), meaning FDI that has been signed into contracts but not yet made. Since those foreign-invested firms have not yet been established, they do not affect nationalistic sentiments.

We use the specification

$$ncFDI_c = \delta NATION_c + \eta OPENNESS_c + \theta' X_c + \varepsilon_c \qquad (12)$$

where $ncFDI_c$ is measured using either value or number of contracts,[29] $OPENNESS_c$ is defined to be (exports+imports)/GDP as in the literature,[30] and X_c is a vector of city characteristics as before. The results are reported in Table 9. Neither the invested value (columns 1–2) nor the number of FDI contracts (columns 3–4) varies with nationalistic sentiments, with or without controlling for $OPENNESS$. As expected, FDI is positively correlated with $OPENNESS$.

Variation in trade over time In this subsection, we use a different and unrelated dataset, the World Value Survey (WVS), to rerun our previous results. The WVS is a cross-country survey coordinated by the Institute of Social

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[29]When measured by value, the value is divided by GDP.

[30]See, e.g., Alcala and Ciccone (2004), Bolaky and Freund (2004), Chang, Kaltani, and Loayza (2005), Rodrik, Subramanian, and Trebbi (2004), and Wei (2000). Also see Harrison and Rodríguez-Clare (2010) for a review on the measure of openness.

Research of the University of Michigan. It is one of the most widely used data sources for studies on values in the economics and political science literature.[31] A study using the WVS data complements our previous study in two ways. First, the recent two waves of WVS, complete in 2001 and 2007, happened to occur before and after China's accession to the World Trade Organization (WTO) in December 2001. China's trade rose substantially during this time period and thus provides a quasi-exogenous variation in trade over time. Second, the WVS reports demographic information on individuals, which is absent in the Zuobiao data in order to ensure privacy protection.

At the same time, the WVS dataset has two crucial drawbacks. The first involves over-aggregation and the small number of provinces. The WVS dataset reports province- rather than city-level resident locations. Mainland China has 32 province-level administrative divisions (henceforth, province),[32] and in 2001 and 2007 WVS sampled only 24 of these divisions.[33] Second, the WVS dataset does not target internet users. To make the WVS sample comparable to the Zuobiao sample, we drop all individuals over 50 years old at the time of the survey. Our final sample includes 1,907 individuals from 21 provinces. Table A4 lists the three questions that we use to construct an individual-level index of nationalistic sentiments, which ranges from 1 (weak) to 3 (strong). The mean of the index is 2.1 out of 3 (s.d.=0.46), a value which is very similar to the index we compile using the Zuobiao data (2.8 out of 4, s.d.=0.64[34]). The majority of individuals in the sample are middle aged (28-45) and married, have a medium level of education and income, and have at least one child.[35]

We use the WVS data to exploit the variation in province-level foreign trade between 2001 and 2007, with province fixed effect included. Figure 2 plots province-level EX and IM between 1990 and 2010. Evidently, both China's exports and imports skyrocketed right after the WTO accession and continued to rise until 2007. The regression is specified as

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[31]For instance, in economics, Alesina and Angeletos (2005) on beliefs in fairness, Guiso, Sapienza, and Zingales (2003) on attitudes conducive to economic growth, Knack and Keefer (1997) on social capital; in political science, Inglehart and Welzel (2005) on modernization.

[32]The 32 province-level administrative divisions include 23 provinces, 4 municipalities, and 5 autonomous regions. The two WVS waves we examine surveyed approximately 3,000 individuals in mainland China. We include only individuals who resided in provinces that were covered in both waves.

[33]In total, the WVS has conducted four waves in China: 1990, 1995, 2001, and 2007. The 1995 wave provides no information on locations of respondents, while the 1990 wave surveyed only 11 provinces and used a very different questionnaire from other waves.

[34]These are moments of the individual-level index, not the city-level index summarized in Table A2.

[35]The survey measures education and income by categorical variables, from low to high.

$$NATION_{ipt} = \pi EX_{pt} + \varpi IM_{pt} + \vec{\rho}'X_{ipt} + \varsigma_p + \epsilon_{ipt}, \tag{13}$$

where $NATION_{ipt}$ is the level of nationalistic sentiments reported by individual i in province p at year t. EX_{pt} and IM_{pt} are defined as before but now at the province level, X_{ipt} is a set of demographic characteristics, including gender, age, educational attainment, income, marriage status, and whether they had children or not. ς_p is a province fixed effect.

