The legacy of wars around the world

The Legacy of Wars around the World: Evidence from Military Directors

Abstract

This study estimates the effects of wars on countries and firms. We first show immediate negative effects of wars on economic and financial development as well as legal institutions. Using a global sample of 93,697 firm-year observation, we further argue and show that (i) wars increase the supply of military directors in corporate boards; and (ii) military directors reduce firm performance as indicated by Tobin's Q and ROA. We interpret these lingering effects as military directors possess social capital but lack business expertise. Our results are robust to a matched sample, a lagged difference model, a two-step dynamic GMM model and to the control of country, industry and year fixed effects.

Keywords: War, Military Directors, Board Directors, Firm Performance

1. Introduction

War brings destructions to human and physical capital and is often described as "development in reverse" (Collier et al. 2003). An expansive cross-country literature shows that war-torn regions suffer from a substantial decline in total output, experience slower economic development, and have less persistent growth rates compared to similar but peaceful regions (Barro 1991, Alesina et al. 1996, Alesina and Perotti 1996). While this literature has been enormously provocative, it hasn't yet been able to isolate a clear channel through which war influences economic performance. This paper links war to firm economic performance through directors with military experience. In doing so, we attempt to take a step further in understanding the relationship between and the mechanism linking war and its economic consequences.

Understanding how war influences economic development is crucial, because nearly half of all countries in the world have experienced some form of external or internal armed conflict in the past half century (Gleditsch et al. 2002, Harbom and Wallensteen, 2007, Blattman and Miguel 2010). People living in war-affected places are killed, traumatized, and separated from their families. They may also be displaced, prevented from attaining education, and excluded from skilled work. A large emerging literature estimates the magnitude of these effects of war on later income, health and education. Yet, each of these outcomes may have implications beyond the individual. In this paper, we attempt to provide evidence on such implications.

To do so, we merge several datasets on war, board directors, and firm performance during 1999-2016, from 119 countries and examine whether directors with military experience influence firm performance. Particularly, the war dataset, Correlates of War Data (COW), contains information on the involved parties, duration, and casualties of wars during 1816-2007. We merge this data with information on board directors from BoardEx, a database that contains information on directors' background, gender, and tenure, as well as board size, shares of independent directors. Finally, we combine this dataset with firm performance measures, such as Tobin's Q and return

on assets (ROA), market capitalization, leverage, fixed assets (property, plant and equipment, henceforth PPE), and sales, from Thomson Reuters' WorldScope. We then assess the relationship between military directors on firm outcomes by regressing firm performance measures on the share of military directors in board, while account for observable covariates and some country-level unobservable factors.

Theories on war and its legacy on individual's behaviours suggest that military directors from war-affected regions can influence firm performance in both directions. On the one hand, directors with military experience can incorporate strict disciplines in monitoring firm's managers when necessary and thus improve the quality of corporate governance (Benmelech and Frydman 2015). The reduction in agency costs from improved governance can subsequently translate into good firm performance. Further, directors with military experience can improve efficiency of board in general because war, or conflict in general, can foster cooperative and prosocial behaviours of affected individuals (Bauer et al. 2016). The increased board efficiency can subsequently improve firm performance through monitoring and/or advising mechanisms.

On the other hand, military directors may affect firm performance negatively because of the interruption of human capital and work experience accumulation when in the army (Angrist 1990, 1998; Angrist and Krueger 1994). Lack of experience and education may result in poor governance and advice from the military directors, and therefore causing firm performance to decline. In addition, psychological trauma, such as malaise, lack of desire to engage with other people, may cause problems in board communication and coordination, thus lowering the efficiency of board (Ehlers and Clark 2000, Galovski and Lyons 2004). This, in turn, decreases firm performance.

Our empirical results can be summarized as follows. Firstly, as motivating analyses, we show that war-torn countries are associated with lower growth in gross domestic product (GDP) per capita, smaller amount of private credits, and poorer legal environment measured by the rule

of law index from International Country Risk Guide (ICRG) database[1]. More importantly, we show that countries that experienced wars are associated with more military directors and more firms with military directors, and this relationship holds both at the extensive margin (proxied by the number of wars in a country) and the intensive margin of war (measured by the number of casualties of and the number of years at war).

Next, using Ordinary Least Square (OLS) regressions, we find that the share of military directors is strongly, negatively associated with firm's performance measured by Tobin's Q. In order to isolate the effects of military directors on firm performance, we saturate the model by including a large set of covariates, including market capitalization, leverage, PPE, sales growth, board size, board independence, the gender ratio of board, average tenure of the board members, and CEO duality, as well as country, industry and year fixed effects to control for unobservable time-invariant country and industry characteristics, and global events in any specific year. The estimated impact of military director on firm performance, assuming causality, is non-trivial. Consider column (1) in Table 6, a one standard deviation increase in the share of military directors (0.05) is associated with a 0.02 (=0.05*0.4119) decrease in firm's Tobin's Q, equivalent to 1% of the sample average. The estimated effect on the extensive margin of military directors is also striking. Using a dummy variable that equals to one if a firm has at least one military director and zero otherwise as the main independent variable, we find that the relationship between military director and firm performance, measured either by Tobin's Q or ROA, is both significant and negative. The economic size of the estimates is large. For example, an average firm with at least one military director on the board has a Tobin's Q that is 0.06 point lower than an identical firm without military director. To provide a reference, this is 3% of the sample mean. When using ROA as a measure of firm performance, we obtain qualitatively similar results.

