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Persistence of Confucian Values? Legacies of Imperialism in China & Taiwan

By Samuel Jung* and Theodor Grigoriadis**

Abstract

In this paper, we analyze the long-run effects of Western and Japanese imperial expansion on the survival of Confucian values in China and Taiwan. Mainland China and Taiwan had been under the rule of the Qing dynasty and shared the same culture and societal structure before the onset of imperial expansions in the mid-nineteenth century. We show that due to the cultural proximity of Japanese invaders to Taiwan, Japan engaged strongly in the development of an efficient public administration in Taiwan. Mainland China, however, was invaded mainly by Western empires from 1842 to the early twentieth century and thus experienced a different cultural treatment. This gave rise to extractive Western institutions in combination with a substantially weakened Qing government, which led to a relatively stronger divergence of Confucian values from their original path. In Taiwan, the smaller distance between Japanese and Chinese languages preserved crucial Confucian values, such as the practice of religion, generalized trust and female participation in the labor force. In contrast, the large cultural distance between mainland China, on the one hand, and Britain, France and Russia, on the other, prevented formal state-building and facilitated individualism and hierarchical family relations. Confucian values are more likely to persist in the long run in Taiwan and those provinces of mainland China that were partly under Japanese occupation.

JEL Codes: O53, O57, P16, P26, P51, Z10

1. Introduction

The impact of culture on economic development is a longstanding topic in economics and empirical social science. Marx and Weber were the first to identify the

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interrelationship between culture and economic systems. Marx treats culture as an outcome of economic structures and vested interests, while Weber proposes that cultural beliefs shape the course of economic development. Tabellini (2008) was one of the pioneers to introduce culture to contemporary economic analysis by arguing the significance of social capital as an outcome of family values and intergenerational transmission. His mechanism indicates that parental teaching increases the probability of the child becoming a moral adult. The underlying assumptions proposed by Tabellini indicate that each individual is shaped by the exogenous natural and social surroundings and by the intentional investments parents make in their children's upbringing. Furthermore, individuals also learn from and are influenced by their teachers, friends, media as well as their own reputation (Cantoni 2015). Guiso, Sapienza and Zingales (2008) also concentrate on intergenerational transmission, while making trust a crucial factor in this model; a society with an initially low level of cooperation and a mixed number of pessimistic and optimistic parents will remain at a low level of development due to low trust.

The predominantly Western imperial expansion in China and the Japanese imperial expansion in Taiwan have had different effects on the survival of Confucian values. Confucian traits observed in the People's Republic of China (PRC) and Taiwan diverge due to different cultural distances between Chinese and Japanese languages, on the one hand, and Chinese and European languages (primarily English, French and Russian), on the other. Western and Japanese imperial expansions occurred between 1842 and 1945 and facilitated the long-run persistence of Confucian values more in Taiwan and those provinces of mainland China that were partly under Japanese, rather than Western, control. The treaty of Nanjing between Qing China and the United Kingdom in 1842 marked the end of the First Opium War and included, among other things, unequal economic conditions to the advantage of the British crown (Jia 2014). The Chinese defeat against Japan in the years 1894 and 1895 granted Japan the dominion over Taiwan (Chai 1999). The Sinocentric worldview ended for China with the European and Japanese expansions in Asia, which resulted in China losing its important vassal states Vietnam, Burma and Korea in 1895 (Ropp 2010).

Mattingly (2017) argues that Japanese invaders in the originally Chinese province of Manchukuo modernized and expanded public administration and infrastructure, health care and education. Natural experiments with former Japanese-ruled regions in Northern China, as well as in Korea and Taiwan, support the argument that Japanese-style institutions provided a stronger basis for long-run development as compared to corresponding institutions in non-occupied regions. Bai and Kung (2015) find similar results when they analyze the work of Protestant missionaries in mainland China in the post-1840 period. The different institutional and cultural backgrounds of European and Japanese imperial powers in what are now the PRC and Taiwan have had long-term effects on these regions. Thus, the set of transmitted Confucian values in the form of social capital differs depending on the imperial invader power in a given region.

We apply Lohmann's Language Barrier Index (2011) to capture the cultural distance in each of the invader-invaded pairs. Becker and Woessmann (2009), Guiso, Sapienza and Zingales (2006) as well as Alesina and Giuliano (2015) argue for causality between culture and institution building. Cultural distance and its related interactions matter in the context of tradition formation. Tradition as a historical heritage has a certain time span of existence of at least three generations, who transmit their culture in the form of rituals, material items, institutions and beliefs. This time dimension differentiates tradition from comparable popular trends. Van Norden (2007) explains the evolution of tradition as a result of intellectual development or adjustment to changed situations. Furthermore, the concept of community includes individuals that share the same set of traditions, which, in turn, results in common interpretations of these traditions that each individual member of that community accepts as part of his or her own life. As Cua (2011) points out, only by knowing what determines one's way of interpretation is it possible to interpret historical texts and transmitted traditions and, hence, diversions from their original path. Corneo and Jeanne (2010) analyze the impact of values on occupational choice and argue that, based on their own beliefs and expectations, parents teach their children values that consequentially influence their children's valuation of certain professions with the respective aggregate economic outcome.

MacIntyre concentrates on the role of moral traditions, which are the "historically extended, socially embodied argument, and an argument in part precisely about the goods which constitute that tradition" (1984, 222). Van Norden (2007) explains the evolution of tradition over time because of intellectual development or adjustment to changed situations. Alesina and Giuliano (2015), by citing a vast number of relevant authors, suggest three methods of how to measure culture, i.e. survey data, particularly when it comes to the observation of second-generation immigrants, game-theoretic modeling and experiments. They provide an interesting overview on the influence of trust on economic results and propose that generalized trust is for one thing lower in groups that have historically frequently been discriminated, such as African Americans.

The paper is structured as follows. Section II provides historical evidence on Confucian ethics and Japanese and Western imperialism in China and Taiwan. Section III offers the data description and the empirical strategy implemented in the paper, and section IV presents and discusses our results. Section V concludes.

2. Confucian Ethics & Historical Imperialism in China & Taiwan

The ethical system of Confucianism, also known as Ruism, originates from the political thinker and philosopher Confucius, whom authors such as Eberhard (1960), Goldin (2011) and Gardner (2014) confirm to be the single most influential thinker in Chinese civilization. The term Confucianism used here refers to this set of ethical

imperatives based on the original teachings of Confucius, which has been amended and transmitted over 2400 years. As Koehn (2001) and Paul (2015) indicate, Confucian social capital in the PRC stresses the significance of trustworthiness, a relatively high degree of collectivism in citizen-government relations and the drive for individual self-fulfillment.

Confucianism can affect economic development through its influence on risk preference in economic activities, human capital and institutions. Huang and Sun (2005) find that Confucianism is related to a high saving rate by introducing Confucian ethics, e. g. gifts to the older generation, bequests to the next generation and the association between wealth accumulation and social status into the overlapping generation model. Furthermore, they argue that a high level of saving squeezes consumption, thus inhibiting economic growth. Similarly, Wan and Xiao (2013) suggest that thrift and familism in Confucianism also lead to a higher saving rate in China than that in other countries. In addition, the empirical analysis of Chinese General Social Survey data (CGSS) shows that Confucian culture is negatively related to the development of inclusive financing (Chen 2017). Through an analysis of a panel dataset at the provincial level in China, Ye, Shuang and Chengyu (2018) provide empirical evidence proving the positive relationship between Confucian culture and residential saving rates, but they propose that economic development can benefit from the promotion of Confucian culture by contributing to capital formation and transformation. Du and Ying (2019) also find families are more risk averse and unlikely to buy risky assets. From the perspective of corporate culture and a CEO's cultural characteristics, the negative relationship between Confucianism and risk taking is also true and this reduces corporate risk returns (Jin, Hui and Yongqiang 2017). Hence, Confucianism may affect financial development negatively, which induces a negative effect on economic development. That being said, Li, Baoping and Cuicui (2014) claim that Confucian culture can exert a positive influence on economic growth by promoting the accumulation of human capital. Feng, Shu and Caiquan (2019), by comparing counties governed by the system of appointing national minority hereditary headmen in the Yuan, Ming and Qing Dynasties and the Central Plains Dynasty find that the inheritance of Confucian culture in the Central Plains Dynasty plays a significant role in explaining the accumulation of human capital.

With respect to the effect of Confucian culture on social institutions, Hu and Zhou (2013) find that there are different relationships between different Confucian ethics and generalized trust. The relationship between differential order in Confucianism and generalized trust is negative, while the relationship between Confucianism as an identity and generalized trust is positive. However, Liu (2017) suggests that researchers should pay more attention to the institutional role of Confucian culture in coordinating economic behavior rather than the effect of particular Confucian ethics. It is true that there is evidence showing the benefits of economic development from the institutional role of Confucian culture. For example, the rise of South Korea benefits from Confucianism through the state's capacity to maintain social stability, effective regulation of the economy and communitarianism based on familism (Liu 2000).

Rapid economic development in Singapore can be attributed partially to the role of the coordination and adaptation of Confucian culture in developing different types of capitalism with higher growth engines (Chen 2004).

Confucianism puts the self at the center of all relations, focusing on the embedment of every individual within a family-like network, on the high meaning of rituals in everyday life, on the priority of education shaping virtues, as well as on the priority of role models in superior positions and on consensus and self-cultivation (Tu 1990). Hence, we argue that Confucian ethics shows a clear predisposition toward formal institutions.

The historical overview provided by Kung and Ma (2014) explains the central role of Confucianism for Chinese culture along with its historical institutionalization in China. Beginning with the West Han dynasty (206 BCE), imperial authorities systematically engaged in the dissemination of Confucianism in China. Möller (2000) provides a short but insightful overview of the connecting points between Confucianism and Chinese communism. Although Confucian traditions were condemned from 1949 until the end of the 1970s under Mao, they experienced a renaissance with the progressive liberalization in the PRC. This resulted in the phenomenon that today is described as Meta-Confucianism, i.e. a general validity of Confucian values like piety towards hierarchical superiors in everyday Chinese culture as part of the national identity. Roßker (2013) underscores that Confucianism is not a static historical heritage of ancient thoughts, but rather comprises several strands that can be used to explain modern ideologies and societies in East Asia.

In this paper, we explore the differences in Chinese social capital in the PRC and Taiwan based on their different histories of foreign interventions. The Qing dynasty (1644–1911) was organized according to Confucian requirements. As a result, all foreign cultures were ranked lower than, and expected to pay tribute to the Qing Empire due to their minor knowledge and appreciation of Confucian rites. This is underscored by the translation of China as the “Central Kingdom” (Jia 2014). The Qing government had rejected first attempts at trade partnerships and diplomatic approaches by European representatives until the early nineteenth century (Wakeman 1975). However, Western and Japanese expansionary missions to find trade partners as well as potential new overseas fulcrums became more intense with increased competition among European powers. The obvious decline of the strictly Confucian imperial China began with the Treaty of Nanjing in 1842, the terms of which were dictated by the victorious power: Great Britain. According to Jia (2014) this treaty forcibly opened the harbors of Shanghai, Guangzhou, Fuzhou, Xiamen and Ningbo to unrestricted trade with the British. This marked the beginning of European powers securing strategically important harbor cities, unequal trade arrangements, enclaves and concessions on Chinese ground, to which the humiliated and over-challenged Qing court gave approval (Ropp 2010). There were two types of foreign domains in mainland China: settlements, referring, in China’s historical context, to a foreign-controlled territory where several treaty powers shared equal rights, and concessions,

referring to a domain conceded to a single foreign nation, where this nation had the right to enact its own laws instead of Chinese law (extraterritoriality) (*ibid.*).¹ The Treaty of Shimonoseki ended the First Sino-Japanese War of 1894–1895 and determined the shift of dominion over Korea and Taiwan from the Chinese Qing dynasty to Japan, while including paragraphs similar to those in the treaties signed with Western powers (Chai 1999).

These developments highlight the race to China due to competition between Japan and Western powers. Japan had just finished its Meiji restoration phase, an ambitious and effective reform of Japanese public administration. Thus, it joined the strategic partition of East Asia by competing with Western powers for territories and economic influence. This phenomenon shows strong similarities to the partition of Poland (Grosfeld and Zhuravskaya 2015).

Acemoglu, Johnson and Robinson (2002) establish the link between “extractive institutions,” on the one hand, and the incentives of the invaders, impacted by cultural distance, in designing colonial institutions in a more detailed way, on the other hand. Extractive institutions may well be “equilibrium institutions,” particularly when powerful groups are unwilling to accept a reduction of their rents in favor of a broader majority of citizens (*ibid.*). Hence, extractive institutions are efficient for ruling elites because they facilitate the maximization of rent accumulation, but at the same time they undermine long-run growth (*ibid.*). Following AJR (2002), Easterly and Levine (2003) identify as extractive states those post-colonial institutional settings where European colonialists enjoyed the monopoly of protected and enforceable private property rights.

As Nathan (2019) outlines, the effects of imperialism on “the Chinese national psyche” gave rise to Chinese nationalism. This led to the Chinese Revolution aimed at liberating China from humiliating imperialism at all cost – including the liberation from traditional structures of society. Therefore, we treat the Communist revolution as a consequence of foreign invasion and a humiliated Qing government.² The findings of Chu, Shin, Welsh and Chang (2013) state that in political systems directly arising from a revolution, the anti-imperialist fight has lasting effects on citizens’ political views (i.e. support for the symbiosis of party and state legitimacy). The Kuomintang in Taiwan installed a one-party government after 1949 that resembled the Communist ruling structures in mainland China with regards to centralization of power as well as the party’s firm grip on state societal institutions (Chu 2012). However, unlike the Communist party in mainland China, the Kuomintang party continued the state-building efforts of Japanese imperialists by supporting private-property rights, higher education and export-oriented industrialization.

¹ For a historical overview of Japanese and Western imperialism in mainland China and Taiwan see also So and Myers (2011) and Wang (2005).

² We provide evidence on the significance of imperialism in the results section by estimating the effects of cultural proximity between the invaders and the invaded in the provinces of mainland China only, since they were all influenced by the Communist revolution.

Now, we proceed with analyzing the differences in effects of the cultural distance between the invaders and the invaded on the persistence of Confucian social capital empirically.

