Impact of Political Connections on Firms' Mergers & Acquisition Decisions: Evidence From China.[1]

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Abstract

Economic literature that studies determinants of M&A deals has primarily focused on "market" driven motives for firms to engage into M&A markets. Furthermore, this strand of literature does not distinguish between domestic and cross-border deals. The latter type of deals has been examined in the empirical trade literature in the context of bilateral industry level gravity model. This approach does not capture firm-level determinants of cross-border deals nor does it compare them to domestic M&A deals. This paper tries to bridge the gap in our understanding of firm-level determinants of cross-border M&A deals, compare them to domestic M&A deals and address the potential for an important "non-market" driven incentive that impacts firm-level decisions to engage into M&A activities: political connections. We not only find statistically significant support for the importance of political connections in driving both domestic and cross-border M&A decisions for Chinese listed firms, but also find empirical evidence that firms that would not be productive enough to select into M&A market could potentially do so by using various politically attained incentives to reduce their costs associated with M&A.

JEL classification: F2, C2, L2, L6, L5

[1] The views expressed are those of the author and do not necessarily reflect those of the U.S. Department of Commerce, the Secretary of Commerce, the International Trade Administration (ITA), the Bureau of Economic Analysis (BEA), or the Under Secretary for International Trade.

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1. Introduction

Political connections are long recognized as valuable assets for corporations, and their impacts on the economic life of individual firms have been examined in various aspects in the finance literature which range from stock prices, market valuation and long-term performance to bail-out events and the competing for government contracts (Fisman 2001, Faccio 2006, Haveman, Jia, Shi and Wang 2016 and Brown and Huang 2017). However, one important topic that remains underexplored is how political connections impact firms' mergers and acquisitions (M&A) decisions (including both domestic and cross-border M&A).

M&A are an important component of firms' overall capital investment strategy. Although existing literature that directly describes the relationship between political connections and firms' M&A decisions is limited, a growing empirical literature shows that political uncertainty can depress firm-level investment (Julio and Yook 2012, Gulen and Ion 2016). Therefore, knowledge of policy-making process and access to influential policymakers should enable corporations to gain information advantage about government policies and reduce precautionary investment delays caused by policy uncertainty. In addition, several studies conclude that political connections enable firms to enjoy preferential policies/treatment from government, such as easy access to bank financing, direct subsidies and preferred tax status (Sapienze 2004, Khwaja and Mian 2005, Claessens, Feijen and Laeven 2008). This can reduce firms' financial constraints and improve their profit margins, increasing the likelihood for them to conduct M&A.

The unique economic and political environment in China makes it an ideal setting for investigating the impact of political connections on firms' M&A decisions. Despite nearly 40 years of economic reform, China's state bureaucrats still have considerable power over the economy through controlling access to key business resources such as land, bank loans as well as entry permits and business licenses (Haveman et. al 2016). The government involvement in the overseas expansion of Chinese firms is especially obvious. China's outbound foreign direct investment (OFDI) was barely noticeable before the government announced the "Going Global" strategy in 1999. The annual growth of its OFDI flow accelerated significantly after the global financial crisis in 2008 when the economic crisis depressed asset prices worldwide and the Chinese government adopted increasingly favorable measures to promote outbound investment (Figure 1). Since 2012,

China has become the world's third largest outward investor after the United States and Japan.[3] A growing body of literature suggests that China's regulatory framework for OFDI, notably government policies, laws and regulation, is a determinant of the country's rising OFDI (Sauvant and Chen 2014). Not only state-owned enterprises (SOEs) account for a substantial share of the country's OFDI flows and stocks, the government also routinely provides subsidies and privileged market access to non-SOEs that have deep connections to the party-state. In fact, it has become common practice for senior executives at major firms, including both SOEs and non-SOEs, to be affiliated with the party-state in various capacities (Milhaupt and Zheng 2015). Concerns about whether China's OFDI might be made for non-commercial purposes and can be detrimental to the national security of host countries have led to the creation or strengthening of regulatory review process of incoming M&As in several countries, including the U.S. (Sauvant and Nolan 2015) [4]

In this paper, we use panel data on a subset of all listed Chinese firms in China's two stock markets (the Shanghai Stock Exchange and the Shenzhen Stock Exchange) between 2008 and 2015, and examine mainly two questions associated with the impacts of political connections on firms' M&A activities. First, do firms with political connections have higher probabilities to engage in M&A activities? Second, if so, will this challenge the conclusions from most economic models that high productive firms are the most likely to engage in M&A? In other words, do preferential policies/treatment resulting from political connections provide enough advantages for not-sufficiently productive firms for them to enter the M&A market, including the cross-border M&A market?

Following Chen and Dickson (2010) and Haveman et. Al. (2014), we study one common form of informal business-state ties in China: having former high-ranking bureaucrats (chief officer or deputy chief officer) serve either as top executives or as members of the Board of Directors. We extend our analysis further by breaking down the level in the official cadre hierarchy that previous bureaucrats served into four main levels: national [guo], ministry/provincial [bu], bureau-director [ting] and division-head [chu]. We use a propensity-score matching approach to examine whether political connection impacts firms' decision to engage in M&A activities. First, we estimate a logistic regression predicting political connections using several financial variables

[3] "*World Investment Report 2016*", United Nations Conference on Trade and Development

[4] See "U.S. Watchdog Expands Scrutiny to More Chinese Deals", Retuers, Oct. 11th, 2016; "CFIUS Again Objects to a China-Europe Deal", Wall Street Journal, Nov. 20, 2016; "Lawmakers Push for Tighter Scrutiny of Chinese Investment in U.S.", Wall Street Journal, Feb. 21, 2017

considered in the literature to have predicative power over whether firms will become acquirers, as well as some fixed-effect variables (firm ownership structure, industry and year). Then we calculate the propensity score – the predicated probability of having political connections for each firm in each year, and construct a sample of control firms that resemble the set of firms that have political connections in all observable aspects except that these firms do not have political connections. We then compare the propensity score for treatment firms (having political connections) with that for control firms (no political connections), which is called the average treatment effect on the treated (ATT), to identify the impact of political connections on firms' decision to conduct M&A deals.