[1] We justify the use of these variables in the data section.

These empirical patterns suggest that the negative impacts of military directors on firm performance dominate the positive ones in our sample. As suggested by Griliches and Mason (1972), experience in the armed forces is a poor substitute for the lost civilian labor market experience, and this is reflected in lower earnings for veterans compared to their otherwise similar non-veteran counterparts (Angrist, 1990; 1998; Angrist and Krueger, 1994). The lack of business experience of military directors, compared to their peers, can in turn lead to poorer firm performance through the advisory mechanism. Indeed, an extensive literature shows that business experience and knowledge of board directors play an important role in promoting firm growth (Francis, Hasan and Wu, 2015; Güner, Malmendier and Tate, 2008). Giannetti, Liao and Yu (2015), for example, find that directors with experience of better management practices and corporate governance increase firm performance substantially. While our empirical results do not rule out the positive effects of military directors on firm performance, the negative impacts appear to dominate in our sample.

It is important to note that there may be unobservable omitted variables associated with both firm performance and the number of military directors that could potentially drive our results. For example, economically successful countries with many successful firms may also be able to wage more wars and therefore have more military directors. Similarly, directors with military experience may automatically sort themselves into industries that have high profit margins, such as arms and ammunitions. To address this concern, we include an array of fixed effects at both the national and industry levels. In addition, we also control for time-specific shocks to further saturate the model. Note that the results should still be interpreted with caution since we are unable to account for time-variant, unobservable factors.

Another important concern arises from potential reverse causality. That is, firms with poorer performance may be more likely to appoint military directors in order to improve performance. Indeed, several studies show that directors with military experience serve as better

monitors on firm's managers and therefore increase firm performance (e.g., Benmelech and Frydman, 2015). We conduct two tests to address this concern. First, we re-do our main analyses using a Lagged First Difference (LFD) model, where we regress the change on the measures of firm performance in year *t* on the change of military director variables in year *t-1*. We find that our results on Tobin's Q become stronger both quantitatively and qualitatively. The results on ROA, however, become imprecisely estimated. One possible reasons is that, due to lack of business experience, military directors may put more emphasis on firm's short-run profit at the expense of firm's long-term growth potential. Therefore, we observe little difference in ROA between firms with higher versus lower number of military directors, but a large difference in Tobin's Q, a measure of firm's growth potential. Another possible explanation is the reduced sample size. Using the LDF model, our sample size decreased by about 40%, which results in a larger standard error. Note that it is difficult to disentangle which explanation, or both, drives our results. Thus we seek further evidence from a two-step dynamic General Method of Moments (GMM) model.

We re-run our analyses using a two-step dynamic GMM model, which potentially allows us to circumvent both omitted variables and reverse causality issues (Blundell and Bond, 1998; Judson and Owen, 1999). In particular, we treat all dependent variables as endogenous and instrument them using their lagged values in year *t-3* and *t-4*, under the assumption that these lagged values influence the outcomes variables in year *t* only though their values in *t-1* (Bun and Windmeijer, 2010). The estimates from the GMM model confirm our main results. We find that military directors significantly reduced firm performance measured either by Tobin's Q or ROA. This is consistent with the second explanation that the imprecise estimates on firm ROA from the LFD model are due to a huge reduction in sample size. We, nevertheless, readers take caution when interpreting our results.

It is also possible that the covariates that we are currently controlling for may have non-linear relationships with measures of firm performance and military directors, such as directors'

gender, tenure and board size. We therefore conduct a Propensity Score Matching analysis to address this issue. Specifically, we first match firms on market capitalization, leverage, PPE, sales growth, board size, board independence ratio, directors' gender, tenure and CEO duality, and then we conduct a simple mean tests on the treated and control groups. We find that the results are qualitatively identical to our OLS estimates, providing reassurance to our analyses.

This paper relates to the literature on the economic legacies of wars. Cerra and Saxena (2008) find that GDP growth rates decline six percent immediate after a civil war. Quantitative case studies, such as Abadie and Gardeazabal (2003) and Justino and Verwimp (2006), show that economic growth decreases significantly following armed conflicts, a pattern consistent with the cross-country evidence. Our paper complements these macro studies from a micro-economic perspective. We show that war hinders economic performance through the influence of military directors in war-affected areas. This suggests that the influence of wars on economy is beyond the direct effects on physical and human capital.

This paper adds to a large literature on the relationship between board director's experience and various firm policies and outcomes. Güner, Malmendier and Tate (2008) document that board directors with experience in commercial banks increase firm access to external financing, and directors with investment bank experience help firm raise larger amount of credit through debt issuance. Giannetti, Liao and Yu (2015) show that directors with business experience in a foreign country can increase firm's governance quality and thus promote firm growth. Masulis, Wang and Xie (2012) demonstrate that firms with foreign independent directors make better cross-border acquisitions when the targets are from their home countries. We contribute to this line of research by presenting evidence that directors with military experience stymie firm growth due to the lack of business experience. In a related strand of literature, Benmelech and Frydman (2015) document that firms led by chief executives with military experience tend to perform better during economic downturns. We complement this study by showing the negative impacts exerted by directors with

military experience. While Benmelech and Frydman's (2015) study emphasizes the positive traits of veterans including being ethnic and conservative, we stress the other important side, i.e., lack of business experience.