Results from regression (13) are reported in Table 10, which are consistent with those reported in Table 3. Specifically, EX is negative and significant, either alone or together with IM (columns 1 and 3). The coefficient of IM is negative but not significant (column 2, coefficient=-0.588, s.e.=0.378), which is different from columns 3–4 in Table 3, where IM's coefficient is significant when IM is included alone in the regression. This difference is highly consistent with our theory. Recall that IM is only determined by trade cost (broadly defined) according to our theory, and regression (13) has included a province fixed effect; therefore, the province fixed effect absorbs the time-invariant trade cost. Again, when both EX and IM are included in the regression, only EX is statistically significant (column 3, coefficient=0.253, s.e.=0.413), indicating that comparative advantage in the form of prices has changed in respond to reductions in foreign tariff changes. A one standard deviation increase in EX is associated with a decrease in nationalistic sentiments by approximately 0.4 standard deviations (the counterpart in Table 3 is approximately 0.2 standard deviations).[36] Column 4 uses net exports, $EX-IM$, as the explanatory variable and reaches the same conclusion as before.

It should be noted that nationalistic sentiments appear to vary little with most demographic characteristics. Women have less nationalistic sentiments than men, and income is positively associated with nationalistic sentiments, but these coefficients are quantitatively small. This largely mitigates the concern over the absence of individual demographic information in the previous analysis of the Zuobiao data. In summary, by using a separate data source as well as variation in a different dimension, we reach the same conclusion as in Table 3 that nationalistic sentiments are negatively associated with exports.

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[36]The standard deviation is 0.228 for EX and 0.458 for $NATION$. A one standard deviation increase in EX is related with a 0.4 standard deviations decrease (-0.787×0.228/0.458)=-0.391) in nationalistic sentiments.

5 Conclusions

Both the political and economic aspects of trade have been widely discussed, but nationalistic sentiments have been believed to be merely political phenomena. Our paper shows, however, that nationalistic sentiments have economic interests behind them. Within a country, nationalistic sentiments are stronger in regions whose production places more weights on the domestic market. Here is a thought experiment that can illustrate the intuition. Other things being equal, nationalistic sentiments are the strongest where local production serves only the domestic market. Those sentiments are presented as advocating the supremacy of the national interests, xenophobia, sovereignty and territorial integrity, and militarism. To locals in this scenario, the home country is the entire market, and foreign countries do not matter as long as they do not harm the home. Clearly, accessing the foreign market will dilute these sentiments. The more important the foreign market, the weaker nationalistic sentiments are in a regional economy.

This theoretical prediction is supported by our study on city-level data from China. Our empirical results show that nationalistic sentiments are weaker in cities where exports are more important to the local economy. To ascertain that this association is indeed between nationalistic sentiments and exports, we have shown that the association is not driven by city characteristics (e.g., demographics), protectionist attitudes, heterogeneous political ideologies, hostility to foreign commerce, nor are the findings specific to our dataset. Our findings suggest a number of avenues for future research. Empirical advancement will result from finding scenarios where trade is randomly assigned to identify the causality, though such scenarios are rare. More promising is theoretical advancement that results from modeling the role of nationalistic sentiments in political economy based on its link with foreign markets. For example, future research could address how federal and regional politicians deal with nationalistic sentiments in the context of wars and trade policies.

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Table 1: Correlation Matrix of Responses to Nationalistic Statements

This table presents the correlation matrix between individual responses to four statements of nationalistic sentiments. See text (section 3) for details. N1 is "Given sufficient comprehensive national power, China has the right to take any measure to protect its interests." N2 is "Western countries, headed by the United States, will not really allow China to become a world-class strong nation." N3 is "State unity and territorial integrity are the interests of paramount priority for a society." N4 is "All students, regardless in college, high school, or elementary school, should attend the military training arranged by the government."

	N1	N2	N3
N2	0.299		
N3	0.339	0.384	
N4	0.237	0.288	0.392

Table 2: Internet Access, Test Participation, and Nationalistic Sentiments

This table examines the correlation between Ratios (1) and (2) (defined in the first row) and nationalistic sentiments. See text (section 3) for details. Constant term not reported. ** significant at 5%; *** significant at 1%.