3. Data & Empirical Strategy

Our dataset consists of measures of Confucian values that are related to contemporary social capital, of cultural distances between the invaders and the invaded in provinces of mainland China and in Taiwan, and of contemporary values related to the Confucian mindset. This accounts for the ambivalence with which Confucian history should be analyzed with respect to its political and social roots (Möller 2000). Our dataset is derived at the regional level from areas that experienced Western or Japanese invasion. Within-province analysis can lead to further supportive evidence, but it is the subject of another study.

The provinces we include in our dataset are Taiwan and mainland Chinese provinces that experienced Japanese and/or Western imperialism during the given time interval and are part of the PRC today. We exclude Hong Kong from our dataset because it was a British Crown Colony leased for 99 years from the Chinese government – also Japanese for a short period during World War II – and was only returned in 1997. Hence, the British control of Hong Kong exceeds the imperial expansion interval between the 1840s and World War II and has produced specific economic and political conditions that do not allow the inference of comparable results on the persistence of Confucian social capital. At the same time, while we focus on Japanese imperialism and its implications in Taiwan and mainland China with the exclusion of Hong Kong, we also acknowledge that long-run British engagement in Hong Kong may have produced more Confucian-style institutions than the shortsighted Western imperialism of the 19th/early 20th century. In any case, our argument is in line with Cantoni and Yuchtman (2013) who indicate that it was precisely the rejection of Western values by Confucianism that prevented Chinese elites from modernizing educational content in the direction of Western subjects and values. In this way, the selection of civil servants and the social mobility attached to it remained linked to the study of Confucian classics, which undermined any government initiatives for large-scale modernization.

The challenge we face when we assemble valid measures of Confucian morals is that, unlike religions, Confucianism does not follow one central sacred writing, which distinctly defines all rules, values and beliefs. Furthermore, the focus of our study does not allow the use of external measures such as the number of temples (Kung and Ma 2014). Moreover, considering the history of civilization in the territory under Qing rule, we treat Taiwan and mainland Chinese provinces as culturally identical *ex-ante*. This implies that Confucianism had been the valid and widely accepted ethical system in Taiwan and mainland China before the beginning of Western and Japanese invasions in the mid-nineteenth century. The Confucian and related values analyzed are

generalized trust, the importance assigned to family, child obedience, the role of mothers, work ethic represented by the general importance of work, filial piety, faith, demand for increased authority and strong autocratic leaders, confidence in the central government as well as individualism in the context of individual moral autonomy. For this purpose, we use survey data stemming from the World Value Survey (WVS). Due to its vast geographical and timely coverage of more than 25 years, WVS constitutes one of the standard data sources in the social capital literature (Guiso, Sapienza and Zingales 2011).

We use survey waves 5 (2005–2009) and 6 (2010–2014) as these are the only two including both Taiwan and the PRC. Since respondents are not repeatedly interviewed in the waves, their answers are treated as individual ones. The responses “No answer” and “Don’t know” are excluded from the dataset and Figures A.1–A.12 (see appendix).

As family is a core element of Confucian society, we include the measure of the degree of importance assigned to family in general. Figure A.1 depicts the distribution of response frequencies: “Very important” (1), “Rather important” (2), “Not very important” (3), “Not at all important” (4). The share of respondents in Taiwan who value family as very important (1) is 7 percentage points higher than in mainland China.

Obedience (A.2) is an answer option to the question “Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important?” We use this variable, referring to Tabellini (2010), who observes that relatively higher values of obedience indicate a lack of trust within society. Moreover, higher values of obedience capture a more conservative society that defends the status quo against radical changes. Figure A.2 depicts whether respondents choose obedience as a child quality (1), or not (2). In both the PRC and Taiwan, between 86 and 90 percent of the respondents did not choose obedience, while among the Taiwanese the approval rate is slightly higher than in China.

In that context, we also analyze the answers to the statement “When a mother works for pay, the children suffer,” to which respondents could choose a level of agreement. Among mainland Chinese 45 percent strongly agree or agree, while not even 17 percent of Taiwanese strongly agree or agree (A.3).

Significance assigned to work is also included in our proposed set of Confucian values. We use this as a measure of the Confucian duty to contribute actively to society. Moreover, it is related to the family-style bond between the employer and the employee. The measurement is conducted in the same way as for the relevance of family, i.e. by a ranking of assigned importance as “Very important” (1), “Rather important” (2), “Not very important” (3), “Not at all important” (4), as shown in Figure A.4. A high valuation of work can be a straightforward explanation for the level of economic output as well as the measure of the Confucian duty to contribute actively to society. 62 percent of Taiwanese respondents value work as very important as opposed to only 47 percent of mainland Chinese.

In Figure A.5 (see appendix) we present the frequencies and densities of respondents' choices on generalized trust by country and in total. As outlined by Koehn (2001), generalized trust is key for transactions in China. Trust enables anonymous exchange and cooperation and thus economic activity. Furthermore, it is the underlying belief in the expected behavior of unfamiliar members of society, so that an individual trusts his peers' respective reaction without contractual enforcement (Tabellini 2010). In Confucian societies, trust is linked to the equilibrium concept of harmony and therefore an essential component of Confucian social capital. Chu *et al.* (2013) discuss that trust can foster the establishment of efficient state institutions. However, authoritarian governments can also benefit from a generally trustful and obedient population. Respondents must choose between the statements "Most people can be trusted" (1) or "Need to be very careful" (2). The mainland Chinese appear to be predominantly trustful (60.55 percent), while the Taiwanese are overwhelmingly distrustful with only 28.16 percent being trustful.

We measure authoritarian predisposition as follows: "Please tell me for each one, if it were to happen, whether you think it would be a good thing, a bad thing, or you don't mind? Greater respect for authority," where respondents need to indicate whether they think that increasing respect for authorities is "A good thing" (1), "Don't mind" (2) or a "Bad thing" (3). This is shown in Figure A.6. This variable measures the degree of Confucian predisposition toward hierarchy and leadership. Chu *et al.* (2013) provide an insightful overview of how in some Asian societies those with a larger preference for political authority embrace paternalistic politics over democratization.

Confidence in the central government (A.7) is measured by the question "I am going to name a number of organizations. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence (1), quite a lot of confidence (2), not very much confidence (3) or none at all (4)? The government." Figure A.7 illustrates the shares of responses excluding "No answer" and "Don't know." In China, more than 90 percent of respondents have a great deal or quite a lot of confidence in their central government, while among the Taiwanese only roughly 40 percent put a similar level of trust in their central government's competence. Confucianism underscores ideal rulership as a foundation of society; an ideal government concentrates on the spiritual and material wellbeing of its citizens. Chu *et al.* (2013) outline that governments which have their roots in a revolution, as is the case in mainland China, often show a strong symbiosis between the state or system and the currently ruling government. In other words, the legitimacy of the state and the current government go hand in hand.

Similarly, we are also interested in the responses to the statement "Having a strong leader who does not have to bother with parliament and elections" (A.8) to which respondents have to say whether they find it very good (1), fairly good (2), bad (3) or very bad (4). Of the mainland Chinese respondents, 38.9 percent find this good or fairly good, while 62.4 percent of Taiwanese respondents report the same.

Individualism (A.9) is measured by the degree of respondents' approval of the statement "I see myself as an autonomous individual," making this variable a measure of perceived individualism. According to Paul (2015), it measures individual moral autonomy. Gorodnichenko and Roland (2016) introduce an instrumental variables design with the use of genetic and epidemiological data as instruments and show that the causal link between economic growth and individualism is robust, also when controlling for institutions. Respondents could choose between the answers "Strongly agree" (1), "Agree" (2), "Disagree" (3), "Strongly disagree" (4). Respondents in the PRC and Taiwan have practically the same perception of their own individualism, with a large majority of approximately 62 percent selecting "Agree." Our results suggest that the Taiwanese tend to value family more than the mainland Chinese and show a relatively higher work morale. Overall, Taiwan appears to be a society with relatively lower generalized trust as well as trust in central government and with a stronger preference for authoritarian leadership.

To further account for the predominant Confucian norms, we introduce measures of filial piety and morality (or ritualism). Nathan (2020) states that individuals with a preference for an authoritarian system prefer the government to act as a parent and decide on behalf of its citizens. Figure A.10 depicts the answers to the question "Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Religious faith," which is structured in the same way as the question regarding child obedience. Among Taiwanese respondents, 9.0 percent mentioned this quality and only 3.7 percent of mainland Chinese. Respondents were also asked to state how much a person described by the following statement is like them: "Tradition is important to this person; to follow the customs handed down by one's religion or family," where "Very much like me" is 1 and "Not at all like me" 6. Figure A.11 shows a very similar distribution between PRC and Taiwan, with both societies appearing to value traditions relatively highly. Furthermore, we include a question asking what religion means to respondents: "To follow religious norms and ceremonies" (1) or "To do good to other people" (2) and depict the results in Figure A.12. Both societies share the same distribution with about 85% of respondents stating that religion means applying the religious values in practice.

To enable cross-country comparison in our analysis, the measures describing imperialist powers need to be commensurably analogous. Tables 1 and 2 as well the mentioned figures show that the Confucian values are indeed different in Taiwan and China today. Jia (2014) proposes a dataset consisting of mainland Chinese prefectures, which have been home to at least one treaty port under Western control in the period from 1842 to 1945. This effectively represents an assembled dataset on imperialist expansions in mainland China. Taiwan was occupied by Japan from 1894 to 1945 (Eberhard 1960).

Desmet, Weber and Ortuno-Ortiz (2009) introduce the concept of linguistic distances and discuss the index of ethnolinguistic fractionalization. They argue that there is a significant effect of linguistic diversity on conflict and redistribution in a cross-

section of 225 advanced and developing economies. Therefore, language barriers or distances are crucial factors in intercultural exchange and reciprocal influence. To measure the cultural distance between the invaders and the invaded, we use the Language Barrier Index (LBI) of Lohmann (2011), which measures the similarity between languages based on linguistic characteristics. The LBI assigns a language or a basket of languages – the official or most spoken ones – to each country and provides values between zero and one, where zero means no language barrier and one the highest possible language barrier for each compared pair of countries. It does not account for minority languages or dialects, which, however, does not alter our argument, since we use Mandarin, which is commonly spoken. Lohmann (2011) calculated the LBI for 201 countries that he paired using reliable and comprehensive data. We use the LBI as the measure of cultural dissimilarity, drawing on the fact that overcoming a language barrier is costly.

The higher the LBI, the higher the compensating costs, with the result that cultural exchange and trade depend negatively on the language barrier. Furthermore, “language is an important source of identity; people may naturally prefer to trade with others who speak similar languages because they often have other things in common, such as cultural or historical ties” (Lohmann 2011, 159). Desmet, Ortuño-Ortín and Wacziarg (2012) provide further insight into the historical development of language families because of separating human populations, so that language distance can be described as a measure of historical-cultural distance; such languages as French and English were separated in an evolutionary manner relatively more recently than Chinese and English. Moreover, they suggest that linguistic distances influence economic growth, whereas language is not crucial for civil conflict and redistribution.

We observe the average effects of Western and Japanese imperialism in mainland China and Taiwan at the provincial level and we use an average LBI per region to characterize the influence of respective foreign invaders, as shown in Table A.5. For example, we calculate the LBI average for the pairs United Kingdom-China, France-China, Germany-China and Russia-China, if these are the largest non-Chinese language groups in an invaded mainland Chinese province. Table A.5 shows that the mix of foreign invaders varies across provinces, with the result that provinces with attractive harbors or access to strategic institutions, such as Beijing or Hubei, may have been invaded by up to eight different nationalities. Descriptive statistics on Confucian values and imperialist expansion are provided in Table 1, which includes mean, minimum and maximum values, standard deviation and data source. One observation in Table 1 and the following tables represents one individual. Descriptive statistics by region (mainland China and Taiwan) are reported in Table 2. Table A.1 provides the cross-sectional estimates for both countries to detect causalities in the full sample between variables.

Table 1
Descriptive Statistics – Full Sample

Variable	Description	Obs	Mean	Std. Dev.	Min	Max	Source
Famties	Family importance	3628	1.110	.338	1	4	WVS*
Childobed	Child quality: obedience	3628	1.871	.335	1	2	WVS
Workingmother	Working mother harmful	1817	2.825	.619	1	4	WVS
Workimp	Work importance	3628	1.534	.731	1	4	WVS
Gentrust	Most people can be trusted	3628	1.634	.482	1	2	WVS
Authority	Greater respect for authority	3628	2.035	.851	1	3	WVS
ConfGov	Confidence: The central government	3628	2.3461	.897	1	4	WVS
Stronglead	Preference for strong autocratic leader	3628	2.352	.871	1	4	WVS
Autonomous	I see myself as an autonomous individual	1817	1.796	.585	1	4	WVS
ChildFaith	Child quality: faith	1954	1.954	.209	1	2	WVS
Tradition	Tradition is important	1954	2.853	1.322	1	6	WVS
PracticeReligion	Meaning of religion: follow religious norms vs do good to others	1954	1.862	.345	1	2	WVS
LBI	Language Barrier Index	3628	.469	.045	.444	.583	Lohmann (2011)

*World Values Survey

Table 2
Descriptive Statistics – By Country

Variable	China					Taiwan				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std.	Min	Max
Family Ties	1412	1.149	.378	1	3	2216	1.087	.318	1	4
Child Obedience	1412	1.911	.285	1	2	2216	1.861	.346	1	2
Working Mothers	780	2.249	.642	1	4	1037	2.930	.579	1	4
Workimp	1412	1.633	.717	1	4	2216	1.495	.733	1	4
Gentrust	1412	1.392	.488	1	2	2216	1.718	.449	1	2
Authority	1412	1.615	.743	1	3	2216	2.198	.831	1	3
ConfGov	1412	1.706	.659	1	4	2216	2.729	.814	1	4
Strong Leader	1412	2.653	.783	1	4	2216	2.245	.883	1	4
Autonomous	780	1.826	.559	1	4	1037	1.796	.588	1	4
ChildFaith	785	1.978	.146	1	2	1169	1.914	.279	1	2
Tradition	785	2.674	1.248	1	6	1169	2.892	1.341	1	6
PracticeReligion	785	1.852	.355	1	2	1169	1.877	.329	1	2
LBI	1412	.537	.038	.444	.583	2216	.444	0	.444	.444