This paper also speaks to the literature on negative war impacts on human capital. Alderman, Hoddinott and Kinsey (2006) document that, in Zimbabwe, young children who experienced war-related malnutrition are stunted as adults, with likely adverse effects on their lifetime labour productivity. Exploiting quasi-random variation in the timing of conflicts in the Burundi civil war, Bundervoet, Verwimp and Akresh (2009) show that children from a war-torn region have considerably lower height-for-age ratios than otherwise identical children. In a related study, Shemyakina (2006) finds that adolescent Tajik girls who have seen their homes destroyed in the civil war are less likely to get secondary education, which may negatively influence their later wages and life chances. Our study sheds light on this literature by documenting that for those who have found their way into skilled employment, war experience can still exert adverse impact on their performance.

Lastly, our study relates to the literature on post-war economic recovery. Studies that examine the impact of U.S. bombing on post-war outcomes find that places heavily affected by the bombing quickly recovered in population back to the pre-war trends both in Japan and Germany (Davis and Weinstein 2002, Brakman, Garretsen, and Schramm 2004). In Vietnam, Miguel and Roland (2006) find similarly rapid local population recovery from bombing. These evidence is consistent with the predictions of the neoclassical model, namely, rapid recovery to pre-war equilibrium levels. Our paper provides the contrary evidence that war can have lasting impacts through human capital. Although some wars happened in nearly 200 years ago, they can still exert adverse influence on military directors from the war-affected regions.

The rest of the paper is organized as follows. Section 2 discusses the related literature, section 3 introduces the data and methodology; section 4 presents the country-level outcomes;

section 5 discusses the results of military director on firm-level performance; section 6 conducts robustness checks; section 7 presents results on firm leverage; and section 8 discusses some potential future research areas and concludes.

2. Consequences and the impact of warfare

Since 1960, warfare has afflicted over half of all nations, leaving severe destructions on physical, human and social capital and causing persistent adverse effects on growth (Blattman and Miguel, 2010; Bauer, et al. 2016). While war is key to many countries' development, it has been on the periphery of finance and economic research for a very long time. The past two decades have witnessed an overdue explosion of research on war's consequences. This section summaries this literature, identifies the gap, and motivates the current study.

2.1 Physical destruction

The most striking images of war are those of physical destructions. Cerra and Saxena (2008) find that such destructions can cost as much as six percent of the country's total output. However, a growing empirical literature shows that the destruction of physical capital can be quickly recovered after war ends (Przeworski et al. 2000). This is largely consistent with the prediction from the neoclassical model which states that a one-time shock has no impact on equilibrium growth (Lucas, 1988; Mankiw, Romer, and Weil, 1992). Davis and Weinstein (2002) examine the bombing of Japan during the World War II and find that areas that were heavily bombed are indistinguishable in physical capital (measured by population size) from places that were untouched during the bombing only 20 to 25 years after the war. Brakman, Garretsen and Schramn (2004) and Miguel and Roland (2006) find similar results in Germany and Vietnam after bombing.

Nevertheless, there are reasons to take caution in generalizing these results. First, there may be selection bias in the cases of bombing, i.e., places that are recovered have good data and those that didn't are dropped out of sample. Second, bombing itself may not be random and it is

in essence different from other forms of physical destruction, and therefore the authors may capture the effects of other unobservable characteristics of bombing. Indeed, after taking all forms of civil wars into account, Cerra and Saxena (2008) find that although output rebound most quickly in the case of wars compared to other forms of crises (e.g., banking and currency crises), only half of the fall is recovered. This leaves room for further research into the persistent adverse effects of wars.

2.2 Human capital

Another destructive legacy of war is the erosion of human capital. In 1999 alone, wars are believed to have caused 269,000 deaths and 8.44 million disability adjusted life years (DALYs). Counting the lingering effects of wars between 1991 and 1997, these estimates are tripled (Ghobarah, Huth, and Russett, 2003, 2004). While the literature seems to have reached a consensus on the severity of war's impact on human capital, there is still an opening debate on how long these adverse effects last. On the one hand, Miguel and Roland (2006) find that 25 years after the Vietnam War, local living standards and human capital tend to converge quickly across regions. On the other hand, evidence from sub-Saharan Africa show that such negative effects persist many decades after the war. For example, Alderman, Hoddinott and Kinsey (2006) show that war-related malnutrition in Zimbabwe leads young children to be significantly shorter as adults, harming their productivity. In central Asia, Shemyakina (2006) finds that Tajik girls who didn't have secondary education due to the civil war earn significantly less on later wages. A related literature on the impact of conscription on young people reveals similar adverse effects (for example, Angrist 1990, 1998; Angrist and Krueger 1994).