Our empirical findings can be summarized as follows. First, we find that firms with political connections are not only more likely to conduct M&A deals (including both domestic and cross-border deals) relative to firms without political connection, the difference in the likelihood is also the biggest at the highest hierarchy level of the political connections (national level). Second, while political connections significantly increase firms' probability to engage in *domestic* M&A activities, their impacts on *cross-border* M&A decisions are much smaller and only significant at relatively-low hierarchy levels (division and bureau level). Third, political connections have little impact on private firms' (including both domestic- and foreign-owned firms) likelihood to conduct cross-border M&A deals although they slightly increase the likelihood of SOEs to enter the cross-border M&A market at certain cadre hierarchy level.

After finding that politically-connected Chinese firms are more likely to engage in M&A activity, we investigate the differences in firm-level total factor productivity (TFP) between political connected and not-connected firms to alleviate concerns that omitted variables (TFP) drive both political connections and firms' decision to engage in M&A activities. Applying the methodology of Olley and Pakes (1996), we estimate the TFP for all Chinese firms in our sample and construct the TFP distribution using quantiles. Although politically-connected firms that engaged in domestic and cross-border M&A activities are overall larger in size than non-connected firms, firms that conduct cross-border deals are on average less productive than non-connected firms at the lowest to lower-middle quantiles of the TFP distribution but more productive at the upper-middle to highest quantiles than non-connected firms when the seniority levels of the political connection is relatively low. For firms without political connections, the largest share of

cross-border M&A deals occurred in the middle-to-high quantiles of the firm-level TFP distribution. This result matches findings from Spearot (2012) for the U.S. firms.

Our study contributes to the literature in several important ways. On the one hand, to the best of our knowledge, our paper is the first to study the impacts of political connections on firms' decisions to conduct M&A deals which adds to the understanding of the value of political connections to firms. We improve on the existing measure of political connections by breaking down the official cadre hierarchy that previous bureaucrats served into four main levels, and this enables us to examine the impacts of political connection in detail. On the other hand, our paper provides empirical evidence that political connections can be an important source of competitive advantage for firms in China and significantly increase their likelihood to conduct M&A deals. This expands the conventional view in the economic literature that M&A deals are typically driven by market forces such as complementary resources, product varieties or productivity difference. In addition, most economic models find that high productivity firms are the most likely to invest. Our investigation of the productivity distributions for politically connected/not-connected firms in China provides empirical evidence that "non-market" incentives allow relatively low productive firms select into larger share of cross-border M&A deals.

The remainder of the paper is organized as follows. Section 2 describes the data and summary statistics. Section 3 presents the empirical methodology employed and the main results. Section 4 provides concluding remarks.

2. Data Sources and Summary Statistics

Our analysis focuses on mainland Chinese firms listed on China's two domestic stock exchanges (Shanghai and Shenzhen Stock Exchanges). These firms are among the largest in China and dominate many industries. Like many emerging markets, the Chinese state still has considerable control over initial public offering approvals. Companies wishing to go public must devote resources and time to lobby the authorities to receive state approval, implicating that all companies listed in the stock exchanges already have certain political connections. This should reduce our ability to find any impact of the specific form of political connections we study, making our estimates of the impact of political connections on M&A decisions a conservative one.

Firm-level Variables We obtain firm-level variables including both financial performance variables (net return on assets (ROA), book-to-market ratio and leverage ratio) and the political background information for the top executives or members of the Board of Directors for China's listed firms from "the China Listed Firms Research Series" provided by the Guo Tai An Information Technology Company (also called China Securities Market and Accounting Research, CSMAR).

We define a firm's political connection as a binary indicator variable which is set equal to one in years when at least one member of the firm's top management team or the board of directors had served as the chief officer or deputy chief officer at one of the four highest levels of the nine official cadre hierarchy levels, and zero otherwise. From the lowest to the highest, the four hierarchy levels that we investigate in this paper include the division [chu], the bureau [ting], ministry/provincial [bu] and national [guo]. Following the literature, we choose the division level as the cutoff level since it's "a commonly used distinction in studies of Chinese cadres" (Haveman et. Al. 2014).[5]

Following the literature, we also include other firm-level variables that may affect Chinese firms' decision to take on M&A deals in our regression: 1) we use property, plant and equipment (PPE) and cash level to control for firm sizes (Guthrie 1999, 2000), and 2) several papers argue that controlling shareholders exercise considerable control over firms' operations even though they might not have majority stakes, and different types of controlling shareholders can not only influence firm performance but also affect what firms can gain from their political connections (Walder and Nguyen 2008, Fisman and Wang 2010, Haveman et. Al 2014). Therefore, we use a categorical variable "equity nature" to control for the nature of controlling shareholders for listed firms, which equals 1 if controlling shareholders are state owned, 2 if controlling shareholders are domestic private firms, 3 if controlling shareholders are foreign firms and 4 for others.

After deleting observations with missing information on financial performance or political connection, we obtain a sub-sample of all listed Chinese firms reported in the CSMAR dataset, which has 17993 observations from 2008 (the first year that the political background information was released) to 2015 (the latest year that all M&A activities were reported). Table 1a presents the

[5] Haveman et. Al. (2014) mentioned that "lower-level officials (those at the section level or lower) are not funded through the central fiscal system, so the division level indicated membership in the inner circle of political elites…the clear majority of these high-level bureaucrats are Chinese Communist Party members…captures a second important aspect of political embeddedness".

share of firms with different levels of political connections by equity nature. It shows that in general SOEs which account for about half of all observations tend to have more political connections at every political connection level that we investigate. Table 1b presents univariate statistics and correlations for all firm-level financial variables. None of the correlations are high enough to raise concerns about multicollinearity except for PPE and cash level. We report the regression results when both variables are included. The regression results remain similar when the cash level is dropped.

M&A variables Like many other prior papers on M&A activity, we rely on the Thomson Reuters (TR) database to obtain the counts of M&A transactions for Chinese listed firms, including both domestic and cross-border M&A deals. The database started to report M&A deals valued at $5 million or higher in China from 2005. If an acquiring firm pursues 10% or more of the shares for a target firm, the transaction is considered as an acquisition. When the headquarter of the ultimate owner of an acquiring firm is in a different country from the headquarter of the ultimate owner of a target firm, the transaction is considered as a cross-border acquisition. Overall, the database reported 4515 M&A deals in manufacturing and service industries for China between 2008 and 2015 and about 8% of these deals (374) are cross-border M&A transactions. The dataset also provides information on the primary 4-digit SIC classification of the acquiring firms, allowing us to control for the industry fixed effects (such as certain industrial policies) that can impact the M&A activities.

