

A Bayesian Measurement of Corporate Political Connection and Its Effects on Entrepreneur International Trade Preferences

Abstract

This paper is an early attempt to theorize and test how corporate political connection shapes firm opinions on economic openness and international competition. Politically connected entrepreneurs (PCEs) usually exploit and benefit from their political resources, but this can lead to opposing predictions on their support for international trade openness. By looking at China's first wave of entrepreneurs and their reactions to the country's accession to WTO in 2001, China's biggest trade liberalization effort, I find that Chinese PCEs actually held a less supportive view before joining WTO than their less connected counterparts. This suggests an anticipation that the imminent opening would level the playing field for non-PCEs, because political resources were mostly non-trade-specific at the time. But in two years, this pattern disappeared, and optimism with respect to WTO was mainly seen among entrepreneurs with more education and experience in international joint ventures. These results are consistent with China's developmental trajectory, where most of the country's trade-supporting institutions were not developed until after joining WTO, but political resources and non-market strategies had been important for PCEs to compete with their unconnected but otherwise more competitive peers. Methodologically, on top of the item response theory (IRT) setup, a modified Bayesian method is presented to measure corporate political connection that avoids shortcomings of the conventional proxy approach, and models the possibility that survey respondents lie on sensitive questions.

Does corporate political connection, a resource stemming from firm owners' relationship with the state, influence their preferences on international trade openness? Intuitively, the answer is probably yes, especially given the salience of state involvement in international trade regulation and assistance in contemporary policy debates. After all, firms do not operate in apolitical environments, and political connection can affect many aspects of their business, including trade and investment activities across borders. This effect is not limited to exporters and import-competing firms, because firms in non-trading sectors can also feel the impact of greater openness via changes in domestic input and output prices, and their political resources can influence how they are affected by and react to those changes. How firm owners perceive international trade openness differently is a precondition to their different business plans and political actions under economic globalization, which in turn influence policy-making circles in both developed and developing nations.

However, there is very limited discussion on firm owners' opinions on international trade policy with respect to their political connection. This paper attempts to fill the gap by looking at China's first wave of entrepreneurs who thrived after Deng Xiaoping's Southern Tour in 1992 and the subsequent consolidation of reformist power in Beijing. Nationally representative surveys were taken in 2000 and 2002 on these entrepreneurs and what they thought about China's WTO accession in 2001, along with many political connection related questions, which provided a window for researchers to empirically investigate the research question of the paper. At the time of the 2000 survey, respondents' average experience in conducting business is only 5.9 years and the median experience is only 5 years. In addition to being novice owners of young firms, these entrepreneurs operated under rapidly changing market and regulatory conditions - they were the first wave of business owners in China's private sector following its transition from centrally-planned economy. With that general setting, I now provide a sketch of the theoretical framework and empirical strategy before delving into the details in subsequent sections.

On the theoretical front, this paper articulates possible mechanisms through which corporate political connection influences entrepreneur trade preference. On the one hand, if political resources translate into favorable policies and additional protection (e.g. Li 2008, Polsiri and Jiraporn 2012, Wu and Rui 2012, Mobarak 2006, Faccio 2006, Cingano and Pinotti 2013, Fisman 2001, Faccio 2010), PCEs should be less worried about increasing foreign competition while enjoying expanded opportunities from abroad. Such a "*connection to evade competition*" mentality leads to a positive correlation between political connection and support for trade. On the other hand, PCEs may fear for trade openness because it can neutralize existing domestic favoritism that disadvantage their unconnected competitors: an "*openness to neutralize privilege*" mentality and negative correlation between political connection and support for trade. These two logics run in opposite directions. Which one dominates?

To answer this question, this paper differentiates types of government assistance into two logical possibilities. First, it can be oriented towards activities that are primarily trade-related, whether

exporting or import-competing, in forms usually categorized as trade subsidy and trade protection. PCEs are able to get more of this state support than non-PCEs when facing foreign competition, which I refer to as trade-specific political resources. Second, much government assistance are not trade-specific. Under autarky, non-trade-specific support would give PCEs a competitive edge over unconnected domestic producers, which I refer to as non-trade-specific political resources. With trade openness, the effect of non-trade-specific political resources can be neutralized by increasing competition and opportunities from abroad. Detailed discussion on how the logical categorization maps to real world policies can be found in Section 2 of the paper.

For a given society in a given time period, the exact relationship between political resources and support for trade openness depends on whether the political resources are primarily trade-specific. Trade-specific political resources will enable PCEs to compete with otherwise more competitive producers from both home and abroad, fostering the "*connection to evade competition*" mentality, and thus a more supportive view on trade liberalization. This is no difference from the commonly criticized protectionist policies of trading states, except for one additional layer of complexity where state subsidy is disproportionately distributed among domestic firms according to the relative amount of trade-specific political resources they have.

Non-trade-specific political resources will allow PCEs to coexist with unconnected but otherwise more competitive domestic producers under autarky, but that privilege can be undermined by the influx of foreign competition and opportunities following free trade. In this second scenario, the "*openness to neutralize privilege*" mentality and a less supportive view among PCEs should be expected. From the perspective of non-PCEs, trade liberalization provides an escape from domestic institutions that reward connection to the state, making non-trade-specific political resources proportionally less important. In other words, different effects of political connection on trade openness are achieved through a selection process, thus this paper does not argue that political connection itself causally makes entrepreneurs more or less liberal-minded.

On the empirical front, to assess the above reasoning, as well as four competing explanations to be described in Section 4, this paper looks at qualitative and quantitative evidence from China before and after its accession to WTO in 2001, the country's biggest liberalization effort. It will show that during the early decades of China's Opening and Reform, the country was still in a relatively autarkic state where domestic favoritism was prevalent. Entrepreneurs saw political ties as critical assets and many of them actively forged greater connection with the government to facilitate their business. Institutions for trade-specific support for Chinese firms were not in place, and the "*openness to neutralize privilege*" mentality was common among Chinese entrepreneurs before the accession, which is consistent with a negative correlation between political connection and support for trade from survey data collected in 2000.

But in 2002, a second survey was taken, and the previous negative correlation disappears. This is consistent with the Chinese developmental trajectory where institutions for trade-specific sup-

port for Chinese firms developed largely as a response to new challenges brought by joining the global trading club in 2001. Subsequently, the "*connection to evade competition*" mentality emerged out of trade-specific state support. When two opposing mentalities coexist at the aggregate level, there was no tenancy for PCEs to like or dislike free trade more than non-PCEs. Combining these results paints a dynamic picture of entrepreneur trade preference in China during its rapid social transformation, which in 2009 became the world's largest exporter, and then in 2014 the largest trading nation.

Empirical assessment of the role of political connection faces a key difficulty: the measurement of this abstract and unobservable concept. In the existing literature, scholars usually rely on one or two proxies from available data to capture aspects of political connection, but there is no industry standard on which proxies should be used. In addition to the limited construct validity of the proxy approach, it usually has to take available proxies as reliable indicators, thus ignoring the possibility of observees lying on sensitive information. Business-government connection carries such sensitivity, which may be especially problematic in societies with limited marketization and legalization. This paper does not make a priori assumption on the severity of this problem, but because political connection is central to all aspects of this paper, it is treated with particular care. Section 6 presents a new method of measuring unobservable political connection as a latent variable in an IRT setup so that all usable information are used systematically without picking one proxy over another. Different from a conventional IRT model, this method is an early attempt to model and estimate lying in survey response.

1 Determinants of Trade Preference

Distributional consequences of trade opening provide the economic foundation for our understanding of trade preference. Subsequent predictions assume that individuals understand the oftentimes complicated general equilibrium effects of liberalization, and form their policy preferences accordingly. Thus, trade attitudes should reflect characteristics of people's factor endowments in a Stolper-Samuelson world, or their industries of employment in a Ricardo-Viner world. Recent research compares the relative impact of factor type and industry affiliation (Scheve, 2011), and focuses on factors such as ideology, (Mansfield, 2009), gender (Burgoon and Hiscox, 2008), and education (Hainmueller and Hiscox, 2006) as sources of influence. One consensus reached is that individuals form their policy preferences with non-material considerations, partial information, and limited understanding of economic consequences of trade openness (Rho and Tomz, 2017).

Much of the policy relevance of individual trade preference relies on research subjects being voters, whose policy stances can be translated into policy changes through democratic institutions. However, this focus on voters has several limitations. Firstly, voters usually vote for candidates

or parties, not specific policy proposals, unless in an *ad hoc* policy referendum setting. During election periods, trade policy may or may not be a focal point. Secondly, interest group lobby, campaign, or even bribe policy makers for specific trade deals, making direct impact on individual policy outcomes. Thirdly, major trading nations like China, Saudi Arabia, and Singapore are not democratic, and it is tricky how knowledge on individual trade preference generated from Western democracies should improve our understanding of economic policy making in those countries.

Given these limitations in analyzing individual trade preference, another branch of the trade preference literature focusing on firm owners has emerged, from which we can better identify how preferences translate into concrete policy outcomes. Evidence from both democracies and non-democracies suggests that, like ordinary individuals, firm owners are influenced by ideational factors such as media and government propaganda (e.g. Kuno and Naoi 2012 on Japanese firm owners, Naoi 2017 on Chinese firm owners). Furthermore, since firm owners' policy preferences determine their firms' policy stances, this literature makes use of the previously under-explored fact that even within competitive industries, only a handful of large and productive enterprises actually engage in international trade because of fixed costs required to enter foreign markets (Melitz, 2003). Given intra-industry differences of distributional consequences, policy preference and political mobilization should exhibit intra-industry divide as well, which has been examined with data from the US (e.g. Osgood et al. 2017, Kim et al. 2016).