It is important to note that this literature is limited in its ability to credibly estimate the aggregate national economic impact of war damage (Blattman and Miguel, 2010). Because even largely peaceful regions close to the combat field are adversely affected by war disruptions, the estimates presented in these studies are likely to underestimate the true effect.

2.3 Social capital and institutions

The social and institutional legacies of war are arguably the most important and widely debated of all war impacts. A sizable literature argues that wars can promote government's legitimacy. For example, in the three cases of bombing mentioned above, governments rallied citizens to fight foreign enemies and therefore strengthened state institutions (Miguel and Roland, 2006; Davis and Weinstein, 2002; Brakman, Garretsen and Schramn, 2004). Cross-country studies find similar evidence that countries have more stable peace and stronger state institutions after an outright military victory for one fighting side (Fortna, 2004; Toft, 2008). As Blattman and Miguel (2010) point out, this result may not be generalized to civil wars. In a civil war, both winning and losing sides are often coexist in the same society, potentially deepening political and social divisions. Further, civil wars sometimes create a cultural of violence in the society. Miguel, Saiegh, and Satyanath (2008) show that European soccer league players with more exposure of civil wars commit significantly more fouls than otherwise similar but less civil-war exposed players.

In addition, a growing body of research finds that exposure to wars promotes prosocial behavior, i.e., people behave more cooperatively and altruistically. Evidence across the globe shows that individuals with more exposure to war-related conflict are more likely to join local social and civic groups, take on leadership roles in their communities, and engage in altruistic giving (Bellows and Miguel, 2006; Blattman, 2009; Bowles, 2008). Such effect differs little across the types of violence, population, age and studies with different empirical strategies (Bellows and Miguel, 2006, 2009; Blattman, 2009, Voors et al. 2012). In addition, the impact of war on prosocial behavior appears to be very persistent through time. Bauer et al. (2016) provide evidence that the effect of violence on cooperative behavior can last many years after war, and sometimes even become more pronounced over time. Finally, several studies also show that war exposure affects in-group prosocial behavior the most, i.e. members of one's own village or ethnic group (Bateson,

2012; Bauer et al. 2014). However, these studies rarely define out-groups consistently, so the evidence remains speculative.

2.4 Research gap

While there are many macro studies on the economic consequences of war, micro analyses on how war influences development and through what channels are rare. The existing ones are predominantly based on household survey data and therefore may suffer from self-reporting bias (Deininger, 2003; Bellows and Miguel, 2009). One exception is the study on Sierra Leone, in which Collier and Duponchel (2012) use firm level data to study the effects of civil war and post-war recovery. They find that the civil war in Sierra Leone has substantial negative effects on firm growth. Using a measure of war intensity variation index constructed by Bellows and Miguel (2009), they find that firms operating in places that experienced more intense conflict have significantly smaller size and income. Further examining the channels, Collier and Duponchel (2012) find that this negative effect is both from the destruction of production and the reduction in demand due to lowered income.

This paper is distinct in three important ways from previous research. First, we deviate from the macro-level analyses and instead focus on one specific channel that links war to development, i.e. board directors. While the existing few micro-level evidence largely rely on household survey data, Collier and Duponchel (2012) argue that the predominant route by which war affects development is probably through firms. Second, previous micro-level analyses are limited to a single country (Deininger, 2003; Bellows and Miguel, 2009; Collier and Duponchel, 2012), and therefore may lack generalization out of the study country. This paper uses a global sample of 93,697 firm-year observations to provide a more generable estimate. Lastly, we contribute to the understanding of war's impact on firms by providing evidence on a new channel that links war to firm growth. Collier and Duponchel (2012) demonstrate that firms' income and

size are affected due to the disruption of production and the reduction of consumer income. We show that war also influences firm development through board of directors.

3. Data and methodology

In this section, we firstly define the key data that we use to evaluate the relationships between war and various country-level outcomes as well as firm performance. Appendix 1 gives detailed variable definitions and sources, and Table 1 provides summary statistics.

3.1 Data and sample

We obtain data on wars from the Correlates of War database (COW), which provides information on wars from 1816-2007 around the world. We use the data on intra- and inter-state wars that ended before 1945, although the dataset also contains information on extra- and non-state wars[2]. This results in a sample that includes 80 countries. Figure 1 shows a visualization of the number of wars by country in our sample.

Our data on country-level economic, financial, and legal development are obtained from the World Bank Open Data program. In particular, we measure a country's financial development by the total amount of credit channeled into private sector scaled by GDP (*Private Credit to GDP*), an indicator commonly found in the literature (e.g., Djankov, McLiesh and Shleifer, 2007; Djankov, et al., 2008). The quality of legal institutions is measured by the rule of law index (*Rule of Law*) from International Country Risk Guide (ICRG) database. Several influential studies also use the same measure (e.g., Knack and Keefer, 1997; Kesternich and Schnitzer, 2010). After merging the war dataset with these country-level variables, the number of countries in our sample ranges from 61 to 71.

[2] Extra-State wars take place between a state(s) and a non-state entity outside the borders of the state, while non-state wars are between or among non-state entities. The effects of these wars are difficult to assign to specific countries since the involved parties typically do not possess a state status.

