Military Executive, Corporate Fraud and Performance in China

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Abstract

It is commonly believed that military service places a strong emphasis on duty, dedication, and firm will, thus would instil self-discipline and promote ethical behaviour. This paper investigates the relationship between corporate executives with military experience and investment decision, financial policy, ethical behaviour, and firm performance, in a Chinese setting. Results suggest that Chinese military executives are more likely to commit corporate frauds, compared to their non-military peers. Sociology and psychology research conclude that military experience leads to aggressiveness, overconfidence, and is associated with an increase in risk-taking behaviour. We find in China, firms run by military executives invest less, have lower expenditure on research and development, take more risk, retain less earnings, and under-perform. Further robustness test using propensity score matching approaches, confirms the overall findings in the basic panel specifications. Our results also indicate that military executives hold lower level of academic degree relative to non-military executives. This may help to explain the unethical behaviour from the military executives. This paper shed some extra lights on issues related to executives with military experiences on corporate governance, corporate activities, as well as the role that ethics play in corporate world, an issue of particular interest in China.

1. Introduction

China's emergence onto the global stage brings both challenge and opportunity: how the rest of the world accommodates an emerging great power, and how this great civilization enhances various aspects of the global integration. There are similarities and differences in the military services, for example, cultures, traditions and norms, between China and the U.S. One key difference between the American and Chinese military services is the terms and expectations of enlistment with People's Liberation Army (PLA) uses of volunteer-conscripts versus the U.S. uses of true volunteers. With PLA, only the best conscripts are kept to continue in service as non-commissioned officer (NCOs) after two years. With the U.S. military, a two-year enlistment is rare with most being three years. The U.S. military provides opportunities for capable, educated, and motivated troops to gain NCO rank during their initial enlistment, also retain good enlisted members for subsequent enlistments. Therefore, there is less separating first-time enlistees from veterans in the U.S. military than in the PLA.[1] The Chinese and American military services also exhibit some significant differences in interpersonal military culture, for example, subordinates' willingness to speak their mind to superiors. On the other hand, Chinese and American military service share some similarities, i.e. the professional military education and the military academic institutions. Beyond the academies, both have a system of specialized academic institutions to train NCOs, as well as mid-level, senior officers, and executive-level officers.

Since its economic reform in 1978, China has made remarkable progress in economic and social developments. Over the last few decades, the Chinese government has been promoting the "mass entrepreneurship and innovation" as a new engine for sustainable growth. In addition, the government has proposed a series of major reforms to the People's Liberation Army (PLA). These reforms have resulted in millions of military personnel retired from the military service and joined the workforce. Many establish their own business and become successful entrepreneurs since then. Benmelech and Frydman (2015) documented that CEOs with military backgrounds have been disappearing from the corporate world in the U.S. The supply of executives who have served in the military has diminished. A similar pattern is observed in China, the supply of military executives has been deteriorated since 1999. There

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[1] https://thediplomat.com/2016/06/a-comparison-of-chinese-and-american-military-culture/

was approximately four percent of CEOs in public listed firms with military backgrounds in 1999, but less than two percent in 2016. Similar patterns are found for Chairman of the board and executives who hold both positions as the CEO and the Chairman (defined as 'Duality' hereafter) with military backgrounds (see Fig.1).

A growing body of literature documents that personal characteristics of corporate executives play important roles in corporate outcomes. Benmelech and Frydman (2015) documented that military service has significant explanatory power for managerial decisions and firm outcomes in the U.S. market. It is commonly believed that military experience places a strong emphasis on duty, dedication, and firm will, thus, would instil self-discipline and promote ethical behaviour. Despite mounting studies of the effect of executives' personal characteristics on corporate outcomes around the world, there are no such studies undertaken in China. Given China becomes the largest emerging market in the world and its unique institutional setting, it is of great interest to analyse the effect of this important personal attribute on the firm decision-making process. This paper investigates the relationship between military executives and investment decision, financial policy, ethical behaviour, and firm performance, in a Chinese setting. Our results conclude that Chinese executives with military backgrounds are more likely to commit corporate frauds, compared to their non-military peers. Evidence from sociology and psychology research finds that military experience should lead to aggressiveness, overconfidence, and is associated with an increase in risk-taking behaviour. In accordance with this strand of research, our results show that in China, firms run by military executives invest less, have lower expenditure on research and development (R&D), take higher financial leverage, retain less earnings, and under-perform, compared to their non-military peers. Further robustness tests, using propensity score matching approaches, confirm the overall findings in basic panel specifications. Overall, our results shed some extra lights on issues related to corporate governance, economic activities, as well as the role that ethics play in the corporate world in China.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature on military attributes from sociology and psychology perspectives. The data and summary statistics are presented in Section 3. Section 4 examines the relations between military experience and various types of corporate outcomes. Section 5 provides the robustness tests. Section 6 investigates the relation between military experience and corporate violations.

Section 7 discuss military executives' performance during industry booms and distress. Section 8 presents the probability of firm hiring a military executive. Section 9 concludes.

2. Literature review

Managerial characteristics of top executives have become a growing topic of interest in the last couple of decades within the field of corporate governance. Numerous studies have explored individual traits fostered by the military service, and their effects on leadership as well as the transition to a civilian career. Wong, Bliese, and McGurk (2003) document that leadership is the mainstay of the military and they are practically inseparable. Military service strives to develop leaders with the traits and capabilities of operating in volatile, complex, and ambiguous circumstances (Hunt, 1991; Hunt and Philips, 1991), creating broad vision, defining tasks, setting goals, monitoring progress, leading change within the organization (Magee, 1998). One would expect that these transformational leadership findings conducted in military settings may be generalized to non-military settings, and this appears to be the case. Lucas and Markessini (1993) interviewed 74 military officers who reported requiring critical capabilities such as problem-solving skills, the ability to networking, consensus building skills and cognitive capacities. Whereas, Markessini, Lucas, Chandler and Jacobs (1994) interviewed senior executive civilians, found similar requisite skills and abilities in the civilian senior leaders.

Whether the attributes of leadership that are fostered in the former military experiences play a positive role in the management of organizations is debated by academics. Wong et al. (2003) state that former military leaders often command large numbers of subordinates due to the size of the military, and thus tend to have an advantage in management at all levels. The military is described as a ''greedy institution'' by Segal (1988), with an all-consuming nature that demands nearly all attention, time, energy, and commitment from its members, thus, military executives require extremely good performance. Avrahami (2003) examines the effect of military service patterns on civilian entrepreneurship, and documents that certain unique social capital assets individuals accumulate in the military service has a positive impact on subsequent entrepreneurship activities. Similar conclusions are drawn by Markman and Baron (1998), while Magnum and Ball (1987) find that significant amounts of skill provided by military trainings are transferred to and support the civilian employment.