Merging the sample obtained from the TR with the sample from the CSMAR using the name of (the acquiring) firms, we got a sample of 18,424 observations between 2008 and 2015 for 2633 listed Chinese firms, among which 1373 firms conducted M&A deals and 265 firms conducted cross-border M&A deals in this period.

3. Empirical Analysis

3.1 Does Political Connectedness matter for M&A Activity?

Since there is no extensive firm-level analysis on the determinants of domestic/cross-border M&A activities, we begin by empirically estimating specific firm-level factors that

significantly predict the probability of successful M&A deals for our sample of publically traded Chinese firms between 2008 and 2015. We turn to the finance literature that focuses on predicting the probability of M&A deals given observable firm-level characteristics in 10-K SEC financial filings.[6] The specific variables we consider are standard in this literature:, PPE (ppe) (the book value of property plant and equipment), log of cash balance ($cash$), the size of leverage(lev_ratio) (book value of debt over book value of assets), market value of equity ($size$), return on assets (roa) (operating income divided by year-end book value of assets). For ease of interpretation we standardize these predictors, and estimate the logit model in (1).

$$MADeal_{it} = \beta_0 + \beta_1 ppe_{it} + \beta_2 cash_{it} + \beta_3 levratio_{it} + \beta_4 roa_{it} + \beta_5 size_{it} + \beta_6 equitnat_{it} + \beta_7 pc_{itl} + \zeta_j + \epsilon_{it} \quad (1)$$

In specification (1) $MADeal_{it}$ takes value of one if Chinese ultimate acquiring parent firm i successfully accomplished the domestic/cross-border M&A deal with Chinese/non-Chinese ultimate target parent firm in year t and zero otherwise; $equitnat_{it}$ represents the nature of a firm i ownership (state-owned (SOE), domestic private-owned (non-SOE), foreign-owned, and other) in year t; pc_{itl} is an indicator variable that represents whether of a firm i has political connection at one of the four cadre hierarchy levels l in year t; ζ_j, ξ_t are industry and year fixed effects respectively, and ϵ_{it} idiosyncratic error term.

In Table 2 we report the estimates from specification (1). Columns [1] and [3] are the estimates of firm-level determinants for domestic and cross-border M&A deals respectively. We find that PPE, operating cash, leverage are significant and positive predictors of domestic M&A deals engagement. Market value of equity and return on assets are significant and negative predictors of domestic M&A deals engagement. The equity nature is posistive and only significant for domestic privately owned firms. This estimate implies that this group of firms are more likely to engage in domestic M&A activity relative to SOE (baseline group) all else equal. Turning to cross-border deals, similarly to domestic predictors, we find that PPE and market value of equity are positive predictors. Conversely, cash, leverage, ROA negatively predict the probability of cross-border M&A engagement, while market value of equity this probability positively. These probabilities are not statistically significant as we have very small variation in cross-border deals

[6] See for example Smith et. al (2016), Edmans, Goldstein, and Jiang (2012), and Cremers, Nair, and John (2009) among others.

across our sample. The equity nature appears to play a significant role in predicting cross-border M&A activity, particularly for foreign owned firms.The impact of political connections on M&A decisions should vary by the equity nature, notably between SOEs and non-SOEs. Compared to SOEs which are naturally tied with the state, private companies (including both domestic private-owned and foreign owned) should have more incentives to develop the type of informal ties we study in the paper (senior executives who held/are still holding government positions). This conjecture is confirmed with positive and significant estimate for the privately-owned firms relative to SOEs.

In columns [2] and [4], we added the control for the first level of political connectedness.[7] We confirm our hypothesis that politically connected firms are more likely to engage in domestic and cross-border deals relative to non-politically connected firms. However, these estimates are not significant. As discussed by Haveman et. al (2014) politically connected firms may differ from non-politically connected firms in various ways that may independently affect the probability of conducting a successful M&A deal. Considering that the M&A deal is an investment choice conditional on firm's productivity, larger firms are more likely to select into M&A market regardless of their political connections. Such firm may be considered a target of political interest, which implies that the simple regression analysis will result in selection bias due to the "treatment condition" (being politically connected) as opposed to the "control condition" (not being politically connected).

We apply propensity-score matching (PSM) technique to account for the selection bias of political connectedness in the probability model (1). To implement this technique, we predict selection of cases into the "treatment" condition using a set of variables that are not affected by the dependent variable; calculate each case's predicted probability of being selected into the treatment condition – its "propensity score" for experiencing the treatment; and match cases in the treatment and control conditions based on their propensity scores. Accordingly, we first estimate a logistic regression predicting political embeddedness, using determinants for M&A deal activity from the specification (1). Next, we calculate the propensity score for each firm each year, which is the predicted probability of being politically connected. We matched these scores to construct the subset of politically not-connected firms that are sufficiently close to the politically connected firms along their financial characteristics. The matching process was conducted using nearest-

[7] Other levels of political connectedness give similar estimates.

neighbor process without replacement with a caliper of 0.001 of standard deviations. This caliper size allowed for highest share of on-support treated firm-year observations.[8] Figure 2 shows the distribution of the propensity scores for being politically connected (treatment group) and not politically connected (control group) for domestic and cross-border M&A deals. The politically connected firms have higher propensity scores for both deal types, but distributions for treatment and control groups greatly overlap indicating an appropriate match mixing.

We tested the quality of the matching process to assess whether the two groups of firms are similar in terms of the observable determinants. In Table 3 we report PSM statistics for various levels of political connections and deal types. Overall, the null hypothesis of joint significance of all firm-level determinants before and after the matching process is strongly rejected. The mean and the median bias are smaller than 2 percent on average. Rubin's B and R statistics are in the suggested intervals.[9] These tests suggest that our matching process is good to conclude that in the pool of two groups of firms, the political connectedness can be regarded as sufficiently exogenous after controlling for the selection on observables.

Using these matched scores, we estimate average treatment effect for the treated group (ATT). We report ATT estimates for domestic, cross-border and pooled domestic and cross-border M&A deals in Table 4. Regardless of the deal type or the level of political connectedness, we find that politically connected firms are more likely to engage in M&A activity as compared to non-politically connected firms (positive ATT). However, this difference is most pronounced for domestic M&A deals. In the case of cross-border M&A deals the difference between these two groups of firms becomes smaller with the level of the political connections and not statistically significant. It is likely that firms with high level of political connectedness are SOE that are prohibited from conducting cross-border M&A deals in China. In the next sub-section we examine a possible channel for these findings.