At the country-level, we also construct two variables that measure the prevalence of military directors in corporate boards. The first variable measures the total number of directors with military experience (*MilDirNum*), while the second one measures the total number of firms that have at least one military director sitting on board (*MiliFirm*). We also provide a visualization of the total number of firms with at least one military director by country in Figure 2. If we conceptually overlay Figure 1 and 2, we can see that places with high intensity of wars also have a larger number of firms with military directors.

[Insert Figure 1 and Figure 2 Here]

At the firm-level, we obtain employment information on board directors from *BoardEx Individual Profile of Employment* database. The database contains various employment information for a global sample of corporate executives. We first identify 15,582 records of military employment for 9,455 unique executives, and then match these executives into corporate boards. In total, we successfully matched 2,642 directors with military experience into 17,519 firms globally. Since there might be heterogeneous effects of military directors on firm policy and performance due to different roles they had in the armed force, we further differentiate military directors with frontline experience and others. In particular, *BoardEx* provides us the role title held by the directors in the military which allows us to distinguish frontline from others.

In Appendix 2, we present the observation distribution by country. To increase the power of our main tests, we include all sample countries that have at least one matched firm. To ensure that our results are not driven by countries with smaller number of observations, we re-do all of our analyses using countries with at least 30 matched firms. Our results are similar both quantitatively and qualitatively[3].

[3] Due to space constraint, we do not present these results here, but submit them to the referees. Results from this alternative sample are available upon request.

We also obtain data on other board characteristics including *Board Size, Board Independence, Gender, Average Time in Board*, *CEO Duality*, *Foreign Background*, *Financial Expertise*, and *Legal Expertise* from *BoardEx*. We complement this with firm-level data obtained from *WorldScope*, a dataset constructed by *Thomson Reuters*, such as *Tobin's Q*, *ROA*, *Market Capitalization*, *Leverage*, *PPE*, and *Sales Growth*. Detailed variable definitions are provided in Appendix 1.

[Insert Table 1 Here]

3.2 Research design

We use cross-country comparisons of the intensity of war and modern economic, financial and legal development as well as the prevalence of military directors to motivate our examination of the impact of wars on firm performance. We begin with the following regression specification:

$$Marco_{c,t} = \alpha + \beta War\ Indicator_{c,t} + \Gamma X'_{c,t} + \delta_c + \Upsilon_t + \varepsilon_{c,t} \quad (1)$$

where the dependent variable $Marco_{c,t}$ is either *GDP Per Capita Growth*, *Private Credit to GDP*, *Rule of Law*, *MilDirNum*, or *MiliFirm* in country *c* in year *t*. *Private Credit to GDP* is the total amount of credit channeled into private sector scaled by GDP and has been widely used in the literature (Djankov, McLiesh and Shleifer, 2007; Djankov, et al., 2008). *Rule of Law* measures the quality of a country legal system and is obtained from the ICRG database (Knack and Keefer, 1997; Kesternich and Schnitzer, 2010). *MilDirNum* measures the total number of directors with military experience. *MiliFirm* measures the total number of firms that have at least one military director sitting on board. Our key interest variable is the $War\ Indicator_{c,t}$, which is either *War Involve (Dummy)*, an indicator that equals one if a country experiences war in country *c* in year *t* and zero otherwise, or *War Involve (Number)*, the total number of wars a country has been through in country *c* in year *t*. $X'_{c,t}$ is a vector of country-level control variables that include *No. of Soldier's Death*, *Log (GDP per capita)* and *Log (Population)*. *No. of Soldier's Death* is the average number of soldier deaths in a year. *Log (GDP per capita)* and *Log (Population)* are the natural logarithms of GDP per capita and

number of population in a country, respectively. δ_c and Υ_t are country and year fixed effects. We cluster our standard errors at the country level.

We assess the relationship between the presence of military directors on corporate board and firm performance using the following regression specification:

$$Firm\ Performance_{i,j,c,t} = \alpha + \beta MIlitary_{i,j,c.t} + \Phi Z'_{i,j,c,t} + \gamma_j + \delta_c + \Upsilon_t + \varepsilon_{i,j,c,t} \quad (2)$$

where the dependent variable $Firm\ Performance_{i,j,c,t}$ is either *Tobin's Q* or ROA of firm *i* in industry *j*, country *c*, and year *t*. Our key interest variable $MIlitary_{i,j,c.t}$ is either *Military Director Ratio*, a measure calculated as the number of military directors on board over board size, or *Military Director Dummy*, an indicator that equals one if a firm has at least one military director sitting on board and zero otherwise. $Z'_{i,j,c,t}$ is a vector of firm level control variables, including *Market Capitalization*, *Leverage*, *PPE*, *Sales Growth*, *Board Size*, *Board Independence*, *Gender*, *Average Time In Board*, and *CEO Duality*. *Market Capitalization* is the natural logarithm of the market value of a firm. *Leverage* is the ratio of firm total liability to total assets. *PPE* is calculated as the ratio of property, plant, and equipment to total assets. *Sales Growth* is the three-year average growth rate of the net sales. *Board Size* is the total number of directors on board. *Board Independence* is measured as the number of non-executive directors divided by board size. *Gender* is the number of male directors divided by board size. *Average Time In Board* measures the average tenure of board directors in a firm. *CEO Duality* is an indicator that equals one if a firm's CEO is also the chairman of the board and zero otherwise. γ_j, δ_c, and Υ_t are industry, country and year fixed effects, respectively. In all regressions, we cluster our standard errors at the country-level.