According to a study conducted by Korn/Ferry International, a Los Angeles based

executive search firm, military experience is found to parlay into better business performance. This result suggests that firms led by a CEO with military backgrounds outperform the Standard & Poor's 500 by 20%; CEOs with military experiences tend to serve longer on a job with an average tenure of 7.2 years, compared to civilian CEOs with an average tenure of 4.6 years (Purdum, 2006). The outstanding performance of military CEOs is driven by their leadership, communication skills, and most importantly, the ability to translate firm visions into tangible results (Purdum, 2006). Many Companies actively hiring veterans claim that the leadership abilities are the most desirable quality (Kirchner, 2016). Indeed, companies such as Wal-Mart and General Electric, have started programs to recruit junior military officers who served in Iraq and Afghanistan, to deal with a lack of leadership talent (O'Keefe, 2010; Benmelech and Frydman 2015).

In contrast, some view military culture as different from societal culture, they argue that the differences are either inconsequential or that the distinct military culture is more effective for the military's unique war-fighting mission (Hillen, 1999; Snider, 1999). Kane (2012) documents that soldiers are at best intellectually rigid, obedient, and uncreative, so that the similarity between the trait of military personnel and entrepreneur is disbelieved. Avrahami (2003) claims that the conformity, discipline and bureaucratic behaviour that fostered in military service are the antitheses of entrepreneurial behaviour.

Other literature examines the influence of former military service on the veteran's behaviour from the psychological perspective, and concludes that the experience of military service is associated with overconfident, aggressiveness and an increase in risk-taking behaviour (Elder, 1986; Elder and Clipp, 1989; and Elder, Gimbel, and Ivie, 1991). In addition, Wansink, Payne, and Van Ittersum (2008) document that many individuals with military service are strongly associated with heroism, exhibit strong leadership personality, loyalty, and risk-taking behaviour. They find that veterans with high risk-taking propensity have a higher inclination toward entrepreneurship in their non-military career, and are risk seekers, excited and eager to achieve desired goals in "combat-like" circumstances. Similar results are also reported in Malmendier, Tate and Yan (2011), which examining veteran CEOs who were involved in the World War II.

One recent study conducted by Benmelech and Frydman (2015) provide contrary results. They find that CEOs who have served in the military tend to conduct more conservative

policies in investments and R&D; they manage firms with relative lower leverage; and perform better in time of industry distress. Furthermore, military CEOs are less likely to commit corporate frauds, due to the strong sense of ethics which instilled by the military service. Lin, Ma, Officer and Zou (2011) examine the effect of a CEO's military service on merger and acquisition. They find that acquirers led by military CEOs earn significant higher abnormal returns during announcements, and exhibit higher synergies, suggesting that the value system which promotes honour, duty, integrity, self-discipline, and selflessness in the military service helps lower the agency costs in acquisitions, generates better acquisition outcomes and enhance the firm value. Law and Mills (2017) also conclude that executives with former military experiences tend to produce higher cash flows and engage in less aggressive tax strategies, and therefore are less likely to be involved in accounting frauds. Their results suggest that military experience help to improve the reporting quality, through ethical conducts.

Results in existing literature from psychology, sociology and organizational behaviour perspectives are all based on U.S. data. Motivated by these findings, we therefore apply a unique dataset to investigate the relationship between executives with military backgrounds and corporate outcomes, in a Chinese setting. Our results should be of interest to academics, practitioners, and policy makers, due to the different institutional settings between these two countries.

3. Data and Summary Statistics

Executive personal characteristics data and firm financial information are obtained from the Chinese Securities Market and Accounting Research (CSMAR) database. The initial sample consists all listed firms in Shanghai and Shenzhen Stock Exchanges for the period from 1999 to 2016. Following the convention in the literature, the public utility and financial firms are excluded from our sample. The military background of executives is hand collected from the executives' resumes provided by CSMAR. To reduce the impact of outliers, most accounting variables are winsorized at both the bottom and the top 1% of the distribution. Since retained earnings and ROS exhibit large negative skewness, these two variables are winsorized at the bottom 5% and at the top 1% of the distribution; whereas, merge is winsorized at the bottom 1% and at the top 5% of the distribution due to a large positive skewness.

A firm-year-executive matched panel data set is constructed for our sample firms. The complete sample is divided into two categories: CEO and Duality, Chairman and Duality. The final CEO sample has 2430 firms, 6492 CEOs and Duality, and consists 24445 firm-year-CEO and Duality observations; the Chairman sample has 2427 firms, 4847 Chairman and Duality, and consists 23292 firm-year-Chairman and Duality observations.

3.1 Executive personal characteristics and firm characteristics

Table 1 reports the summary statistics for executive personal characteristics and firm characteristics. The executives in Panel A are divided into two categories by military background: military and non-military CEO and Duality, military and non-military Chairman and Duality. Results in Panel A indicate that the average age of military CEOs is older than non-military CEOs (72.4% above the median age of 46.99 years compared to 53.9%, respectively). While non-military CEOs are better educated than military CEOs. An education level dummy equals one indicates university level of education or above. 48.2% of the non-military CEOs have significant better education level compared to 31.5% of military CEOs. In addition, military CEOs is serving longer (Tenure) in the position than non-military CEOs. Similar results found for Chairman and Duality in terms of age, education and tenure[2]. Results in Panel A reveal that Chinese executives with military background appear to have lower education level than those without military experience. This is not surprising given the unique Chinese setting, due to a number of reasons: 1. Military service is not compulsory; 2. A few decades ago, China's economy developed very slowly under special political atmosphere, military enrolment was regarded as the best option for young people when they completed high school; 3. Chinese university entry resumed in 1977, therefore, majority of people who was born before 1960 has no opportunity to receive university level education.

[Insert Table 1 About Here]

In addition to executive personal characteristics, Panel B of Table 1 also presents the firm characteristics for the military firms and non-military firms, respectively. This includes firm size, firm age, cash & equivalents, investment, R&D, acquisitions, book leverage, new borrowing, retained earnings, ROA (return on assets), ROS (return on sales), violation

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[2] It is noted that the limited availability of data on Chairman's education level reduces the size of final sample of the Chairman.

(corporate fraud) and state ownership[3]. ROE and Tobin's Q are not employed as suggested by Liu, Wei, and Xie (2014) for the following reasons: 1. ROE is often manipulated aggressively by firms in China to satisfy certain requirements imposed by the China Securities Regulatory Commission (CSRC); 2. Tobin's Q has been widely employed as a proxy for firm performance in the existing literature, but it is considered as an inappropriate measure for performance in China, due to the fact that many listed firms are originated from state-owned enterprises (SOEs) with large holdings of non-tradeable shares. In addition, Bai, Liu, Lu, Song, and Zhang (2014) also documented that the share price contains little information to its fundamental values, since the Chinese stock markets are considered to be highly speculative, see also Markoczy, Sun, Peng, Shi, and Ren (2013).

For firm characteristics, results suggest that firms hiring military executives (including CEOs, Chairman, and Duality) are smaller in size (measured by total assets), less profitable (measured by ROA and ROS), taking more risk (measured by book leverage and new borrowing), retaining less earnings (measured by retained earnings), longer in operation (measured by firm age), investing less in capital expenditure (measured by investment), involving more corporate frauds (measured by number of violations). These results are statistically significant at either 5% or 1% level, respectively, suggesting that there are significant differences in personal and firm characteristics for Chinese listed firms' executives with and with no military backgrounds. However, these results may be driven by the correlation between military background, time periods, firm characteristics, and other factors, as well as the selection bias of the military executives who are employed by firms that prefer executives with military experiences. Therefore, the relationship between military executives and corporate outcomes are analysed through multivariate regression models in the next section.