Empirical strategy

Using the invader's cultural distance to the invaded region (LBI) as our forcing variable, we construct a quasi-experimental design in which the respective invader performs an intervention in either China or Taiwan. The first step of the analysis is to measure the influence of the invader on the inherited Confucian value. We examine the causal links between culturally different invading powers and Confucian cultural traits. The underlying model is an OLS specification such that:

$$Value_i = \alpha + \beta LBI_i + \varepsilon_i$$

where $i = 1, 2, \dots, n$ indicates the individual observation, while $Value_i$ denotes the respective Confucian value measured. LBI denotes the cultural distance between the invader and the invaded measured by the language barrier. Our empirical strategy is to measure differences in mean values of the dependent variable and in this way to model treatment effects that characterize imperialist powers by using their cultural distance to the invaded region. To make use of the observable discontinuity related to the assignment variable LBI, we introduce a sharp regression discontinuity design (SRD). The intuition of the SRD is to make use of an existing jump at the cutoff of the observed variable that can be assigned to the treatment, which in our case is the cultural distance between the invader and the invaded. This means that the forcing variable, the LBI, jumps at the cutoff proposed by z_0 . Because the treatment of cultural proximity is randomly assigned, the regression discontinuity design is “generally regarded as having the greatest internal validity of the quasi-experimental estimators” (Nichols 2007, 527). Hence, we implement a sharp regression discontinuity design (SRD) to analyze the treatment bias term, such that $E[\varepsilon|LBI_i] = 0$, where ε_i holds for the error term. The treatment assignment rule is, therefore, defined as follows:

$$T_i = \begin{cases} 0 & \text{if } z_0 \geq 0.5317 \\ 1 & \text{if } z_0 < 0.5317 \end{cases}$$

Where T_i denotes the cultural proximity to Japan as the treatment for provinces in mainland China and for Taiwan and is the LBI threshold that separates Chinese provinces that experienced Japanese invasion from provinces that did not.³ Given the smaller linguistic distance between the Chinese and Japanese languages, the provinces that were occupied by Japan are below the cutoff point, whereas the opposite holds for Chinese provinces that experienced Western invasion.⁴ It is important to note here that Hebei and Beijing are treated as “Western” regions given the short duration of Japanese invasions in these two Chinese provinces that were otherwise fully dominated

³ 0.5317 is just below the lowest value for an LBI of a pair West-PRC.

⁴ Because Japanese or Western imperialism is synonymous with the LBI score assigned to any province of mainland China or Taiwan, we identify cultural proximity to Japan or the West as the main treatment mechanism that is driven by the LBI score. The latter is the forcing variable of the sharp RDD proposed.

by the economic presence of Western powers (see also Table A.2 and Figure A.11 in the appendix).

The reasoning behind the SRD is to identify a discontinuity jump at the cutoff of the observed variable that can be assigned to the treatment, which, in our case, is the Japanese occupation of Taiwan and provinces in mainland China.⁵ Hence, we analyze whether the treatment of Western cultural proximity in China results in different effects than the treatment of Japanese imperialism in Taiwan. Initially, before the beginning of foreign invasion in the mid-nineteenth century, mainland China and Taiwan were under the rule of the Qing dynasty and shared the same cultural and societal structure. Thus, we treat imperialism as an exogenous shock for both regions and provide two hypotheses.

Hypothesis 1

Cultural proximity to Japan rather than to the West has facilitated more the long-run persistence of Confucian values in mainland China and Taiwan.

Hypothesis 2

Confucian values persist in the long run more in the provinces of China that used to be partly under Japanese rather than under exclusive Western imperial control.

Due to a relatively smaller cultural difference between Japan and Taiwan, transmitted Confucian values were updated to become more productive, whilst the relatively larger cultural difference between the Western invaders in mainland China had a detrimental impact on inherited Confucian social capital. This has resulted in different economic growth and institutional development outcomes, given the currently observed differences between the two countries. In short, we introduce imperialism as an external treatment to a formerly culturally homogenous region to construct a quasi-experimental design.

The first hypothesis suggests that in mainland China and Taiwan, Confucian traits survived, but were different due to distinct historical experiences (Liu, Meng and Wang 2014). These different historical experiences are to a significant extent due to foreign invasion, which means that invaders' institution building (Jia 2014; Mattingly 2017) and their missionary attempts (Bai and Kung 2015) functioned as external treatments towards the formerly homogeneous Chinese culture rooted in Confucianism. The second hypothesis shifts the focus to mainland China only and confirms the first hypothesis.

⁵ Because imperial expansion can be applied as a randomly assigned treatment, the regression discontinuity design is "generally regarded as having the greatest internal validity of the quasi-experimental estimators" (Nichols 2007, 527). A thorough introduction to regression discontinuity designs can be found in Lee and Lemieux (2010).

4. Results

The cross-sectional estimates for China and Taiwan (see Table A.1 in the appendix) indicate that there is a significant positive correlation between the importance assigned to work, to family and the degree of commitment to individual self-fulfillment (individualism). There is also a significant positive correlation between confidence in the central government and generalized trust, on the one hand, and a significant negative correlation between preference for strong leadership and generalized trust, on the other (Alesina and Giuliano 2011). Moreover, there is a significant positive correlation between positive predisposition toward authority and acceptance of working mothers. Societies with a high emphasis on loyal long-term reciprocal relationships, as manifested by confidence in government and positive predisposition toward authority, tend to create similar patrimonial and hierarchical relationships between employers and employees. Hence, there is a higher loyalty threshold at the workplace for societies with a stronger commitment to religion and government.

Table 3
SRD Results: China vs. Taiwan (Provincial Level)

Outcome Variable	Coefficient	Std. Err.	z	95 % Confidence Interval	
Family Ties	0.067	0.045	1.49	-0.021	0.155
Child Obedience	-0.124***	0.030	-4.20	-0.182	-0.066
Working Mothers	0.286***	0.099	2.87	0.091	0.481
Work Importance	0.040	0.075	0.53	-0.107	0.187
Generalized Trust	0.166***	0.053	3.14	0.062	0.270
Authority	0.033	0.078	0.43	-0.120	0.187
Confidence in Government	0.186***	0.072	2.59	0.046	0.327
Strong Leader	-0.152*	0.082	-1.85	-0.313	0.009
Individualism	-0.115**	0.090	-1.29	-0.291	0.060
Child Faith	-0.042**	0.017	-2.49	-0.075	-0.009
Tradition	0.168	0.118	1.43	-0.062	0.398
Practice of Religion	0.091***	0.031	2.91	0.030	0.152

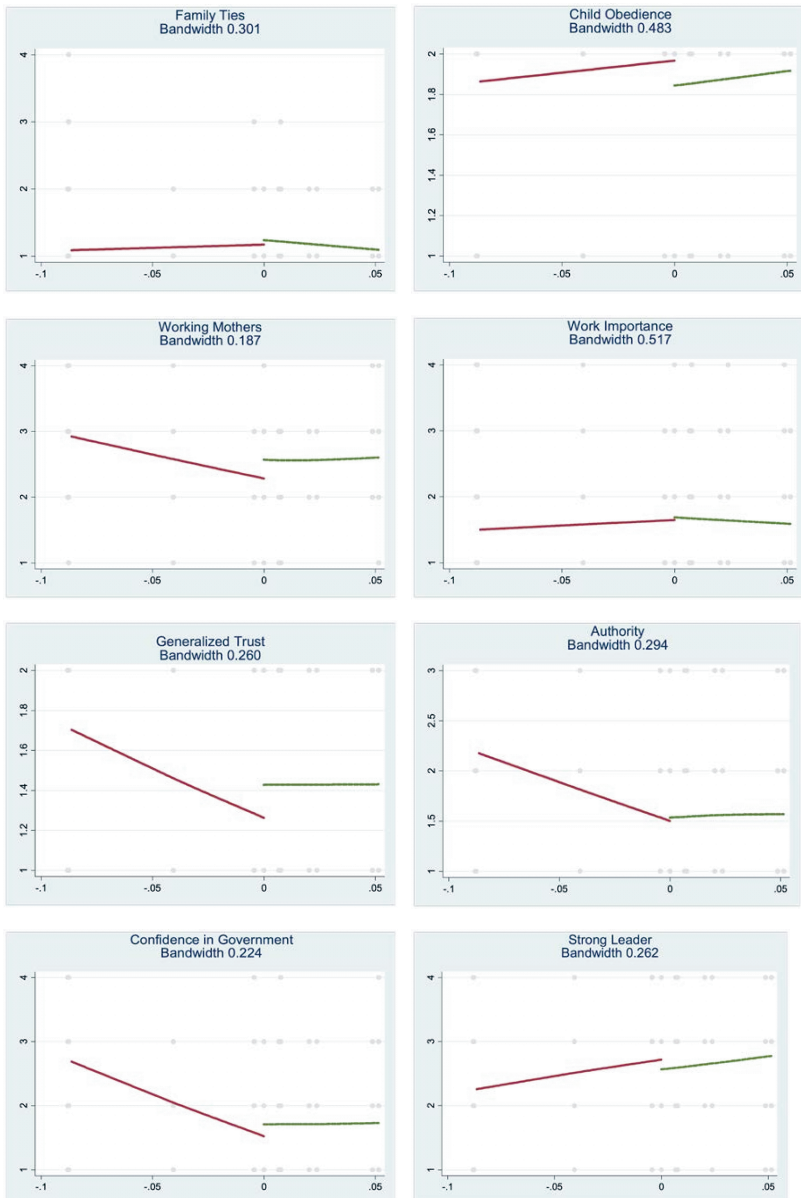
Note: *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

We estimate the average treatment differences (local Wald estimators) at the cutoff threshold $z_0 = 0.5317$, which delimits the regions that experienced Japanese invasion from the ones that did not. The value 0.5317 is just below the lowest LBI value we detected for a mainland Chinese province that experienced Western imperialism. Below that, there is only the LBI for the language pair Japanese-Chinese. Table 3 provides the estimation results of the SRD model on the effects of Western and Japanese imperialisms in China and Taiwan. When interpreting the estimator's coefficients, it is important to remember the structure of the outcome variables. Respondents had to assign importance or levels of approval, where 1 is the highest level, 2 one scale below and so forth. Hence, a coefficient's negative sign means that Western

imperialism has led to an increased average treatment effect compared to Japanese imperialism.

Figure 1 depicts the respective mean treatment differences of Japanese and Western imperialism on the perception of religion as collective welfare. The mean value for Taiwan is on the left of the cutoff and for the PRC on the right. Western imperialism resulted in a decreased mean importance assigned to the practice of religion by 0.091 points compared to Japanese imperialism, which is significant at the 1 percent level. Figure 1 also presents the averages of whether respondents select obedience as their preferred child quality. The difference of -0.124 is significant, implying that Western imperialism has had a significant influence on this value in the Chinese provinces where it was observed compared to Taiwan and those Chinese provinces under partial or full Japanese control. We further observe a highly significant difference of 0.286 when it comes to the positive perception of working mothers, which implies that Japanese imperialism has facilitated the positive evaluation of female labor beyond the boundaries of the household.

The extractive nature of institutions, such as a colonial-style customs system, established by Western imperialists undermined generalized trust and confidence in the central government; the mean difference in confidence in the central government is significant at the 1 percent level and indicates a stronger predisposition for confidence in the central government in provinces that developed Japanese-style institutions. The average treatment effect difference for generalized trust is significant at the 1 percent level and points in the same direction; Confucian social capital is more highly developed in areas of Japanese, rather than Western, imperial expansion. Similarly, individualism in the form of autonomous self-realization appears to be stronger in those provinces of mainland China that were under Western imperial control. The same observation holds for child faith (filial piety) and preference for strong leadership; Western imperialism appears to have significantly influenced the persistence of these values.



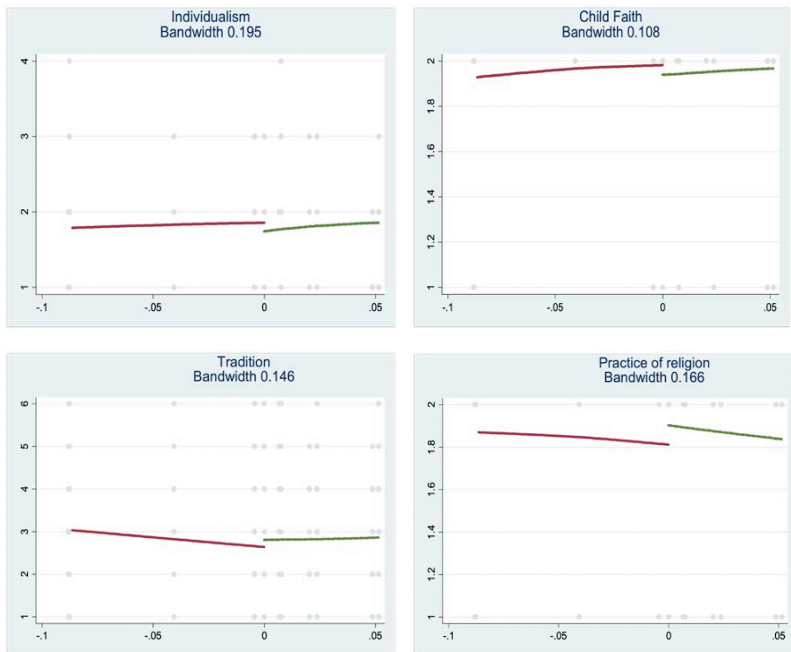


Figure 1: SRD Results: China vs. Taiwan (Provincial Level)

Provinces of mainland China

We now run the same regression discontinuity design within mainland China and with a dataset that covers all Chinese provinces that have experienced imperialist concessions since the First Opium War and faced the treatment of the Communist Revolution. This suggests that our argument is confirmed if significant differences are revealed between former Japan- and West-dominated provinces in mainland China. Using a cutoff threshold $z_0 = 0.5317$, which denotes a boundary between Japanese and Western imperialisms, we estimate the differential treatment effects of imperialist expansion on the persistence of Confucian values at the level of the province within mainland China. The results presented in Table 4 confirm the dichotomy between Japan and the West (including Russia) with respect to the long-run survival of Confucianism in China. Japanese imperial presence in the provinces of mainland China (alone or combined with other imperialist powers, particularly the United Kingdom or Germany) has had a positive and statistically significant effect on the practice of religion as collective welfare at the 1 percent level. Moreover, the average treatment difference for the positive perception of working mothers is statistically significant at the 1 percent level; this confirms our findings from the larger sample including Taiwan that territories having received the Japanese imperialism treatment

