International Political Science Review

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Article

How does political trust affect social trust? An analysis of survey data from rural China using an instrumental variables approach

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Abstract
Using an instrumental variable approach, we analyze survey data to untangle the relationship between social and political trust in contemporary China. We find strong evidence that political trust enhances social trust in China and the results are robust to a range of measures, including the generalized social trust question, as well as three contextualized trust questions. We also shed light on the impact of economic modernization on social trust. Our findings contribute to the general literature on trust and provide a better understanding of the complicated relationship between political trust and social trust. They also offer insight into the dynamics of trust production and reproduction in China and thus into China's socio-political development.

Keywords
social trust, political trust, China, modernization, trust treadmill

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Introduction

Social trust constitutes the foundation for social cooperation and, by extension, for the integration and stability of modern society (Nannestad, 2008: 415; Rothstein and Eek, 2009). Societies that boast of higher levels of social trust tend to enjoy better government and economic performance.[1] Yet Robert Putnam famously noted, "The causal arrows among civic involvement, reciprocity, honesty, and social trust are as tangled as well-tossed spaghetti" (Putnam, 2000: 137). What are the origins of social trust? What makes levels of social trust vary in different societies? How can high levels of social trust be sustained? These remain among the most fascinating, as well as challenging, questions for social science research. As the authors of a major research report on generalized trust lamented recently:

> In spite of the flowering of trust research in the social sciences, trust remains a puzzle. Conceptually, it is clear that trust is the key ingredient of social capital, but its origins remain uncertain and its consequences are yet to be clearly established. (Delhey et al., 2011)

As it has achieved its stellar economic growth, China has also stood out for its high level of trust (Steinhardt, 2012). Yet, much as in many developed countries, China is today gripped by the fear of declining social and political trust. A plethora of public incidents, from the melamine-tainted milk scandal to the case of Yueyue, a toddler who was twice run over by an automobile and ignored by passers-by in October 2011, have riveted the nation's attention and caused much soul-searching about a perceived decline in social trust. A social trust index produced by researchers at the Institute of Sociology of the Chinese Academy of Social Sciences was widely reported to show a declining trend and failed to make the passing grade in 2012 (Wang and Yang, 2013).

In this article, we use data from a national survey in rural China to estimate the effect of political trust on social trust. To deal with the problem of endogeneity, we adopt an instrumental variables approach (we use the share of war veterans in village as our instrument) and establish the causality from political trust to social trust. We hold that local political trust, or more fundamentally the level of local governance conceptualized by constituency, influences both contextualized social trust and generalized social trust. These findings shed new light on the foundations of social trust in China. It leads us to project that eroding political trust will lead to declining social trust in China.

In the rest of this article, we first offer a review of the literature on the complex relationship between political and social trust. We then discuss some of the concerns about the use of survey data for trust research and offer an overview of the data used in this analysis and the measurements of political and social trust. This is followed by model specifications and a discussion of the control variables. The regression results are presented and discussed next. Finally, we offer our concluding thoughts.

The tangled relationship between political and social trust

Social scientists continue to debate the relationships between social trust and political trust and have done much to unpack this relationship or lack thereof along multiple dimensions. For ease of discussion, we classify existing research on the relationship between social and political trust by whether researchers consider social and political trust as being independent of each other or as having a causal relationship.

Independence

One prominent position in trust research posits social and political trust as two analytically distinct types of trust. We call this the independence thesis. On this account, social or horizontal trust on the

one hand, and political or vertical trust on the other, are distinguished from each other and their relationship is weak or even non-existent (Kaase, 1999: 13–14; Newton, 1999: 180; 2001: 203). People may register high social or interpersonal trust and yet not trust their political leaders or institutions. Social trust and political trust are thus different forms of trust; they do not share "common origins in the same set of social conditions; they are different things with different causes" (Newton, 2001: 201) and are "largely independent of each other" (Newton, 2001: 203; see also Uslaner, 2002). Newton (2001: 203) once declared, "one can predict virtually nothing about a person's trust in other people from their trust in government." It thus follows that one should use social variables to explain social trust and political variables to explain political trust (Newton, 2007: 353).

Empirical support for the independence perspective has come from the post-communist societies in Central and Eastern Europe. In those societies that had a totalitarian past, individuals and their families may have developed habits of self-protection and relied on trusted social networks to insulate themselves from distrusted state institutions (Shlapentokh, 1989). As a consequence, we would expect to find individuals in these societies to more likely behave in line with the independence perspective. Using data from 10 post-communist societies in Eastern and Central Europe, Mishler and Rose (2001) tested for the reciprocal effects between interpersonal (social) and institutional (political) trust and concluded that "Interpersonal trust appears almost wholly exogenous to the political process" (Mishler and Rose, 2001: 54). More recently, Delhey et al. (2011), in their major contribution operationalizing the concept of the trust radius, found that there was no robust relationship between social trust and institutional confidence when taking into account the radius of trust.