Dependent variable:	Ratio (1): No. of internet accounts to Population		Ratio (2): No. of participants to No. of internet accounts	
	1	2	3	4
Nationalistic sentiments	-0.126**	-0.073	0.102	0.183
	(0.059)	(0.045)	(0.298)	(0.292)
Log (GDP per capita)		0.069***		0.017
		(.011)		(0.071)
Share of Rural Population		-0.160***		-0.502***
		(0.029)		(0.184)
Observations	239	239	239	239
R-Square	0.019	0.428	0.001	0.051

Table 3: Nationalistic Sentiments and Trade (Baseline Results)

This table examines the association between nationalistic sentiments and trade (exports and imports weighted by GDP, i.e., EX and IM, respectively). See text (section 4) for details. Control variables are GDP per capita, gender ratio, share of rural population, share of college students, share of government budget in GDP, travel intensity, and labor intensity in production. Constant term not reported. Cluster robust standard errors in parentheses. Clustering is at the province level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Dependent variable is nationalistic sentiments (four-point scale).

	1	2	3	4	5	6
EX	-0.104***	-0.093**			-0.113**	-0.091**
	(0.029)	(0.036)			(0.043)	(0.042)
IM			-0.073*	-0.075*	0.014	-0.004
			(0.039)	(0.043)	(0.059)	(0.054)
Protectionism on tariff		0.140*		0.137*		0.140*
		(0.074)		(0.078)		(0.075)
Protectionism on FDI		0.354***		0.362***		0.354***
		(0.080)		(0.078)		(0.080)
Observations	218	218	218	218	218	218
R-squared	0.06	0.27	0.04	0.26	0.06	0.27

Table 4: Nationalistic Sentiments and Trade (Two-point Scale)

This table examines the association between nationalistic sentiments and trade (exports and imports weighted by GDP, i.e., EX and IM, respectively). Different from Table 3, dependent variables are binary in this table. See text (section 4) for details. Control variables are GDP per capita, gender ratio, share of rural population, share of college students, share of government budget in GDP, travel intensity, and labor intensity in production. Constant term not reported. Cluster robust standard errors in parentheses. Clustering is at the province level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Dependent variable is nationalistic sentiments (two-point scale)

	1	2	3	4
EX	-0.047***		-0.052**	-0.042**
	(0.013)		(0.019)	(0.019)
IM		-0.032**	0.008	-0.002
		(0.015)	(0.024)	(0.022)
Protectionism on tariff				0.024
				(0.039)
Protectionism on FDI				0.166***
				(0.034)
Observations	218	218	218	218
R-squared	0.07	0.05	0.07	0.23

Table 5: Heterogeneous Political Ideologies and Trade

This table examines whether the results in Table 3 also hold for other political ideologies. The main explanatory variables remain exports and imports (EX and IM, respectively) weighted by GDP. See text (section 4) for details. Control variables are GDP per capita, gender ratio, share of rural population, share of college students, share of government budget in GDP, travel intensity, and labor intensity in production. Constant term not reported. Clustering is at the province level. * significant at 10%; *** significant at 1%.

Dependent variable in columns 1—5 are, respectively, four-point scale responses (city-level averages) to the following statements: (1) "'Robbing from the rich and giving to the poor' is a heroic deed;" (2) "Chinese traditional medicine exceeds mainstream western medicine in a number of ways;" (3) "Feng-shui" (Chinese astrology) is a great achievement of our forefathers' wisdom and can explain a wide range of phenomena;" (4) "The fruits of China's recent economic reforms have been grabbed by a few people; the majority hardly received any benefits;" and (5) "Frustratingly, economists are becoming spokespersons of the rich."

	1	2	3	4	5
Dependent variable	Rob the rich	Feng-shui	Chinese medicine	China reform	Distrust in Economists
EX	-0.045	0.047	0.045	0.031	0.032
	(0.058)	(0.031)	(0.047)	(0.030)	(0.031)
IM	-0.014	-0.063*	-0.044	-0.029	0.033
	(0.061)	(0.033)	(0.047)	(0.054)	(0.031)
Protectionism on tariff	0.073	-0.099	-0.017	0.106	0.135*
	(0.071)	(0.095)	(0.089)	(0.073)	(0.073)
Protectionism on FDI	0.113	0.125	0.293***	-0.079	0.167***
	(0.086)	(0.098)	(0.068)	(0.103)	(0.056)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	218	218	218	218	218
R-squared	0.06	0.04	0.11	0.05	0.11

Table 6: Residual Regressions

This table examines the association between trade and nationalistic sentiments that cannot be explained by ideological heterogeneity. See text (section 4) for details. Control variables GDP per capita, gender ratio, share of rural population, share of college students, share of government budget in GDP, travel intensity, and labor intensity in production. Constant Cluster robust standard errors in parentheses. Clustering is at the province level. * significant at 10%; ** significant at 5%; *** significant at 1%.