3.2 Correlation Matrix

Table 2 reports the correlations among the key variables used in our regression analysis. Follow the rule of thumb, if the absolute value of the correlation is greater than 0.7, a multicollinearity issue may occur. Table 2 shows that none of the correlation coefficient has an absolute value higher than 0.7. Correlation coefficients in bold indicates statistical significance.

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[3] Table A1 in Appendix provides full list of these variables and their definitions.

[Insert Table 2 About Here]

4. Empirical Analysis

4.1 Effects of military background on firm's outcomes

Following Benmelech and Frydman (2015), panel OLS regressions are conducted to analyse the relations between the Chinese executives with military experience and a number of corporate outcomes. We focus on three main types of corporate outcomes as documented in many previous studies. These are: investment decisions (represented by investment, R&D, and acquisitions), financial policies (represented by book leverage, new borrowing, and retained earnings), and firm performances (represented by ROA and ROS). For investment decisions, it is important to note that before 2007, the Chinese accounting standards did not require a separate disclosure of R&D expenditure, therefore, the value of total intangible assets is used instead. Because R&D expenditures can be capitalized as an intangible asset of the firm, such as intellectual property, patents and copyrights. To analyse the outcomes of firm's financial policies, book leverage, new borrowing, and retained earnings are three main proxies. ROA and ROS are the primary measures for firm performance, due to the reason as discussed in the previous section. These outcome measures are then estimated as the function of the firm-level observables, executive's personal characteristics, and a military dummy variable. Year and industry fixed effects are controlled for the panel regressions. Standard errors are clustered at the firm level. Specifically, the following model is estimated:

$$y_{i,t} = \alpha * Military_j + \beta * Characteristics_{j,t} + \delta * X_{i,t} + Year_t + Industry_{CSRC} + \varepsilon_{i,t} \qquad (1)$$

Where $y_{i,t}$ is the dependent variable that represents various types of corporate outcomes. $Military_j$ is a dummy variable that takes the value of one if the executive has military experience, or zero otherwise. $Characteristics_{j,t}$ are controls variables for executives' personal characteristics, including the executive's age (in logarithm), education level and tenure. $X_{i,t}$ is a vector of firm-level attributes, including firm size, firm age, cash, ROA, ROS, and leverage. All regressions control for industry fixed effects ($Industry_{CSRC}$) classified by the China Securities Regulatory Commission (CSRC) industry classification, and year fixed effects ($Year_t$). Standard errors are clustered at the firm level. α is the coefficient of interest

in all eight regressions, measures the effect of executives with military experiences on firm's investment decisions, financial policies, and performances.

Table 3 presents the results of equation (1) for military CEOs and Duality in Panel A, while military Chairman and Duality in Panel B. Eight models are specified for various of dependent variables. Models 1-3 investigate the relationships between the executive military background and a firm's investment decisions. The dependent variables are *investment, R&D,* and *Acquisitions.* All military coefficients in Panels A and B are statistically insignificant from Models 1-3, indicating that executive with military backgrounds do not have any impact on firm's investment decision making.

Models 4-6 in Table 3 examine the relationship between military executive and firm's financial policy. Book leverage, new borrowing, and retained earnings are scaled by firm's total assets and used as dependent variables to measure firm's financial policy. Same control variables in Models 1-3 are applied in Models 4 and 5, however, book leverage is included as an additional control variable in Model 6. Military coefficients from Model 4 in Panels A and B are positive and statistically significant at the 1% level. Therefore, executives with military background are taking more risk compared to their non-military peers. Similar results are concluded from Model 5, both military coefficients are positive, it is statistically significant at the 1% for military Chairman and Duality in Panel B, but insignificant in Panel A. Coefficients from Model 6 are negative but statistically insignificant. Negative coefficients in Model 6 indicate that military executives tend to retain less, i.e. pay high dividend, therefore, taking more risk.

Models 7 and 8 in Table 3 examine the relationship between military executive and firm performances, measured by ROA and ROS. No significant relationship observed in Model 7 when firm performance is measured by ROA. However, strong negative military coefficients are found in Model 8 when performance is measured by ROS (Return on Sales). The coefficient of -0.0307 in Panel A, indicating firms with military CEOs or Duality experience a decrease in ROS by 3.07% p.a. and this result is statistically significant at the 1% level. This suggests that CEOs or Duality with military experience underperform their non-military peers.

[Insert Table 3 About Here]

Overall, results in Table 3 suggest that military executives in China pursue more aggressive financial policies, as opposed to Benmelech and Frydman (2015) from the U.S. market. However, the statistical significances from the panel OLS regressions may be driven by certain characteristics and attributes both at the individual executive level and at the firm level, as all models are controlled for this. Therefore, interaction terms are introduced in the panel regression to better examine the relationship between military executives and corporate outcomes.

4.2. Military backgrounds interact with personal and firm characteristics.

Results in Section 4.1 suggest that executives with military experience in China are taking more risk and underperform compared to their non-military peers, but have no impact on firm's investment decision making. In this section, the relations between military experience and financial policies as well as firm performance are further examined by introducing a number of interaction terms between military experiences and personal characteristics; firm age and the state-owned dummy are also included to investigate the underlying factors that contribute to these relationships. The dependent variables estimated in this section are book leverage, new borrowing and ROS (model 4, 5 and 8 in Section 4.1, respectively). The base control variables are identical to those in Section 4.1 except Duality. In addition, six interaction terms are included in all three models, including interactions with duality, education, tenure, executive age, firm age and the state-owned dummy.

Table 4 presents panel regression results for military dummy interacts with various personal and firm characteristics. The first row in each panel replicates the coefficients on military of the base specification in Table 3 for comparison purpose. Results are somewhat mixed and in line with those in Table 3. In Panel A, the coefficient on military is again positive and statistically significant at the 10% level for book leverage. This positive impact on book leverage has been further proved by military duality. The result shows that Duality have conservative impact on book leverage. However, this impact reverses and has greater magnitude when a Duality has former military experience, and thus dominants a higher book leverage of the firm. Firms have been in operation for longer years and led by military CEOs or Duality tend to have higher book leverage as well. For firm performance, firms run by military Duality tend to have lower ROS. While under the same education level, military CEO or Duality also underperform their non-military peers.

Table 4 Panel B presents results for military Chairman and Duality. The coefficients on military experience for book leverage and new borrowing are no longer significant after adding interaction terms to the base specifications. Results suggest that the aggressive impact of military experience on book leverage is mainly driven by military Duality. For new borrowing, Duality tends to be more conservative than Chairman. However, for firms with longer age of operation, Chairman or Duality who has military background is likely to borrow more new debts compared to their non-military peers. This has weakened the negative effect of Duality on firms' new borrowing. Result for firm performance is similar as from Panel A, firms led by military Duality underperform.