Varieties of causal relationship

Much of the literature on trust assumes a social basis for political trust and posits a causal relationship running from social trust to political trust. By taking social capital or social trust as an exogenous variable, the overriding concern of this bourgeoning research program on social trust has been to explain the widespread political disaffection with politicians and public institutions alike in democracies at a time of an apparent democratic triumph around the world (Hetherington, 2006; Norris, 1999, 2011; Pharr and Putnam, 2000; Putnam, 2000). Numerous studies attribute the decline in political trust in the US and other advanced industrial democracies to declining civic engagement and social trust (Jennings and Stoker, 2004).

Some researchers have questioned the appropriateness of taking social capital or social trust as the causal variable for political trust because the causal arrow may well be pointing in the opposite direction. For Levi, governments not only provide the trust-facilitating context, but also "influence civic behavior to the extent they elicit trust or distrust towards themselves" (Levi, 1996: 51). A little earlier, Muller and Seligson (1994) suggested that "interpersonal trust appears to be a product of democracy rather than a cause of it." Recent research has examined the importance of regime type and quality of governance on interpersonal trust. The level of generalized social trust tends to be higher in societies that possess effective, impartial, and fair street-level bureaucracies (Rothstein and Stolle, 2008) but decreases with corruption and bad governance in general (Richey, 2010). This latter effect is particularly pronounced in post-communist societies, where "aggregate corruption has the strongest effect on interpersonal trust. The more corrupt a country's current institutions are, the more citizens in those countries are likely to distrust other people" (Mishler and Rose, 2001: 53). Experimental work confirms that the measured level of trust in authorities (vertical trust) influences the level of social or horizontal trust (Rothstein and Eek, 2009).

In a provocative article and subsequent book, Jackman and Miller (1998, 2005) argued vigorously that the intellectual godfathers of "social capital," such as James Coleman (1988, 1990),

endogenized social capital and social trust in their analytical framework. A number of studies have tested for an endogenous relationship between social and political trust, that is, the causal arrows point in both directions for these two variables. Brehm and Rahn (1997) apply a structural model to explore the relationship between interpersonal trust and confidence in federal political institutions (the executive branch, the US Supreme Court, and the Congress) using pooled US General Social Survey data from 1972 to 1994. They report a robust relationship, in both directions, between confidence in political institutions and interpersonal trust (Brehm and Rahn, 1997: 1014). In line with Levi (1996), the findings of Brehm and Rahn marked the return of politics and power to the study of social trust.

Subsequent studies using different data have come to similar conclusions. Whereas Newton was previously the leading champion of the independence thesis on social and political trust, Zmerli and Newton (2008) came to a strikingly different conclusion using new data. They find strong empirical support for a three-cornered set of robust and statistically significant correlations among social trust, confidence in political institutions, and satisfaction with democracy.

In view of the enormous growth, as well as growing complexity, of the research on trust, we seek to make two contributions in this article. First, the existing literature has relied on data from surveys to advance the competing perspectives on the causal relationship between political and social trust. Such data are generally good for generating correlates for different variables but are of limited utility in proving the direction of causality. By adopting the instrumental variables approach, we seek to develop a more precise estimate of whether and how political trust affects social trust.

Second, in spite of its growing global profile, China has received extremely limited attention in the literature on trust and most of these, led by Lianjiang Li, have focused on political trust. There has been hardly any English-language study on generalized trust devoted to the Chinese case. Steinhardt (2012) is the notable exception and he suggests that one of the plausible reasons for the high level of measured trust in Mainland China was that it was related to high institutional confidence or political trust. Meanwhile, the general literature on social trust has tended to view China as an outlier because China tends to score highly on social trust measures compared with countries with similar socio-economic profiles.

The important work of Delhey et al. (2011), by operationalizing the concept of the trust radius first advanced by Fukuyama (1995), has made major headway in helping to place China and a number of other Asian societies in the global context. We believe our study, by anchoring social trust on the trellises of political trust in China, not only sheds light on trust within China, but also helps to illuminate the dynamics of trust and its reproduction in comparative perspective, especially under authoritarian regimes. In consequence, this article contributes to bridging the divide between the general literature on trust and research on trust in China.

The problem of trust measurement and the China case

As research on social trust has bourgeoned, researchers have become particularly sensitive to a host of methodological issues in empirical research on trust, including conceptualization, specification, endogeneity biases, omitted variable biases, and biases due to unobserved heterogeneity (Durlauf, 2002). Much progress in trust research has been made in recent years in tackling a multitude of problems, ranging from differences in conceptualization, to the difficulties of measuring trust over time, ethnicity, and space (especially across national boundaries), to challenges of causal inference and estimation (Nannestad, 2008).

Empirical research on social trust has relied on data from experiments and surveys. Survey-based studies have in turn made much use of responses to the following question originally

formulated by Elisabeth Noelle-Neumann in 1948: "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?" This generalized-trust question, widely adopted in General Social Surveys in the US, Europe, and other places, is used to measure generalized social trust, or trust in people one does not know (versus particularized trust). Yet, scholars have questioned the validity of treating the responses to this question as indicators of generalized trust (Glaeser et al., 2000; Hardin, 2002; Newton, 2001: 203). It is suggested that this generalized-trust question suffers from under-specification of the group or community that the respondent would make reference to in answering the question (What does "most people" mean?). Some of the respondents thought abstractly about people in general, but others thought about people known to them, and the latter tend to report higher levels of trust than the former (Smith and Sturgis, 2010). Such concerns thus raise questions about the comparability of answers across groups or countries.