Following this tradition of focusing on firms, this paper asks whether PCEs are more or less likely to support trade liberalization. There is very little discussion of this topic in the literature, but a lot has been written on a related question: the relationship between political connection and firm performance. To help later discussion on connection influencing trade preference, I now briefly review this related literature on connection influencing firm performance, where political resources have been shown to benefit PCEs' firm performance most of the time. For instance, connected entrepreneurs face less obstacles in financing (Li 2008 on Chinese firms, Polsiri and Jiraporn 2012 on Thai firms), information acquisition (Wu and Rui 2012 on Chinese firms), getting government import licenses (Mobarak 2006 on Indonesian firms), government bailout (Faccio 2006 on firms in 47 countries), government procurement (Cingano and Pinotti 2013 on Italian firms), boosted confidence in the stock market (Fisman 2001 on Indonesian firms), and tax benefits (Kim et al 2015 on American firms, Faccio 2010 on firms from 47 countries).

These patterns hold internationally, but the degree of corporate political connection, and its potential impact, vary across countries. Generally speaking, political connection is more common in places with a lower degree of legalization and a higher level of corruption, such as Russia, where connected firms represent 86.75% of the market capitalization, compared to 4.94% for the US according to calculation in Faccio (2006). By that logic China, which during its post-communist transformation is sometimes categorized as crony-capitalism (Dickson, 2008), which makes it a good case to observe effects of political connection on firm performance and trade preference. How po-

litical connection was indeed an asset for Chinese entrepreneurs will be presented in greater detail in Section 3.

However, as discussed previously, benefits of political connection alone do not tell us how PCEs view trade liberalization, as both "*connection to evade competition*" mentality and "*openness to neutralize privilege*" mentality are reasonable reactions. In order to answer this question at the theoretical level, the next section categorizes two types of favoritism: each corresponds to positive and negative correlation between political connection and support for trade.

2 Two Types of Favoritism

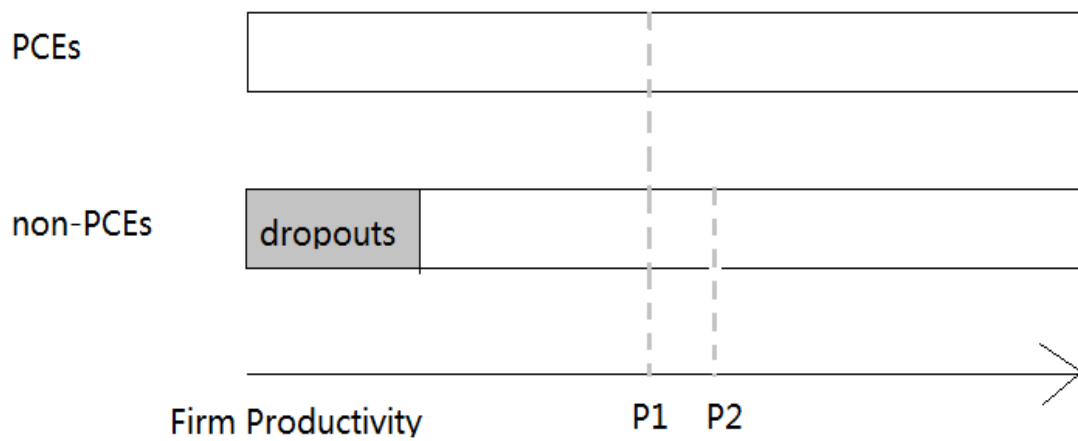
Favoritism from political connection can be categorized into two logical types. First, state support can be primarily trade-related. This type include tariffs targeting specific industries, export tax rebate, state-sponsored trade litigation, and subsidies for import-competing firms, which are usually seen as tariff and non-tariff barriers in trade negotiation and policy debates. Many state assistances are targeting specific products, not individual firms per se. However, this does not mean an even distribution of benefits among firms producing the same products. For instance, in the case of state-sponsored litigation in WTO, a government support of a case involving several key domestic firms. In such scenarios, PCEs can naturally secure more state attention for their cause through their connections in government offices, so that PCEs enjoy a trade-specific favoritism. Second, government assistance can be oriented towards activities that are non-trade-specific, giving PCEs a competitive edge over other domestic producers, such as government procurement to increase domestic sales, better access to bank loans (esp. in countries where banks are mostly state-owned, such as China), and so on.

To be clear, non-trade-specific subsidies can also have a positive effect on PCE's foreign activities. For instance, increase of domestic sales from government procurement and loans from the banking system can facilitate international expansion as well as domestic dominance. The distinction between two types of favoritism lies in the fact that trade-specific favoritism provides PCEs an "additional leg up" to cope with increasing foreign competition, but non-trade-specific favoritism does not provide such additional boost for new realities after trade liberalization. From the non-PCE perspective, non-trade-specific favoritism makes it hard for them to compete with PCEs, so they have to become more competitive to survive the discriminatory environment at home. As a result, when trade becomes free, that disadvantage can be neutralized because non-PCEs are better able to deal with foreign competitors and utilize new opportunities from abroad.

In other words, favoritism stemming from political connection brings a selection effect: under autarky, government help forces a bottom portion of unconnected firms to dropout. As shown in Figure 1 below, this selection effect would tend to make a typical PCE's firm less competitive than

a typical unconnected firm, so that $P1 < P2$, where $P1$ is the average underlying productivity of political connected firms, and $P2$ is the average underlying productivity of non-politically connected firms. In addition, this favoritism of PCEs, or discrimination of non-PCEs, may be unobservable when analyzing differences in average profitability between the two groups. Because non-PCEs have to be more productive to make up for their lack of political resources, so surviving non-PCEs can appear no more profitable than PCEs.

Figure 1.
Effect of Government Favoritism under Autarky



However, with increasing foreign competition and international opportunity, but without enough trade-specific favoritism (i.e. the "additional leg up"), the PCEs will suffer, while its un-connected, and more productive, domestic counterpart will benefit, according to Melitz (2003). This prospect will foster the "openness to neutralize privilege" mentality on the question of trade liberalization, as an average entrepreneur regards favoritism primarily as preexisting unfairness in the home country that can be lessened by economic openness, translating into a negative correlation between political connection and trade attitude, as in H1a:

H1a: when non-trade-specific favoritism dominates, political connection is negatively associated with support for free trade.

On the other hand, dominance of trade-specific favoritism will foster the "connection to evade competition" mentality. When free trade comes, only PCEs receive abundant protection from the

state to cope with increasing foreign competition, while non-PCEs enjoy no such support. The implication from this reasoning is that in equilibrium, PCEs, with the "additional leg up" from the government, can compete with both domestic and foreign producers that are otherwise more competitive. This selection effect of political connection is similar to the role of gender on entrepreneur trade preference, argued by Osgood and Peters (2017), that gender discrimination itself does not make female entrepreneurs more pro free trade, but they are more competitive on average because of domestic gender prejudice. An average entrepreneur in the home country now regards favoritism as trade protection unevenly distributed according to how much political resource one has, and we should observe a positive correlation between political connection and trade attitude, as in H1b:

H1b: when trade-specific favoritism dominates, political connection is positively associated with support for free trade.

It is possible that the two mechanisms mentioned above cancel each other out. In other words, "additional leg up" for PCEs and "escape through trade openness" for non-PCEs coexist at comparable levels. Then, there should not be significant correlation between political connection and trade preference at the aggregate level. The reasoning based on the categorization of state assistance to domestic firms generates three hypothetical scenarios below.

Non-trade-specific favoritism dominates	→	"openness to neutralize privilege" mentality	→	Non-PCEs support free trade more: H1a
Trade-specific favoritism dominates	→	"connection to evade competition" mentality	→	PCEs support free trade more: H1b
Neither type dominates	→	Two mentalities cancel each other out	→	No clear pattern, non-significant correlation

3 Institutional Background

The previous reasoning generates a testable hypothesis to be evaluated with qualitative and quantitative evidence from the Chinese case presented in the following sections. China began its post-communist economic reform in 1979, when private economy was allowed and started to flourish.¹

¹ State-owned firms play a big role in China's industrialization and development, and there has been extensive discussion on their low efficiency. But managers of state-owned firms are not firm owners, since by

During its rapid social transformation and economic growth, getting into WTO in 2001 is arguably the most significant trade liberalization effort. Under the multilateral WTO framework, China later proceeded to deeper integration through bilateral and regional agreements. As described by former Chinese president Hu Jintao, "China's accession to the WTO is a milestone in China's reform and opening up, bring us into a new era of further open up." What's important for this paper is that China was in a relatively autarkic situation beforehand, and joining WTO in 2001 greatly accelerated China's economic opening and establishment of new institutions to improve coordination between the government and firms to cope with the new environment.

The guiding principle for such business-government coordination is called the "four body interaction mechanism (FBIM)", and it worked as a direct response to post-accession challenges. The four bodies include China's Ministry of Commerce, local governments, industry associations, and individual firms. Initially, the pressing need for FBIM was to have the four bodies to work closely to help Chinese firms dealing with WTO litigations and penetrating foreign markets. But gradually, under the same principle, the institutional agenda became more and more comprehensive, covering policy areas such as new forms of non-tariff trade barriers, trade-related intellectual property issues, and negotiations of China's recent free trade agreements (FTAs). In "2017 National Conference on Trade Assistance Work" in Beijing, the head of China's MOFCOM, Ji Zhang, praised the functioning of the "four body mechanism" in advancing Chinese corporate interests in the previous fifteen years, and further laid out a plan for the Ministry to deepen its work on trade assistance and forging better external environment for China's international trade (MOFCOM of PRC 2017).

Based on the author's interview of MOFCOM officials², China's contemporary trade supporting apparatus is becoming more and more like the American one in several aspects. Most notably, today's trade policy making and implementation involves extensive consultation of individual firms, instead of Beijing making all the decisions without knowledge of needs and concerns from below. One example is the Ministry's regular consultative sessions with firms and industry associations on trade and investment issues through Mixed Economy and Trade Committees.³ In contrast, the situation was very different pre-2001, when there were no such institutions and joining WTO was largely a top-down liberalization initiated by the central government.

The above discussion shows that Chinese state's trade-specific support was largely a product of new realities after 2001. As such, trade-specific favoritism (i.e. uneven distribution of trade

definition these enterprises belong to the state. This paper only investigates privately-owned firms, and their owners, which accounts for the majority of China's employment and industrial output since 2004 (Li, 2008).