[Insert Table 4 About Here]

Overall, results from Table 4 suggest that the magnitude and significance of the effects of corporate outcomes with respects to military experiences depend on specific executive personal and firm characteristics. However, results from Tables 3 and 4 may be subject to sample selection bias. The possibility that the military executives are randomly assigned to firms is a valid concern. Thus, in the next section, the propensity score matching approach is employed in order to address the potential endogeneity issue.

5. Robustness Tests: Propensity Matching Approach

Executives with military backgrounds may not be randomly assigned to firms, so the empirical analysis must consider potential endogeneity issue. Executives who have served in the military before may self-select into certain types of firms, say, firms have connections to the military system or with relevant background. Some of these veterans may be promoted to be an executive of the company through the "*guanxi*" practices. On the other hand, it is possible for firms which prefer to hire executives with military experiences but unable to find one. To mitigate these issues, the propensity score matching approach is used to conduct the robustness test.

The propensity score matching approach documented in Rosenbaum and Rubin (1983) is employed to examine the differences in corporate outcomes between military and non-military executives in China. This methodology is to identify matching firms run by non-military executives with similar firm-level and personal attributes as those firms with military executives. Therefore, firms run by military executives is set to be the treatment group, while

firms run by non-military executives is the control group. Propensity score matching enables one firm from the treatment group to match one firm from the control group as a matched pair. The matched pair must be virtually indistinguishable from each other, with only one exception that one firm is run by a military executive and the other one is run by a non-military executive.

The propensity score matching approach is conducted twice to test the robustness in terms of different matching criteria. Firstly, the propensity score is estimated through a probit regression of the military dummy variable on firm-level characteristics, including firm size, firm age, cash, book leverage, industry, ROS and state ownership dummy. Then use these propensity scores to identify a control group of firms that are run by non-military executives and which exhibit no observable differences in the firm-level characteristics relative to the firms run by military executives. By performing a nearest neighbour match, each pair of matched firms that from the control group (firms with non-military executives) and the treatment group (firms with military executives), respectively, is virtually indistinguishable from one another except for the military background of their executives. Secondly, the matching criteria is set at both the firm-level and the personal-level characteristics. The univariate regressions are then run on these two matched samples to examine the effect of military background on corporate outcomes.

Table 5 Panel A presents the propensity score matching results using firm-level characteristics, including size, firm age, cash, book leverage, industry, ROS and state ownership dummy. There are 570 matching CEO pairs (including Duality), and 783 matching Chairman pairs (including Duality) resulted from the propensity score matching on firm-level characteristics. The differences on a number of selected corporate outcomes between the matching pairs are then calculated. Results for CEO matching pairs are basically in line with the results in Table 3, in terms of R&D, book leverage, new borrowing, retaining earnings, and ROS. The spending on R&D for firms with military CEOs are less than firms with non-military CEOs, it is insignificant in Table 3 but significant at the 1% level in Table 5. Results on book leverage, new borrowing, retained earnings and ROS also support the findings in Table 3, that firms with military CEOs are taking more risk. They tend to operate under high leverage, involve in more new borrowing, likely to retain less earnings for future growth and underperform their non-military peers when measured by ROS. Results for military matching Chairman firms are similar with those CEOs matching firms, except for ROS.

[Insert Table 5 About Here]

In Panel B, the propensity score is estimated based on both firm-level characteristics and individual characteristics of the executives, including age, education level and tenure. The nearest neighbour matching approach is performed to match the firms in the control group that are similar to the firms in the treatment group. Then the differences of a number of selected corporate outcomes are calculated between these two groups of firms. In Panel B, firms in both treatment and control groups are matched based on a more restrictive matching criteria, the numbers of matching pairs within the two samples of CEOs and Duality, Chairman and Duality are decreased to 521 and 414, respectively. Even though, the results largely remain consistence to results observed in Table 3. After matching firms based on both firm-level and individual-level characteristics, the results further confirm that firms with military executives are taking more risk, retained less, under-performing their non-military peers. Therefore, the propensity score matching approach demonstrate a more robust relationship between military experiences and corporate outcomes.

6. Effects of Military Experience on Corporate Violations

It is a common belief that a person with military experience may instil a stronger sense of ethics and self-discipline. Therefore, executives with military experiences should be less likely involved in corporate fraudulent activities. In this section, we investigate the correlation between executives with military backgrounds and corporate violations. The CSRC issued 7206 announcements of corporate violations from listed firms during our sample period. The data record the number of times that a company is accused of having committed corporate violation in a year. Given the requirement of having detailed corporate financial information and executives' personal information, 6374 of these violation records are matched with the executive sample. A linear probability model is carried to estimate the likelihood of corporate violations relative to the military experience.

Table 6 reports the results for the linear probability regressions with the number of violations as the dependent variable. The correlation between military experience and corporate violations are statistically significant at the 1% levels. These results suggest that Chinese executives with military backgrounds are more likely to be involved in corporate violations than their non-military peers. These may be due to the prevalence of the "*guanxi*"

practices and the *"back-door"* promotions in the Chinese military system in corporate worlds. In addition, the concentrated power of the upper-level leaders and the lack of effective and external monitoring, coupled with the misconduct of power, resulting increasing number of violation and corruption activities in Chinese list firms (Mulvenon, 1998; Wang, 2016; Li, 2017). This result is not consistent with Benmelech and Frydman (2015), they find that military executives in the U.S. are less likely to commit frauds.

[Insert Table 6 About Here]

7. Military Executives' Performance during Industry Distress and Boom

Research on the U.S. military suggested that military service developed leaders with the traits and capabilities of operating in volatile, complex, and ambiguous circumstances (Hunt, 1991; Hunt and Philips, 1991). Therefore, military executives are considered to perform better under pressure in real world (Franke, 2001; Duffy, 2006). Do military executives in China also cope better in difficult time than their non-military peers? Thus, in this section, multivariate tests are conducted to investigate whether military experience has effects on firm performance (measured by ROS) during periods of industry distress and boom.

Following Benmelech and Frydman (2015), the periods of industry distress and boom need to be defined firstly. We calculate the asset-weighted ROA for the four industries in each year of the sample period. This measures the profitability of each industry in every single year. For years in which the profitability of the industry is below the 25th percentile of the asset-weighted industry profitability over the sample period of 1999 to 2016 are defined as the periods of industry distress. While the periods of industry boom are similarly defined for years in which the profitability of the industry is above the 75th percentile. Both the industry distress and the industry boom are dummy variables that take the value of zero and one. The analyses are then conducted by interacting the military indicator with the industry distress dummy and the industry boom dummy, respectively, to assess whether a different effect on firm's performance exists during different economic conditions for executives with military background. All regressions control for firm size, executive's age, the four industries dummy and year fixed effects, as well as personal characteristics such as executive's education level and tenure.

Table 7 presents results from regressions of ROS on military experience. In Panel A, the estimated correlations between military CEOs and Duality and firm's ROS are all negative and statistically significant at the 1% level. These are in line with those results found in previous tests suggesting that CEOs and Duality with military background underperform their non-military peers in normal times. The negative coefficients on industry distress (except for model 5) indicating a lower level of ROS but statistically insignificant. In models (2), (3), (4) and (6), the coefficients on the interaction term of military experience and industry distress are positive and significant, implying that CEOs and Duality with military experience perform better than their non-military peers during the time of industry distress in China. The potential explanation for this is that the special traits and capabilities developed in the military service may help to offset some negative effects during industry distress. The insignificant results for the same interaction terms in model (1) and (5) maybe driven by omitted personal characteristics of CEOs.