To address this issue of comparability, researchers have undertaken a variety of tests and have found substantial stability in the measured levels of generalized trust (e.g. Ciriolo, 2007; Uslaner, 2002, 2012). There is also experimental evidence showing that those with trusting attitudes also tend to behave in a more trusting manner (Yamagishi and Yamagishi, 1994). These findings lead to the conclusion that, in spite of its shortcomings, the generalized-trust question is a reasonably reliable survey instrument for measuring trust and that respondents are able to discriminate between generalized trust versus particularized trust, as well as trust in institutions (Delhey et al., 2011; Newton, 2007). They lend support to comparing levels of generalized trust within countries over time (Nannestad, 2008: 419). In operationalizing the radius of trust, Delhey et al. find that in most countries, respondents imagine a wider circle of people but the radiuses of trust vary across countries and are "much smaller in countries with a Confucian heritage" (Delhey et al., 2011: 800). This conclusion points to certain problems in comparing levels of generalized trust across certain countries and the need to take into account differences in radiuses of trust.

Our study contributes to the continuing debate on the relationship between political trust and social trust, with analyses of survey data from rural China. In particular, given the debate about the direction of this relationship, we adopt an instrumental variables approach to assess the causal relationship running from political trust to social trust. Because we use data from a survey conducted in rural China (more later), our study is free of the complications arising from cross-national comparisons. Yet, the significant variations within China offer an appropriate test ground for empirical analyses. Besides the generalized-social-trust question, we also include a number of trust-related questions contextualized for rural China in order to help cross-validate the findings from the generalized-trust question and enhance the validity of our overall findings.

In view of the concerns about trust measurement enumerated earlier, one needs to address the specific challenges of making the China trust data relevant in a comparative perspective. In particular, researchers were divided on how to interpret the high trust scores of countries with a Confucian heritage, including China's. Knack and Keefer (1997) took an accepting attitude, but Fukuyama (1995) was dismissive and argued that the trust radius in these societies was narrow. Yamagishi and Yamagishi (1994) also found that cultural norms of strong in-group cohesion inhibited the formation of truly general trust but they also introduced an emancipation theory of trust and showed that the expansion of individualism fosters trust among people (Gheorghiu et al., 2009). Recent research using data from the fifth round of the World Values Survey has made interesting attempts to grapple with the limitations and utility of the data from China. Delhey et al. (2011) note that China and Vietnam continue to stand out for their high scores and suggest that the Chinese appear to be more in-group connoted. They introduce an adjusted trust score that accounts for the radius of trust in different countries. Following the adjustment, the (Mainland) China score

becomes less exceptional, but, interestingly, (Mainland) China requires less severe adjustment than several other East Asian societies. Moreover, the adjusted trust score for China continues to rank in the top third of the sample countries and outperforms France, Spain, and South Korea. While these results call for careful interpretation of the standard trust question, they also underscore the need to better understand China's high trust level, and not to dismiss it as an outlier. Such an endeavor is especially important today because China accounts for nearly one-fifth of the world's population and is the world's second-largest economy. Our research thus contributes to this endeavor.

To be sure, our data is from rural China and one might suggest that such data are especially susceptible to the in-group bias. We do not wish to deny such a possibility but believe the fear is overstated. Rural China has experienced massive reform and social change in recent decades. More than 220 million people work as migrant workers (Murphy, 2002; National Bureau of Statistics, 2011) and television and cellphone usage are high. Thus, rural China does not fit the stereotype of closed traditional villages. Therefore, although the trust score from rural China is subject to some discounting, it is valuable for exploring the connection between trust and the processes of modernization in one nation and cultural space (Steinhardt, 2012: 447).

Survey description and data

The data set used in this article is drawn from a national survey conducted in the summer of 2008 using stratified sampling (see Appendix 1, available at: http://ips.sagepub.com). To correct for the differential between random sampling and multi-stage stratified sampling, we weight the data with each individual's probability of being selected, as well as the rural population distribution from the 2000 Census, and control the clustering and stratification effects.

Our survey questionnaire includes the generalized-trust question and the responses are coded as a binary variable (yes = 1; no = 0). Meanwhile, in the context of rural China, we also included three more questions that speak to the core values of Chinese culture, especially that of the family and, by extension, lineage (Faure, 2007; Hsu, 1967; Liang, 2005). The first of these three questions (CQ1) asks whether a villager is willing to entrust his/her young child to fellow villagers when he/she is away from the village.[2] The second question is about money, specifically whether the respondent would lend money to a fellow villager in need.[3] The third question concerns wedding/funeral attendance: "If your family is having a wedding or a funeral and invite others to come to help, will [they] come?"[4] These questions help to capture dimensions of particularized trust in rural communities.