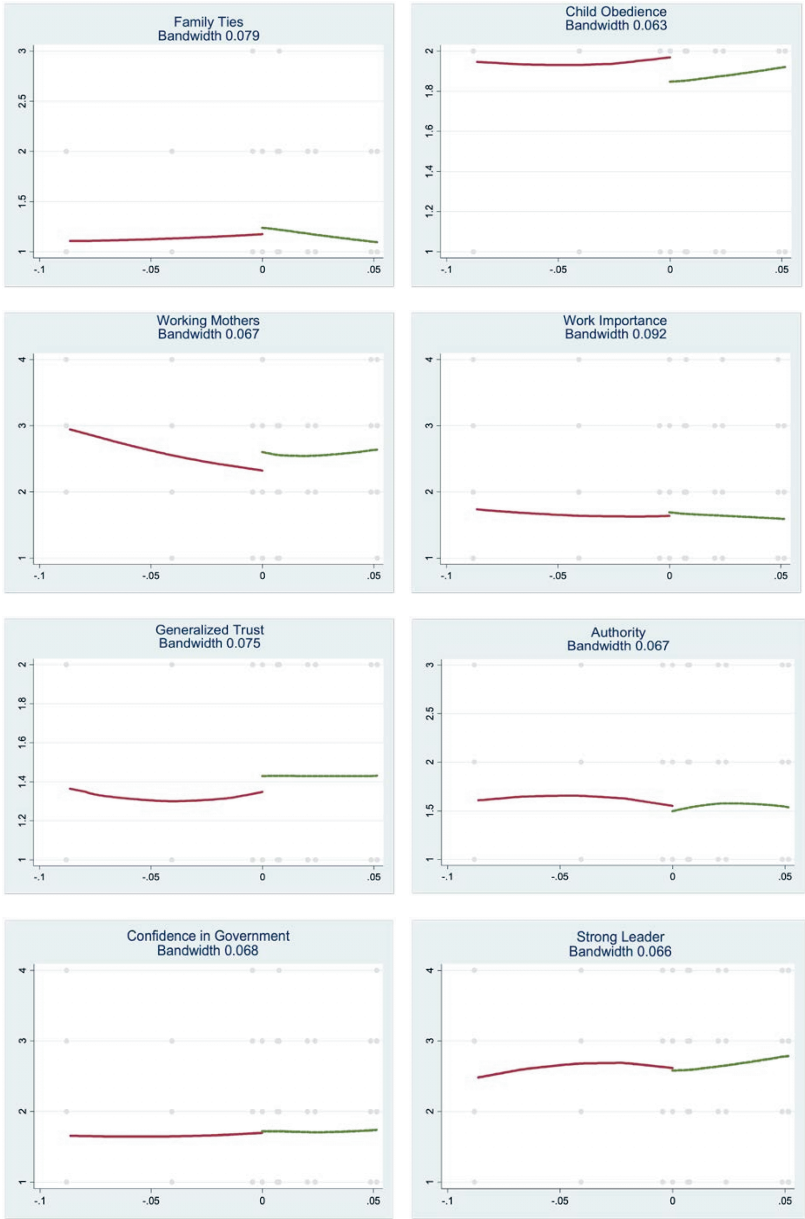
are more likely to abide by the norms of Confucian social capital, also including the preferences for a higher inclusion of women into the labor market. Nevertheless, Western imperialism has had a highly positive effect on the preservation of obedience as child quality at the 1 percent level and of child faith (filial piety) at the 10 percent level as well.

Table 4
SRD results: Provinces of China

Outcome Variable	Coefficient	Std. Err.	z	95 % Confidence Interval	
Family Ties	0.065	0.050	1.28	-0.034	0.163
Child Obedience	-0.121***	0.032	-3.83	-0.183	-0.059
Working Mothers	0.282**	0.118	2.38	0.050	0.514
Work Importance	0.053	0.080	0.66	-0.104	0.210
Generalized Trust	0.081	0.045	1.00	-0.043	0.133
Authority	-0.055	0.086	-0.63	-0.224	0.114
Confidence in Government	0.023	0.078	0.29	-0.130	0.176
Strong Leader	-0.034	0.091	-0.37	-0.213	0.145
Individualism	-0.130	0.108	-1.21	-0.341	0.080
Child Faith	-0.031*	0.018	-1.76	-0.066	0.004
Tradition	0.195	0.120	1.62	-0.041	0.431
Practice of Religion	0.092***	0.032	2.83	0.028	0.155

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Both the collectivist effect of Japanese imperialism and the individualist effect of Western imperialism appear to be weaker compared to that in Table 3. Nevertheless, what is decisive here is the persistence of hierarchical family structures in the form of filial piety and obedience (at the 10 and 1 percent levels, respectively). This confirms the influence of Western imperialism in its abstention from state-building and the emergence of formal societal institutions. Japanese imperialism, on the other hand, has consolidated the collectivist function of religion and the acceptance of female participation in the domestic labor force. Figure 2 provides the graphs of the results presented in Table 4.



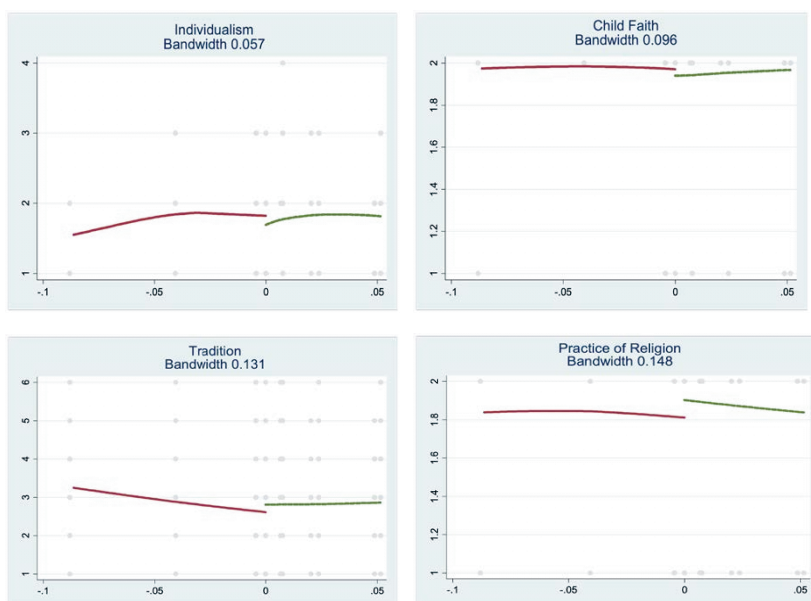


Figure 2: SRD results: Chinese Provinces

Robust bias-corrected confidence intervals

We now implement the method of Calonico, Cattaneo and Titiunik (2014), which concentrates on the bias-corrected derivation of confidence intervals. Moreover, we derive the regression discontinuity plots of our data using quantile-spaced bins for RD estimates (*ibid.*). This new econometric method increases the robustness of our results because it introduces confidence intervals constructed based on a bias-corrected RD estimator and therefore on a novel standard error estimator (*ibid.*).

We concentrate on the statistical significance of values with bias-corrected and robust confident intervals (CIs). Japanese-style imperialism induces the preservation of values such as practice of religion as collective welfare, acceptance of working mothers, generalized trust and strong preference for tradition. On the other hand, Western imperialism in its various forms appears to bolster obedience as an important child quality, preference for strong authority, filial piety and individualism. The results presented in Table 5 reinforce our findings for mainland China in Table 4, but they also provide some novel extensions. First, a committed practice of religion does not seem to be incompatible with the significance of generalized trust in society. Second, family ties, confidence in government and the importance of work do not constitute robust components of Confucian social capital, as this was bolstered by Japanese imperial control.

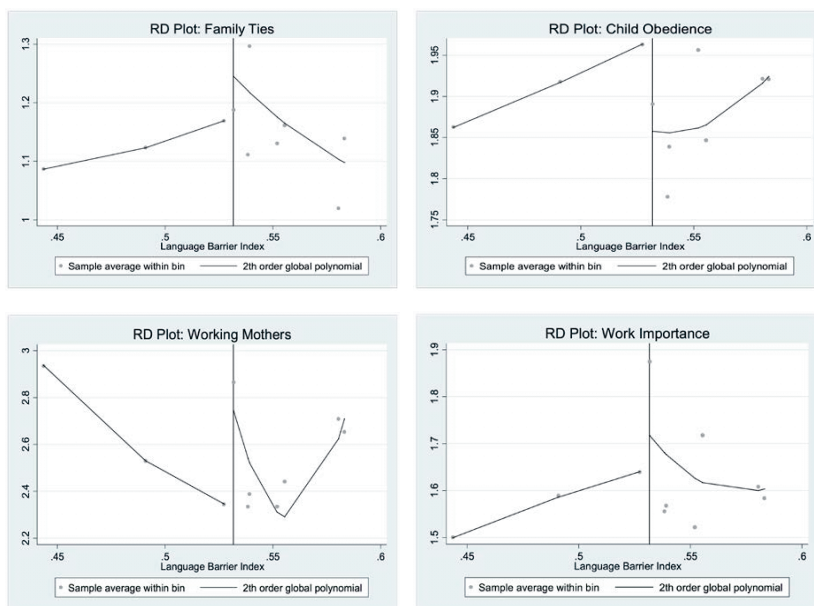
Table 5

SRD results with robust bias-corrected CIs: China vs. Taiwan (provincial level)

Outcome Variable	Method	Coefficient	Std. Err.	z	95 % Confidence Interval	
Family Ties	Conventional	0.067	0.047	1.44	-0.024	0.159
	Bias-Corrected	0.064	0.047	1.37	-0.028	0.155
	Robust	0.064	0.060	1.07	-0.053	0.181
Child Obedience	Conventional	-0.123***	0.031	-4.00	-0.183	-0.063
	Bias-Corrected	-0.109***	0.031	-3.57	-0.170	-0.049
	Robust	-0.109***	0.040	-2.73	-0.188	-0.031
Working Mothers	Conventional	0.292**	0.124	2.35	0.048	0.536
	Bias-Corrected	0.432***	0.124	3.47	0.188	0.675
	Robust	0.432***	0.165	2.62	0.109	0.754
Work Importance	Conventional	0.044	0.077	0.57	-0.107	0.195
	Bias-Corrected	0.086	0.077	1.11	-0.065	0.237
	Robust	0.086	0.102	0.84	-0.113	0.285
Generalized Trust	Conventional	0.151**	0.061	2.46	0.031	0.271
	Bias-Corrected	0.054	0.061	0.88	-0.066	0.174
	Robust	0.054	0.079	0.68	-0.101	0.209
Authority	Conventional	0.007	0.094	0.08	-0.176	0.190
	Bias-Corrected	-0.193**	0.094	-2.06	-0.376	-0.009
	Robust	-0.193	0.118	-1.64	-0.432	0.038
Confidence in Government	Conventional	0.162	0.110	1.48	-0.053	0.377
	Bias-Corrected	0.003	0.110	0.03	-0.212	0.218
	Robust	0.003	0.139	0.02	-0.269	0.275
Strong Leader	Conventional	-0.127	0.089	-1.43	-0.301	0.047
	Bias-Corrected	0.057	0.089	0.64	-0.117	0.231
	Robust	0.057	0.112	0.51	-0.163	0.277
Individualism	Conventional	-0.120	0.093	-1.28	-0.303	0.063
	Bias-Corrected	-0.230**	0.093	-2.46	-0.413	-0.047
	Robust	-0.230*	0.124	-1.86	-0.472	0.013
Child Faith	Conventional	-0.041**	0.017	-0.56	-0.074	-0.007
	Bias-Corrected	-0.023	0.017	3.48	-0.057	0.011
	Robust	-0.023	0.021	2.77	-0.063	0.018
Tradition	Conventional	0.170	0.121	1.40	-0.068	0.408
	Bias-Corrected	0.218*	0.121	1.79	-0.020	0.456
	Robust	0.218	0.156	1.39	-0.089	0.524
Practice of Religion	Conventional	0.099***	0.032	3.07	0.036	0.163
	Bias-Corrected	0.140***	0.032	4.32	0.077	0.204
	Robust	0.140***	0.040	3.49	0.062	0.219

Note: *** p<0.01, ** p<0.05, * p<0.1.

Japanese control induces practice of religion by 0.140 and the positive perception of working mothers by 0.432, both at the 1 percent level, whereas predominantly Western imperial control enhances child obedience by 0.109 and individualism by 0.231, also at the 1 and 10 percent levels, respectively. Furthermore, as Figure 3 indicates, the mean difference in generalized trust is significant at the 5 percent level with a conventional CI and implies a stronger Japanese invasion effect. The average treatment difference in preference for authority preservation is also significant at the 5 percent level with a bias-corrected CI; contrary to generalized trust, it implies a stronger Western imperial effect. Moreover, the mean difference in child faith (filial piety) of -0.041 at the 5 percent level with a conventional CI and in tradition acceptance of 0.218 at the 10 percent level with a bias-corrected CI suggest that the Japanese imperialism treatment favors much more the emergence of collectivist, rather than institutionalized forms of governance. Hence, the Japan vs. the West hypothesis in terms of the persistence of Confucian values is confirmed.⁶



⁶ For the theoretical foundations of rdplots, see Calonico, Cataneo, and Titiunik (2015).