To assess how military CEOs and Duality perform during the period of industry boom compared to their non-military peers, the industry boom indicator and its interaction with military experience are included in model (5) and (6). Results suggest that the measure of industry boom is associated with a higher ROS significantly. Both interaction terms of military experience and industry boom showing a negative impact on ROS, but they are statistically insignificant. Therefore, there is no evidence to conclude that military CEOs and dualities under perform during good times.

Panel B presents a similar result for military Chairman and Duality. Military Chairman and Duality are associated with a lower ROS in normal times. However, similar as the military CEOs and Duality, they over perform during the periods of industry distress compared with their non-military peers. The coefficients on military experience interacting with industry boom are positive but insignificant, thus we cannot conclude that military Chairman and Duality perform better during industry boom.

Overall, results in Table 7 suggested that military executives in China underperform during normal economic condition. However, during industry distress, their performance

become better relative to their non-military peers. On the other hand, there is no evidence to conclude that military executives outperform or underperform during good times.

[Insert Table 7 About Here]

8. The Probability of Hiring a Military Executive

The propensity score matching approach in Section 5 helps to address the potential endogeneity issues and demonstrate that our results from the basic panel OLS model are robust. However, it does not offer a conclusive solution to define the causal relationship between the military experience and the corporate outcome. In this section, a linear probability model is performed to analyse the determinants of executive hiring decisions using the military dummy as the dependent variable. First, an executive transition sample is constructed which only include firms that have executive transitions occurred during the period between 1999 and 2016. For the three independent variables of interest, R&D, book leverage and ROS, we individually calculate the asset-weighted industry mean for one-year, three-year and five-year before the year in which a new executive was hired. Then the differences between a firm's outcome and its asset-weighted industry mean across those same periods are computed. The hiring probability is then estimated through three sub-sample: one year, three-year and five-year before a new executive was hired. This is to examine if the probability of hiring a military executive is affected by the firm's outcomes in years before making the hiring decision.

Table 8 reports the results for the determinants of a firm hiring a military executive. In Panel A, results show that firms invest more in R&D than other firms in the same industry prefer hiring military CEOs and Duality. While previous analysis suggests that military executives tend to invest less on R&D compared to their non-military peers. This finding may extend the assumption that after the periods of overinvestment in R&D, firms are more likely to hire a CEO with military experience as a solution to control over investment. Same results found for one-year, three-year and five-year prior to the hiring, but they are not statistically significant. Firms have lower book leverage relative to their industry peers in one-year before the transition are more likely to hire a military CEO. As CEOs and Duality with military background are proven in previous tests that they tend to manage firms under higher book leverage. Thus, military CEO may be a good choice for firms want to push up its financial leverage. Opposite results are observed in three-year and five-year before the transition, but

results are all statistically insignificant. Insignificant results for ROS also suggest that firm's performance in years before replacing a military CEO is not a determinant of the hiring decision. Similar results shown in Panel B for military Chairman and Duality. This indicates that the decision to hire a military Chairman or Duality is independent from the firm's performance, relative to its industry peers.

[Insert Table 8 About Here]

In sum, results from Table 8 suggest that the probability of hiring a military executive is not affected by firms' outcome before the hiring decision is made. More specifically, firm's R&D, book leverage and ROS in years prior to the transition relative to its industry peers are not the determinants of whether or not to hire a military executive. These findings further confirm the previous conclusion that firms run by military executives have lower R&D, higher book leverage and lower ROS are purely driven by the effect of military experience.

9. Conclusion

It has been documented that executive personal characteristics play important roles in corporate outcomes. Military services place strong emphasis on duty, dedication, and firm will, thus would instil self-discipline and promote ethical behaviours. Evidence from sociology and psychology research also concludes that military experience leads to aggressiveness, overconfidence, and is associated with an increase in risk-taking behaviour. Therefore, using a unique dataset, a comprehensive study has been conducted in this paper to investigate the relationship between executives with military experiences and various types of corporate outcomes, including investment decisions, financial policies, risk taking behaviours, as well as ethical behaviours.

First, our results from basic panel specifications suggest that firms run by military executives take higher financial leverage, borrow more new debts and under-perform, compared to their non-military peers, in China. Further robustness tests, using propensity score matching confirm the overall findings in basic panel specifications. These results indicate that Chinese executives with military backgrounds tend to pursue more aggressive financial policies, as they use excessive leverage, involve more new borrowing through new bank loans and/or new debenture issuances, and retain less earnings, as opposed to their non-military peers. In addition, Chinese military

executives also tend to spend less in R&D, and under-perform, compared to non-military executives.

Further investigations also reveal that firms led by military executives are more likely to involve in the violation activates in China, as opposed to Benmelech and Frydman (2015), which document that U.S. military executives are less likely to commit frauds. On the other hand, a similar finding is observed as in the U.S., that Chinese executives perform better during the periods of industry distress. In addition, this study also finds that firm's outcomes in years prior to the transition are not the determinants of whether or not to hire a military executive.

Given the fact that China becomes one of the largest emerging markets in the world and its unique institutional settings, it is of great interests to analyse the effect of corporate executive personal attributes on firm decision making process. Since military executives possess very special characteristics, therefore, results in this research shed some extra lights on issues related to executives with military experiences on corporate governance, corporate activities, as well as the role that ethics play in corporate world, an issue of particular interest in China.

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Appendix

Table A1 Variables and Definitions

Firm Size	the logarithm of total assets
Firm Age	the number of years the company has been in operations
Cash	the ratio of cash and equivalents to total assets
Return on Asset	the ratio of EBIT to total assets
Return on Sales	the ratio of EBIT to total sales
Investment	the ratio of capital expenditures to lagged total assets
Acquisition	the ratio of annual acquisition activities to lagged total assets
R&D	the ratio of total intangible assets to total assets
Book Leverage	the ratio of total current liabilities to total assets
New Borrowing	the ratio of total current liabilities to long term debts to total assets
Retained Earnings	the ratio of retained earnings to total assets
State Owned	an indicator takes the value of one if the firm is state owned
Violation	the number of times a firm has been alleged to involve in corporate violation activities in a year