² Series of interviews of MOFCOM officials in the Chinese Embassy in Washington DC in June 2017, and in the MOFCOM in Beijing in July 2017.

³ See a list of Mixed Economy and Trade Committees consultative sessions, each with time, location, specific issue areas, and invitation to entrepreneurs in the MOFCOM official website (in Chinese): <http://www.mofcom.gov.cn/article/au/aa/>

assistance among Chinese firms), could not be prevalent prior to that time. What about non-trade-specific favoritism?

Since the beginning of China's Opening and Reform in 1979, the fast growing private sector endured both political and social discrimination. Privately-owned firms were considered a wicked form of ownership due to ideological prejudices and polarization during post-communist transformation. Entrepreneurs in China often fell victim to periodic political movements, such as campaigns against "capitalist spiritual pollution" in 1983 and 1984, and against capitalist liberalization in 1987 (Li 2008). Commercial and property laws were either non-existent or unenforceable (McMillan 1995), and the antagonism towards the private sector remained strong until the late 1990s (Li 2008). China's legislature body, the National People's Congress, did not approve the constitutional amendment to recognize and protect private property rights until 2004, three years after joining WTO in 2001.

Given this tough environment for Chinese entrepreneurs, political resources became a desirable asset for business success. On the one hand, some previous government officials started their business, and greatly benefited from their connections from the old days. On the other hand, some private business owners actively invested in connections with the political apparatus to facilitate their business (Dickson 2008). These movements from both directions started when the country was still in a relatively autarkic situation, well before China's accession to WTO. One example of such political connection is membership in the Chinese Communist Party (CCP). As shown by Li (2008), CCP membership brought entrepreneurs better access to key resources that were controlled by the state, such as business operation licenses and eligibility for favorable but discretionary tax benefits. In addition, CCP membership is often a ticket for political status of much higher value, such as membership in the People's Congress at local or national levels (Li 2008).

To summarize, China's developmental trajectory exhibits three characteristics. Firstly, under harsh political and social environment, political resources were a key asset for Chinese entrepreneurs. This is consistent with research on political connection improving firm performance in both developing and developed countries mentioned in Section 1. Secondly, non-trade-specific favoritism emerged since the infancy of China's private sector in the 1980s. Thirdly, trade-specific support, and subsequent trade-specific favoritism, was developed much later as institutionalization of trade assistance was largely a product of joining the global trade club in 2001.

Combining all these, if we are looking at entrepreneurs during China's run-up to WTO accession, it is probable that the "*openness to neutralize privilege*" mentality was more common since non-trade-specific favoritism had been a feature of the transitioning society for many years. However, after 2001, trade-specific favoritism kept growing, and at some time point it should start to neutralize the effect of non-trade-specific favoritism on trade preferences. Before moving to quantitative evidence in Section 5 and 6, I introduce several competing explanations with the potential to jeopardize the validity of the proposed interpretation in Section 4.

4 Competing Explanations

4.1 Capable Entrepreneurs

A potential confounder of the above argument on political connection is that capable entrepreneurs can better appreciate trade liberalization and better foster political connection at the same time. To be clear, capability of entrepreneurs does *not* equal to their firms' productivity, but it can improve efficiency in 1) utilizing trade liberalization and 2) befriending the policy making circle at the same time, yielding an observationally equivalent correlation as the "connection to evade competition" argument under trade-specific favoritism in *H1b*.

Personal capability can be accumulated from both formal schooling and hands-on experience. As discussed in Hainmueller and Hiscox (2006), education contributes to positive attitude toward international trade by equipping people with the knowledge to appreciate the overall welfare effect of trade openness, and help them to see new opportunities provided by liberalization. The same logic can be applied to Chinese entrepreneurs. In addition, unlike ordinary people who are mostly on the receiving end of distributional consequences of trade liberalization as consumers and employees, business owners can actively engage in globalization through interaction with foreign economies.

During the early decades of China's opening and reform, international joint ventures was the primary form of international corporation encouraged by the Chinese government. It encouraged joint operation and mutual ownership, and discouraged direct import of foreign brands and foreign-owned subsidiaries in China. This form of international cooperation maximized technological transfer to domestic producers and minimized foreign competition that could crowd out local industries in their infant stage. For this subset of Chinese entrepreneurs with experience in international joint ventures, their knowledge of globalization was greater than the national average. With such knowledge and experience, for instance, they can better utilize trade-related policies from the government and identify future business opportunities should Beijing allow greater exposure to the world market. Furthermore, because of this hands-on experience, globalization is no longer an abstract concept, and business owners should be less influenced by either globalist or anti-globalist discourses from media or schools. This confounding argument on entrepreneur capability generates two predictions:

H2a: entrepreneur's educational level is positively associated with support for free trade.

H2b: entrepreneur's experience in international joint ventures is positively associated with support for free trade.

4.2 Strategic Industries

Another potential confounder of the political connection argument is that entrepreneurs in strategic industries tend to receive more attention from the state. Strategic industries are those identified by the Chinese government to have a significant impact on national security and social stability. Identifying and protecting strategic industries is not unique to China, nor is it exclusive for developing countries, though it is commonly overlapped with industrial policies of developmental state to accelerate industrialization and modernization. In addition, industry strategicness is not defined by the industries' economic value, at least not for the short run. They may or may not be the country's most profitable and productive industries. In the case of China, for instance, a lot of strategic industries fall into the category of capital intensive and technology intensive heavy industries, instead of labor intensive light industries, where the country's comparative advantage was the greatest at the time.

Industries with high strategicness for China include telecommunications, banking, agriculture, and so on. Industries with low strategicness include textiles and retail, where foreign competition does not pose a threat to social stability and national security. In its WTO entry deal, similar to many other developing countries, China was able to retain protection of strategic industries for longer time periods than industries of lower strategicness. Hsueh (2011) provides a good discussion on China's regulation of textiles and telecommunications, for example. Being a non-strategic industry, China's textile industry experienced a dismantling of central control and government protection in the WTO era. For telecommunications, however, in the WTO era China's central control consolidated and state protection increased against foreign infiltration due to its significance for national security and social stability.

How could the industry strategicness rationale affect the political connection affecting trade preference argument? Being in strategic industries makes it easier for entrepreneurs to have close relationship with the government, for reasons mentioned in the previous paragraph. At the same time, their strategicness warrants more protections against foreign competition, which makes them more confident about liberalization. As such, a potential correlation between political connection and liberal trade view, as in **H1b**, may be spurious when both are products of industry strategicness, an industry-level attribute. The discussion on industry strategicness predicts that:

H3: industry strategicness is positively associated with support for free trade.

4.3 Causal Effect vs Selection Effect

As discussed in Section 2, non-trade-specific favoritism stemming from political connection buffers competition from competitors, so that PCEs can survive among otherwise more competitive non-

PCEs. However, with increasing foreign competition and international opportunity come, if without enough trade-specific favoritism (i.e. the "additional leg up"), the PCEs will suffer, while non-PCEs will benefit. But instead of this selection effect story, is it possible that political background gained through, say, previous work experience in the government causally make a PCE more prone to non-market ideas, such as government management of economy and less trade openness? Alternatively, for example, if a PCE worked for a trade-promoting office in the government, such as US Trade Representative (USTR), Japan's Ministry of International Trade and Industry (MITI), or China's Department of International Trade and Economic Affairs under MOFCOM, such background is likely to foster pro-trade ideas.

A causal story can run in both directions, making opposing predictions on how political connection (e.g. through previous work experience in government) affect support for free trade. Which one is more likely to be the case in China? As mentioned in Section 3, the Chinese government had been the major force promoting the WTO entry deal. Trade policy making back then was very different from the comprehensive institutional arrangement in contemporary China that allows for nuanced policy consultation and coordination with the private sector. This is by no means to say that now Chinese firms can influence the policy circle like American firms who can hire lobbyists, sponsor political candidates, make congressional testimonies, and so on, but the contemporary channels for Chinese entrepreneurs to have their voice heard on the country's trade policy were not in place in the 1980s and 1990s. Even if the entrepreneurs were overwhelmingly pro-trade, they could not have made a substantial impact on China getting into WTO.

In that sense, getting WTO membership was largely a top-down liberalization, where the Chinese state had been the major advocate since 1982, 19 years before accession in 2001. In 1982, the People's Republic of China (PRC) became an "observer" in GATT, and the State Council of PRC made "regaining" ⁴ GATT status a national policy goal. During the two decades to come, the Chinese government sent delegates for numerous rounds of bilateral (especially with the US) and multilateral negotiations, making it one of the most prolonged and difficult entry negotiation in the GATT/WTO history ⁵. To conclude, the Chinese government has been pro-WTO since the early 1980s; then, entrepreneurs with connections in the government, maybe through previous work experience, were likely to be influenced by such pro-WTO idea. If one believes such influence being significant for the Chinese case, political connection and support for trade should be positively correlated, making it observationally equivalent with **H1b**.

In other words, a positive correlation as in **H1b** can be a result of the selection effect proposed

⁴ Republic of China (ROC) was a signatory nation of GATT in 1947, as such in 1982 PRC applied to "regain" China's place in GATT. ROC government that fled to Taiwan after the Chinese Civil War lost its membership in GATT in 1971, and Richard Nixon visited red China in 1972 that started a de facto Sino-US alliance against the Soviet threat.

⁵ See a list of major events during the prolonged negotiation period from MOFCOM official website: <http://cwto.mofcom.gov.cn/article/c/201001/20100106765404.shtml>

in Section 2, or the causal effect described here. Without making a priori assumption on the magnitude of this potential casual effect, quantitative analysis summarized in **Table 2** actually shows a negative correlation for the political connection variable, contradicting the positive correlation implied by the causal hypothesis.