4. War and country-level outcomes

4.1 Economic growth, financial development and legal institutions

In this section, we start with discussing the results from our motivating regressions. War damage human and physical capital (Collier et al. 2003). A large literature shows that war-torn regions

experience a substantial decline in total output, experience slower economic development, and have less persistent growth rates compared to similar but peaceful regions (Barro 1991, Alesina et al. 1996, Alesina and Perotti 1996). In Table 2, we present the results on the relationship between war and country-level economic growth, while controlling for the level of economic development, population density, country and year fixed effects. We find that war is significantly, negatively associated with economic growth measured by the GDP per capita growth rate, and this relationship holds both at the intensive (*War Involve (Number)*) and extensive margin (*War Involve (Dummy)*). The economic magnitude of the estimates is large. For example, consider the estimate from column (3) in Table 2, where we include both country and year fixed effects to controlling for the various time-invariant confounders and year-specific shocks. A one standard deviation increase in the *War Involve (Number)* (0.41) is associated with 0.49 (=1.21*0.41) increase in the *GDP Per Capita Growth*, which accounts 20% of the sample mean (2.38). Similarly, on the extensive margin, consider the estimate from column (6) in Table 2. The coefficient implies that if countries with war experience have a lower growth rate than otherwise similar countries without war by 1.86 points, equivalent to 78% of the sample mean.

[Insert Table 2 Here]

We find similar results on financial development and legal institutions. In particular, Table 3 shows that wars, either measured by *War Involve (Number)* or *War Involve (Dummy)*, is significantly, negatively associated with financial development (*Private Credit to GDP*). The economic magnitude is non-trivial. Consider, for example, column (3) in Table 3. The estimate implies that a standard deviation increase in *War Involve (Number)* is associated with 1.46 (=0.41*3.59) percentage points decrease in *Private Credit to GDP*, which equals to 4.5% of the sample mean (32.76). As emphasized by King and Levine (1993), Levine (2005) and Popov (2018), financial development is crucial to promote economic growth. Therefore, the negative relationship between wars and financial

development warrants further research on the mechanism that linking the two, i.e., military directors.

[Insert Table 3 Here]

We present results on the relationship between wars and the quality of legal institutions in Table 4. In a series of influential studies, La Porta et al. (1998, 1999, 2008) show that a country's legal environment is important in determining its economic outcomes. Better creditor rights protection, contract enforcement and private property protection, for example, are found to promote a country's economic and financial development. We find that wars are negatively, significantly related with the quality of legal system measured by *Rule of Law,* an indicator that ranges from 0 to 6 with higher value indicating better legal environment. The economic magnitude is large. For example, take the coefficients from column (3) in Table 4. The estimate suggests that a one standard deviation increase in *War Involve (Number)* is related with 0.16 (=0.405*0.3925) decrease in the *Rule of Law* index. This decrease is equal to 4.5% of the sample mean (3.58). The estimate from the extensive margin of war implies similar change in the *Rule of Law* index.

[Insert Table 4 Here]

4.2 War and military directors

The results from Table 2-4 reveal that wars are associated with worse economic growth, financial development and poorer legal environment, and the economic magnitudes are large. Therefore it is important study the underlying mechanisms that link the two, for example, via the lens of military directors. Before discussing the main results of military directors on firm growth, however, it is critical to empirically demonstrate that wars are indeed related with higher prevalence of military directors sitting on corporate board. From Table 1, we can see that the number of firms with at least one military directors on board (*MiliFirm*) has substantial variations across countries. The standard deviation of *MiliFirm* is 102, which is about five times of the sample mean (20.90). We

also observe a similar distribution of military directors. In Figure 2, we also present a visualization of the distribution of firms with military directors across countries.

In Table 5, we present the results of regressing either the total number of military directors in a country (*MilDirNum*) or the total number of firms with at least one military director sitting on board (*MiliFirm*) on various measures of war intensity. We find that wars are indeed significantly, positively associated with both variables of military directors, and the economic size is large. Consider column (1) in Table 5, for example. The estimate implies a one standard deviation increase in the total number of years that a country is at war (*Total War (Year)*) (6.19) is associated with an increase of the number of military directors by 167.63 (=6.19*27.08), which is six times higher than the sample mean (23.86). For another example, consider column (4) in Table 5. The coefficient on *Total War (Number)*, a variable that equals to the total number wars that a country has experienced, suggests that a one standard deviation increase (4.60) is associated with an increase in the number of firms with at least one military director by 155.25 (=33.75*4.60), which is also about six times higher than the sample mean (20.92).