	1	2
EX	-0.116***	-0.101**
	(0.040)	(0.039)
IM	0.013	0.003
	(0.060)	(0.056)
Protectionism on tariff		0.129*
		(0.071)
Protectionism on FDI		0.231***
		(0.077)
Control variables:	Yes	Yes
Observations	218	218
R-squared	0.07	0.20

Table 7: Nationalistic Sentiments and Net Exports I

This table examines the association between nationalistic sentiments and net exports (measured by exports less imports weighted by GDP, i.e., EX-IM). See text (section 4) for details. Control variables are GDP per capita, gender ratio, share of rural population, share of college students, share of government budget in GDP, travel intensity, and labor intensity in production. Constant term not reported. Cluster robust standard errors in parentheses. Clustering is at the province level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Dependent variable is nationalistic sentiments (NATION).

	1	2	3	4
Sample (trade balance):	Surplus	Surplus	Deficit	Deficit
EX-IM	-1.204***	-1.120**	-1.442**	-0.909*
	(0.376)	(0.480)	(0.502)	(0.496)
Protectionism on tariff		0.159**		-0.116
		(0.076)		(0.189)
Protectionism on FDI		0.340***		0.254***
		(0.095)		(0.068)
Observations	177	177	41	41
R-squared	0.07	0.27	0.33	0.41

Table 8: Nationalistic Sentiments and Net Exports II

This table examines the association between nationalistic sentiments and net exports. Net exports is measured by an indicator of large trade surplus weighted by GDP (i.e., EX-IM). Large trade surplus is alternately defined as top 75%, 50% and 25% of EX-IM values in columns 1, 2, 3. Less than 20% of cities hold trade deficits such that that the indicator must correspond to trade surplus. See text (section 4) for details. Control variables are GDP per capita, gender ratio, share of rural population, share of college students, share of government budget in GDP, travel intensity, and labor intensity in production. Constant term not reported. Cluster robust standard errors in parentheses. Clustering is at the province level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Dependent variable is nationalistic sentiments (NATION).

	1	2	3
	Top 75%	Top 50%	Top 25%
Indicator of large Trade surplus	-0.021	-0.029*	-0.047**
	(0.018)	(0.014)	(0.018)
Protectionism on tariff	0.143*	0.153*	0.143*
	(0.078)	(0.076)	(0.073)
Protectionism on FDI	0.353***	0.344***	0.358***
	(0.080)	(0.079)	(0.077)
Observations	218	218	218
R-squared	0.25	0.26	0.27

Table 9: Nationalistic Sentiments and Forthcoming FDI

This table examines the association between forthcoming FDI and nationalistic sentiments. See text (section 4) for details. Control variables are GDP per capita, gender ratio, share of rural population, share of college students, share of government budget in GDP, travel intensity, and labor intensity in production. Constant term not reported. Cluster robust standard errors in parentheses. Clustering is at the province level. * significant at 10%; ** significant at 5%; *** significant at 1%.

	1	2	3	4
Dependent variable	FDI/GDP	FDI/GDP	Log(#FDI)	Log(#FDI)
NATION	-0.011	-0.005	-1.298	-0.760
	(0.009)	(0.008)	(0.882)	(0.767)
OPENNESS		0.015***		1.328***
		(0.003)		(0.255)
Control Variables	Yes	Yes	Yes	Yes
Observations	214	214	211	211
R-squared	0.318	0.369	0.330	0.411

## Table 10: Results from the WVS Data (with Province Fixed Effects and Individual Characteristics)

This table examines the association between nationalistic sentiments and trade (exports and imports weighted by GDP, i.e., EX and IM, respectively). See text (section 4) for details. The data are from the World Value Survey (WVS). All regressions control for the province fixed effect. Cluster robust standard errors in parentheses. Clustering is at the province level. * significant at 10%; ** significant at 5%; *** significant at 1%.