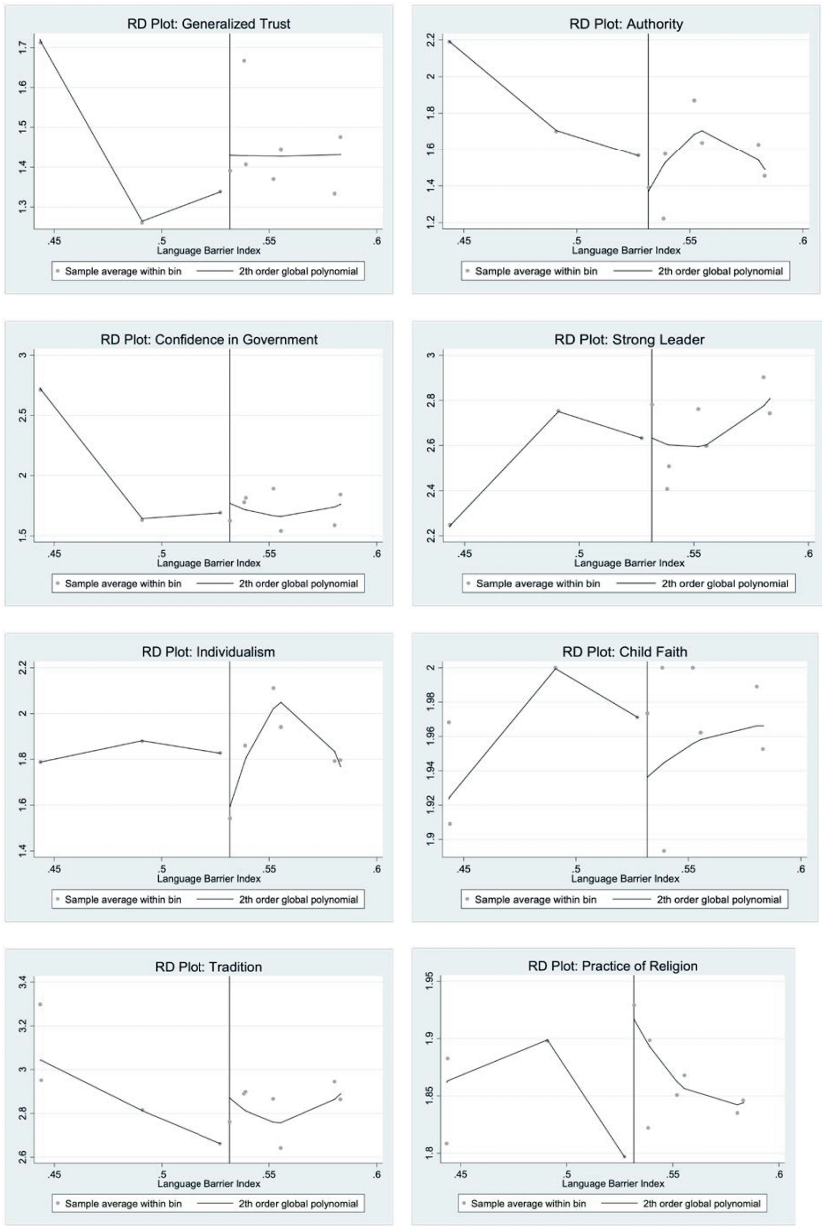


Figure 3: SRD with robust bias-corrected CIs: China vs. Taiwan

In Table 6, we focus exclusively on provinces of mainland China. The results do not reveal a major difference to those of Table 5. Practice of religion as collective welfare and positive perception of working mothers are supported by Japanese rule. However, the identification of obedience as an important child quality, individualism as autonomous self-realization, authority preservation and acceptance of child faith are higher in the provinces of mainland China that were mainly invaded by the West.

Table 6

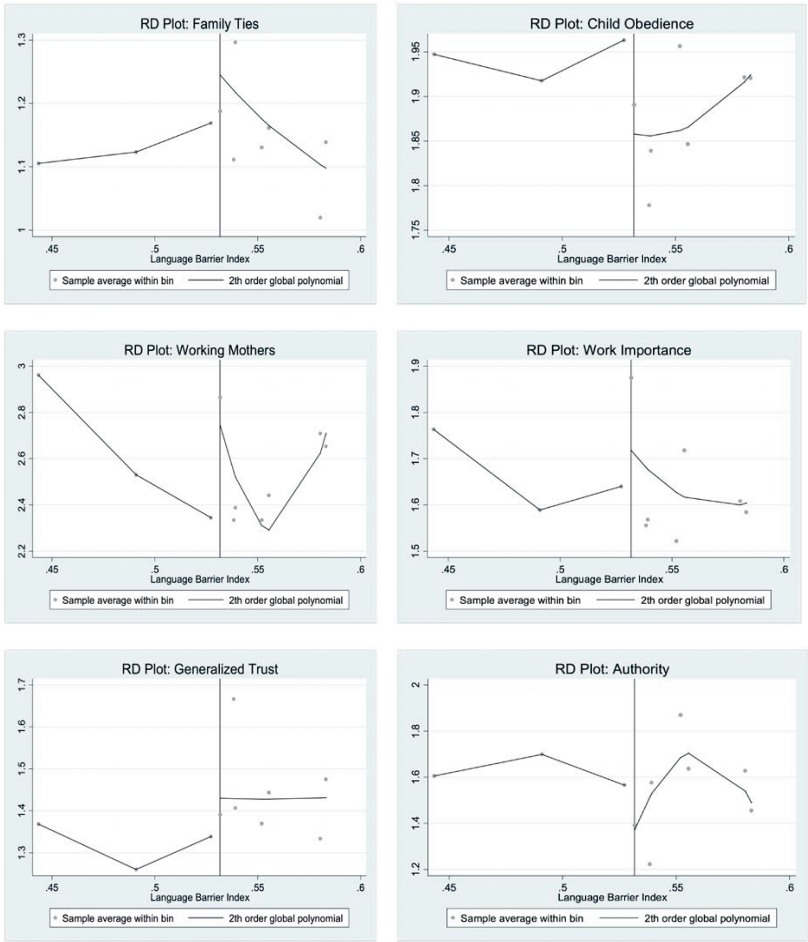
SRD results with robust bias-corrected CIs: Chinese Province

Outcome Variable	Method	Coefficient	Std. Err.	z	95% Confidence Interval
Family Ties	Conventional	0.066	0.048	1.37	-0.029 0.161
	Bias-Corrected	0.063	0.048	1.30	-0.032 0.158
	Robust	0.063	0.059	1.06	-0.053 0.179
Child Obedience	Conventional	-0.119***	0.030	-3.95	-0.178 -0.060
	Bias-Corrected	-0.113***	0.030	-3.76	-0.172 -0.054
	Robust	-0.113***	0.039	-2.90	-0.190 -0.037
Working Mothers	Conventional	0.273**	0.121	2.26	0.036 0.511
	Bias-Corrected	0.431***	0.121	3.55	0.193 0.668
	Robust	0.431***	0.146	2.94	0.143 0.718
Work Importance	Conventional	0.058	0.079	0.74	-0.096 0.213
	Bias-Corrected	0.074	0.079	0.94	-0.081 0.229
	Robust	0.074	0.101	0.74	-0.123 0.271
Generalized Trust	Conventional	0.091	0.056	1.64	-0.018 0.200
	Bias-Corrected	0.069	0.056	1.25	-0.040 0.178
	Robust	0.069	0.069	1.00	-0.066 0.205
Authority	Conventional	-0.046	0.083	-0.55	-0.208 0.117
	Bias-Corrected	-0.167**	0.083	-2.01	-0.329 -0.004
	Robust	-0.167*	0.100	-1.67	-0.363 0.029
Confidence in Government	Conventional	0.021	0.075	0.28	-0.126 0.167
	Bias-Corrected	0.050	0.075	0.67	-0.097 0.196
	Robust	0.050	0.093	0.54	-0.132 0.232
Strong Leader	Conventional	-0.065	0.087	-0.75	-0.236 0.106
	Bias-Corrected	0.047	0.087	0.54	-0.124 0.218
	Robust	0.047	0.105	0.45	-0.159 0.253
Individualism	Conventional	-0.117	0.102	-1.16	-0.317 0.082
	Bias-Corrected	-0.219**	0.102	-2.15	-0.418 -0.020
	Robust	-0.219*	0.124	-1.77	-0.461 0.023
Child Faith	Conventional	-0.032*	0.018	-1.80	-0.067 0.003
	Bias-Corrected	-0.025	0.018	-1.40	-0.059 0.010
	Robust	-0.025	0.021	-1.20	-0.065 0.016
Tradition	Conventional	0.186	0.126	1.48	-0.061 0.432
	Bias-Corrected	0.207	0.126	1.64	-0.040 0.453
	Robust	0.207	0.157	1.32	-0.101 0.514

Table 6 (Continued)

Outcome Variable	Method	Coefficient	Std. Err.	z	95 % Confidence Interval
Practice of Religion	Conventional	0.104***	0.034	3.08	0.038 0.170
	Bias-Corrected	0.143***	0.034	4.23	0.077 0.208
	Robust	0.143***	0.040	3.56	0.064 0.221

Note: *** $p<0.01$, ** $p<0.05$, * $p<0.1$.



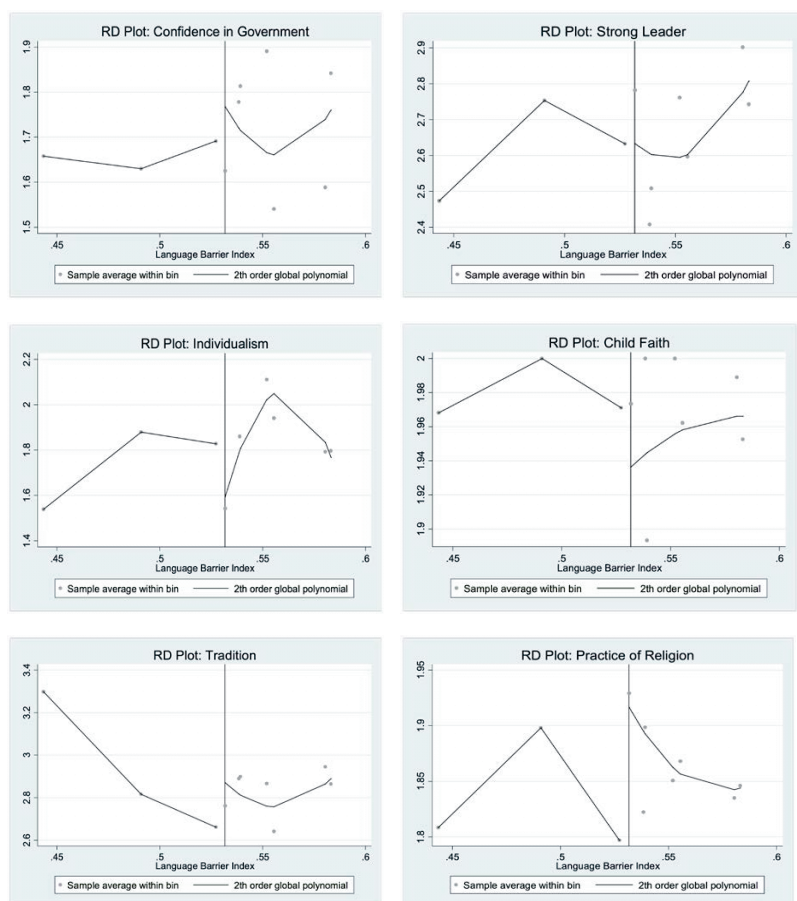


Figure 4: SRD with robust bias-corrected CIs: Chinese Provinces

Robustness Checks

We now perform the same estimations as in Tables 3–6 and Figures 1–4, but with a dataset which also includes the provinces of mainland China which were not invaded by Japan or the West (see Tables A.2-A.3 and Figures A.15-A.16 in the appendix). To account for regional differences as well as factors affecting the selection by imperialists, our specification also controls for confounding geographical factors, such as tangency to the coast or the economically crucial Yangtze River. Hence, following Jia (2014), we include in our dataset dummy variables as to whether a province is coastal or directly tangent to the Yangtze River as well as the province's longitude and

latitude. The results reported in Table A.4 underscore the statistically significant treatment effect of Japanese imperialism on generalized trust of 0.109 and on importance assigned to work of 0.151, both at the 5 percent level with bias-corrected CIs. Our results hold both with standard as well as with bias-corrected and robust CIs.

5. Conclusions

We showed that due to the relative cultural and geographical nearness of the Japanese imperialists to Taiwan, the Japanese imperialists engaged strongly in the renovation and development of an efficient public administration and planned economy. This behavior of imperialist powers appears to be a pattern throughout history as supported, for example, by evidence from empirical findings in Poland (Grosfeld and Zhuravskaya 2015) as well as counterfactual proof from European colonizers' extractive activities in distant regions (Acemoglu, Johnson and Robinson 2001).

Taiwan experienced the emergence of stronger formal institutions built by their culturally proximate invaders, with this underscoring generalized trust (Chu *et al.* 2013) and stressing the significance of family ties and the preservation of the social status quo. Given the institutional differences between Western and Japanese rule in China and Taiwan, respectively, Taiwanese and contemporary mainland Chinese areas under partial Japanese control have a higher preference for strong leadership, practice of religion as collective welfare and female integration into the job market. We trace this phenomenon to the significant treatment effect of foreign invasion.

We acknowledge that our results would possibly have been more powerful if survey data had been collected at the county- or prefecture- rather than at the province level. Nevertheless, we are not aware of another survey that asks the same or similar questions at a higher level of aggregation. Moreover, we are convinced that even in this case our results would not have significantly changed. Weber (1951) described Confucianism as a drawback for economic development. In this paper, we show that Confucianism is linked to social capital. More importantly, we offer robust evidence that the cultural distance between the invader and the invaded in mainland China and Taiwan is a powerful predictor of institutional outcomes and the persistence path of unrelenting Confucian values. The cultural proximity of Japanese invaders to Taiwan facilitated the creation of an efficient public administration and state-run economy.

The Confucian ethical system is based on interpersonal relations and was first widely promoted by the Chinese Han dynasty in the economy, in society and in politics. The onset of imperial expansions in China and Taiwan, which both shared the same culture, is treated as an external shock to Chinese civilization. Our results show that Confucian values survived in the PRC and Taiwan, but they altered due to the historical legacies of imperialism. In fact, we offer evidence that Confucianism survived more in its original form in the more conservative Taiwan than in mainland

China. Liu, Meng and Wang (2014) confirm our argument by characterizing mainland Chinese as less loss-averse and thus more open for change. While Taiwan has produced higher income per capita and internal stability in recent decades, the PRC after the end of foreign control in 1945 experienced four years of civil war followed by societal and political turmoil, with this bringing about the official abolishment of Confucianism in mainland China under Mao. While the cultural traits of China and Taiwan have deviated over the past 100 years, they may experience a relative confluence as soon as the PRC achieves wealth levels and non-forceful inner stability comparable to Taiwan. Confucian values persist in the long run, but differently, in China and Taiwan. Our results show that the further away the invader is culturally from the invaded, the further away Confucian social capital deviates from its original traits.