3.2. The Role of TFP in Explaining "Market" vs "Non-Market" driven Cross-Border M&A Activity

[8] This caliper size allowed for 98% observations to be on-support.

[9] Rubins' B is the absolute standardized difference of the means of the linear index of the propensity score in the treated and (matched non-treated group); and Rubin's R is the ratio of treated to (matched) non-treated variances of the propensity score index). Rubin (2001) recommends that B be less than 25 and that R be between 0.5 and 2 for the samples to be considered sufficiently balanced.

A. Motivation

With our main empirical finding that politically connected Chinese firms have higher likelihood of engaging into domestic and cross-border M&A activity relative to firms without political connections, we investigate whether this finding can be explained by differences in firm-level total factor productivity (TFP). Using Compustat North American Industrial data, Spearot (2012) finds that all firm-level investment behavior occurs in a middle region of productivity, with the most productive of firms in this region choosing acquisitions over new investment. Spearot (2012) analysis is focused on "market driven" motives for engaging into M&A deals. Under this motive, firms optimally choose to select into M&A market based on their drawn productivities. When a firm is politically connected, it may choose to engage in M&A activity even if it is not it's the optimal "market driven" choice. For example, Brown and Huang (2017) find that meetings with U.S. federal government officials result in firms receiving more government contracts and regulatory relief. Furthermore, the investment of these firms also becomes less affected by political uncertainty after the meetings. Haveman et al. (2014) find empirical support for the hypothesis that political embeddedness raises firms' performance in China through expanded access to bank loans, and through protection of firms from pressure to make loans to other firms. These non-market channels may lower fixed costs of entry, and generate comparative advantage in financing for politically connected firms. While these papers do not consider implications of political connections for domestic and cross-border M&A activity, the theoretical models of firm-level cross-border M&A choices show that the interplay between productivity and fixed entry costs play a major role in determining the selection of firms into M&A market.[10] Accordingly, we hypothesize that political connections allow non-sufficiently productive firms to select into M&A markets.

B. Set-Up

We are interested in estimating the TFP distributions for politically connected/not connected firms engaging into cross-border M&A activity. We estimate, the total factor productivity (TFP) for the sample of publicly traded Chinese firms, by estimating firm level production function (2).

$$Y_{it} = f_t(L_{it}, K_{it}) + \varphi_{it} + \epsilon_{it} \quad (2)$$

[10] See, for example, Nocke and Yeaple (2006) and Lee (2011).

In the production function (2) a firm's i-year t output Y_{it}, is determined by the labor L_{it}, and capital stock K_{it}, in period t, unobserved and to be estimated TFP φ_{it} and idiosyncratic error term ϵ_{it}. Together φ_{it} and ϵ_{it} forms the Hick's neutral productivity shock ν_{it}. The goal of empirically estimating production function (a) is to identify the joint distribution of productivity $\varphi_{it} + \epsilon_{it} = Y_{it} - f_t(L_{it}, K_{it})$.

We apply Olley and Pakes, (OP) (1996) methodology to estimate TFP. The related approaches by Levinsohn and Petrin, (2003) and Ghandi et. al (2013) are not suitable given the limitations of the CSMAR data in the lack of data on materials and intermediate inputs. Following OP approach, we assume that at the beginning of each period $t + 1$ a firm decides whether to continue production or exit based on the realized productivity φ_{it} in period t. Labor L_{it} is the only variable input, while physical capital K_{it}, are fixed in period t, and their values are affected by the distribution of φ_{it} in the period t. In other words, the expected productivity is a function of current productivity, and physical capital stock $E[\varphi_{it+1}|\varphi_{it}, K_{it}]$. Since the realized productivity is observed by the firm before it makes variable factor input decisions, the estimated elasticities would be biased due to the simultaneity between output and these variable inputs. Furthermore, not accounting for the exit of non-productive firms, gives rise to the selection bias.

To address these biases, and following OP, we estimate production function (a) in three stages. First, to control for simultaneity, we assume the inverse of investment decision rule is given in (3).

$$\varphi_{it} = I^{-1}(I_{it}, K_{it}, a_{it}) = h(I_{it}, K_{it}, a_{it}) \quad (3)$$

In (3), function $h(\blacksquare)$ is strictly increasing in I_{it} and a_{it} it the age of capital. We calculate the average age of capital by dividing the accumulated depreciation by current depreciation. Following, Imrohorglu and Tuzel (2013), we smooth the capital age by taking 3-year moving average. Substituting (3) into production function (2) gives the specification (4). This specification accounts for the simultaneity bias because we account the approximated productivity given the observed fixed factors of production at time t. Consequently, the labor elasticity β_l is consistently estimated.

$$y_{it} = \beta_l l_{it} + \phi(i_{it}, k_{it}, a_{it}) + \eta_{it} \quad (4)$$

In specification (4) all variables are expressed in natural logs; $\phi(i_{it}, k_{it}, a_{it}) = \beta_0 + \beta_k k_{it} + \beta_a a_{it} + h(i_{it}, k_{it}, a_{it})$, where $\phi(\blacksquare)$ is a second order polynomial series in investments, capital,

and age.[11] Second, to control for selection of firms into continuing serving the market, we estimate the probability that a firm i that was active in our sample in year t remains as such in year $t+1$ conditional on the second order polynomial approximation series in investment, capital, and age. Third, with the predicted probability ($\hat{P}_{it}$) of firms' survival we use nonlinear least squares to estimate the elasticity of capital (β_k) in specification (5).

$$y_{it} - \hat{\beta}_l l_{it} = \beta_k k_{it} + g\left(\hat{\phi}_{t-1} - \beta_k k_{it-1}, \hat{P}_{it}\right) + \eta_{it} \quad (5)$$

Like the earlier steps, $g(\blacksquare)$ is approximated by the second order polynomial in $\hat{\phi}_{t-1} - \beta_k k_{it-1}$ and $\hat{P}_{it}$. Finally, the estimated augmented for R&D TFP is given in expression (6).

$$\widehat{TFP}_{it} = \exp\left(y_{it} - \hat{\beta}_l l_{it} - \hat{\beta}_k k_{it}\right) \quad (6)$$