5 Data and Empirical Strategy

This paper utilizes survey data on privately-owned business owners in 2000 (n=3073) and 2002 (n=3258). The two surveys are part of a multi-year investigation conducted every 2 years by an expert team summoned by the United Front Work Department of the Chinese Communist Party Central Committee, National Association of Industry and Commerce, and Private Sector Research Association of China. The purpose of this survey project is to inform the Chinese government about the country's fast growing private sector.

Since it is directly administered by the central agencies in Beijing, this survey project is well funded and the data collection follows standard survey methodology for an accurate representation of China's private sector at the time. For instance, once a firm is selected into the sample through stratified randomization, survey takers will meet with the firm owner in person to conduct the survey. If the firm owner does not show up, survey takers are required to visit again, and facilitate the survey taking by clarifying survey questions, so that missing data is not prevalent. The institutional capacity behind the implementation of this survey is rare in surveys conducted by survey companies and individual researchers.

A broad range of questions are asked about the firm owners' personal backgrounds, daily operation of their firms, and their reactions to various economic policies at the time. 2000 and 2002 are the only two years with the question on China joining the WTO in 2001. I use this question to construct my dependent variable, and extract covariates for later statistical analysis from other questions included in 2000 and 2002 surveys. In both years, respondents are asked the question: *"After China's accession to the WTO, what is your anticipated impact on your firm?"* For firm owners who checked *"Amid competition, my firm will do better"* as their response, I code them having a clear supportive view of China joining the WTO. The wording of the question are the same in 2000 and 2002. Under such construction, there is a 45% support rate in 2000 and a 35% support rate in 2002.

Social desirability bias is common for survey data, where respondents tend to give answers that are socially desirable and politically correct. As discussed previously, the Chinese government had been the major force behind China's prolonged accession process for twenty years, during which it utilized its control of media to promote the idea of getting into WTO. In the 1990s and 2000s, getting WTO membership was widely considered a success for China's economic modernization, as well as a symbol of China being accepted by the global community, and maybe even a source of

national pride. So the social desirability at the time was to support WTO. However, the distribution of the DV shows that more than half of the respondents did not conform to that social desirability in 2000, and the unfavorable rate increased to 65% in 2002.

Social desirability bias does not seem like a severe problem here probably because of the framing of the question and the nature of the respondents. The question did not ask Chinese entrepreneurs for an overall subjective feeling of joining an international organization, but prospects of their own firms with respect to their business environment becoming part of the global economy. Also, with such high stake and business experience, entrepreneurs should be less ignorant of economic consequences of liberalization than average citizens, making them less vulnerable to what was preached in the media. The social desirability bias could be a much bigger threat to data quality if, say, the survey asks ordinary Chinese people about their subjective feelings of China joining WTO.

With a binary response as the DV, where TRUE/1 corresponds to supportive view, and FALSE/0 otherwise, the empirical model is logistic regression independent variables including 1) political connection, our main variable of interest; 2) confounding variables from competing explanations, including education, experience in international joint ventures, and industry strategicness; and 3) other covariates at industry, firm, and individual levels. The regression function is below:

$$\text{logit}(E[Y]) = \beta_0 + \beta_1 * \text{Political Connection} + \beta_2 * \text{Confounders} + \beta_3 * \text{Other Covariates} \quad (1)$$

Note that the data structure is not panel but cross-section only. The model above assumes independence of errors, and **Appendix 2** performs a geo-statistical check of potential spatial dependence. The variables used are from questions in the survey: some are from straightforward questions while others are constructed with information from multiple questions. Below is a summary of all variables that appear in the empirical analysis. The construction of all variables are straightforward, except for political connection, which will be discussed in detail in the following section.

Table 1: Construction of Variables Used in Regressions

Variable Name	Measuring	Construction
Connection	Political connection as a latent variable	Estimated from J=6 questions related to political connection for 2000 and 2002, with consideration of respondents lying.
Connection(9)	Political connection as a latent variable	Estimated with additional 3 (J=6+3) questions related to political connection. Only available for 2002, with consideration of respondents lying.
Connection(h)	Political connection as a latent variable	Estimated from J=6 questions related to political connection for 2000 and 2002, assuming respondents to be completely honest.
Strategicness	Industry strategicness	Coded with information from China's WTO entry document and Hsueh (2011), firms in sample are either in strategic, mixed, or non-strategic industries.
CCP	A proxy for political connection	Respondent's CCP membership
NPP/PCC	A proxy for political connection	Respondent being NPP or PCC members
Official	A proxy for political connection	Respondent having work experience as an official at or above the <i>chu</i> rank
Education	Entrepreneur's education	Illiterate, primary school, middle school, high school, college, or graduate school
Experience	Entrepreneur's experience	Respondent having experience in international joint venture
Manufacture	Industry competitiveness	Respondent's firm's primary product being manufacturing goods
Intensity	Industry competitiveness	Respondents' firm's annual wage cost divided up by annual total cost of production one year before the surveys
Sales	Firm size	Respondents' firm's annual sales one year before the surveys
Employment	Firm size	Respondents' firm's employment one year before the surveys
R&D	Firm productivity	Respondents' firm's spending in R&D one year before the surveys
Gender	Gender	Respondents' gender

6 Measuring Political Connection

6.1 Proxy vs Latent Variable

A major difficulty for empirical assessment of the previous discussion is the conceptualization and measurement of political connection, given its abstract and sensitive nature. Existing literature relies on using proxies, but there is no consensus on which proxies are the most appropriate.

Ang and Jia (2014) utilizes the same survey data of Chinese private firm owners, and operationalizes political connection as being 1) previous officials, at or above the *Chu* rank; 2) delegates in National People's Congress (NPC) or People's Political Consultative Conference (PCC). However, other research, such as Wu (2012), may only use the previous official criterion. Being a official above the *Chu* rank or having membership in NPC/PCC are rare, using one or both of them as proxy limits having political connection to a very small group of political elites. Under this treatment, all entrepreneurs with neither previous working experience as officials nor NPC/PCC membership are treated as having zero political connection. A sub-*chu* rank Chinese Communist Party (CCP) member can also have political resources that are beneficial for business, for instance. Instead of using highly exclusive criteria, Li et al (2008) uses CCP membership as the proxy for an entrepreneur's political connection, but like the other side of the same coin, this highly inclusive measurement treats all CCP member entrepreneurs as having the same level of political connection, when there are 70 million CCP members in the country.

Relying on individual proxies always has to impose an unjustified oversimplification of reality, and when political connection is of particular importance to the research question asked, it deserves a more careful treatment. This paper conceptualizes political connection as an unobservable latent variable, and utilizes all manifestations of political connections that are available from the data. To make sure that results from 2000 and 2002 regressions are comparable, I construct a measure of political connection employing the same set of six questions in 2000 and 2002 surveys, each of which *may reveal some* information on corporate political resources:

1. Previous working experience as an official (same as Ang and Jia 2014)
2. Being a delegate in NPC and/or PCC (same as Ang and Jia 2014)
3. Being a member of CCP, Youth League, or democratic parties. (similar to Wu and Chen 2012)
4. Having secured loans from the banking system for corporate operation.
5. Having resolved business disputes through personal connections with local officials.
6. Having contributed to philanthropy to return favor to local government.

There are two important features of this construction. First, these six sources of information are conceptualized as revelations of political connection, not political connection itself. Being a CCP

member does not equal to having political connections for corporate development, but it does capture a piece of the latent trait to be estimated in the latent variable model. The latent variable model does not make *a priori* assumptions on that. Similarly, the last three questions are factual questions on firm owners' past experience in financing, dispute resolution, and philanthropy, none of which can be seen as political connection itself. So, they are not the best candidates for proxies of political connection. But as long as they contain some useful information for the Chinese case, the latent variable approach makes use of them.

Second, this construction does not assume equal importance of the six questions, nor is it a weighted average of six individual proxies. The latent variable approach offers a more nuanced treatment where both difficulty and discrimination for each question are incorporated and estimated, something unfeasible in the weighted average of multiple approach.

To give an example of difficulty and discrimination, being NPC/PCC delegates would be high difficulty and also high discrimination in survey data. High difficulty because it is such an elitist political status that most entrepreneurs would be excluded from this small elitist group. High discrimination because, unlike, say having resolved legal disputes through personal back-doors, NPC/PCC membership is public information, so who is in can be reliably separated from who is out in the data.

In general, the latent variable method offers a principled way to combine messy but useful information from multiple observables to estimate the unobservable. This approach can be represented in the item response model setup as:

$$\begin{aligned}
 Y_{i1} &\sim f_1(\theta_i) \\
 Y_{i2} &\sim f_2(\theta_i) \\
 Y_{i3} &\sim f_3(\theta_i) \\
 Y_{i4} &\sim f_4(\theta_i) \\
 Y_{i5} &\sim f_5(\theta_i) \\
 Y_{i6} &\sim f_6(\theta_i)
 \end{aligned}
 \tag{2}$$

where Y_i 's are the six observed variables from the survey data, and θ_i 's are the latent variable for each respondent, political connection, and $i = 1, \dots, 3073$ for the 2000 survey, and $i = 1, \dots, 3258$ for the 2002 survey. For each response Y_j , where $j = 1, \dots, 6$, I reasonably assume latent monotonicity so that the response function, f , is strictly increasing on θ (i.e. respondents with previous working experience as officials have, on average, more political connection than respondents without such background).

The above standard setup for latent variable estimation has not considered another problem with measuring political connection. Most research in the literature, whether using proxies or not, assumes information collected, Y , to be an accurate representation of the reality, Y^* , so that:

$$Y_{ij}^* \stackrel{\text{assumed}}{=} Y_{ij} \sim f_j(\theta_i) \quad (2.1)$$

For the data used in this paper, this assumption ignores the possibility that respondents may be hiding sensitive connection information in the survey. How do we know survey respondents are telling the truth? This can be particularly problematic since the survey is conducted by the Chinese Communist Party Central Committee. It is reasonable to suspect that respondents may not want information on their political connection to be revealed and recorded. This potential may or may not jeopardize the final findings of the paper, but it is something worth considering. To the best of my knowledge, this lying issue in survey data has not been addressed in a systematic way in the literature.