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Appendix

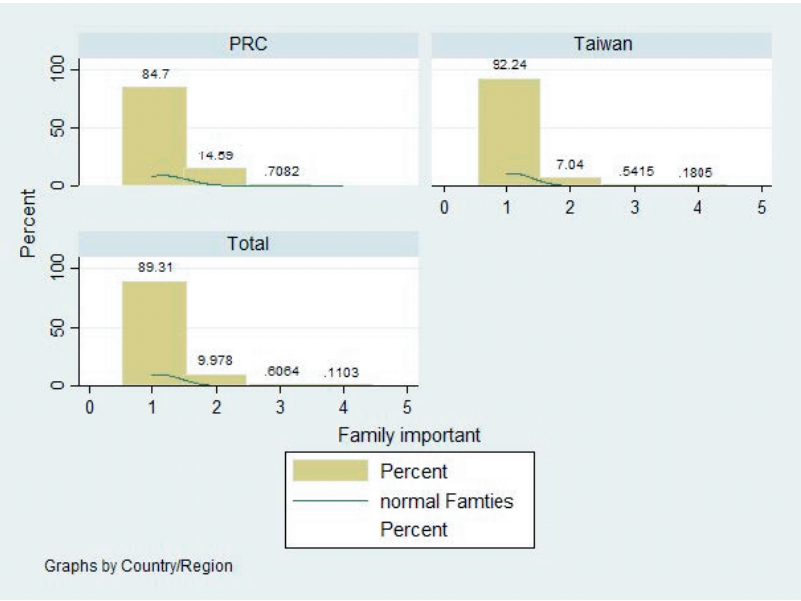


Figure A.1 Family Ties

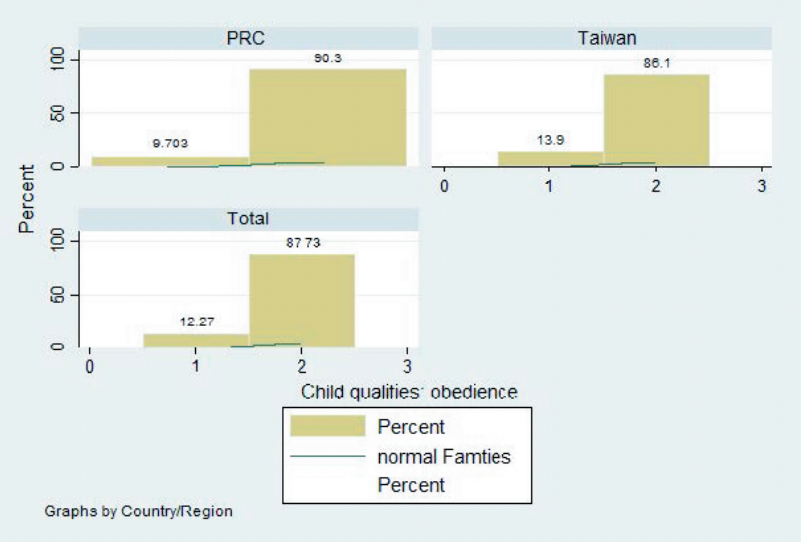


Figure A.2 Child Obedience

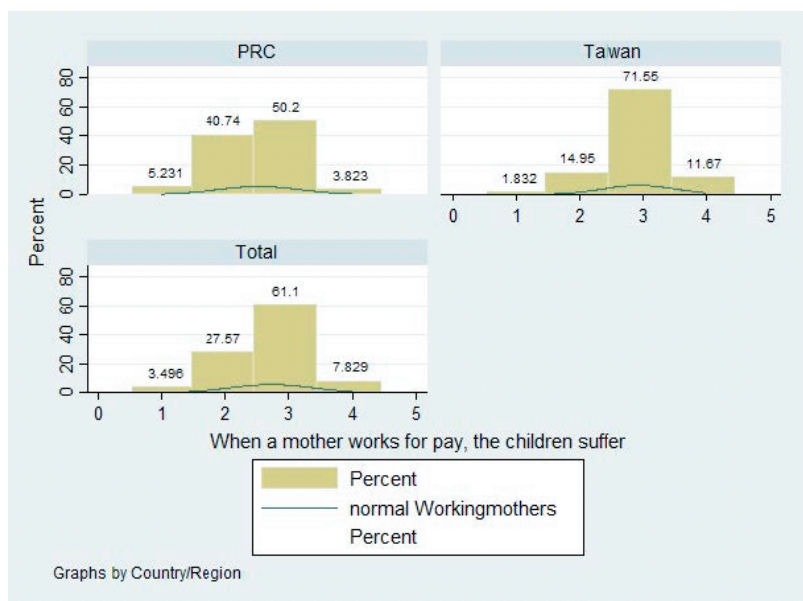


Figure A.3 Working Mothers

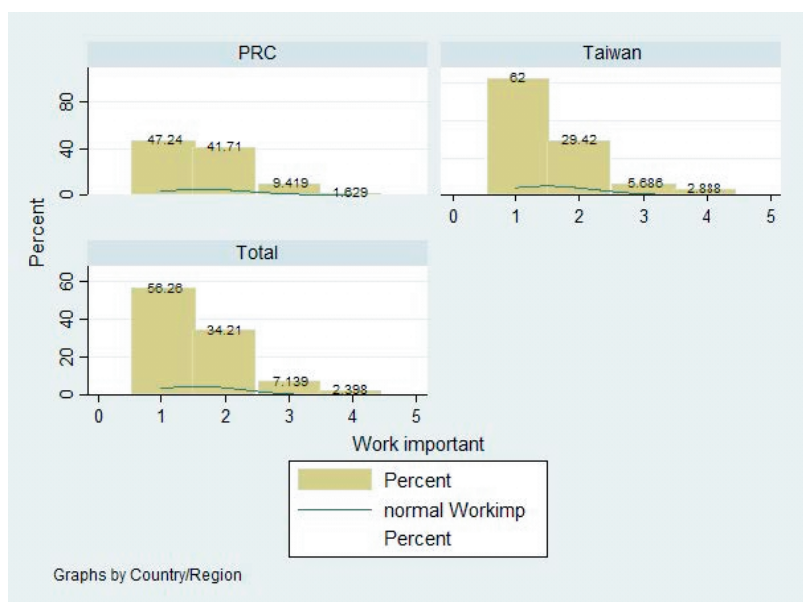


Figure A.4 Work Importance

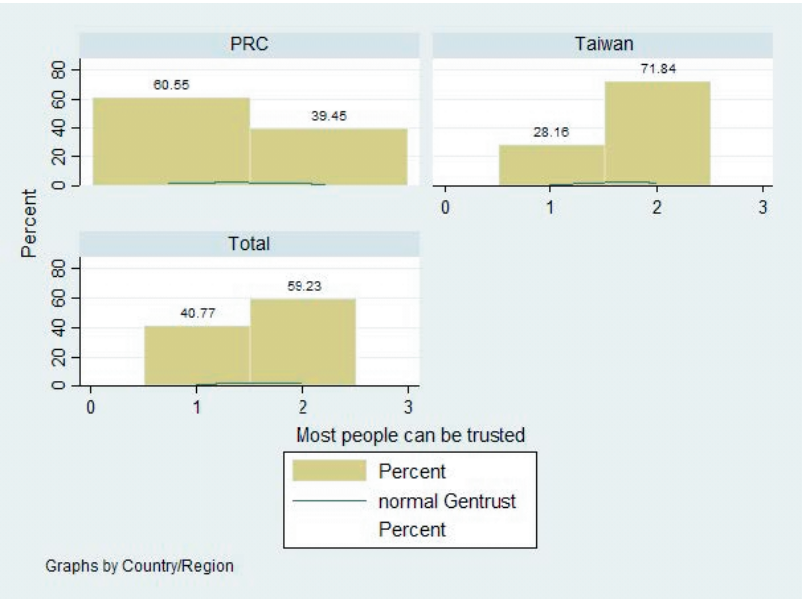


Figure A.5 Generalized Trust

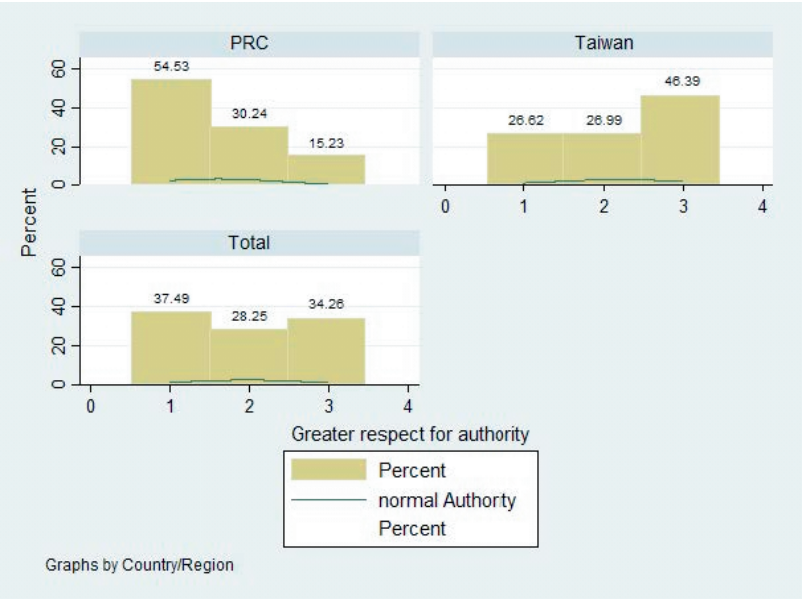


Figure A.6 Authority

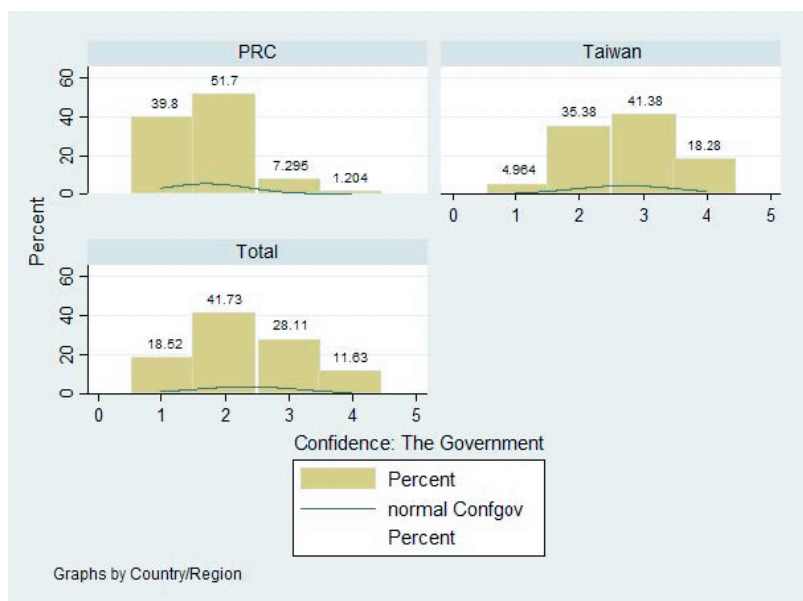


Figure A.7 Confidence in Central Government

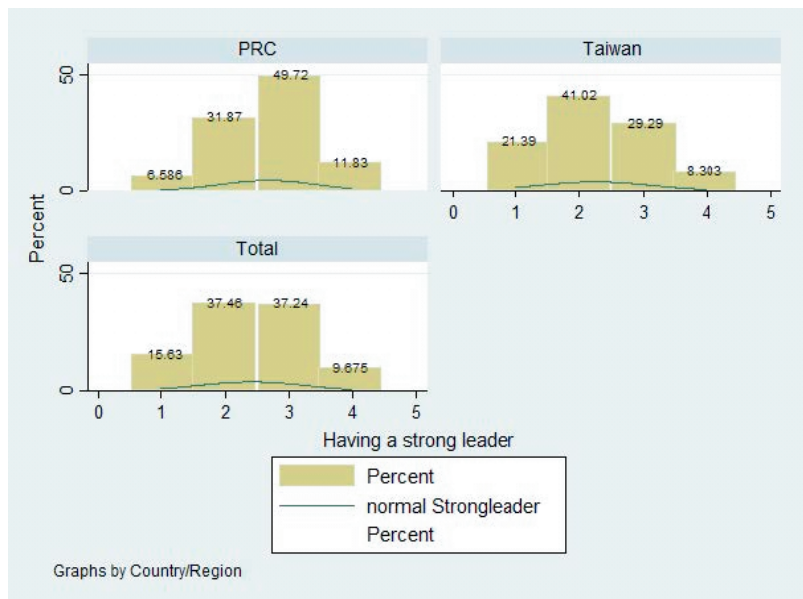


Figure A.8 Strong Leader

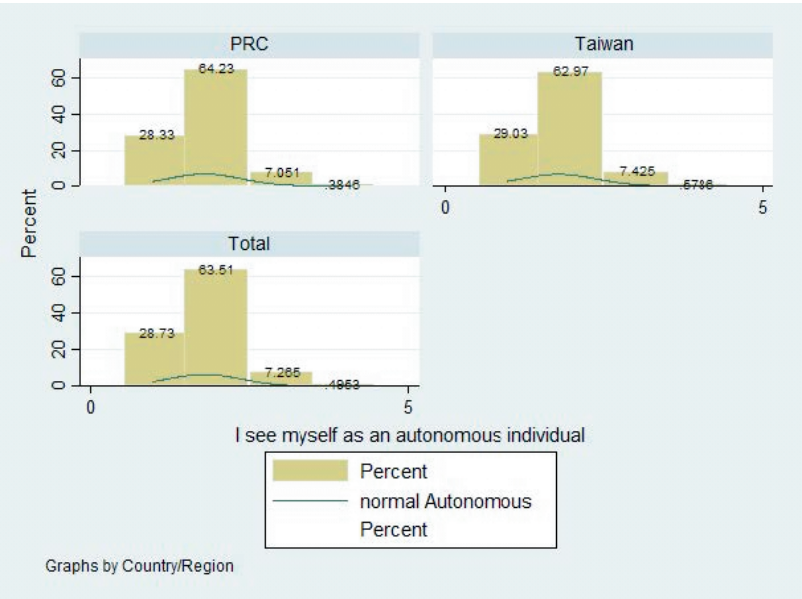


Figure A.9 Individualism

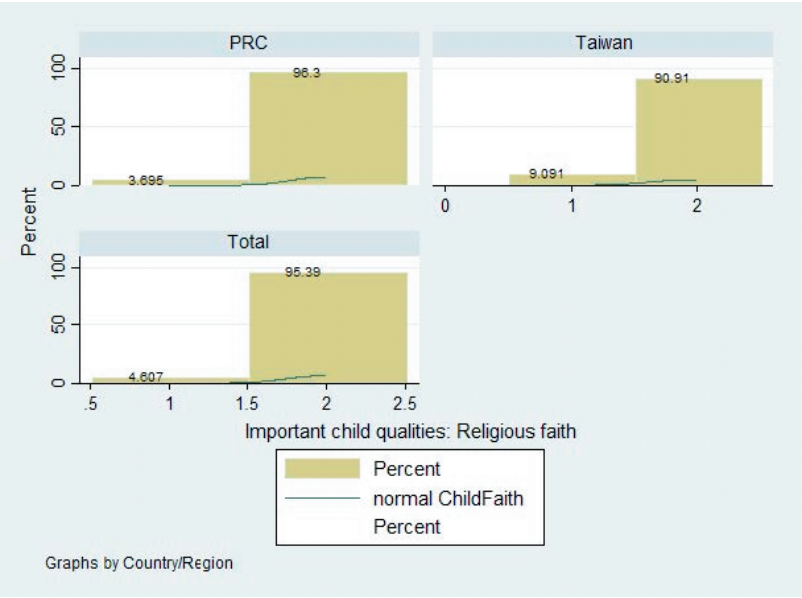


Figure A.10 Child Faith (Filial Piety)