Dependent variable is nationalistic sentiments (NATION).

	1	2	3	4
EX	-0.617***		-0.787**	-0.868***
	(0.204)		(0.287)	(0.264)
IM		-0.588	0.253	
		(0.378)	(0.413)	
Age	0.002	0.002	0.002	0.003
	(0.002)	(0.002)	(0.002)	(0.002)
Gender	-0.064*	-0.066*	-0.063*	-0.063*
	(0.032)	(0.033)	(0.033)	(0.033)
Income	0.027***	0.029***	0.027***	0.031***
	(0.006)	(0.006)	(0.006)	(0.006)
Education	0.022	0.020	0.022	0.022
	(0.021)	(0.021)	(0.021)	(0.021)
Married	-0.063	-0.060	-0.065	-0.073
	(0.067)	(0.066)	(0.066)	(0.064)
Child	0.057	0.053	0.059	0.067
	(0.063)	(0.062)	(0.061)	(0.062)
Constant	1.910***	2.315***	1.696***	1.037***
	(0.121)	(0.422)	(0.399)	(0.228)
Observations	1,330	1,330	1,330	1,330
R-squared	0.096	0.093	0.096	0.093

Figure 1: Map of China's Nationalistic Sentiments
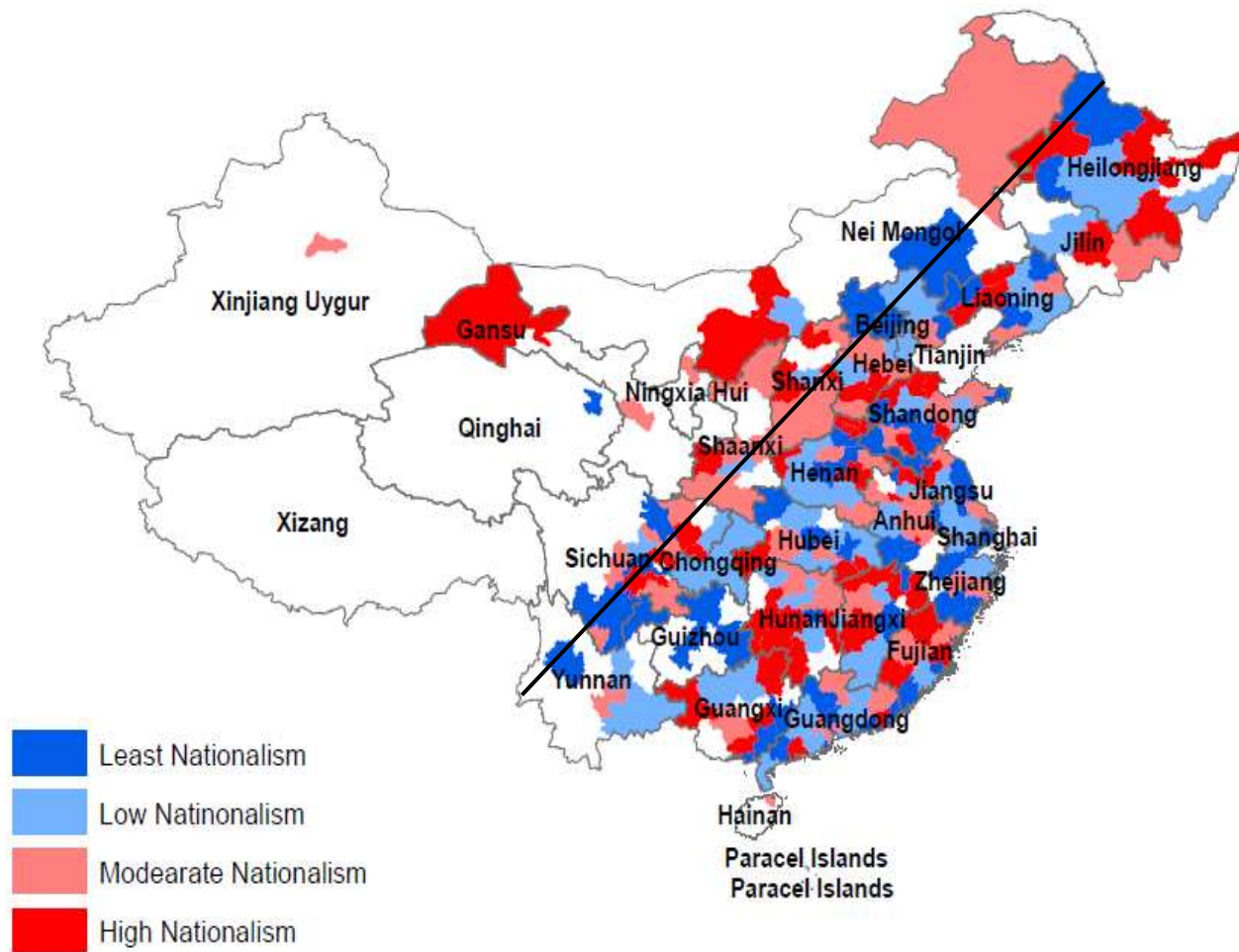
Notes: Only mainland China is included in this study. The black straight line in the map is the Hu's Line. See text (section 3) for details.