Panel A in Table 1 (available online at: http://ips.sagepub.com) shows the descriptive statistics of our social trust measurements for the entire survey sample (last row). At 0.59, the measure for the generalized social trust for rural China would put China in the ranks of the most trusting societies in the world if China is included among the countries participating in the World Values Study. In light of China's size and regional diversity, we also present the data by province. It is interesting to note that the two most developed provinces along the coast (Fujian and Jiangsu) tend to have lower social trust scores compared with the provinces in the interior.

As can be seen from Table 1, meaningful differences exist between the survey results for the generalized-trust question and for the three China-specific questions designed to measure trust in the contextualized settings for rural China.[5] The striking difference in the answers to the contextualized questions, particularly the low score for the "childcare question," indicates the seriousness with which our respondents took the questions and reinforces our confidence in using questions such as this to assess the level of trust in China. To ensure the robustness of our statistical

estimations, we use the results for all four social trust questions and will also use provincial dummy variables to control for heterogeneity across provinces.

Political trust is a multidimensional and complex phenomenon. Building on David Easton's call for distinguishing political support among three levels of the political system (the community, the regime, and the authorities), Norris and her colleagues further expand the classification into a five-fold framework encompassing political support for the community, regime principles, regime performance, regime institutions, and political actors (Easton, 1965; Norris, 1999: 9–13). Confidence in political institutions is generally considered more fundamental than trust in politicians and has therefore received more attention.

Owing to the nature of China's political system, Chinese survey data present interesting interpretive challenges. In survey after survey, including recent ones by the World Values Survey and the East Asian Barometer, Chinese respondents have tended to exhibit high levels of confidence in the national government, as well as high social trust, and ours is no exception. Whereas it is relatively easy to understand and accept the high social trust scores for China (Inglehart, 1999), researchers have tended to take issue with the high political trust measurements and some researchers treat China as an outlier in cross-national comparisons (Nannestad, 2008; Newton, 2001: 208). China specialists accept the higher political trust scores as no fluke but a consequence of China's system of governance—with careful Party-state manipulation of the media—coupled with extraordinary economic growth (Li, 2013; Shi, 2001; Tang, 2005). The high level of rural political trust, in particular, is a tangible confirmation of the political benefits of major rural policy initiatives adopted in recent years (Michelson, 2012).

Research on political attitudes in China has also been attentive to the divergence of public attitudes toward different levels of government (Chen, 2004; Li, 2004, 2011; Shi, 2001; Tang, 2005). The central/national authorities tend to speak in generalities, enjoy an immense propaganda system to dominate the public discourse, and also tend to blame local authorities when things go wrong. In contrast, the lower-level authorities, particularly at the township, county, and district levels, are the ones that are tasked with the implementation of contentious and unpopular policies, including family planning and revenue extraction. In consequence, data from surveys have tended to reveal that Chinese respondents have a greater degree of trust or confidence in national political institutions/leadership than in local authorities (Li, 2004, 2008).

Our survey starts with the need to distinguish between public attitudes toward the central versus local authorities. In view of China's political environment and of the sensitivity to questions related to political trust in China, we eschewed asking respondents to directly respond to and thus confront the issue of "trust (信任)" of the political authorities. Instead, taking cues from the official discourse, we ask our survey respondents to answer questions on whether the local leadership or the central authorities represent and protect the lawful rights and interests of farmers. Still, given these considerations of political sensitivity, we recognize that those who answer "not sure" in the Chinese context are generally showing their disapproval but are hesitant to say so directly. We thus code the answers as follows: "1" if they agree or somewhat agree and "0" if they do not agree, somewhat do not agree, or answer "not sure."[6] Panel B in Table 1 presents the survey results for the questions on political trust for the entire sample and by province. As in other surveys conducted in China, ours reveals high levels of political trust in central authorities. Leaving aside the issue of reliability, there is little variation in the trust measurement for central authorities and such lack of variation reduces the value of such data for statistical analysis. In contrast, the scores for local authorities are well below those for central authorities and are more varied. We therefore focus our analysis on political trust in local authorities. Among the provinces included in the survey sample, Shaanxi, which once served as the base for Mao and the Red Army following the Long March, boasts the

highest level of social trust but ranks lowest for political trust and thus appears to suffer from an acute discordance between expectations shaped by the province's revolutionary legacy and present-day realities of rapid growth, high inequality, and rampant corruption.

Model specifications and the instrumental and control variables

We seek to estimate how political trust affects social trust. The baseline model is the single-equation probit model:

$$\Pr[ST_i = 1] = \Pr[\delta_0 PT_i + \sum_{j=1}^{k} \lambda_j X_{ij} + \xi_i > 0] = \Phi[PT_i \delta + X_i \beta],$$

where: ST_i is the measurement of social trust for observation i; PT_i is the level of political trust for observation i; X represents all control variables including province dummies; ξ_i is the error term; and $\Phi[\cdot]$ is the cumulative distribution function (CDF) of the standard normal distribution.