Figure 1. Percentage of CEO and duality, Chairman and Duality with military experience in China.
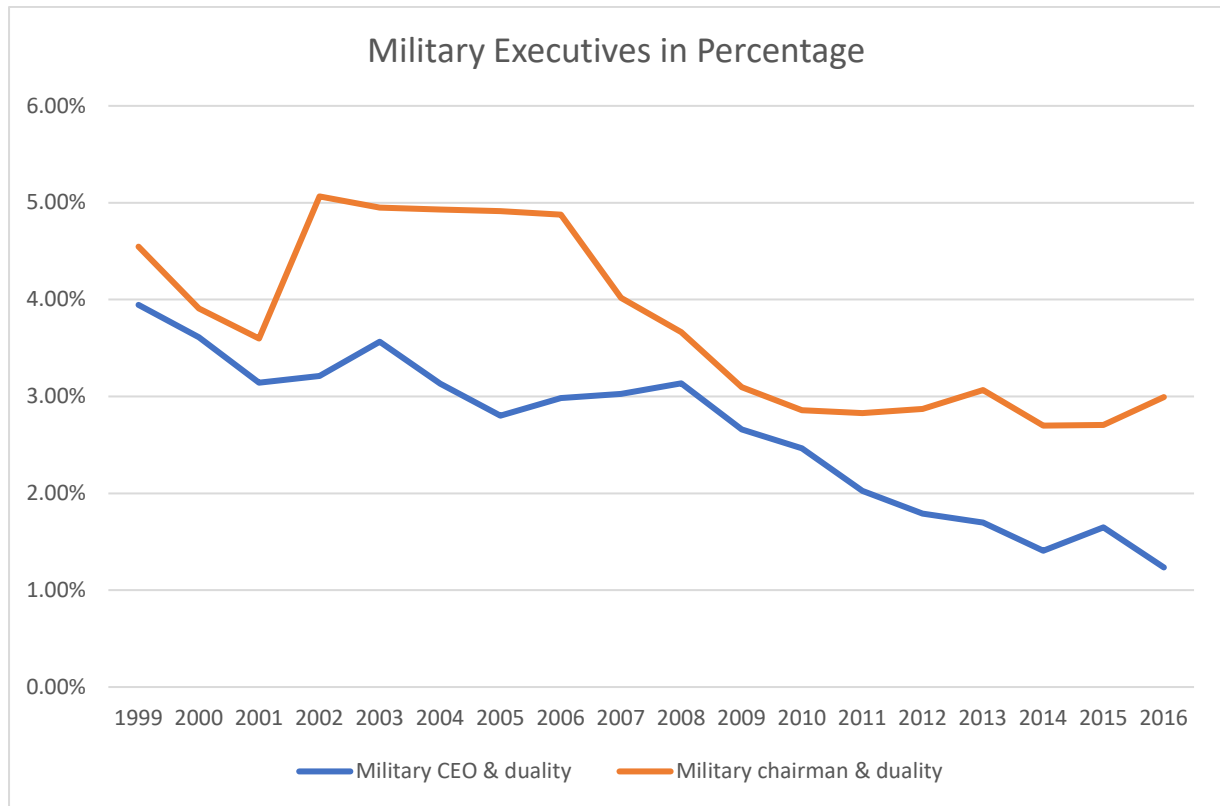
Table 1. Univariate statistics, by firm-year.

This table reports the summary statistics for executive personal characteristics and firm characteristics. The data includes all firms (but excluding financial and utility firms) listed on the Shanghai and Shenzhen stock exchanges over the 1999 to 2016 sample period. The executives in Panel A are divided into two categories by military background: military and non-military CEOs and Duality, military and non-military Chairman and duality. *Age* is a dummy variable that equals to one if the age of the executive when holding a position as a CEO or a duality is above the median age of 46.99 years, or above the median age of 50.91 years for the sample of chairman and Duality, and 0 otherwise. *Education* is an indicator variable for whether the education level of the executive is equivalent to/and above bachelor level. Tenure is a dummy variable that equals to one if the number of years an executive holds the position is longer than the median term of 6 years for the sample of CEOs and duality, or 7 years for the sample of Chairman and Duality, otherwise equals to zero. Firms in Panel B are divided by whether be operated by a military executive. *Size* is the logarithm of total assets. *Firm age* is an indicator variable for whether the number of years that the company has been in operation since registration is longer than the median term of 16.99 years for both the military and non-military sample. *Cash* is the ratio of cash and equivalents to total assets. *ROA* is EBITDA divided by total assets. *ROS* is EBITDA divided by total sales. *Investment* is capital expenditure divided by lagged total assets. *Acquisition* is the total value of the acquisition activities during the year divided by lagged total assets. *R&D* is the ratio of total intangible assets to total assets. *Book leverage* is the sum of total current liabilities and long term debts divided by total assets. *New borrowing* is the sum of cash received from new loan and new corporate bonds issued each year divided by total assets. *Retained earnings* is the ratio of retained earnings to total assets. *State-owned* is an indicator variable for whether the firm is a state-owned enterprise. *Violation* is the number of times in a year that a firm has been alleged to have involved in corporate violations.

Panel A: Personal characteristics	Military CEO & Duality			Non-military CEO & Duality			
	Mean	Std.dev.	Obs.	Mean	Std.dev.	Obs.	t-Test
Age	0.724	0.448	586	0.539	0.498	23298	**8.850**
Education	0.315	0.465	537	0.482	0.501	22023	**-7.667**
Tenure	0.542	0.499	587	0.434	0.496	23319	**5.225**

	Military Chairman & Duality			Non-military Chairman & Duality			
	Mean	Std.dev.	Obs.	Mean	Std.dev.	Obs.	t-Test
Age	0.602	0.49	802	0.519	0.501	22129	**4.631**
Education	0.378	0.485	429	0.520	0.501	11994	**-5.802**
Tenure	0.522	0.501	802	0.463	0.499	22160	**3.344**

Panel B: Firm characteristics	Military Firms			Non-military Firms			
	Mean	Std.dev.	Obs.	Mean	Std.dev.	Obs.	t-Test
Size	21.260	1.249	1389	21.612	1.269	45435	**-10.176**
Firm age	0.591	0.492	1373	0.550	0.497	44799	**3.025**
Cash	0.161	0.122	1389	0.181	0.138	45435	**-5.278**
Investment	0.047	0.048	1374	0.050	0.048	45023	**-2.623**
R&D	0.040	0.046	1389	0.042	0.046	45435	-1.393
Acquisition	0.051	0.081	1374	0.047	0.079	45023	1.576
Book leverage	0.541	0.247	1389	0.475	0.226	45435	**10.667**
New borrowing	0.058	0.132	1389	0.041	0.111	45435	**5.797**
retained earnings	0.0127	0.184	1389	0.069	0.157	45435	**-13.035**
ROA	0.041	0.073	1348	0.048	0.063	44505	**-4.038**
ROS	0.050	0.151	1384	0.074	0.138	45368	**-6.434**
Violation	0.321	0.762	1389	0.220	0.601	45479	**6.126**
State owned	0.437	0.496	1389	0.439	0.496	45479	-0.137

Table 2. Correlation Matrix

This table reports the correlation matrix of the variables for the sample over 1999 to 2016.