[Insert Table 5 Here]

5. Military directors and firm performance

5.1 Baseline results

We next present our baseline results on the relationship between military directors and firm performance in Table 6. From our OLS estimations, we find that military directors are negatively, significantly associated with firm performance measured either by *Tobin's Q* or *ROA*. The economic magnitude is large. For example, on the intensive margin, consider column (1) in Table 6. The estimate implies that a one standard deviation increase in the *Military Director Ratio* (0.046), a variable that equals to the ratio of military directors to board size, is associated with a 0.02 (=0.046*0.412) decrease in firm's Tobin's Q. This is equivalent to a 1% change when evaluated at

the sample mean. On the extensive margin, consider column (4) in Table 6. The coefficient on *Military Director Dummy*, an indicator that equals one if a firm has at least one military director on board, implies that firms with military directors are associated with a 0.005 drop in ROA compared to firms that are otherwise similar but without military directors. The magnitude of the decrease is economically substantially since it amounts to 56% of the sample mean.

[Insert Table 6 Here]

These empirical regularities suggest that the negative impacts of military directors on firm performance outweigh the positive ones in our sample. As emphasized by Griliches and Mason (1972), experience in the armed forces is a poor substitute for the lost experience in the labor market. Angrist (1990; 1998) and Angrist and Krueger (1994) further substantiate this argument by showing that veterans have lower earnings compared to their otherwise similar non-veteran counterparts.

Military directors who lack of business experience, compared to their peers, can in turn lead to poorer firm performance through the advisory mechanism. Indeed, a large literature documents that business experience and knowledge of board directors play a critical role in firm growth (Francis, Hasan and Wu, 2015; Güner, Malmendier and Tate, 2008). Giannetti, Liao and Yu (2015), for instance, show that directors with experience of better management practices and corporate governance increase firm performance substantially. While our empirical results do not rule out the positive effects of military directors on firm performance, the negative impacts, which are consistent with the literature discussed above, seem to dominate in our sample.

5.2 Address potential reverse causality

It is important to note that our results may be subject to potential reverse causality. That is, firms with poorer performance may be more likely to appoint military directors in order to improve performance. Indeed, an extensive literature documents that directors with military experience

serve as better monitors on firm's management team and therefore enhance firm performance (e.g., Benmelech and Frydman, 2015).

To address this concern, we firstly re-run our baseline analyses using a Lagged First Difference (LFD) model, where we regress the change on the measures of firm performance in year *t* on the change of military director variables in year *t-1*. Similar in model (2) in section 3.2, we include *Market Capitalization*, *Leverage*, *PPE*, *Sales Growth*, *Board Size*, *Board Independence*, Gender, *Average Time In Board*, and *CEO Duality* as our control variables. However, instead of the level of these confounders, we use the change of these variables in year *t-1*.

Results from the LFD model are presented in Table 7. We find that our results on Tobin's Q become stronger both quantitatively and qualitatively. The results on ROA, however, become imprecisely estimated. One possible reasons is that, due to lack of business experience, military directors may put more emphasis on firm's short-term profit at the expense of firm's long-term growth potential. Therefore, we observe little difference in ROA between firms with higher versus lower number of military directors, but a large difference in Tobin's Q, a measure of firm's growth potential. Another possible explanation is the reduced sample size. Using the LDF model, our sample size decreased by about 40%, which results in a larger standard error. Note that it is difficult to disentangle which explanation, or both, drives our results. Thus we seek further evidence from a two-step dynamic General Method of Moments (GMM) model.

[Insert Table 7 Here]

We re-run our analyses using a two-step dynamic panel system GMM model, which potentially allows us to circumvent both omitted variables and reverse causality issues (Blundell and Bond, 1998; Judson and Owen, 1999). In particular, we treat all dependent variables as endogenous and instrument them using their lagged values in year *t-3* and *t-4*, under the assumption that these lagged values influence the outcomes variables in year *t* only though their values in *t-1* (Bun and Windmeijer, 2010).

[Insert Table 8 Here]

The estimates from the GMM model confirm our main results. We find that military directors significantly reduced firm performance measured either by Tobin's Q or ROA. The economic magnitudes are qualitatively similar to our baseline results. For example, consider column (1) in Table 8. The coefficient on *Military Director Ratio* suggests that a one standard deviation increase ratio of military directors to board size (0.046) is associated with a decrease in firm Tobin's Q by 0.033 (=0.710*0.046), which is a 1.7% decrease evaluated at the sample mean. The effects on ROA is also economically substantial. Take the coefficient in column (4) Table 8. This estimate implies that if a firm starts to hire military directors, then its return on assets (ROA) would suffer from a loss of 0.013 point, which is about 1.4 times of the sample mean (0.009).

In sum, the evidence from our OLS, LFD and GMM models taken together suggests that military directors are negatively associated with firm performance measured either by firm's Tobin's Q or ROA. While the evidence on Tobin's Q is consistently robust across different model specifications that control for reverse causality and omitted variable issues, results on firm ROA are sometimes imprecisely estimated. We present two possible reasons above and find support for the reduction in sample size explanation from the GMM estimations. Nonetheless, we suggest readers take caution when interpreting our results.

5.3 Results from Propensity Score Matching

We also employ the propensity score matching (PSM) to further test the relationship between military director and firm performance, under the concern that the covariates included in the model may influence our results in a non-linear way. PSM model allows us to estimate the treatment effects without assuming linear relationship between the covariates and the outcome variables.