C. Analysis

With estimated TFP for all Chinese firms in our sample, we construct the TFP distribution using quantities. The least productive firms are concentrated below 25th percentile, the mid-productivity firms are concentrated between 25th and 75th percentile, while the most productive firms are concentrated above 75th percentile.[12] In Figure 3 and 4, we plot the TFP distributions, and politically connected/not-connected firms engaged in domestic and cross-border M&A activity by seniority levels respectively. Tables 5(A) and 5(B) provides quantile means of TFP distribution for firms that engage in domestic and cross-border M&A activities with/without political connections. Notably, TFP growth is negative for all Chinese firms in almost every TFP quantile. We find that regardless of political connection level, politically-connected Chinese firms that engage in domestic M&A deals are more productive than non-politically connected firms across the all quantiles of the TFP distribution, and more so in the top quantile. Conversely, politically connected firms that engage into cross-border M&A deals are on average less productive than firms that do not at the lowest and lower-middle of the distribution, but more

[11] Approximating with a higher order polynomial instead does not significantly change the results.
[12] The maximum TFP values in the quantile ranges are as follows: $(-\infty, 0.25]: -2.862; [0.25, 0.50]: -2.102; [0.50,0.75] - 1.288; [0.75, \infty)$: 6.437

productive at the middle-to-high and high quantiles respectively at each level of political connections.

In Tables 6(A) and 6(B), we report the means of firm sales for firms that engage in domestic and cross-border M&A activities with/without political connections. To the extent, that a firm's sales approximate its size, largest firms are relatively more heterogeneous which allows them to optimally select into the M&A markets. We find that regardless the level of political connectedness, firms with political connections that engage into either domestic or cross-border M&A deals are larger than firms without political connections. Recall that politically connected firms that engage in the domestic M&A deals are more productive relative to non-connected firms. Accordingly, it is not surprising that they are larger as approximated by sales. For the firms that are engaged in cross-border deals, the relationship between their productivity and sales is more intriguing. While politically connected firms are less productive in the lower quantiles of TFP distributions, they are larger in size.

Finally, in Tables 7(A) and 7(B) we report the percentage of domestic and cross-border M&A deals by TFP distribution quantiles for firms with/without political connections. First, regardless of deal types and the level of political connections, we observe that largest share of cross-border "market" driven deals (i.e. firms without political connections) occurs in the middle-high quantile of the firm-level TFP distribution. This result matches Spearot (2012) finding for the U.S. firms. Second, given that politically connected firms are more productive than non-politically connected firms, surprisingly, the share of domestic deals by firms without political connections in general is higher than for firms with political connections. Third, the share of cross-border M&A deals for politically connected firms is substantially higher than that of the non-connected firms at the lowest TFP quantiles. Recall, that politically connected firms are relatively less productive at this TFP quantile, and yet they conduct larger share of cross-border deals. At the highest TFP quantile, the share of deals by politically connected firms is higher than that for firms without political connections except for political connections at the provincial/ministry level. With our finding that at the highest TFP quantile, politically connected firms are more productive and larger; this result does not necessarily imply that these deals are driven by "non-market" motives. The largest firms are likely state-owned enterprises.[13] Conversely, the politically connected firms in the lowest TFP quantiles benefit from "non-market" mechanisms (possibly afforded by being

[13] Our data does not distinguish firms by SOE.

politically connected) allowing them to conduct cross-border M&A deals at the TFP levels that do not make it "market" optimal for firms without political connections.

4. Concluding Remarks

The recent firm-level empirical literature has emphasized the role of political connections in explaining heterogeneity of firm performance in the market place. At the same time, the finance literature that studies determinants of M&A deals, has primarily focused on "market" driven motives for firms to engage into M&A markets. Furthermore, this strand of literature does not distinguish between domestic and cross-border deals. The latter type of deals has been examined in the empirical trade literature in the context of bilateral industry level gravity model. This approach does not capture firm-level determinants of cross-border deals nor does it compare them to domestic M&A deals.

This paper is the first to our knowledge, to bridge the gap in our understanding of firm-level determinants of cross-border M&A deals, compare them to domestic M&A deals and address the potential for "non-market" driven firm-level decisions to engage into M&A activity through additional incentives through political connections. The unique economic and political environment in China provides an ideal setting for investigating the impact of political connections on firms' M&A decisions. For the first time, we are able to investigate these decisions at various cadre of political seniority in China. After empirically estimating the firm-level determinants domestic and cross-border M&A deals, we apply propensity score matching (PSM) methodology to account for the endogeneity of political connectedness. We find statistically significant support for the importance of political connections in driving both domestic and cross-border M&A deals for Chinese firms. To explain this result, we estimate the TFP distribution for all firms in our sample. Our findings indicate that most deals by Chinese firms take place at the mid-high quantile of the TFP distribution, matching the earlier evidence from the United States. Importantly, at the lowest quantile of this distribution politically connected firms that engage in cross-border M&A deals are less productive than non-politically firms. At the same time these firms conduct higher percent of cross-border deals as compared to non-politically connected firms. This result provides the empirical evidence for "non-market" driven motives for M&A deals: firms that would not profitably select into M&A market due to being non-sufficiently productive, potentially are able to do so using various politically attained incentives that reduces their costs.

While motivated by the industrial policies in China, this paper does not directly examine the relationship between these policies, political connections and M&A activity. However, our finding of the presence of potential "non-market" political incentives taken by politically connected firms provides an important policy implications for negotiating the fair and competitive trade policy targeting M&A activity. The specifics of such policy for M&A markets depends on more extensive industrial policy analysis that we plan to conduct in our future research.