	Size	Cash	ROA	ROS	Investment	Acquisitions	R&D	Book leverage	Violation	Firm age	New borrowing	Retained earnings	State owned
Size	1.000												
Cash	-0.131	1.000											
ROA	0.126	0.260	1.000										
ROS	0.106	0.295	0.697	1.000									
Investment	0.038	-0.010	0.155	0.104	1.000								
Acquisitions	-0.119	-0.077	-0.075	-0.028	-0.095	1.000							
R&D	-0.082	-0.120	-0.078	-0.116	0.062	0.105	1.000						
Book leverage	0.243	-0.432	-0.327	-0.413	-0.138	0.040	0.010	1.000					
Violation	-0.064	-0.063	-0.139	-0.133	-0.020	0.085	0.050	0.093	1.000				
Firm age	0.040	-0.308	-0.160	-0.144	-0.175	0.001	-0.020	0.368	-0.016	1.000			
New borrowing	0.053	-0.120	-0.073	-0.079	-0.028	-0.004	-0.001	0.182	0.029	0.303	1.000		
Retained earnings	0.298	0.249	0.535	0.497	0.159	-0.142	-0.101	-0.517	-0.127	-0.364	-0.109	1.000	
State owned	0.286	-0.154	-0.078	-0.116	-0.037	-0.106	-0.010	0.228	-0.077	0.307	0.062	-0.065	1.000

Table 3. Effects of military experience on firm investment decisions, financial policies and overall performance.

This table reports the panel regression results from Equation (1), examining the effects of military experience on corporate outcomes (Equation 1). *Military* is a dummy variable that takes the value of one if the executive has military background, and zero otherwise. All regressions include control for *Size, Firm age,* year and industry fixed effects, as well as executives' personal characteristics that include *Age, Education, Tenure.* Column (1) to (3) also include *ROA* and *Cash.* Column (4) and (5) include control for *ROS* and *ROA.* Column (6) controls for *ROA, ROS* and *Book leverage.* Variable definitions and sample statistics are provided in Table 1. Robust standard errors in parentheses are clustered by firm. * indicates significant at 10%; ** indicates significant at 5%; *** indicates significant at 1%.

	Investment	R&D	Acquisitions	Book leverage	New borrowing	Retained earnings	ROA	ROS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Military CEO & Duality								
	-0.0018	-0.0031	0.0021	0.0634***	0.0035	-0.0113	-0.0048	-0.0307***
	(0.0030)	(0.0037)	(0.0038)	(0.0153)	(0.0108)	(0.0084)	(0.0038)	(0.0091)
No. of Obs.	22030	22194	22030	21565	21565	21565	21589	22194
R-squared	0.1324	0.0702	0.0905	0.3663	0.1038	0.5743	0.1369	0.1398
Panel B: Military Chairman & Duality								
	0.0000	-0.0021	-0.0012	0.0532***	0.0259***	-0.0125	0.0001	-0.0149
	(0.0031)	(0.0038)	(0.0042)	(0.0150)	(0.0103)	(0.0087)	(0.0040)	(0.0100)
No. of Obs.	12006	12139	12006	11985	11985	11985	12002	12139
R-squared	0.1490	0.0758	0.1000	0.4221	0.1809	0.5745	0.1427	0.1608

Table 4. Military backgrounds interact with personal and firm characteristics.

This table presents correlations between military executives and individual characteristics interaction terms and the corporate outcomes. The first row in each panel replicates the coefficients on military of the base specification in Table 2 for comparison purpose. The three dependent variables and the base control variables are identical to those in Section 5.1. *Duality* is included as a control variable. Moreover, six interaction terms are included in all three modes, including the *Military* dummy interact with *duality, education, tenure* and *age.* As well as *firm age* and the *state-owned* dummy. The year and industry fixed effects are controlled for all regressions. Variable definitions and sample statistics are provided in Table 1. Robust standard errors in parentheses are clustered by firm. * indicates significant at 10%; ** indicates significant at 5%; *** indicates significant at 1%.

Panel A: Military CEO & Duality	Book leverage	New borrowing	ROS
	（4）	（5）	（8）
Military (Base specification)	0.0634***	0.0035	-0.0307***
	(0.0153)	(0.0108)	(0.0091)
Military	0.0593*	-0.0068	0.0031
	(0.0371)	(0.0253)	(0.0241)
Duality	-0.0161***	0.0058	0.0035
	(0.0058)	(0.0038)	(0.0037)
Military x duality	0.0977***	0.0080	-0.0419**
	(0.0341)	(0.0232)	(0.0220)
Military x education	0.0179	-0.0145	-0.0428**
	(0.0311)	(0.0211)	(0.0199)
Military x tenure	-0.0265	0.0059	-0.0111
	(0.0300)	(0.0210)	(0.0191)
Military x age	-0.0264	-0.0066	0.0048
	(0.0287)	(0.0200)	(0.0185)
Military x firm age	0.0698**	0.0012	-0.0160
	(0.0315)	(0.0221)	(0.0197)
Military x state owned	-0.0431	0.0308	-0.0021
	(0.0297)	(0.0201)	(0.0190)
No. of Obs.	21565	21565	22194
R-squared	0.3686	0.1056	0.0704

Panel B: Military Chairman & Duality	**Book leverage**	**New borrowing**	**ROS**
	（4）	（5）	（8）
Military (Base Specification)	0.0532***	0.0259***	-0.0149
	(0.0150)	(0.0103)	(0.0100)
Military	0.0413	-0.0033	-0.0021
	(0.0335)	(0.0214)	(0.0237)
Duality	-0.0055	-0.0072**	-0.0006
	(0.0057)	(0.0037)	(0.0041)
Military x duality	0.1129***	-0.0284	-0.0514***
	(0.0311)	(0.0207)	(0.0216)
Military x education	-0.0362	-0.0238	-0.0022
	(0.0322)	(0.0218)	(0.0224)
Military x tenure	0.0061	0.0136	0.0099
	(0.0319)	(0.0221)	(0.0217)
Military x age	-0.0256	0.0282	-0.0226
	(0.0278)	(0.0185)	(0.0192)
Military x firm age	0.0036	0.0412*	-0.0145
	(0.0327)	(0.0224)	(0.0225)
Military x state owned	0.0108	-0.0008	0.0287
	(0.0324)	(0.0222)	(0.0222)
No. of Obs.	11985	11985	12139
R-squared	0.4245	0.1868	0.0697

Table 5. Propensity score matching approach.

This table presents results on the differences between the effect of military executives and non-military executives on corporate outcomes using the propensity score matching approach. Firms run by military executives is identified as the treatment group, while those run by non-military executives belong to the control group. The propensity score in Panel A is estimated using the firm-level observables, including *size, firm age, cash, book leverage, industry dummy, ROS* and *state-owned* dummy. The propensity score in Panel B is estimated using both the firm-level observables same as in Panel A as well as variables of personal characteristics which is including *age, education, tenure.* Variable definitions and sample statistics are provided in Table 1. * indicates significant at 10%; ** indicates significant at 5%; *** indicates significant at 1%.

Panel A: The propensity score is estimated using firm-level observables.

	Investment	R&D	Acquisition	Book leverage	New borrowing	Retained earnings	ROS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CEO & Duality							
No. of matched pairs	570	570	570	570	570	570	570
Difference (Military – Non-military)	0.0013	-0.0055***	-0.0007	0.0527***	0.0120**	-0.0067	-0.0214***
P- value of difference	0.5652	0.0044	0.8484	0.0000	0.0491	0.3655	0.0027
Chairman & Duality							
No. of matched pairs	783	783	783	783	783	783	783
Difference (Military – Non-military)	-0.0009	-0.0033*	-0.0018	0.0494***	0.0195***	-0.0141***	-0.0076
P- value of difference	0.5994	0.0823	0.5506	0.0000	0.0000	0.0060	0.1409

Panel B: The propensity score is estimated using firm-level and personal observables.