Figure 2: China's WTO Accession and the Share of Trade in GDP
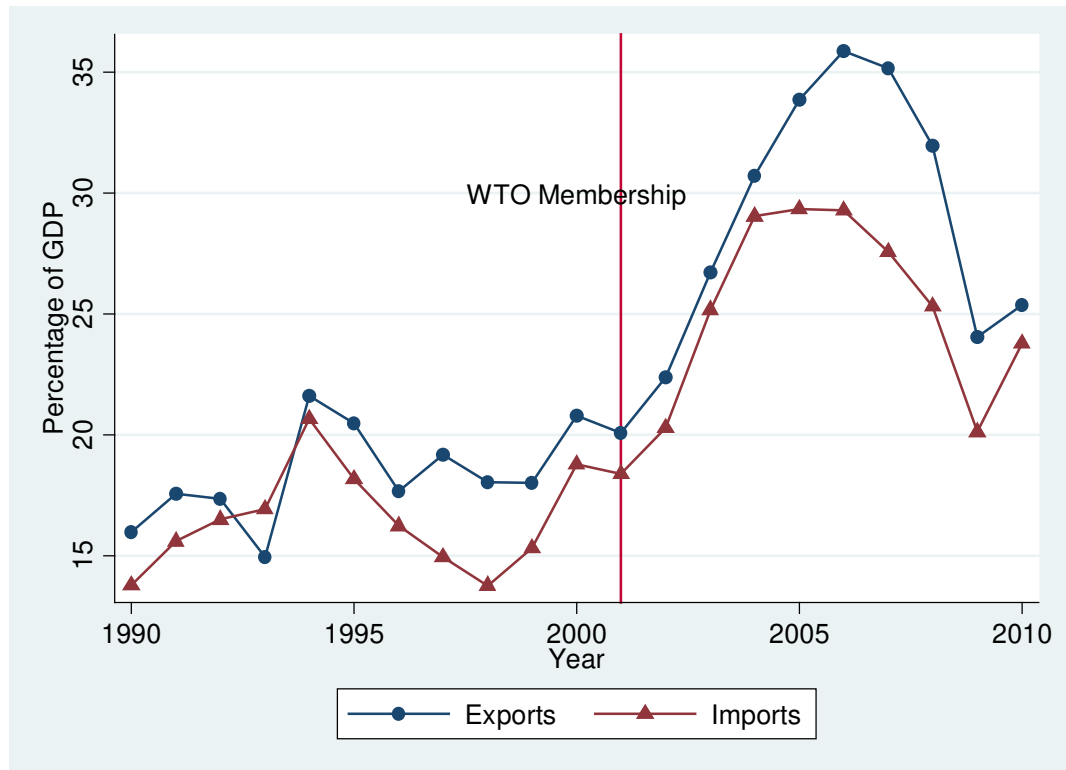
Appendix A1: Sample Report and Statistics from Zuobiao

Your Results:

Regime Coordinate: 0.1; Cultural Coordinate: -0.4; Economic Coordinate: 0.1

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

Regime Coordinate: authoritarianism vs. libertarianism, positive value refers to libertarianism.
Cultural Coordinate: conservatism vs. liberalism, positive value refers to liberalism.
Economic Coordinate: collectivism vs. neoliberalism, positive value refers to neoliberalism.