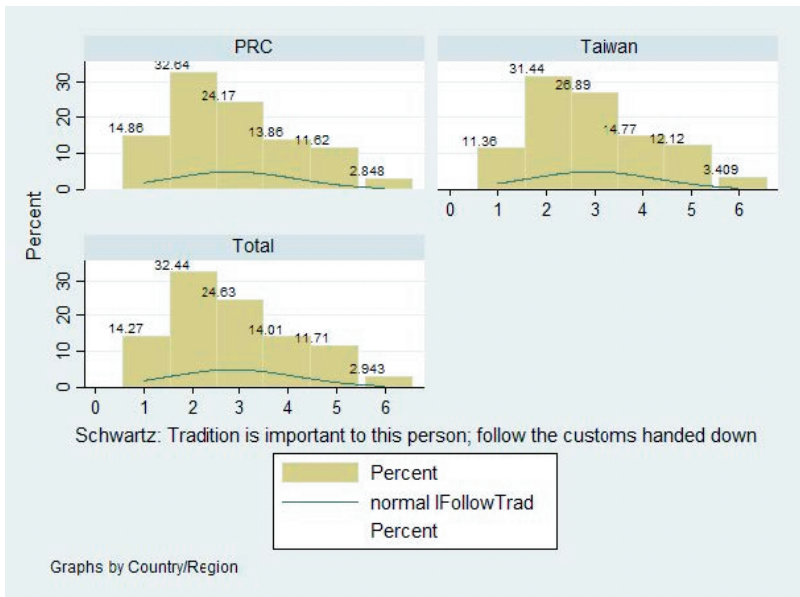


Figure A.11 Tradition

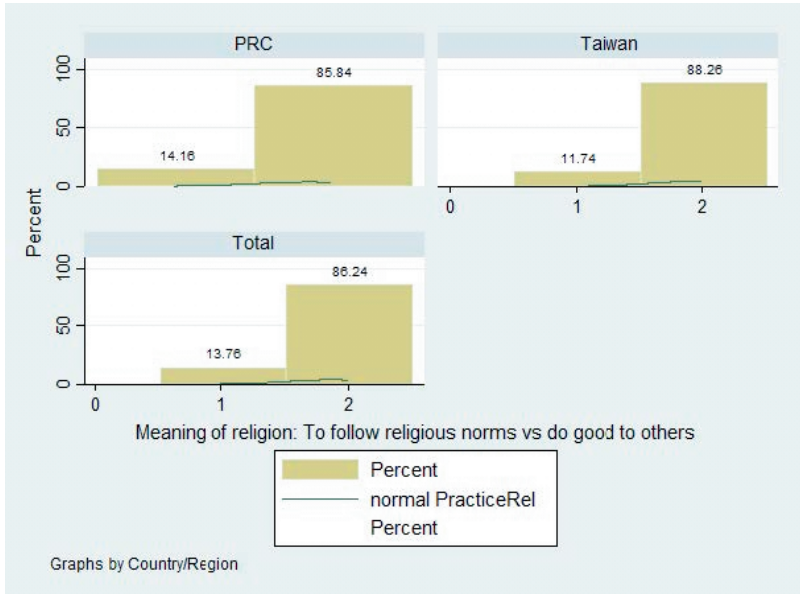


Figure A.12 Practice of Religion



Figure A.13 Provinces of China – LBI Reference Map
Note: NC for non-invaded/non-conceded; Eberhard (1960); Nield (2010).

Table A.2

SRD results: Invaded vs. Non-invaded Provinces

Outcome Variable	Coefficient	Std. Err.	z	95 % Confidence Interval	
Family Ties	0.065	0.044	1.48	-0.021	0.151
Child Obedience	-0.124***	0.028	-4.34	-0.179	-0.068
Working Mothers	0.271***	0.097	2.78	0.080	0.462
Work Importance	0.049	0.073	0.67	-0.095	0.192
Generalized Trust	0.149***	0.052	2.88	0.048	0.250
Authority	0.048	0.077	0.63	-0.102	0.198
Confidence in Government	0.196***	0.070	2.78	0.058	0.334
Strong Leader	-0.146*	0.081	-1.80	-0.304	0.013
Individualism	-0.110	0.087	-1.27	-0.281	0.060
Child Faith	-0.018	0.014	-1.29	-0.045	0.009
Tradition	-0.106	0.089	-1.19	-0.281	0.069
Practice of Religion	0.077**	0.031	2.51	0.017	0.138

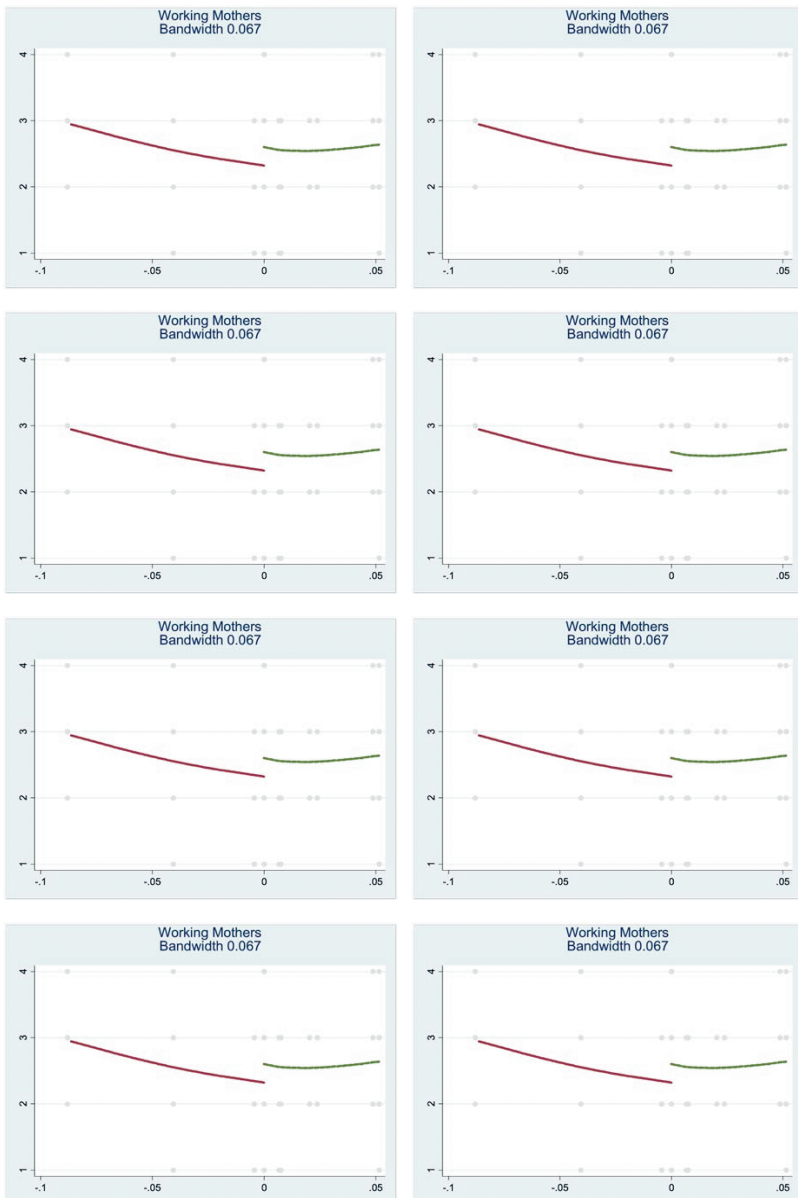
Note: *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A.1
Cross-sectional estimates – full sample

Dependent Variable	Family Ties	Child Obedience	Working Mothers	Work Importance	Generalized Trust	Confidence in Authority	Confidence in Government	Strong Leader	Individualism	Child Faith	Tradition	Practice of Religion	Cons. Adj R ²
Family Ties	Coef. Std. Err. P> t	- .093 - .056 - .101	- .086 .026 - .001	- .075 .022 - .001	- .006 .034 - .006	.027 .021 - .006	- .042 .022 - .006	.015 .020 - .006	.067 .028 - .006	- .048 .081 - .001	- .001 .012 - .001	- .007 .047 - .007	1.246 .047 - .234
Child Obedience	Coef. Std. Err. P> t	- .058 .035 - .101	- .011 .021 - .001	- .001 .018 - .001	- .020 .027 - .006	.188 .016 - .006	.060 .013 - .006	.459 .027 - .006	.018 .057 - .006	.554 .037 - .006	.913 .009 - .001	.000 - .037 - .001	.000 - .173 - .000
Working Mothers	Coef. Std. Err. P> t	- .253 .076 - .001	- .053 .097 - .001	- .061 .039 - .001	- .109 .057 - .006	.054 .036 - .006	.097 .038 - .006	.039 .035 - .006	- .057 .049 - .006	- .023 .139 - .006	.000 .021 - .001	.116 - .081 - .001	2.494 .044 - .397
Work Importance	Coef. Std. Err. P> t	.296 .088 - .001	.082 .052 - .001	- .085 .066 - .001	.051 .041 - .001	.126 .041 - .001	.010 .044 - .001	.252 .040 - .001	.244 .057 - .001	.871 .161 - .001	.995 .024 - .001	.152 .094 - .001	.000 - .476 - .000
Generalized Trust	Coef. Std. Err. P> t	- .011 .059 - .001	- .065 .035 - .001	- .038 .029 - .001	- .004 - .028 - .001	.124 .029 - .001	.057 .029 - .001	.037 .027 - .001	- .047 .038 - .001	- .157 .108 - .001	- .021 .016 - .001	.109 .063 - .001	.947 .311 - .001
Authority	Coef. Std. Err. P> t	.126 .096 - .001	.086 .056 - .001	.056 .048 - .001	- .009 .072 - .001	- .009 - .004 - .001	.166 .047 - .001	.005 .043 - .001	.118 .061 - .001	.026 .174 - .001	.001 .026 - .001	- .141 .102 - .001	.717 .039 - .517
Confidence in Government	Coef. Std. Err. P> t	.169 .089 - .001	.088 .114 - .001	.135 .052 - .001	.286 .067 - .001	.147 .042 - .001	- .001 - .001 - .001	- .166 .040 - .001	.128 .036 - .001	.070 .164 - .001	- .015 .024 - .001	- .049 .096 - .001	.789 .115 - .486
Strong Leader	Coef. Std. Err. P> t	.073 .099 - .001	.124 .124 - .001	.066 .058 - .001	- .158 .074 - .001	.005 .046 - .001	- .198 .048 - .001	- .001 - .001 - .001	.055 .063 - .001	.066 .179 - .001	- .045 .026 - .001	.124 .104 - .001	2.102 .052 - .524
Individualism	Coef. Std. Err. P> t	.164 .069 - .001	.221 .088 - .001	- .047 .041 - .001	- .089 .052 - .001	.063 .032 - .001	.076 .034 - .001	.028 .032 - .001	- .383 - .001 - .001	.712 .127 - .001	.090 .019 - .001	.233 .074 - .001	.000 - .376 - .000
	Coef. Std. Err. P> t	.164 .069 - .001	.221 .088 - .001	- .047 .041 - .001	- .089 .052 - .001	.063 .032 - .001	.076 .034 - .001	.028 .032 - .001	- .383 - .001 - .001	.712 .127 - .001	.090 .019 - .001	.233 .074 - .001	.000 - .376 - .000
	Coef. Std. Err. P> t	.164 .069 - .001	.221 .088 - .001	- .047 .041 - .001	- .089 .052 - .001	.063 .032 - .001	.076 .034 - .001	.028 .032 - .001	- .383 - .001 - .001	.712 .127 - .001	.090 .019 - .001	.233 .074 - .001	.000 - .376 - .000

Table A.1 (Continued)

Dependent Variable	Family Ties	Child Obedience	Working Mothers	Work Importance	Generalized Authority Trust	Confidence in Government	Strong Leader	Individualism	Child Faith	Tradition	Practice of Religion	Cons. Adj R ²
Child Faith	Coef.	-.015	.018	-.002	-.001	.002	.005	.021	-	.005	.038	1.834-.008
	Std. Err.	.025	.031	.014	.012	.011	.012	.016	-	.007	.026	.104 -
	P> t	.554	.566	.871	.922	.143	.667	.175	-	.452	.142	.000 -
Tradition	Coef.	-.018	.349	.001	-.075	.004	-.054	.169	.227	-	.046	2.091-.003
	Std. Err.	.166	.209	.097	.084	.077	.082	.106	.301	-	.176	.891 -
	P> t	.913	.096	.995	.372	.655	.511	.090	.452	-	.794	.019 -
Practice of Religion	Coef.	-.006	-.103	.035	.027	-.027	-.011	.023	.112	.003	-	1.695 .004
	Std. Err.	.042	.053	.025	.021	.019	.021	.019	.076	.011	-	.214 -
	P> t	.891	.052	.152	.245	.164	.607	.233	.142	.794	-	.000 -