The beauty of the baseline single-equation probit model is its simplicity, but it has important limitations. Most notably, the political trust measure can be endogenous due to three reasons. First, as discussed in the previous section, the causal arrow between political and social trust can be going in the opposite direction. Second, some unobservable factors such as family culture may affect both political trust and social trust simultaneously. Third, the self-reported trust indicators may not be accurate, and thus may result in measurement error. All of these reasons may lead to violation of the crucial assumption $E(PT \cdot \xi) = 0$, which is necessary for consistent estimation of the coefficient δ_0.

The instrumental variable method provides a general solution to the problem of an endogenous explanatory variable as long as certain assumptions are met (Wooldridge, 2002). Our approach departs from the typical treatment of binary variables, which would normally have required logistic regressions, and presents linear instrumental variable estimates. The two-stage least squares (2SLS) approach is applied in this article. We first find a group of instrumental variables such that $Cov(Z,u) = 0$ and then estimate, in the first stage, the following equation:

$$PT_i = \mu + \sum_{m=1}^{n} \pi_m Z_{im} + \sum_{j=1}^{k} \theta_j X_{ij} + v_i.$$

Then we estimate the following model:

$$ST_i = \alpha + \beta_0 PT_i + \sum_{j=1}^{k} \beta_j X_{ij} + u_i,$$

where ST_i, PT_i, and X are defined as earlier and PT_i is the predicted value of PT_i from the first-stage estimation. The 2SLS approach could give consistent estimation as long as $Cov(Z,u) = 0$ and $\pi_m \neq 0$.

Instrumental variable

Our main instrumental variable is the number of war veterans as a percentage of the 1957 village population. It is an indicator of historical legacies and particularly of how each of the villages was implicated in China's wars for independence and revolution but prior to the onset of major Mao-era calamities (the Great Leap Famine and the Cultural Revolution).[7] These war veterans,

as participants in the Chinese revolution, were heroes of their times and supporters of the Chinese Communist Party regime that triumphed. Although their post-war careers did not always turn out as rosily as hoped, they (and their families) were nonetheless offered jobs and other benefits and tended to be supportive of the Party-state through thick and thin.[8] They are to be contrasted with today's People's Liberation Army (PLA) demobilized soldiers, who are generally not taken care of after their service ends and are likely to become cynical and less trusting after experiencing rampant corruption in the PLA (Lewis and Xue, 2003: 929–930; Mulvenon, 2006). We thus expect to find respondents in those villages with a higher percentage of war veterans to have more political trust in local authorities.

Valid instrumental variables need to meet two assumptions. First, an instrumental variable should be exogenous to the dependent variable and affect the dependent variable only through its effect on the explanatory variable (Wooldridge, 2002). Second, the instrumental variable must be partially correlated with the endogenous variable once other exogenous variables, X_j, are netted out. As shown in the first-stage estimation, our instrumental variable is statistically significant and the F-value lends support to the second assumption. Therefore, we can focus our discussion on the first assumption here.

The war veterans indicator is a measure of something that existed half a century or more ago and the vast majority of the war veterans have died off. Hence, we came to believe intuitively that this is very much a variable affecting political trust and that it does not have a serious impact on social trust today. One reviewer suggests that the war veterans indicator may be related to socio-economic conditions, in that poorer people in villages with certain social trust characteristics might have been more likely to join the Red Army. This does not appear to be the case in the history of the Chinese Communist movement. As Hofheinz (1977) concluded in his classic study, the conditions for revolution were ones "of human effort rather than immutable givens of social structure, economics, or demography."[9] Another possibility was that the war veterans could have induced a change in community culture that produces higher political trust and positively affects social trust. We do not have direct evidence on community culture but two empirical findings contradict this proposition. The province of Shaanxi, where the Red Army made its base after the Long March, has the lowest local political trust score among the survey provinces and yet the highest social trust score. Also suggestive is the fact that Communist Party members show heightened political trust in local authorities but exhibit lower social trust.

As is the case with other leading studies using instrumental variables (Miguel et al., 2004), it is difficult to completely rule out the possibility that our instrumental variable might have some sort of direct impact on social trust rather than only working through political trust. Nonetheless, taking into account the preceding considerations, we believe that the direct effect, if any, is not serious enough to warrant our abandoning our instrument.

Control variables

Beside the core independent variable—political trust in local authorities—we also control for other variables that might affect the level of social trust. First are the personal traits of the survey respondents. Some studies have found the level of social trust to vary with age (Putnam, 2000) and others with race and education (Bjørnskov, 2007; Putnam, 1995; Uslaner, 2002: ch. 4). Still others (Glaeser et al., 2000) suggest that the impact of education on social capital and social trust may be a complex function of how the more educated value investing in social capital but at the same time are constrained by the higher opportunity costs of time in making such investment. Our analyses control for the influence of age and education, as well as gender and marital status.