	Investment	R&D	Acquisition	Book leverage	New borrowing	Retained earnings	ROS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CEO & Duality							
No. of matched pairs	521	521	521	521	521	521	521
Difference (Military – Non-military)	-0.0005	-0.0021	0.0017	0.0650***	0.0096*	-0.0021	-0.0303***
P- value of difference	0.8187	0.3000	0.6803	0.0000	0.1036	0.8092	0.0000
Chairman & Duality							
No. of matched pairs	414	414	414	414	414	414	414
Difference (Military – Non-military)	0.0002	-0.0040	-0.0059	0.0597***	0.0290***	-0.0160**	-0.0097
P- value of difference	0.9371	0.1279	0.1854	0.0002	0.0005	0.0444	0.1812

Table 6. Corporate violations and military experience.
This table presents regression results of the impact of military experience on the likelihood of corporate violations. The dependent variable is the number of violations committed by a firm in each year. All regressions control for executive *age, education, tenure* and *firm size, firm age,* and *state-owned.* The industry and year fixed effects are controlled for all regressions. Variable definitions and sample statistics are provided in Table 1. Robust standard errors in parentheses are clustered by firm. * indicates significant at 10%; ** indicates significant at 5%; *** indicates significant at 1%.

Dependent variable: violation	CEO & Duality	Chairman & Duality
Military	0.1616***	0.1372***
	(0.0372)	(0.0381)
Firm size	-0.0313***	-0.0261***
	(0.0057)	(0.0049)
Firm age	0.0343**	0.0276**
	(0.0153)	(0.0138)
Age	0.0062	-0.0184
	(0.0115)	(0.0119)
Education	0.0101	-0.0166
	(0.0120)	(0.0118)
Tenure	-0.0539***	-0.0141
	(0.0125)	(0.0122)
State owned	-0.0798***	-0.0690***
	(0.0153)	(0.0147)
No. of Obs.	22218	12156
R-squared	0.0255	0.0260

Table 7. Effects of military experience on frim performance during periods of industry distress and booms.

This table displays the results from regressions of ROS on military experience. *Industry distress* is a dummy variable that takes the value of one for years in which the asset-weighted ROA of an industry is below the 25th percentile of the asset-weighted ROA of that industry across the sample period of 1999 to 2016, otherwise zero. *Industry booms* is similarly defined for years in which the asset-weighted ROA of an industry is above the 75th percentile. All regressions control for firm size, executives age, the four industry dummy and year fixed effects. Personal characteristics including education level and tenure. Variable definitions, and sample summary statistics, are provided in Table 1. Robust standard errors in parentheses are clustered by firm. * indicates significant at 10%; ** indicates significant at 5%; *** indicates significant at 1%.

	ROS					
Panel A: CEO & Duality	(1)	(2)	(3)	(4)	(5)	(6)
Military	-0.0356***	-0.0420***	-0.0413***	-0.0419***	-0.0349***	-0.0417***
	(0.0107)	(0.0109)	(0.0109)	(0.0109)	(0.0114)	(0.0116)
Industry distress	-0.0015	-0.0027	-0.0019	-0.0018	0.0004	-0.0009
	(0.0036)	(0.0036)	(0.0043)	(0.0043)	(0.0034)	(0.0035)
Military*distress	0.0221	0.0305*	0.0302*	0.0301*	0.0215	0.0304*
	(0.0154)	(0.0161)	(0.0162)	(0.0162)	(0.0153)	(0.0160)
Education			-0.0029	-0.0034		
			(0.0034)	(0.0034)		
Education*distress			-0.0022	0.0020		
			(0.0049)	(0.0048)		
Industry boom					0.0091***	0.0088***
					(0.0034)	(0.0035)
Military*boom					-0.0013	-0.0003
					(0.0127)	(0.0130)
Personal characteristics	No	Yes	No	Yes	No	Yes
Observations	23174	21855	21855	21855	23174	21855
R-squared	0.0372	0.0376	0.0364	0.0376	0.0375	0.0378

			ROS			
Panel B: Chairman & Duality	(1)	(2)	(3)	(4)	(5)	(6)
Military	-0.0177*	-0.0320***	-0.0325***	-0.0320***	-0.0201**	-0.0396***
	(0.0094)	(0.0119)	(0.0119)	(0.0119)	(0.0104)	(0.0140)
Industry distress	-0.0027	0.0030	0.0032	0.0030	-0.0008	0.0049
	(0.0045)	(0.0057)	(0.0066)	(0.0066)	(0.0042)	(0.0057)
Military*distress	0.0126	0.0292*	0.0300*	0.0292*	0.0148	0.0367**
	(0.0135)	(0.0171)	(0.0172)	(0.0172)	(0.0133)	(0.0175)
Education			-0.0093**	-0.0090		
			(0.0045)	(0.0045)		
Education*distress			-0.0000	-0.0000		
			(0.0061)	(0.0061)		
Industry boom					0.0041	0.0033
					(0.0034)	(0.0051)
Military*boom					0.0064	0.0187
					(0.0108)	(0.0158)
Personal characteristics	No	Yes	No	Yes	No	Yes
Observations	22553	12225	12225	12225	22553	12225
R-squared	0.0379	0.0354	0.0350	0.0354	0.0380	0.0356

Table 8. Linear probability model of hiring a military executive.

This table reports the results for the determinants of military executive hiring decision. The dependent variable is the military executive dummy. Regression (1) controls for *firm size, firm age, cash & equivalent, investment, book leverage, retained ratio* and *ROS*. Control variables in Regression (2) are identical to those in Regression (1) as well as adding the *state-owned* and industry dummies. The year fixed effects are controlled for all regressions. Variable definitions and sample statistics are provided in Table 1. Robust standard errors in parentheses are clustered by firm. * indicates significant at 10%; ** indicates significant at 5%; *** indicates significant at 1%.

Panel A:

Dependent variable: *Military CEO & Duality*	R&D			Book leverage			ROS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Difference to industry mean, one year prior	10.062			-0.059			-1.536		
	(9.811)			(0.728)			(3.878)		
Difference to industry mean, three years prior		9.195			0.185			1.063	
		(10.252)			(0.785)			(6.210)	
Difference to industry mean, five years prior			5.990			0.558			5.990
			(6.184)			(1.050)			(6.184)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4022	2079	958	4022	2079	958	4022	2079	958
R-squared	0.020	0.015	0.030	0.020	0.015	0.030	0.019	0.015	0.030

Panel B:

Dependent variable: *Military Chairman & Duality*	R&D			Book leverage			ROS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Difference to industry mean, one year prior	1.369			-0.036			0.627		
	(26.139)			(1.819)			(9.922)		
Difference to industry mean, three years prior		-5.057			0.481			3.108	
		(30.650)			(1.545)			(7.994)	
Difference to industry mean, five years prior			3.111			-0.137			-0.332
			(17.381)			(0.987)			(3.835)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2388	1612	944	2388	1612	944	2388	1612	944
R-squared	0.016	0.009	0.018	0.016	0.009	0.017	0.016	0.009	0.017