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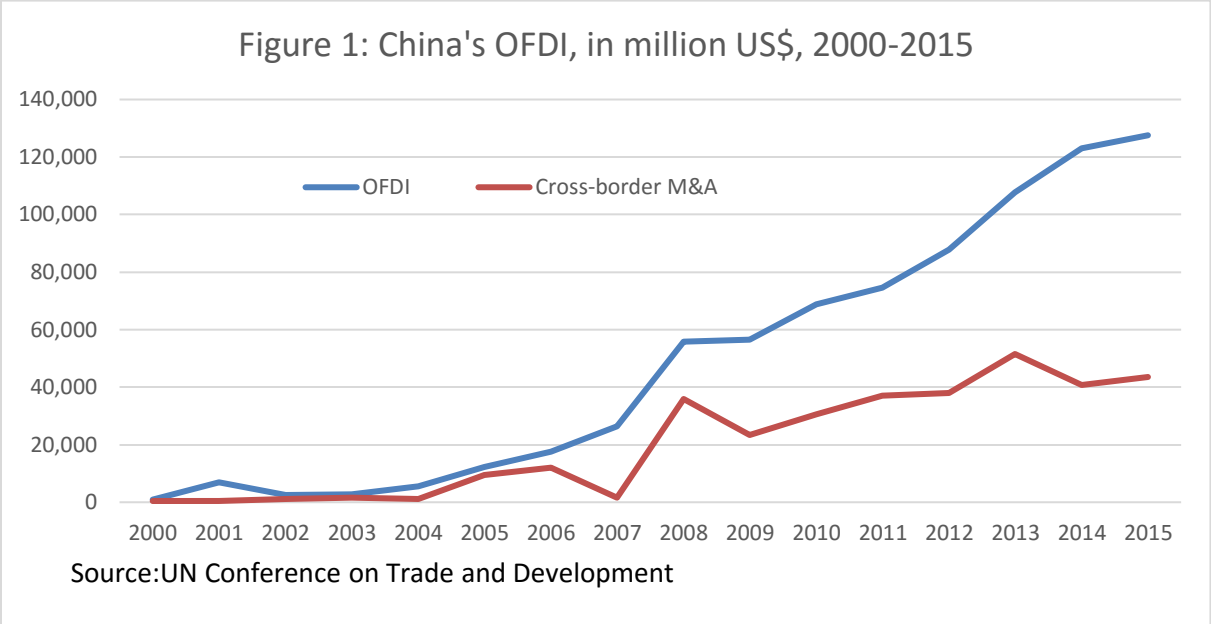
Appendix

Figures and Tables



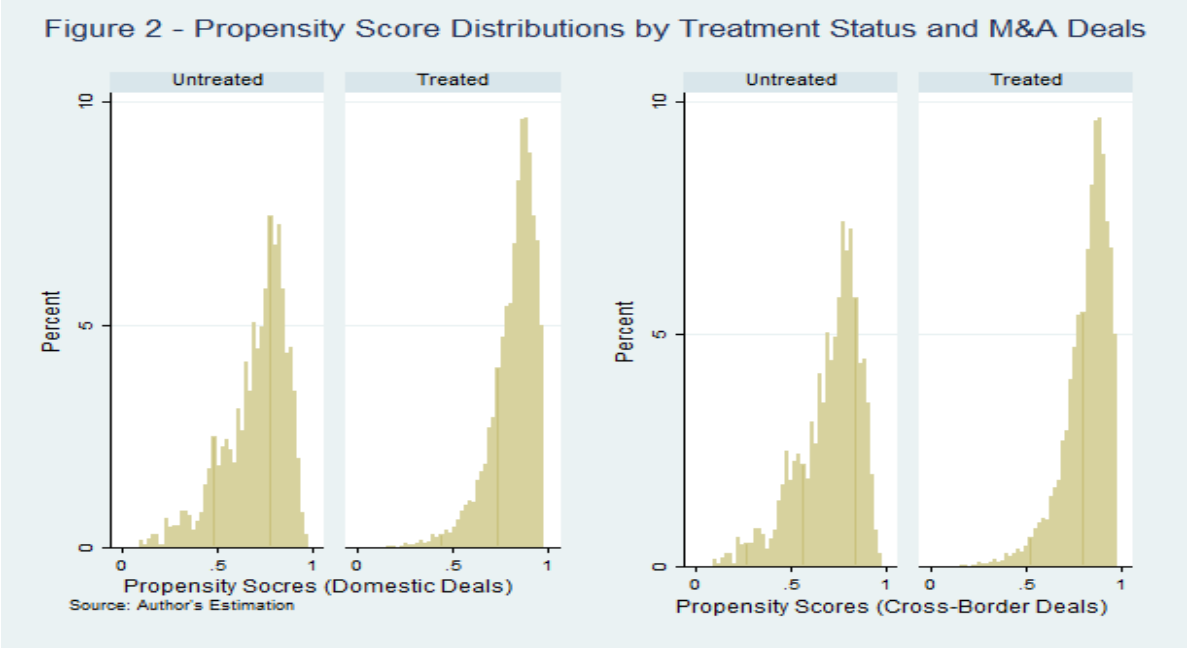
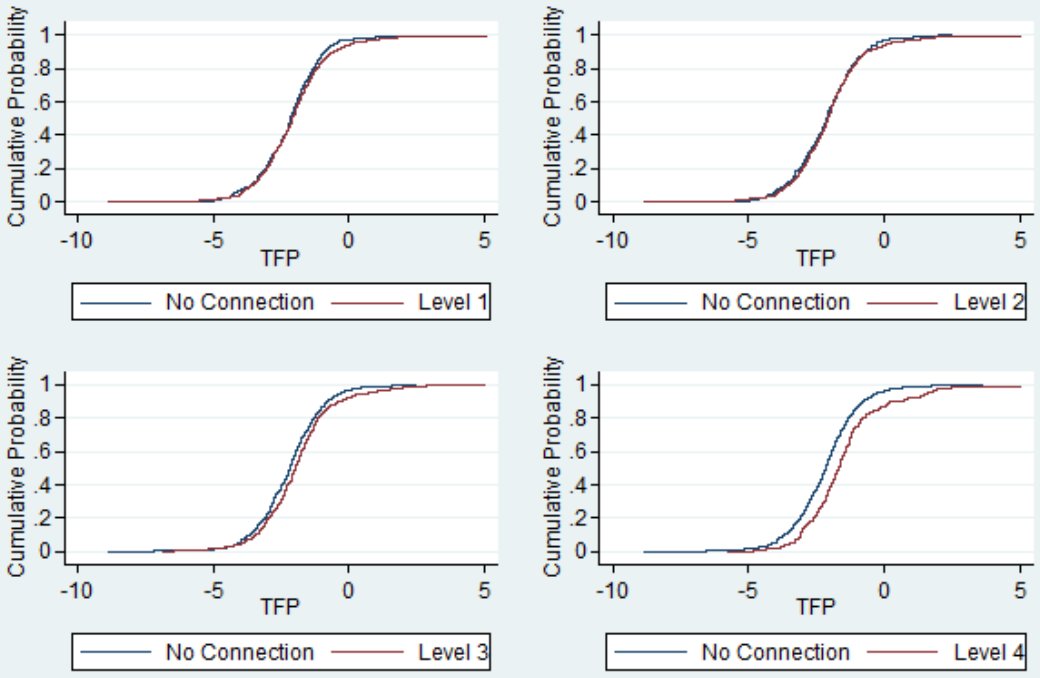
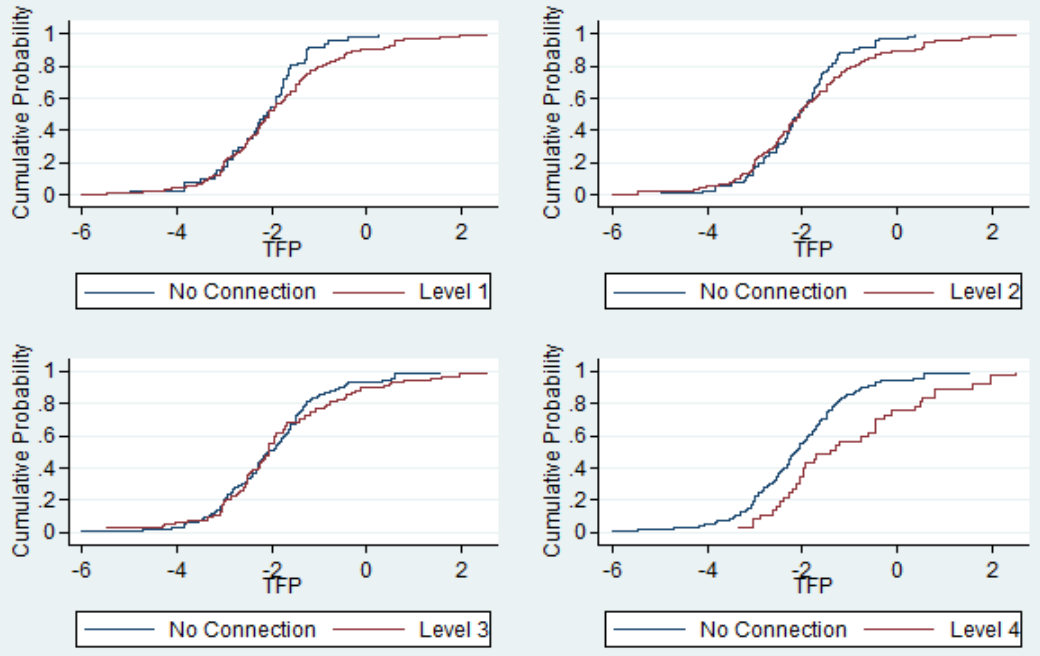