Generalized social trust is "often part of a tight syndrome of social, economic, and political features of nations" (Newton, 2007: 355). In view of China's political environment and massive socio-economic changes, we control for whether the respondent is a member of the Chinese Communist Party, a member of an ethnic minority, a member of the village leadership (village cadre), had served in the armed forces, has rural or urban household registration, has been a migrant worker beyond his/her home county, and has any relative(s) serving as township or county officials (broadly understood by respondents to encompass both officials and employees in government and Party organizations). Migration, for example, may be expected to lower a family's dependence on agriculture, reduce their interactions with rural society and affect an individual's interpersonal trust. In addition, considering the role lineage (clan) and religion play in rural Chinese society, we control for whether the respondent is a religious believer and whether he or she is a member of a major village clan.

Trust inheres in relations, and researchers have paid increasing attention to how social context and interactions affect social trust (Marschall and Stolle, 2004). In our analysis, the village characteristics we include are the total number of households in a natural village, the share of the resident population without local household registration status, the share of the village population working as migrant workers, and village per capita income (see Table 2, available online at: http://ips.sage-pub.com).[10] Because certain government designations may help a locality obtain preferential treatment and subsidies, we include as a control whether a village is in a government-designated "Poor County."

Research by Tsai (2007) has suggested that local solidarity groups, including village temples and lineages, as well as churches, may affect public goods provision in villages. It goes without saying that social contexts, such as the configuration of village social and religious organizations, often the product of many decades or even centuries of evolution, may also affect the level of social trust (Delhey and Newton, 2005; Welch et al., 2004). We therefore include in our analysis the following indicators of village social and religious organizations: village clan (lineage) structure; whether the clans are in conflict; whether a village has Christian or Islamic (monotheistic) religious organizations; whether the village has a temple; and whether a village has a seniors' association or other non-governmental organization (NGO). Following studies by Kennedy (2002) and Manion (2006), we control for clan structure by taking into account surname diversity and the number of clans.

Durante (2009) hypothesizes that the patterns of social trust in different societies may have been shaped by the patterns of risk and cooperation in pre-industrial times, when subsistence farmers needed to cope with climatic risk as shaped by a locality's natural endowments. Specifically, he advances a theory of insurance through geographic differentiation and found higher levels of trust in regions with higher year-to-year variability in precipitation and temperature. Trust is thus an enduring value shaped in circumstances over long stretches of time, even generations (Uslaner, 2002). Here, our focus is on a survey sample from rural China, where land scarcity and climatic risk remain major concerns. To take account of susceptibility to climatic risk in our regression analyses, we include the area of a village's farmland and the share of the village arable land that is irrigated.

Regression results and discussion

As noted earlier, we seek to estimate how political trust affects social trust using an instrumental variables approach to deal with the problem of endogeneity. Therefore, we present results using the ordinary least squares (OLS) model discussed earlier and the 2SLS instrumental variables model.

The baseline probit model

We first conduct estimations using the baseline probit model, where the dependent variable is our measurements of social trust (GQ and CQ1–3). The results (see Appendix 2, available at: http://ips.sagepub.com) suggest that political trust is significantly related to social trust, with CQ1 (trusting one's child with others) being the exception.

To verify the existence of endogeneity, we conduct a Hausman test for the potential endogenous regressor, namely, political trust. The test indicates that the issue of endogeneity is significant and therefore the regression results based on probit models are likely to be biased. In consequence, our discussion of the substantive findings relies on the regression results for the 2SLS model.[11]

The 2SLS model

Because we want to better understand both political trust and social trust, we first run a probit regression with political trust as the dependent variable (1) alongside the first-stage regression of the 2SLS model (2). Since the variable for the level of per capita income is more susceptible to measurement error, we also ran both regressions without the per capita income variable (1a and 2a). The results are presented in Table 3 (a short version of which is reproduced in the following as Table 3S; the full version of this table is available online at: http://ips.sagepub.com). The F-value for the Wald tests lends support to the validity of our instrumental variable. In Table 4 (a short version of which is reproduced in the following as Table 4S; the full version of this table is available online at: http://ips.sagepub.com), we present the second-stage results of the 2SLS model for all four measures of social trust, both with and without the per capita income variable. The values of the independent variable 'Political Trust' in Table 4 are the estimated values for 'Political Trust' as derived from the first-stage regression in Table 3.

The regression results from the probit model and the first stage of the 2SLS model (Table 3) show the same patterns. It is not surprising, but is nonetheless instructive, to note that members of the Communist Party show more trust in local authorities. This is prime facie evidence that the regime's own members do lend more support to the regime. Those in villages with a higher percentage of war veterans also trust the local authorities more. In contrast, and as noted earlier, today's demobilized soldiers tend to be cynical and thus have lower political trust in local authorities (when the per capita income variable is removed). Modernization is a double-edged sword. The regression results show that, when per capita income is controlled for, those with more education tend to trust the local authorities less. Villages with higher per capita income and those with more farmland are both found to exhibit higher political trust in local authorities. Migration is an important factor affecting local political trust. Those villages with a larger share of "outsiders" tend to trust the local authorities less while those with a greater share of people away as migrant workers see their local political trust measure go up. We shall further discuss the relationship between social change and trust below.