Notes: The sample report indicates that this participant holds political opinions towards libertarianism (slightly), conservatism (moderately), and neoliberalism (slightly). Zuobiao also publishes the following histograms to facilitate self-evaluation:
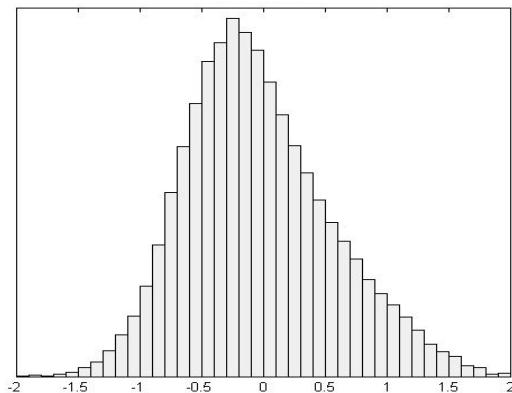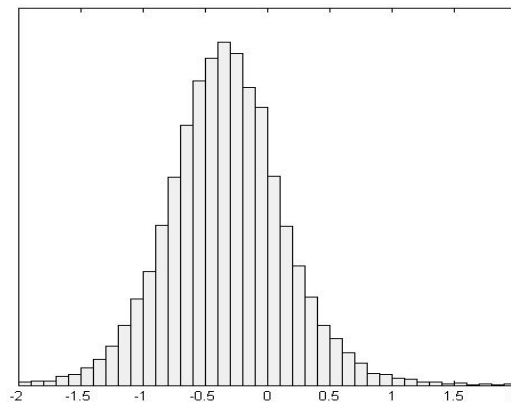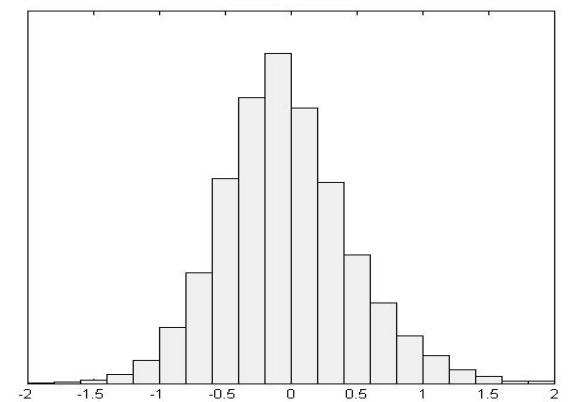
Regime | Economics | Culture

Table A2: Descriptive Statistics

	Obs	Mean	Std. Dev.	Min	Max
Index of nationalistic sentiments (NATION), 4-point scale	239	2.903	0.121	2.450	3.219
Index of nationalistic sentiments (NATION), 2-point scale	239	0.682	0.056	0.488	0.833
GDP per capita*	239	9.996	0.611	8.549	11.579
Export/GDP (EX)	226	0.155	0.250	0	1.611
Import/GDP (IM)	226	0.104	0.215	0	1.811
Share of rural population	239	0.668	0.236	0	0.956
Gender ratio (female=100)	231	104.96	3.785	93.33	121
Share of college students (per 10,000 people)	239	0.016	0.021	0	0.116
Share of government budget in GDP	239	0.060	0.027	0.024	0.238
Travel intensity	239	0.002	0.003	0.0004	0.032

 * Currency unit is yuan (RMB). In 2009, the average exchange rate was $1=6.841 yuan.

Table A3: Profiles of Chinese Internet Users and Citizens (2010)

	Internet Users	Citizens
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). The data on citizens are from the *China Statistical Yearbook 2010* (NBSC, 2010).

Table A4: The WVS Survey Questions on Nationalistic Sentiments

Questions	Values
What is the most important goal of the country?	
1. A high level of economic growth	Strong defense forces is the first choice =3
2. Strong defense forces	Strong defense forces is the second choice =2
3. People have more say about how things are done	Strong defense forces is neither first nor the second choice =1
4. Trying to make our cities and countryside more beautiful.	
How much confidence you have in armed forces?	A great deal=3
	Quite a lot=2
	Not very much or none at all =1
How proud are you to be a Chinese?	Very proud=3
	Quite proud =2
	Not very or not at all =1

Note: For each individual, we create three variables as listed in the table. Then we calculate simple mean of the three variables as the index of nationalistic sentiments.