6.2 Parametric Bayesian Approach to Latent Variable Estimation

This paper adopts a parametric Bayesian approach to estimate the latent variable θ in (2), while taking care of the potential risk of respondents lying. In fact, many problems in social sciences involve making inferences about attributes that are not observable, for instance, ideological dispositions of US legislator roll calls (Erikson 1990, and Clinton and Rivers 2004), judges (Martin and Quinn 2002), and political parties (Huber and Inglehart 1995). Aside from ideology, concepts such as levels of democracy across countries (Jagers and Gurr 1996), distance in non-physical space between actors in social network (Hoff and Handcock 2002), and human rights (Fariss 2014 and Fariss forthcoming) are also treated as latent variables in the literature .

When dealing with latent variables, the Bayesian approach has a straightforward interpretation: updating knowledge of unobserved parameters with observed data. In the estimation of political connection, as shown in (2), to "learn" about the latent trait θ with available data Y , it is necessary to assume that Y is generated by some model \mathcal{F} , with parameters Θ , which includes but not necessarily limited to the θ in (2), so that we can utilize $p(Y_n|\mathcal{F}, \Theta)$ to learn about posterior density of interest, $p(\Theta|\mathcal{F}, Y)$, through the Bayes' Theorem. This paper follows this tradition for latent variable estimation and start with the standard item response model where \mathcal{F} is specified as in (3) for binary response ⁶ :

⁶ For the survey data used in this paper, the model should be mixed binaries and categoricals, but the single binary response illustration can be extended for more complex cases. For instance, a three-level categorical

$$P(Y_{ij} = 1|\theta_i, a_j, b_j) = \frac{e^{a_i+b_i*\theta_i}}{1 + e^{a_j+b_j*\theta_i}} = \text{inv.logit}(a_i + b_i * \theta_i) \quad (3)$$

$$\lim_{\theta_i \rightarrow -\infty} P(Y_{ij} = 1|\theta_i, a_j, b_j) = 0 \quad (4)$$

$$\lim_{\theta_i \rightarrow \infty} P(Y_{ij} = 1|\theta_i, a_j, b_j) = 1 \quad (5)$$

This model is widely used in multiple disciplines for data with discrete response. For instance, testing intelligence level with multiple choice questions is a important application. In answering multiple choice questions, $P(Y=1)$ is the probability of *respondent_i* getting the correct answer in a 2-option multiple choice question, and it is a function of *respondent_i*'s knowledge level θ_i , and question difficulty and discrimination a_j and b_j . The goal of the latent variable approach is to estimate each *respondent_i*'s knowledge θ_i , which is not directly observable. For answering questions on political connection as in this paper, $P(Y=1)$ is the probability of *respondent_i* revealing political information (e.g. $Y = 1$ for *respondent_i* admitting being a CCP member, and 0 otherwise), and the ultimate goal is to estimate each *respondent_i*'s latent political connection level θ_i .

To answer multiple choice questions, with minimum knowledge θ_i , *respondent_i* will never get the question right, as in (4). With maximum knowledge θ_i , *respondent_i* will always get the question right, as in (5). For answering question on political connection, respondents with the least political connection will reveal no political connection, as in (4), and vice versa, as in (5).

I incorporate the lying problem in this basic setting parametrically. Of course, it is not always necessary to work with explicit functional forms, as non-parametric approach can provide equally feasible ways for inference. For instance, following Matzkin (2007), one can conceptualize the lying issue highlighted in this paper as bias associated with response errors. In other words, response Y when asked about the value of Y^* may be related to both observable and unobservable characteristics other than Y^* that are specific to respondents and surveys. The exact relationship between Y and its determinants are not pre-specified, but these unknown functions may be identified and estimated under certain assumptions (see details in Matzkin 2007). As will be shown in the next section, however, the problem dealt with in this paper does not warrant the additional complexity brought by the non-parametric approach. This is mainly because of two reasons. First, the parametric construction of lying parameters naturally builds on the existing baseline model (3) in the sense that the relationship between these unobservables and response Y is relatively straightforward. Second, the parametrization to follow directly improves our understanding of existing

variable can be represented as two binary variables.

parameters in the baseline model.

6.3 Individual-Specific and Question-Specific Lying Parameters

To solve this problem of intentional lying on sensitive information in a parametric fashion, I construct two "lying parameters" to correct for potential bias that occurs when this issue is ignored or assumed away. To a certain extent, this resembles the treatment of respondents "guessing" in discrete choice tests (e.g. Wise and DeMars 2006, Thorpe and Favia 2012) in psychometrics literature, where additional parameters are incorporated in the model for the extra layer of complexity. However, aside from the general idea of adding parameters, these two methods are designed to solve different problems, thus the functional forms will be different as well.

Conceptually, guessing and lying operate in different logics. First, guessing parameter accounts for the fact that, regardless of knowledge level, there is always a possibility of the respondent choosing the right or wrong answer. But in the case of lying, respondents tend to conceal sensitive information at different degrees for each question. It is possible for respondents to reveal zero political connection information when there is maximum lying, but it is impossible to reveal more political connection information than the true level. In other words, guessing can go both ways, but lying in this case is unidirectional.

Second, in surveying political connection, some questions are more difficult to lie about. For instance, it is hard to hide the fact that, say, you were a delegate of National People's Congress (NPC), a highly selective and conspicuous political status. In fact, NPC delegate status is supposed to be known to the public because delegates should pass voice from local constituents to Beijing in NPC meetings. As such, in the modeling procedure, I allow this flexibility at the response level for each j . There is no equivalent concept in guessing in multiple choice tests. If anything, the limits of random guessing are determined by the number of options, such as a 1/4 chance of picking the correct one from A, B, C, D, not by the content of questions.

For the characteristics of lying discussed above, a person specific one c_i , and a question specific one d_j , are incorporated into (3) in the functional form:

$$P(Y_{ij} = 1|\theta_i, a_j, b_j, c_i, d_j) = (1 - c_i) * (1 - d_j) * \text{inv.logit}(a_j + b_j * \theta_i) \quad (6)$$

$$\text{where } c_i \in [0, 1], \quad d_j \in [0, 1],$$

c_i is the respondent-level variable capturing each respondent's propensity to lie, and d_j is the response-level variable capturing each response' propensity to be lied on. When there is no ly-

ing for $respondent_i$ on $response_j$ so that $c_i = 0$ and $d_j = 0$, the model reduces to the baseline form as in (3). For both c_i and d_j , larger values correspond to bigger lying effects.

6.4 Parameter Identification and Dimension Reduction

Identification of the lying parameters can be difficult. Obviously, there can be infinite number of combinations of parameter values to provide the same fit to the data, so these parameters are not identified without additional information as constraints. One common solution to this identification problem is to pivot on exogenous information, and in **Appendix 1**, I discuss in detail how I follow this tradition by using available data from other questions in the same survey. However, even with this operation, as long as I do not impose fixed c values for all i 's, the inclusion of c_i brings a proliferation of parameters. As discussed in detail in Diaconis and Freedman (1986), in high-dimensional inference problem, data will not always swamp the prior, or even when it occurs, it may occur very slowly. I have run through multiple simulations and findings confirm this problem. There are three steps in these simulations. First, Y_{ij} 's on the left hand side of (6) are calculated with known but random parameter values on the right hand side of (6), assuming this is the true data generating process \mathcal{F} . Second, calculated Y_{ij} 's are feed to the latent variable model to estimate parameter values. Third, estimated parameter values from step 2 are compared with initial known parameter values in step 1. If initial known parameter values are recovered in this simulation exercise, under reasonable range of error given several probabilistic procedures in both the data generating process and Monte Carlo Markov Chain estimate of posterior densities, we can say that, as least in theory, the latent variable model used can correctly identify unknown parameters with real data.

More results from simulations are presented in **Appendix 3**. One lesson learned from multiple simulations is that identification is feasible for models with no consideration of lying at all, as in (3), which is not surprising, and also for models that only consider the question-specific lying parameter d_j , as in

$$P(Y_{ij} = 1 | \theta_i, a_j, b_j, c_i, d_j) = (1 - d_j) * \text{inv.logit}(a_j + b_j * \theta_i), \quad (7)$$

But, once I bring in another $N \approx 3000$ c_i 's, identification becomes very unreliable. In this scenario, one choosing to ignore c_i will have to acknowledge that variation among c_i 's is absorbed into θ_i 's. This simplification can be costly since c_i captures an individual respondent's likelihood to lie on his or her own political connection information, so by definition it is closely related to

θ_i . People with higher levels of political connection naturally have bigger incentive to hide their political connection information, while people with little political resources have nothing to hide in the first place. Allowing variations in c_i to be absorbed in θ_i essentially assumes away the lying problem at the individual level.

To compromise the potential bias problem and identification problem, some dimension deduction is required. In the setup of this survey, there are two sets of determinants of c_i , one that is innate to individuals, making some people tend to lie more often than others on any questions, another that varies with θ_i levels. I use the information on underreporting of sales to capture the first type (more details on this construction in **Appendix 1**), and estimate:

$$P(Y_{ij} = 1|\theta_i, a_j, b_j, c_i, d_j) = (1 - c_i) * (1 - d_j) * \text{inv.logit}(a_j + b_j * \theta_i), \quad (8)$$

$$\text{where } c_i = \text{inv.logit}(\gamma + \sigma * \text{UnderReport}_i + \omega * \theta_i),$$

(8) incorporates the problem that respondent $_i$'s θ_i level is influenced by c_i level. The other term, σ , captures the other portion of individual propensity to lie that is unrelated to θ_i , identified with information on underreporting of sales figure. For the identification purpose, (8) reduces $N \approx 3000$ additional parameters with the inclusion of c_i to only 3, which are γ , σ , and ω . This part makes the idea of adding lying parameters feasible for identification. Thus, (8) is the methodological innovation of this paper on top of existing use of IRT models in the social science literature.