Because the Chinese ruling regime brooks no political opposition and often pits itself against civil society, our results show that members of civil society organizations, including major clans and seniors' associations, tend to exhibit lower political trust in local authorities.

The second-stage results for the 2SLS regression appear in Table 4. The coefficients of the instrumental variable for all four measures of social trust are statistically significant and positive. These results, for both the generalized social trust question and the contextualized social trust questions, demonstrate quite consistently that political trust positively affects social trust in rural China. They strongly confirm our main hypothesis for this study.

The relationship between the rest of the variables and our measures of social trust are more complex and nuanced. Earlier, we referred to modernization theory, but it is not straightforward

Table 3S. Local political trust: Probit model and first-stage results of 2SLS (only reporting selected control variables).

Local political trust	Probit		First-stage OLS	
	(1)	(1a)	(2)	(2a)
Veterans as % of 1957 village population	21.95***	21.00***	7.892***	7.527***
	(7.381)	(7.346)	(2.422)	(2.396)
Education (years)	–0.0359*	–0.0333	–0.0129*	–0.0120
	(0.0213)	(0.0209)	(0.00747)	(0.00734)
Communist Party member	0.791***	0.798***	0.258***	0.260***
1 = Yes; 0 = No	(0.203)	(0.202)	(0.0606)	(0.0602)
Village cadre	0.205	0.224	0.0891	0.0962
1 = Yes; 0 = No	(0.316)	(0.317)	(0.114)	(0.115)
Served in the armed forces	–0.412	–0.422*	–0.135*	–0.137*
1 = Yes; 0 = No	(0.249)	(0.249)	(0.0804)	(0.0802)
Member of a major clan in village	–0.261**	–0.263**	–0.0957**	–0.0963**
1 = Yes; 0 = No	(0.115)	(0.115)	(0.0417)	(0.0420)
Village characteristics				
Per capita income (log form)	0.155**		0.0567**	
	(0.0780)		(0.0284)	
% of population away as migrant workers	1.767**	1.879**	0.636**	0.675**
	(0.879)	(0.872)	(0.287)	(0.284)
Seniors' association or other NGO	–0.323***	–0.312***	–0.117***	–0.114***
1 = Yes; 0 = No	(0.104)	(0.110)	(0.0382)	(0.0402)
Village farmland area (mu, log form)	0.208***	0.169***	0.0731***	0.0587***
	(0.0653)	(0.0609)	(0.0227)	(0.0211)
Provincial dummy	Y	Y	Y	Y
Observations	2168	2168	2168	2168
R-squared			0.132	0.130
F-value in Wald test of instrumental variables			9.62	10.87

Note: Clustered standard errors in parentheses. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table 4S. Effect of local political trust on social trust.

Social trust	Single equation probit model		Second-stage results of 2SLS	
	Coef. Of Local PT	M. Eff.	Coef. Of Local PT	Coef. Of Local PT
GQ	0.370**	0.1443**	0.854**	0.948**
	(0.177)	(0.0686)	(0.358)	(0.412)
CQ1	–0.138	–0.0504	0.528*	0.587*
	(0.104)	(0.0383)	(0.280)	(0.296)
CQ2	0.255**	0.0691**	1.110***	1.224***
	(0.109)	(0.0304)	(0.417)	(0.455)
CQ3	0.307**	0.0787**	0.467**	0.509**
	(0.124)	(0.0313)	(0.196)	(0.208)
Personal income level controlled	Y	Y	Y	N

Notes: Questions used for measuring social trust in China: GQ: "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?"; CQ1: Suppose you have a 3–4-year-old child at home. When you need to leave the village for business, would you ask other villagers to look after the child?"; CQ2: "Would you lend money to someone living in your village when he or she is in need?"; CQ3: "If your family is having a wedding or a funeral and invite others to come to help, will [they] come?" Clustered standard errors in parentheses. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

with respect to social trust. Those with a higher income per capita do exhibit reduced social trust, but those with more education are more likely to lend money to the needy (controlling for per capita income) and to attend funerals and weddings. This appears to be an indication that the better educated are also better networked. The same effect is found for those who had served in the armed forces and, for funerals and weddings, for those who were migrant workers.

A striking result that leaps out at us is that Communist Party members seem less trusting. The coefficients for Party members are statistically significant and negative for the generalized social trust and the question about willingness to lend money to help fellow villagers in need. In focus-group discussions, it is noted that Party members are socially expected to behave more altruistically and this may paradoxically make them less willing to part with their money for the needy. While we are not in a position to rule out the self-selection effect that only the less socially trusting and more selfish join the Communist Party, it seems that the Communist Party is able to inculcate political loyalty among its members but, at the same time, make them more distant from the rest of society. In contrast, as noted earlier, former members of the armed forces, an organization that tends to foster camaraderie, are both more helpful to the needy and more social, though they do not score higher on the generalized social trust question. Meanwhile, in a reflection of the delicate relations between the dominant Han Chinese and minority ethnic groups, minority ethnic groups score lower on the generalized social trust question.