Figure 3 - TFP Distrtibution by Levels of Political Connection and Domestic M&A Activity



Source: Author's Estimation

Figure 4 - TFP Distribution by Levels of Political Connection and Cross-Border M&A Activity



Source: Author's Estimation

Table 1a: Share of Firms with Different Levels of Political Connections, by Equity Nature

	SOE	Domestic Private-owned	Foreign-owned	Others
Division level	0.85	0.78	0.79	0.85
Bureau level	0.72	0.67	0.65	0.76
Ministry/Provincial level	0.45	0.43	0.38	0.44
National level	0.18	0.14	0.12	0.17
# of observations	8,092	7,355	654	223

Table 1b: Univariate Statistics and Bivariate Correlations

Variables	Ln(PPE)	Ln(Cash level)	Ln (leverage ratio)	Book Market Ratio	ROA
Mean	20.439	19.778	-1.057	0.952	0.005
Standard Deviation	1.715	1.529	0.714	1.313	2.325
Minimum	9.407	8.346	-4.910	0.003	-315.318
Maximum	28.100	28.004	6.375	24.262	2.885
# of observations	18424	18424	18424	18424	18424
Ln(PPE)	1.000				
Ln(Cash level)	0.520				
Ln (leverage ratio)	0.309	-0.007			
Book Market Ratio	0.400	0.405	0.336		
ROA	0.012	0.042	-0.077	0.003	

Table 2 - Firm-Level Determinants of M&A Deals in China

	Domestic		Cross-Border	
Variables	[1]	[2]	[3]	[4]
PPE	1.089***	1.085***	0.454	0.448
	(0.250)	(0.249)	(0.764)	(0.765)
ln(cash)	0.450*	0.451*	-0.379	-0.386
	(0.232)	(0.232)	(0.627)	(0.629)
Leverage	0.186***	0.186***	-0.055	-0.056
	(0.039)	(0.039)	(0.114)	(0.113)
Size	-0.828***	-0.829***	0.527	0.531
	(0.139)	(0.139)	(0.380)	(0.380)
ROA	-1.089**	-1.091**	-0.583	-0.582
	(0.451)	(0.451)	(0.705)	(0.705)
Equity Nature:				
Domestic Owned (Private)	0.542***	0.542***	0.814***	0.816***
	(0.0512)	(0.051)	(0.155)	(0.155)
Foreign Owned	0.089	0.089	1.213***	1.214***
	(0.126)	(0.126)	(0.280)	(0.281)
Other	0.196	0.198	-1.034	-1.044
	(0.212)	(0.212)	(0.867)	(0.868)
Political Connection (Division Level)		0.041		0.071
		(0.052)		(0.151)
Fixed Effects				
Acquirer's Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
R-squared (Pseudo)	0.122	0.125	0.112	0.112
Number of Observations	16,522	16,522	11,030	11,030

Notes:
Robust stanard errors in parenthesis *-10%; **- 5%; ***- 1%

Table 3 - PSM Match Quality Analysis

Deal Type	Domestic			
Matching Indicators	Political Connectedness Level 1	Level 2	Level 3	Level 4
Matching Method	Nearest Neighbor	Nearest Neighbor	Nearest Neighbor	Nearest Neighbor
LR (chi2)	198.52 (0.000)	121.51 (0.000)	50.19 (0.000)	21.13 (0.221)
Mean Bias	2.2	3.4	2.2	1.9
Median Bias	1.7	1.3	2.0	1.2
Rubin's B	17.5	14.4	11.6	12.4
Rubin's R	0.82	0.63	1.25	0.71
% Variation	79	57	50	57
Deal Type	Cross-Border			
Matching Indicators	Political Connectedness Level 1	Level 2	Level 3	Level 4
Matching Method	Nearest Neighbor	Nearest Neighbor	Nearest Neighbor	Nearest Neighbor
LR (chi2)	202.22 (0.000)	121.72 (0.000)	50.19 (0.000)	21.13 (0.221)
Mean Bias	2.2	3.4	2.2	1.9
Median Bias	1.7	1.3	2.0	1.2
Rubin's B	17.6	14.5	11.6	12.4
Rubin's R	0.82	0.63	1.25	0.71
% Variation	79	57	50	57

Table 3(continued)