In the regression analysis to follow, I use estimations of political connection from all methods mentioned above, so that they serve as robustness checks to each other. In **Appendix 4**, convergence diagnostics of different models are presented.

Table 2: Statistical Results with and without Modeling for Lying

	<i>DV: Support for WTO</i>					
	2000	2000	2000	2002	2002	2002
	no lying (1)	with d (2)	with c (3)	no lying (4)	with d (5)	Connection(9)
Connection	-0.276*** (0.082)	-0.270*** (0.093)	-0.294*** (0.081)	-0.005 (0.472)	0.200 (0.153)	0.041 (0.155)
Strategicness	0.232*** (0.079)	0.242*** (0.079)	0.230*** (0.079)	0.026 (0.076)	0.033 (0.076)	0.023 (0.077)
Education	0.116** (0.052)	0.119** (0.052)	0.114** (0.052)	0.278*** (0.057)	0.277*** (0.057)	0.278*** (0.057)
Experience	0.275* (0.148)	0.280* (0.148)	0.275* (0.148)	0.469*** (0.170)	0.466*** (0.170)	0.470*** (0.170)
Manufacture	0.168 (0.103)	0.173 (0.103)	0.166 (0.104)	0.112 (0.105)	0.115 (0.104)	0.113 (0.105)
Intensity	-0.408 (0.264)	-0.427 (0.264)	-0.408 (0.265)	0.640 (0.417)	0.642 (0.417)	0.647 (0.417)
Sales	-4.632 (5.477)	-4.545 (5.475)	-4.618 (5.467)	6.738 (5.030)	6.919 (5.050)	6.704 (5.026)
Employment	0.0001 (0.0001)	0.0001 (0.0001)	0.0001 (0.0001)	0.0002 (0.0002)	0.0002 (0.0002)	0.0002 (0.0002)
R&D	-1.712 (3.501)	-1.637 (3.491)	-1.752 (0.0001)	0.061 (0.167)	0.051 (0.168)	0.063 (0.167)
Gender	-0.080 (0.160)	-0.097 (0.160)	-0.075 (0.160)	0.122 (0.158)	0.119 (0.158)	0.122 (0.158)
Constant	-0.867*** (0.286)	-0.877*** (0.286)	-0.865*** (0.286)	-1.863*** (0.286)	-1.863*** (0.293)	-1.858*** (0.294)

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

7 Results and Implications

This section presents results from models in Table 2. In model (1), (2), (3) from the 2000 data, connection has consistent negative correlation with the DV, confirming **H1a** that “openness to neutralize privilege” mentality dominated, since political connection had long been a non-market strategy for Chinese entrepreneurs in the 1980s and 1990s, and subsequent non-trade-specific favoritism was common during China’s run-up to WTO accession. Model (2) incorporates a response-specific lying parameter d_j , model (3) incorporates a respondent-specific lying-parameter c_i , where c_i is estimated from equation (14), utilizing information on under report of sales figures as an indicator of individual propensity to lie that is not related to θ .

The consistency across models suggests that the negative correlation is robust even when we account for potential lying in different ways, without making apriori assumptions on the severity of the lying problem. Especially, the inclusion of question-specific lying parameter in model (2) generates very similar results as the basic model in (1), suggesting that lying is trivial across different questions. The inclusion of individual lying propensity parameter in (3) results in a slightly larger magnitude of coefficient estimate than the basic model, an indication that some individuals may have hidden information on their ties with the government. Ignoring this effect may underestimate the effect of political connection on trade preference, though the bias is not large. Overall, lying turned out to be not particularly severe for the data used.

The paper proposed selection interpretation over the causal interpretation (Section 4.3) in the sense that, with government help, PCEs can survive among unconnected but otherwise more competitive competitors, and this disparity in competitiveness is critical for non-PCEs to be more optimistic than PCEs on the imminent trade liberalization. A causal theory where political connection and government experience itself influence entrepreneur preference on openness is possible, but the direction of that influence can be positive or negative. In the case of China, getting into WTO was a prolonged process, with the Chinese government being the main advocating force behind. Because the Chinese state had been pro-WTO for two decades, such a causal story would require political connection and government background to make PCEs more likely to support free trade, thus a positive coefficient for Connection. However, the negative coefficient estimate in the 2000 models is consistent with the selection effect rationale, and this rationale contradicts that alternative causal explanation.

In model (4), (5), and (6) for 2002 data, the significance of connection coefficient disappears. How to interpret this non-significant correlation between political connection and trade attitude? On the one hand, it is possible when two movements cancel each other out: PCEs getting proportionally more trade-related subsidy and non-PCEs escaping domestic unfairness through trade openness. This is the natural interpretation from the theory proposed in this paper. On the other hand, however, it can also be a result of firm owners not seeing political connection affecting their

business in any substantial way in the first place, so that they do not think of political connection at all when talking about international trade.

These two possibilities are observationally equivalent, but the possibility that entrepreneurs simply did not think of political connection when talking about trade is unlikely. Pre-WTO, the prevailing idea was that political favoritism created advantage for PCEs, consistent with qualitative and quantitative evidence discussed; it is hard to believe that an average Chinese entrepreneur suddenly ceased to see political resources having an impact on their business. The more likely scenario is that, as trade-specific institutions developed after China entered the WTO, PCEs saw more protection from the state in their international operations, so that the "*connection to evade competition*" mentality grew to a comparable level with the existing "*openness to neutralize privilege*" mentality.

For competing argument 4.1, both 2000 and 2002 data exhibit a positive effect of education and prior experience in international joint ventures, supporting **H2a** and **H2b**. Especially in 2002, positive correlations are bigger in both magnitude and significance level, suggesting that when political connection ceased to be a consistent predictor of trade preference, optimism with respect to WTO was mostly seen among entrepreneurs with more education and experience in international joint ventures, confirming **H3**. On this front, the knowledge effect on Chinese entrepreneurs seems to be similar to American voters in Hainmueller and Hiscox (2006).

For competing argument 4.2, similar to political connection, industry strategicness is only significant in (1) to (3), supporting **H3** for 2000 but not for 2002. The theory section does not provide an explanation to this change that happened in just two years, yet one possibility is that entrepreneurs in those industries believed that they would be well protected because of their industry strategicness. But once the liberalization arrived, they learned that Chinese state's support of strategic industry turned out to be limited to state-owned enterprises, not privately-owned firms. Like many other political economic issues in China, state-owned enterprises and privately-owned firms are often two distinct populations with different incentive structure and policy preferences (e.g. see Shi 2015 on systematic difference in outward investment activity between China's privately-owned and state-owned companies). With data only on the latter group, this paper cannot empirically evaluate this speculation. But it is a fruitful direction for further analysis, especially because the institutions for corporate-government interaction in trade issues that developed after WTO have continued to mature. A better understanding of corporate trade preference can improve our understanding of China's trade policy making.

Can results presented in this paper be generalized to other cases? The theoretical framework and methodology, yes; the specific results, probably no. The theoretical framework proposed centers around the type of state favoritism toward PCEs and the selection effect. In other words, the exact direction of political connection influencing entrepreneur trade preference cannot be teased out without first specifying these mediating factors. Methodologically, this paper demonstrated

an alternative way to measure political connection, or any complex and abstract quantity in social science research, with several advantages over the commonly used proxy treatment. Features of this approach are first, systematic utilization of multiple sources of messy but useful information, and second, taking care of potential bias via explicit modeling and identification of unobservable quantities (i.e. lying in this paper).

As shown throughout the discussion, assessment of the theoretical framework is heavily intertwined with qualitative evidence on the developmental trajectory of China, so lessons learned here should not be blindly applied to other countries and other time periods. A key message of the paper is that trade preference formation can be highly dynamic, subject to changes in the social and regulatory environment. Especially in rapidly developing countries, there may not be time-invariant, context-free, universal patterns on entrepreneur policy stances. To some extent, after 16 years since China's accession to WTO, the China analyzed in this paper does not exist anymore. Its first wave of entrepreneurs and privately-owned firms in the 1990s were small and vulnerable, but now they have evolved into global giants such as Alibaba, Huawei, and Tencent. For these reasons, implications drawn from this paper may be more relevant for countries such as contemporary Vietnam, Indonesia, and Nigeria, where entrepreneurs are formulating business strategy to thrive in weakly institutionalized and fast changing environments.

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Appendix 1

Notes on Lying Parameter Identification

Identification of the lying parameters can be difficult. Obviously, there can be infinite number of combinations of parameter values to provide the same fit to the data, so these parameters are not identified without additional information as constraints. Both d_j and b_j on the j dimension describe how well the question discriminate θ_i in its effect on $P(Y_{ij} = 1)$, but d_j is specific to the lying effect we are dealing with. Similarly, on the i dimension, both propensity to lie, c_i , and political connection level, θ_i , influence $P(Y_{ij} = 1)$, which is the probability in exhibiting political connection.

However, is the above relationship between b_j and d_j , and between θ_i and c_i , complementary or substitutable? Is that relationship linear? To investigate further, I compute first order and second order conditions of d_j with respect to b_j , and of c_i with respect to θ_i , while holding all other elements in (6) as constants:

$$(6) \rightarrow d = 1 - \frac{P(Y=1)}{(1-c) \frac{e^{a+b\theta}}{1+e^{a+b\theta}}} \quad (9)$$

$$(9) \rightarrow \frac{\partial d}{\partial b} \propto \theta \cdot e^{-(a+b\theta)} > 0, \quad \forall \theta > 0 \quad (10)$$

$$\frac{\partial^2 d}{\partial b^2} \propto -\theta^2 \cdot e^{-(a+b\theta)} < 0 \quad (11)$$

Similarly,

$$(6) \rightarrow c = 1 - \frac{P(Y=1)}{(1-d) \frac{e^{a+b\theta}}{1+e^{a+b\theta}}} \quad (12)$$

$$(12) \rightarrow \frac{\partial c}{\partial \theta} \propto b \cdot e^{-(a+b\theta)} > 0, \quad \forall b > 0 \quad (13)$$

$$\frac{\partial^2 c}{\partial \theta^2} \propto -b^2 \cdot e^{-(a+b\theta)} < 0 \quad (14)$$

As we can see, while holding all other elements in (6) as constant, there is a complimentary relationship between d_j and b_j , as in (9), and between c_i and θ_i , as in (12). This makes sense intuitively, as a question $j = 1$ with both high discrimination $b_{j=1}$ and high propensity to be lied on $d_{j=1}$ can have the same probability of revealing political connection information, $P(Y=1)$, as a question $j = 2$ with both low discrimination $b_{j=2}$ and a low propensity to be lied on $d_{j=2}$.⁷ Similarly, a person $i = 1$ with both high political connection $\theta_{i=1}$ and high propensity to lie $c_{i=1}$ can reveal the same level of information on political connection as a person $i = 2$ with lower $\theta_{i=2}$ and lower $c_{i=2}$. Negative signs in (11) and (14) indicate that this complementary relationship diminishes in magnitude with increasing discrimination b and latent political connection θ .