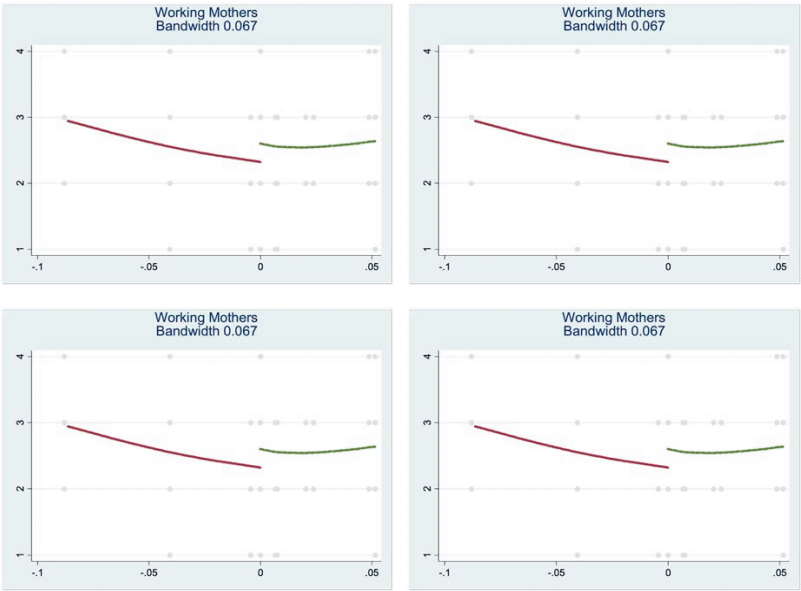


Figure A.15 SRD results: Invaded vs. Non-invaded Provinces

Table A.3

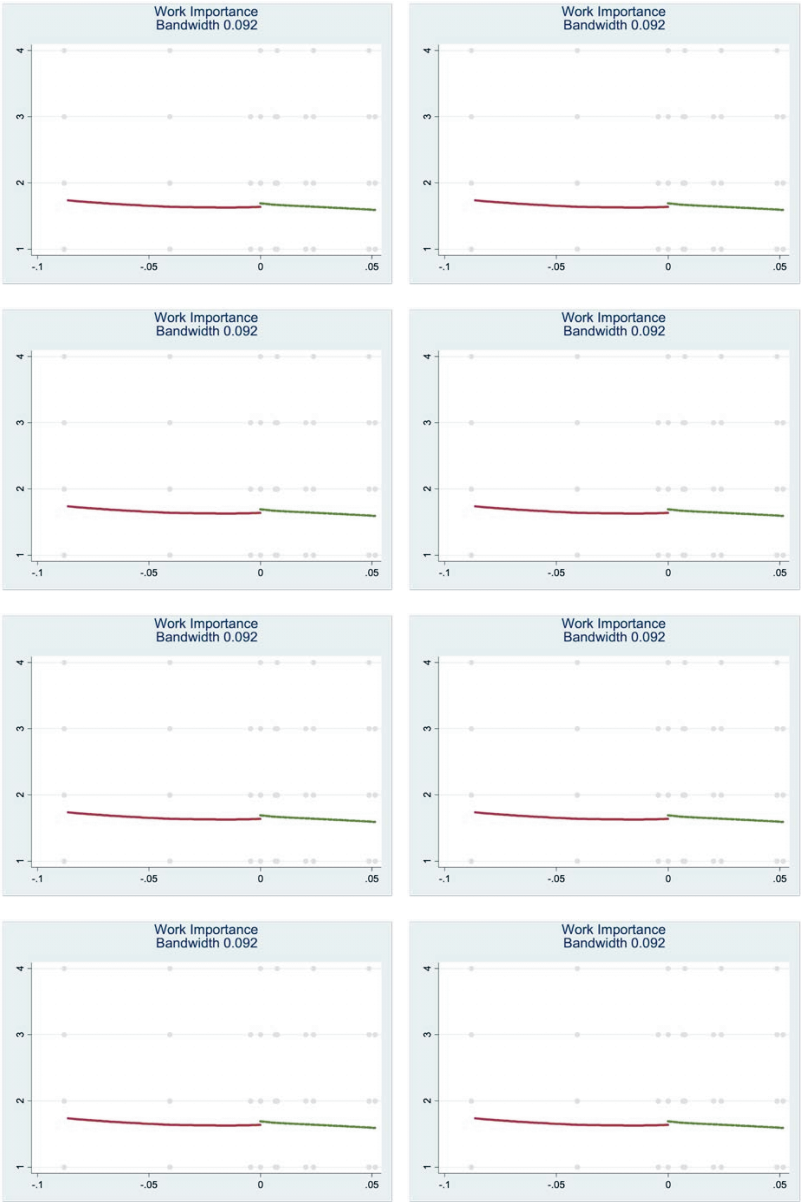
SRD results with robust bias-corrected CIs: Invaded vs. Non-invaded Provinces

Outcome Variable	Method	Coefficient	Std. Err.	z	95% Confidence Interval	
Family Ties	Conventional	0.065	0.045	1.43	-0.024	0.153
	Bias-Corrected	0.061	0.045	1.34	-0.028	0.150
	Robust	0.061	0.058	1.04	-0.053	0.175
Child Obedience	Conventional	-0.122***	0.030	-4.14	-0.180	-0.064
	Bias-Corrected	-0.109***	0.030	-3.70	-0.167	-0.051
	Robust	-0.109***	0.039	-2.80	-0.186	-0.033
Working Mothers	Conventional	0.278***	0.122	2.28	0.039	0.517
	Bias-Corrected	0.423***	0.122	3.47	0.184	0.662
	Robust	0.423***	0.163	2.60	0.105	0.742
Work Importance	Conventional	0.052	0.075	0.70	-0.095	0.199
	Bias-Corrected	0.095	0.075	1.26	-0.052	0.241
	Robust	0.095	0.099	0.96	-0.099	0.288
Generalized Trust	Conventional	0.132**	0.060	2.20	0.014	0.250
	Bias-Corrected	0.033	0.060	0.55	-0.085	0.151
	Robust	0.033	0.078	0.43	-0.119	0.185

Table A.3 (Continued)

Outcome Variable	Method	Coefficient	Std. Err.	z	95 % Confidence Interval	
Authority	Conventional	0.024	0.092	0.26	-0.157	0.205
	Bias-Corrected	-0.172*	0.092	-1.86	-0.352	0.009
	Robust	-0.172	0.116	-1.48	-0.400	0.056
Confidence in Government	Conventional	0.166	0.109	1.53	-0.047	0.379
	Bias-Corrected	0.007	0.109	0.06	-0.206	0.219
	Robust	0.007	0.138	0.05	-0.263	0.276
Strong Leader	Conventional	-0.120	0.087	-1.37	-0.291	0.052
	Bias-Corrected	0.065	0.087	0.74	-0.107	0.236
	Robust	0.065	0.111	0.58	-0.153	0.282
Individualism	Conventional	-0.115	0.090	-1.27	-0.292	0.063
	Bias-Corrected	-0.229**	0.090	-2.52	-0.406	-0.051
	Robust	-0.229*	0.122	-1.88	-0.467	0.010
Child Faith	Conventional	-0.037	0.017	-2.21	-0.069	-0.004
	Bias-Corrected	-0.019	0.017	-1.13	-0.051	0.014
	Robust	-0.019	0.020	-0.94	-0.058	0.020
Tradition	Conventional	0.110	0.119	0.93	-0.122	0.342
	Bias-Corrected	0.155	0.119	1.31	-0.077	0.387
	Robust	0.155	0.153	1.01	-0.145	0.455
Practice of Religion	Conventional	0.090***	0.032	2.79	0.027	0.154
	Bias-Corrected	0.131***	0.032	4.04	0.067	0.194
	Robust	0.131***	0.040	3.26	0.052	0.210

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.



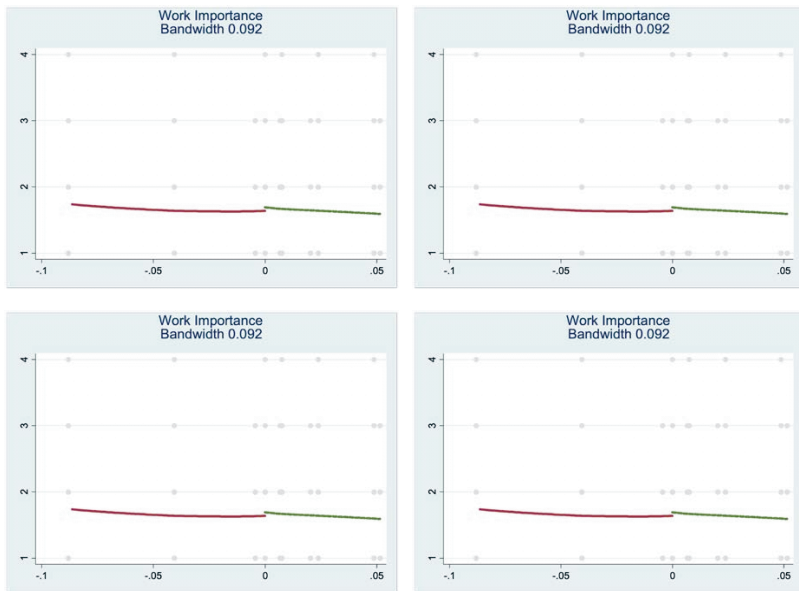


Figure A.16 SRD with robust bias-corrected CIs: Invaded vs. Non-invaded Provinces

Table A.4

**SRD results with robust bias-corrected CIs and covariate-adjusted estimates:
China vs. Taiwan (Provincial Level)**

Outcome Variable	Method	Coefficient	Std. Err.	z	95% Confidence Interval	
Family Ties	Conventional	0.047	0.046	1.02	-0.044	0.138
	Bias-Corrected	0.021	0.046	0.45	-0.070	0.111
	Robust	0.021	0.059	0.35	-0.095	0.137
Child Obedience	Conventional	-0.143***	0.030	-4.80	-0.202	-0.153
	Bias-Corrected	-0.129***	0.030	-4.31	-0.187	-0.070
	Robust	-0.129***	0.039	-3.30	-0.205	-0.052
Working Mothers	Conventional	0.271***	0.100	2.71	0.075	0.467
	Bias-Corrected	0.376***	0.100	3.76	0.180	0.572
	Robust	0.376***	0.131	2.88	0.120	0.632
Work Importance	Conventional	0.120	0.076	1.59	-0.028	0.269
	Bias-Corrected	0.151**	0.076	1.99	0.002	0.299
	Robust	0.151	0.098	1.54	-0.042	0.343
Generalized Trust	Conventional	0.173***	0.054	3.23	0.068	0.278
	Bias-Corrected	0.109**	0.054	2.03	0.004	0.214
	Robust	0.109	0.070	1.56	-0.028	0.245

Table A.4
SRD results with robust bias-corrected CIs and covariate-adjusted estimates: (Continued)

Outcome Variable	Method	Coefficient	Std. Err.	z	95% Confidence Interval	
Authority	Conventional	-0.044	0.079	-0.55	-0.198	0.111
	Bias-Corrected	-0.187	0.079	-2.37	-0.341	-0.032
	Robust	-0.187	0.099	-1.89	-0.381	0.007
Confidence in Government	Conventional	0.065	0.072	0.90	-0.075	0.205
	Bias-Corrected	-0.044	0.072	-0.62	-0.185	0.096
	Robust	-0.044	0.092	-0.48	-0.225	0.137
Strong Leader	Conventional	-0.084	0.083	-1.01	-0.246	0.078
	Bias-Corrected	0.039	0.083	0.47	-0.124	0.201
	Robust	0.039	0.104	0.37	-0.166	0.243
Individualism	Conventional	-0.049	0.091	-0.54	-0.228	0.129
	Bias-Corrected	-0.073	0.091	-0.80	-0.251	0.106
	Robust	-0.073	0.119	-0.61	-0.306	0.161
Child Faith	Conventional	-0.014	0.017	-0.80	-0.047	0.020
	Bias-Corrected	0.008	0.017	0.46	-0.025	0.041
	Robust	0.008	0.020	0.39	-0.032	0.047
Tradition	Conventional	0.082	0.121	0.68	-0.154	0.153
	Bias-Corrected	0.054	0.121	0.45	-0.182	0.150
	Robust	0.054	0.155	0.35	-0.250	0.175
Practice of Religion	Conventional	0.113***	0.032	3.52	0.050	0.176
	Bias-Corrected	0.134***	0.032	4.13	0.070	0.196
	Robust	0.134***	0.040	3.34	0.055	0.211

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The set of covariates includes a coastal dummy, the longitude and latitude of each province and a Yangtze River tangency dummy.

Table A.5
Imperial Concessions in Chinese Provinces

Province name	Imperial powers
Beijing	UK/FR/DE/JP/RU/AT/IT/US
Hebei	UK/FR/DE/JP/RU/BE/AT/PT
Shanxi	NC
Liaoning	RU/JP
Jilin	NC
Heilongjiang	RU
Shanghai	UK/FR
Jiangsu	UK/JP
Zhejiang	UK/JP
Anhui	NC
Fujian	UK

Table A.5 (Continued)

Province name	Imperial powers
Jiangxi	UK
Shandong	UK/DE/JP
Henan	NC
Hubei	UK/RU/DE/FR
Hunan	JP
Guangdong	UK/FR
Guangxi	FR/US/UK/IT/AT/PT/BE
Sichuan	NC
Hainan	NC
Yunnan	UK/FR
Shaannxi	NC
Chongqing	NC
Gansu	NC
Xinjiang	RU
Guizhou	NC
Qinghai	NC

Note: NC for non-invaded/non-conceded; Eberhard (1960); Nield (2010).