As was the case with political trust, the patterns of social trust also reflect China's massive social change. Unlike the communities that host more migrants, those communities that have a higher proportion of people having left home as migrant workers tend to face more challenges (Xiang, 2006); they have lower social trust scores, especially on the childcare question and on helping those in need.

Our results also offer important insights into the relationship between civil society and social trust in China. The presence of a seniors' association is associated with a higher score on generalized social trust. It is not a surprise that religious believers are more willing to help those in need. However, the presence of Christian or Islamic (monotheistic) religious organizations in villages has no effect on the level of social trust. We also find that villages with a temple see a decline in the willingness to help the needy. As a consequence, even if temple organizations are conducive to helping villages obtain public goods (Tsai, 2002), there might be a displacement effect. The role of clans is also mixed. Not surprisingly, clan rivalry (oligopoly) and clan conflict are not conducive to the enhancement of social trust, especially in the contextualized settings.

The Durante hypothesis linking risk from the farming environment and social trust finds modest support in our analyses. Those villages that enjoy better irrigation of their farmland and thus more reliable harvests tend to exhibit lower levels of social trust, with the coefficients for the childcare question being negative and statistically significant. When per capita income is controlled for, those with more farmland are less willing to lend money to the needy.

Conclusions

The findings of our research speak to two important concerns. First, they help to untangle the complicated causal relationship between political and social trust, with the finding that political trust positively and significantly affects social trust in rural China. Whereas earlier studies, especially Steinhardt (2012), have proposed that institutional confidence may contribute to the formation of generalized trust, our use of the instrumental variables methodology allows us to be more affirmative in discerning the causal path from political to social trust. Our results are robust across a range of measures, including the generalized social trust question, as well as more contextualized questions.

Second, our findings allow us to gain insight into the dynamics of trust production and reproduction in authoritarian China. In the existing literature, it is noted that "authoritarian and

totalitarian political systems seem to undermine generalized trust and oblige citizens to rely in daily life on particularized trust" (Newton, 2007: 348). In contrast, our study reveals that high levels of political trust have helped to sustain fairly high levels of social trust in China. Superior economic performance and the resultant improvement in living standards—economic modernization—increase political trust and, indirectly, the levels of social trust.

Yet, this is a Faustian bargain for the Chinese Party-state. To begin with, a failure to sustain political trust due to worsening economic performance or deteriorating governance (such as nationwide environmental catastrophe) will likely bring down the level of social trust. Moreover, modernization leads to more investment in education and an overall improvement in the cognitive abilities of the Chinese population, which are associated with declining political trust in China. While improving incomes can help increase political trust and by extension social trust, the level of income variable also negatively impacts the level of generalized social trust. In consequence, as China modernizes, it looks likely that it will be on a sort of "trust treadmill." The prospects for social trust thus seem mixed in China and recent reports of the decline in social trust in China, as noted at the beginning of this article, may suggest that the high trust levels currently found in China are a transitional phenomenon.

Acknowledgments

Funding

Notes

1. On trust and government performance, see Putnam et al. (1993), Putnam (2000), Knack and Keefer (1997), Knack (2002), and Uslaner (2002). On the implications of social trust for economic performance, see Knack and Keefer (1997) and Fukuyama (1995). For contrary results, see Beugelsdijk (2006) and Paldam (2009).
2. Coded "1" ("Yes, it's OK [to leave the child] with anybody in the village, except for enemies") and "0" ("No, I'll take the child with me" or "Yes, but must be with kin or friends or neighbors").
3. Coded "1" ("Yes") and "0" ("No," or if the respondent is willing to lend money to relatives or very close friends only).
4. Coded "1" ("They generally will come") and "0" ("No," or "Only relatives/friends will come").
5. The correlations among the four social trust measures range from 0.13 to 0.15 (between GQ and CQ1–3) and 0.27 (between CQ2 and CQ3).
6. We conduct two robustness checks. The first one drops all observations (286 observations) with a response of "not sure" and the results remain consistent with the results reported in this study. Second, we use the original five-value political trust variable, that is, "5" for agree, "4" for somewhat agree, "3" for not sure, "2" for somewhat do not agree, and "1" for not agree, and the results are still robust.
7. For the present study, the wars include the Sino-Japanese War, the Civil War (or War of Liberation in the parlance of the Chinese Communist Party), and the Korean War (The War to Resist America and Aid Korea).
8. The Chinese government has specifically grouped these veterans as a category for preferential treatment. Zhongfa Document no. 54 (1983) conferred promotions and special benefits on veterans who had joined the army prior to 1953.
9. Even if a reviewer were correct that a trajectory of poverty was the cause "behind share of veterans, political trust in local officials, and social trust," we have controlled for per capita income. Present income is a good proxy for relative poverty in the past if, as the reviewer states, relative poverty "persisted over time."

10. For the village characteristics imputed to each individual in the sample, we keep the same number of observations for both individual and village characteristics in the table for descriptive statistics.
11. We also estimate a bivariate probit model and the results are quite consistent with the 2SLS procedure.

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