To solve this identification problem empirically under the Bayesian framework, I utilize exogenous information from the survey data, recall that:

1. Previous working experience as an official
2. Being a delegate in National People's Congress and Political Consultative Conference

⁷ Here d_j can be seen as a special case of b_j in the sense that questions that are easier to be lied on have low discrimination levels. However, low discrimination can also be caused by other reasons, such as the question body being ambiguous. So including d_j in the model essentially teases out the part of low discrimination caused by lying. Note that a_j captures the difficulty, so it is not affected by this operation on discrimination.

3. Being a member of CCP, Youth League, or democratic parties.
4. Having secured loans from the banking system for corporate operation.
5. Having resolved business disputes through personal connections with local officials.
6. Having contributed to philanthropy to return favor to local government.

I fix the second d_j value to be 0 because, as discussed previously, delegate status in Congress are open to the public and there is no reason to lie on such public information. For b_j 's, their signs are set to be positive to ensure positive discrimination of responses, so that the signs of θ_i 's are identified, which is critical for later regression analysis that include θ_i as the key explanatory variable.

For parameters on the i dimension, I utilize information that on about 100 out of 3000 respondents may have under reported their sales value in the survey because total cost calculated with the sales figure reported is lower than their total wage cost calculated with wage and employment figures. One possible reason of under-reporting sales is that taxation is based on sales value⁸. Taking this as an indicator of propensity to lie, one can set those c_i at fixed high values and estimate other c_i 's through the model, which may nor may not be mostly zero.

Appendix 2

Checking Potential Geo-dependence of Responses

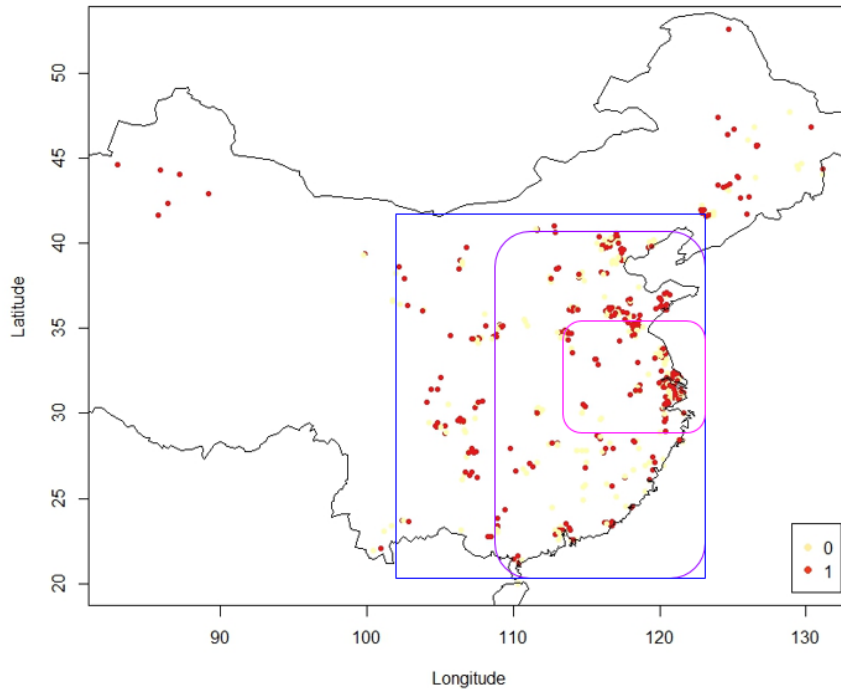
Do entrepreneur trade preferences influence each other locally? Here I present a check for potential geo autocorrelation that is not considered in the main statistical analysis. Geographical information is obtained from zip-codes of firms in the sample, making the spatial analysis feasible. I adopt point-referenced modeling approach for the following operations. This exercise can also be seen as an effort to control for social desirability bias. China is a vast country with great internal diversity, different regions have different climate, ethnicity, dialect, and level of economic development. If one speculates that, for instance, entrepreneurs in Shanghai are more pro free trade than entrepreneurs in Beijing, it implies a clustering and mutual-influence of DV values by geographical proximity, and this geo-dependence check verifies that possibility.

Models based on both 2000 and 2002 data show NO spatial dependency, and these no results are not presented here for brevity. However, they are based on the whole data that covers the entirety of China, while different regions of the country may contain regional spatial dependency that

⁸ For extreme under-reports, it may also be a result of those respondents being carelessness or incompetent. For this reason, extreme observations where total wage cost figures are more than 10 times larger than total cost figures are not considered intentional underreporting in the estimation. The choice of 10 is somewhat arbitrary but estimation results are not sensitive to different threshold levels.

are not shown at the national level. Thus I replicate the same investigation for three subsets of the data: 1. "China proper": excluding frontier provinces with low population density, low economic development, and high ethnic diversity. 2. "Coastal China": including only coastal provinces from "China proper" 3. "Yangtze Delta": including only Shanghai, Jiangsu, and Zhejiang from "Coastal China". This delta region is highly developed with high population and industrial density.

Graph 1. Sub-setting Data

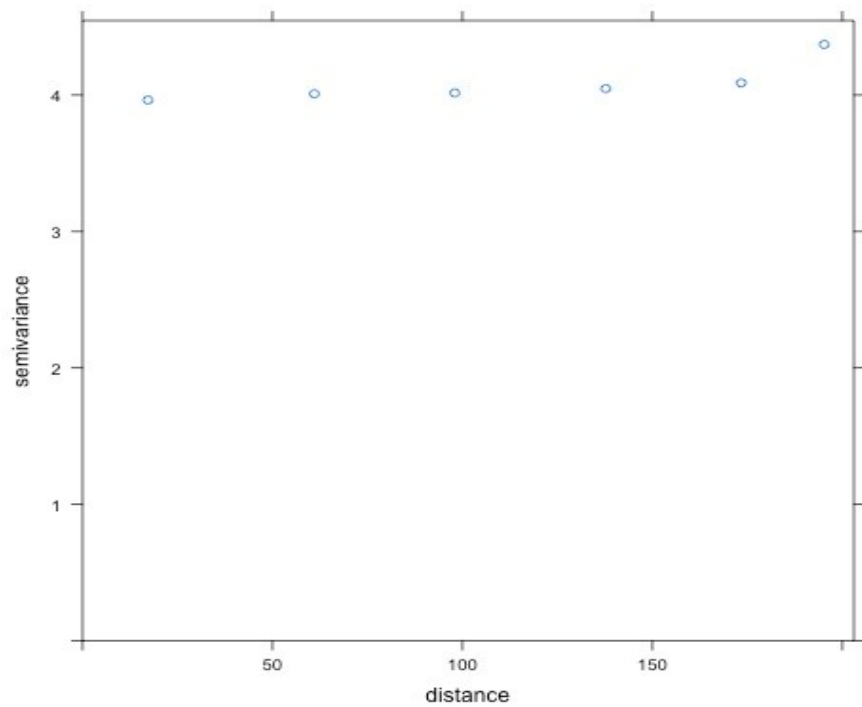


All replications on different subsets show NO clear sign of spatial dependency. The following paragraphs demonstrate the procedure with data from Yangtze Delta subset in 2000. Graph 1. shows the above sub-setting with plots of the DV. I use the following specification to model large scale variation and local autocorrelation:

$$DV_i = a_0 + a_1 longitude_i + a_2 latitude_i + \epsilon_i \quad (15)$$

Residuals from the above model are used to plot the empirical semi-variogram in Graph 2. Semi-variogram defines the range or distance over which spatial dependence exists, and from Graph 2 we observe no clear sign of decaying dependence as distance increases. I thus conclude that there is NO clear sign of spatial dependence in the data.