Deal Type	Domestic& Cross-Border			
Matching Indicators	Political Connectedness Level 1	Level 2	Level 3	Level 4
Matching Method	Nearest Neighbor	Nearest Neighbor	Nearest Neighbor	Nearest Neighbor
LR (chi2)	198.68 (0.000)	121.36 (0.000)	50.19 (0.000)	21.13 (0.221)
Mean Bias	2.2	3.4	2.2	1.9
Median Bias	1.7	1.3	2.0	1.2
Rubin's B	17.5	14.4	11.6	12.4
Rubin's R	0.82	0.62	1.25	0.71
% Variation	79	57	50	57

Table 4 - Average Treatment Effects (ATT) of Political Connectedness on M&A Activity

	Political Connectedness			
Deal Type	Level 1	Level 2	Level 3	Level 4
Domestic	0.073***	0.063***	0.064***	0.072***
	(0.0137)	(0.011)	(0.009)	(0.013)
Cross-Border	0.019**	0.005	0.011*	0..002
	(0.007)	(0.007)	(0.006)	(0.008)
Domestic & Cross-Border	0.082***	0.066	0.068	0.074***
	-0.014	(0.011)	(0.010)	(0.133)

Notes:

Standard errors in parenthesis *-10%; **- 5%; ***- 1%

Table 5 (A) - TFP Quantile Means by Domestic M&A Activity and Political Connection Levels

TFP Quantile	Political Level 1			Political Level 2		
	Yes	No	Difference	Yes	No	Difference
< 25%	-3.604	-3.672	0.068	-3.598	-3.658	0.060
25% - 50%	-2.437	-2.460	0.024	-2.420	-2.489	0.069
50%- 75%	-1.742	-1.839	0.096	-1.757	-1.790	0.033
75%>	-0.404	-0.800	0.396	-0.410	-0.670	0.259
TFP Quantile	Political Level 3			Political Level 4		
	Yes	No	Difference	Yes	No	Difference
< 25%	-3.515	-3.682	0.167	-3.094	-3.698	0.603
25% - 50%	-2.300	-2.532	0.231	-2.012	-2.512	0.500
50%- 75%	-1.648	-1.857	0.209	-1.371	-1.848	0.476
75%>	-0.180	-0.715	0.535	0.486	-0.687	1.173

Table 5 (B) - TFP Quantile Means by Cross-Border M&A Activity and Political Connection Levels

TFP Quantile	Political Level 1			Political Level 2		
	Yes	No	Difference	Yes	No	Difference
< 25%	-3.467	-3.347	-0.12	-3.514	-3.272	-0.242
25% - 50%	-2.38	-2.371	-0.009	-2.407	-2.322	-0.085
50%- 75%	-1.661	-1.82	0.16	-1.649	-1.788	0.139
75%>	-0.092	-1.02	0.928	0.0003	-0.91	0.91
TFP Quantile	Political Level 3			Political Level 4		
	Yes	No	Difference	Yes	No	Difference
< 25%	-3.477	-3.388	-0.089	-2.681	-3.531	0.850
25% - 50%	-2.359	-2.377	0.019	-1.890	-2.463	0.573
50%- 75%	-1.73	-1.672	-0.058	-0.630	-1.787	1.158
75%>	0.144	-0.485	0.629	1.221	-0.601	1.822

Table 6 (A) -Firm Sales Means by Domestic M&A Activity and Political Connection Levels

TFP Quantile	Political Level 1		Political Level 2	
	Yes	No	Yes	No
< 25%	1.500	0.856	1.540	1.030
25% - 50%	1.780	1.600	1.740	1.749
50%- 75%	2.860	1.760	3.030	1.770
75%>	11	4.790	11.800	4.570
TFP Quantile	Political Level 3		Political Level 4	
	Yes	No	Yes	No
< 25%	1.760	1.130	2.240	1.260
25% - 50%	1.930	1.630	2.270	1.680
50%- 75%	3.050	2.300	4.310	2.300
75%>	14.000	5.520	22.900	5.250

Notes: Values are in billions of RMB

Table 6 (B) -Firm Sales Means by Cross-Border M&A Activity and Political Connection Levels

TFP Quantile	Political Level 1		Political Level 2	
	Yes	No	Yes	No
< 25%	3.4	0.907	3.28	0.891
25% - 50%	2.71	1.61	2.6	2.29
50%- 75%	3.76	1.41	4.05	1.68
75%>	14	6.62	14.9	6.74
TFP Quantile	Political Level 3		Political Level 4	
	Yes	No	Yes	No
< 25%	0.847	3.66	1.300	2.760
25% - 50%	3.47	1.92	4.710	2.250
50%- 75%	4.61	2.49	8.650	2.450
75%>	21	6.87	25.100	8.760

Notes: Values are in billions of RMB

Table 7(A) - Domestic M&A Deal Percentage by TFP Quantiles

TFP Quantile	Political Level 1		Political Level 2	
	Yes	No	Yes	No
< 25%	24.57	24.87	23.81	26.33
25% - 50%	25.00	26.08	25.15	25.36
50%- 75%	27.67	29.11	27.76	28.37
75%>	21.32	26.41	20.59	26.19
TFP Quantile	Political Level 3		Political Level 4	
	Yes	No	Yes	No
< 25%	23.28	25.49	24.31	24.67
25% - 50%	22.86	26.82	21.45	25.78
50%- 75%	28.40	27.57	30.07	27.54
75%>	21.09	23.03	24.18	21.47
TFP Quantile Means	< 25%	25% - 50%	50%- 75%	75%>
Yes	23.99	23.62	28.48	21.80
No	25.34	26.01	28.15	24.28

Table 7(B) - Cross-Border M&A Deal Percentage by TFP Quantiles

TFP Quantile	Political Level 1		Political Level 2	
	Yes	No	Yes	No
< 25%	2.32	1.91	2.47	1.77
25% - 50%	2.53	2.52	2.46	2.67
50%- 75%	2.54	3.4	2.49	3.22
75%>	2.37	1.96	2.46	1.91
TFP Quantile	Political Level 3		Political Level 4	
	Yes	No	Yes	No
< 25%	2.05	2.36	1.39	2.34
25% - 50%	2.32	2.67	1.95	2.62
50%- 75%	2.01	3.27	2.05	2.83
75%>	2.06	2.56	2.78	2.18
TFP Quantile Means	< 25%	25% - 50%	50%- 75%	75%>
Yes	2.06	2.32	2.27	2.42
No	2.10	2.62	3.18	2.15