Graph 2: Empirical Semi-Variogram



Appendix 3

Simulations to Recover Parameters

	(1)	(2)		(3)	(4)		(5)	(6)
ZA Initial	Est.	Est.	Initial	Est.	Est.	Initial	Est.	Est.
alpha[1]= -1	-1.055	-1.018	alpha[1]= -1	-1.027	-1.076	alpha[1]= -1	-0.804	-0.996
alpha[2]= -1	-1.073	-0.840	alpha[2]= -1	-0.861	-0.786	alpha[2]= -1	-0.648	-0.927
alpha[3]= 0	-0.006	0.068	alpha[3]= 0	-0.494	-0.159	alpha[3]= 0	0.455	-0.202
alpha[4]= 0	-0.013	-0.434	alpha[4]= 0	-0.3441	-0.118	alpha[4]= 0	0.553	0.155
alpha[5]= 1	0.9603	1.027	alpha[5]= 1	0.975	0.808	alpha[5]= 1	1.976	1.168
alpha[6]= 1	0.939	0.957	alpha[6]= 1	0.749	0.623	alpha[6]= 1	1.372	1.089
beta[1]= 1	1.005	1.052	beta[1]= 1	1.034	1.035	beta[1]= 1	0.724	1(fix)
beta[2]= 2	2.244	2.050	beta[2]= 2	2.051	1.924	beta[2]= 2	1.538	1.725
beta[3]= 3	2.836	3.351	beta[3]= 3	2.398	2.450	beta[3]= 3	1.726	2.448
beta[4]= 1	0.979	0.716	beta[4]= 1	0.962	0.866	beta[4]= 1	0.904	0.785
beta[5]= 2	1.807	1.997	beta[5]= 2	2.014	1.804	beta[5]= 2	1.721	2.091
beta[6]= 3	2.543	2.898	beta[6]= 3	2.762	2.546	beta[6]= 3	1.925	2.493
d[1]= 0	NA	0(fix)	d[1]= 0	0(fix)	0(fix)	gamma=0	0.189	0.148
d[2]= 0	NA	0.064	d[2]= 0.1	0.122	0.145	sigma=0.1	0.378	0.528
d[3]= 0	NA	0.012	d[3]= 0.2	0.089	0.167	omega=0.1	0.237	0.102
d[4]= 0.5	NA	0.357	d[4]= 0.5	0.390	0.5(fix)			
d[5]= 0	NA	0.016	d[5]= 0.1	0.097	0.071			
d[6]= 0	NA	0.006	d[6]= 0.2	0.176	0.145			

N=3000, Burn=5000, Draw=1000 for all simulations presented here. Simulation (1) is with basic model with no consideration of lying at response or respondent levels, this should provide the baseline for simulation precision while allowing for reasonable fluctuation brought by randomness in the data generating process and MCMC procedure. Simulations (2), (3), (4) are models with consideration of the response level lying parameter, d_j . With one d_j fixed, identification is achieved in (2) and (3), and not surprisingly, fixing more d_j 's in (4) does not improve precision.

Simulation (5) and (6) are with the individual level lying parameter c_i estimated via:

$$c_i = \text{inv.logit}(\gamma + \sigma * \text{UnderReport}_i + \omega * \theta_i), \quad (14)$$

Both (5) and (6) preserve the trend in alpha and beta parameters, but the precision is fair with or without fixing one beta value.

Appendix 4

MCMC Convergence Diagnostics

Table 4: Potential Scale Reduction Factors for the first 10 Estimates

2000 (with d)	2002 (with d)	2000 (no lying)	2002 (no lying)	2000 (with c)
Est. Upper C.I.	Est. Upper C.I.	Est. Upper C.I.	Est. Upper C.I.	Est. Upper C.I.
$\theta[1]$ 1.151 1.371	$\theta[1]$ 1.409 1.896	$\theta[1]$ 0.999 1.003	$\theta[1]$ 1.006 1.021	$\theta[1]$ 1.005 1.018
$\theta[2]$ 1.004 1.015	$\theta[2]$ 1.029 1.083	$\theta[2]$ 0.998 1.001	$\theta[2]$ 1.000 1.004	$\theta[2]$ 1.003 1.014
$\theta[3]$ 1.072 1.192	$\theta[3]$ 1.353 1.785	$\theta[3]$ 1.007 1.021	$\theta[3]$ 1.001 1.009	$\theta[3]$ 1.002 1.009
$\theta[4]$ 1.435 1.945	$\theta[4]$ 1.377 1.833	$\theta[4]$ 1.001 1.004	$\theta[4]$ 1.005 1.014	$\theta[4]$ 1.002 1.009
$\theta[5]$ 1.002 1.007	$\theta[5]$ 1.157 1.382	$\theta[5]$ 0.998 1.001	$\theta[5]$ 1.000 1.002	$\theta[5]$ 1.002 1.010
$\theta[6]$ 1.015 1.042	$\theta[6]$ 1.103 1.263	$\theta[6]$ 1.001 1.006	$\theta[6]$ 1.003 1.016	$\theta[6]$ 1.001 1.007
$\theta[7]$ 1.042 1.112	$\theta[7]$ 1.249 1.575	$\theta[7]$ 1.006 1.021	$\theta[7]$ 1.000 1.003	$\theta[7]$ 0.998 1.001
$\theta[8]$ 1.036 1.103	$\theta[8]$ 1.034 1.094	$\theta[8]$ 1.004 1.018	$\theta[8]$ 0.999 1.003	$\theta[8]$ 1.000 1.003
$\theta[9]$ 1.042 1.117	$\theta[9]$ 1.007 1.024	$\theta[9]$ 1.009 1.028	$\theta[9]$ 0.999 1.004	$\theta[9]$ 1.003 1.012
$\theta[10]$ 1.007 1.022	$\theta[10]$ 1.290 1.659	$\theta[10]$ 0.999 1.003	$\theta[10]$ 1.002 1.012	$\theta[10]$ 1.001 1.009

It is unfeasible to print all potential scale reduction factors here, but as we can see from the small sample of first ten estimates, potential scale reduction factors calculated for Gelman Diagnostics are close to one. Below are a few convergence plots for five chains and 250 draws.

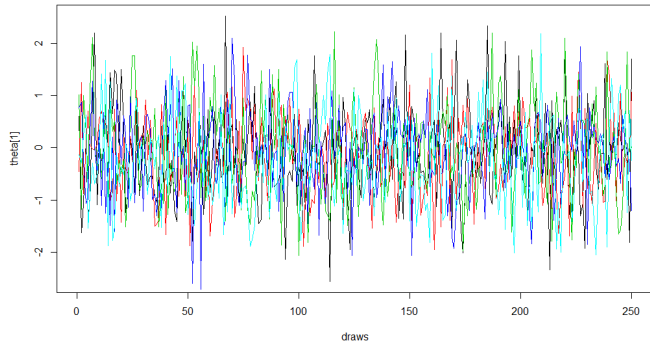


Figure 1: θ_1 from 2000 (with d)

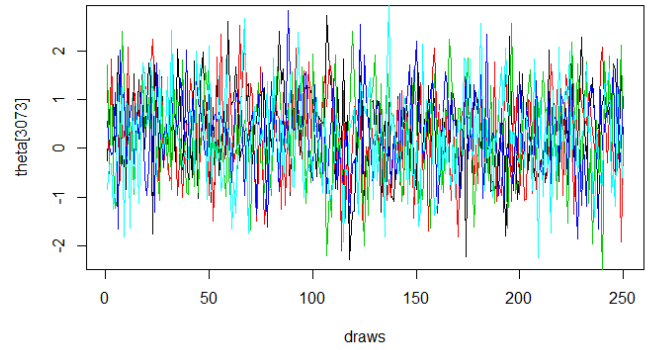


Figure 2: θ_{3073} from 2000 (with d)

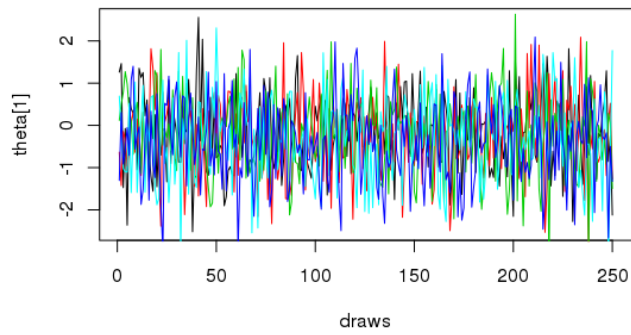


Figure 3: θ_1 from 2002 (no lying)

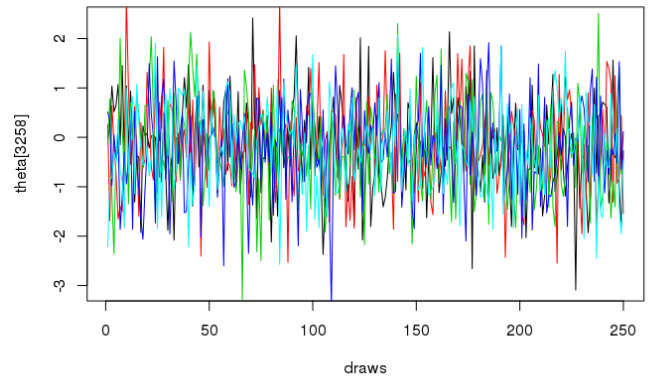


Figure 4: θ_{3258} from 2002 (no lying)

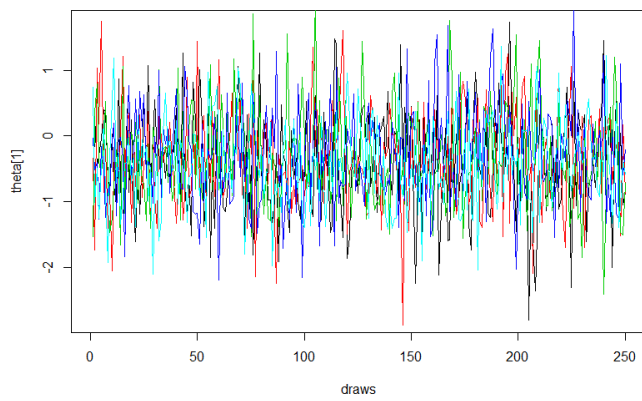


Figure 5: θ_1 from 2000 (with c)

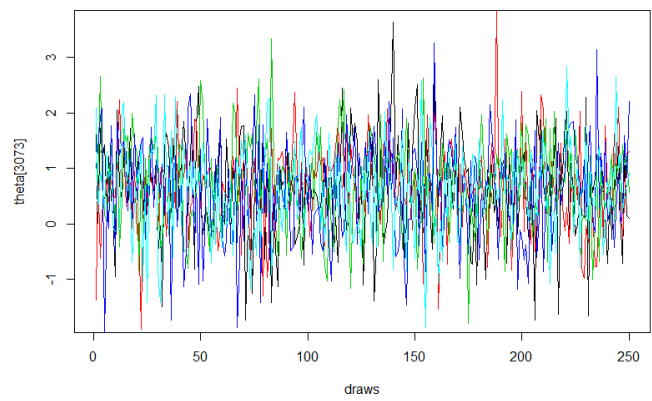


Figure 6: θ_{3073} from 2000 (with c)