In particular, a firm with military directors is matched to a firm that without based on the propensity-score from the fitted value of the following probit regression of model:

$$MIlitary_{ij,c.t} = \alpha + \beta + \Phi Z'_{i,j,c,t} + \Psi M'_{i,j,c,t} + \gamma_j + \delta_c + \Upsilon_t + \varepsilon_{i,j,c,t} \quad (3)$$

where the dependent variable $MIlitary_{ij,c.t}$ is an indicator that equals to one if a firm has at least one military director sitting on board and zero otherwise. $Z'_{i,j,c,t}$ is the same vector of firm level control variables as in model (2), including *Market Capitalization*, *Leverage*, *PPE*, *Sales Growth*, *Board Size*, *Board Independence*, *Gender*, *Average Time In Board*, and *CEO Duality*. Industry, country and year are fixed effects are also included. A new sample of firms with military directors and the matched firms without military director is constructed based on the one-to-one nearest neighbour matching method. In sum, this new sample consists of 27176 firm-year observations for Tobin's Q and 26610 for ROA.

In panel A Table 9, we present our results from the probit model. The estimates suggest that firms with bigger size and larger amount of debt are more likely to appoint a military director, and firms with a larger board size, higher level of board independence and more male directors have higher probability to appoint military directors. Panel B of Table 9 shows the estimated treatment effects in our matched sample. We find that firms with military directors in general have worse performance measured either by Tobin's Q or ROA. And the estimate effects are quantitatively similar to our baseline results.

[Insert Table 9 Here]

6. Robustness checks

In this section, we perform two sets of robustness checks on our baseline results. First, we include various board director characteristics that are found important to firm performance in the literature. Then, we re-do our main analyses on the relationship between military directors and firm performance while controlling for military directors' frontline experience in the armed forces.

6.1 Controlling for other board director characteristics

An extensive literature documents the relationships between various board director characteristics and firm performance. For example, Adams and Ferreira (2009) show that female directors exert more efforts on monitoring executives, and Gul, Srinidhi and Ng (2011) document that firms with more female directors increase firm transparency. These results suggest that the gender composition of corporate board has economic implications on firm performance. We therefore include a variable that measures board's gender composition in our model. Güner, Malmendier and Tate (2008) show that board directors with commercial bank experience increase firm access to external financing, and directors with investment bank experience are associated with larger amount of debt issuance. Therefore it is important to also include an indicator of directors' financial experience. Several studies also find that directors with foreign experience can add value to firm performance. For example, Giannetti, Liao and Yu (2015) show that directors with foreign experience can increase firm's governance quality and thus promote firm growth. Masulis, Wang and Xie (2012) document that firms with foreign independent directors make better cross-border acquisitions when the targets are from their home countries. We thus include an indicator of board director's foreign experience. Lastly, we include an indicator of director's legal experience in our models, since several influential studies suggest that legal experience can add value to firms, particularly via cross-border acquisitions (e.g., Masulis, Wang and Xie, 2012).

[Insert Table 10 Here]

The results are presented in Table 10. We find that our estimates remain qualitatively unchanged, even after controlling for *Gender*, *Foreign Background*, *Financial Expertise* and *Legal Experience*. For example, consider the estimate in column (1) Table 10. The coefficient on *Military Director Ratio* implies that a one standard deviation increase in the ratio of military directors to board size (0.046) is associated with a decrease in Tobin's Q by 0.017 (=0.046*0.375), approximately 1% decrease compared to the sample mean.

6.2 Controlling for frontline experience

Next, we re-run our baseline regressions while controlling for military directors' frontline experience in the armed force. While all veterans receive similar basic training in the armed force, they may have different experience based on their roles in the army. Such heterogeneity in military experience may result in different implications on firm performance. *BoardEx* provides us the role title held by the directors in the military, which allows us to distinguish frontline experience from others. Specifically, we construct the variable *Frontline* as the ratio of the military directors that possess the frontline soldier experience. We define military directors' frontline experience as holding frontline roles when in the armed force[4].

[Insert Table 11 Here]

We then include this variable in our main regression models specified in model (2). We present our results in Table 11. We find that our main results are unchanged even after controlling for the frontline experience. That is, our measures of military directors are significantly, negatively associated with firm performance. The coefficients on the frontline measure are also insignificant, which suggests that after taking military experience in general into account, frontline experience becomes unimportant.

7. Military directors and firm leverage

In this section, we present suggestive evidence on the relationship between military directors and firm leverage. While the results from previous sections taken together suggest a negative relationship between military directors and performance and such evidence is consistent with existing theory in the literature (Angrist, 1990; 1998; Angrist and Krueger, 1994; Francis, Hasan

[4] These role include: Adjutant General, Admiral, Air Marshall, Air Vice Marshall, Brigadier General, Captain, Chief of Air Staff, Chief of Defence Staff, Chief of General Staff, Chief of Naval Staff, Chief of Operations, Commandant, Commander, Commander-in-Chief, Commanding General, Commanding Officer, Commentator, Deputy Commander, Deputy Commander-in-Chief, Field Marshall, First Lieutenant, First Sea Lord/Chief of Naval Staff, General, Lieutenant, Lieutenant Colonel, Lieutenant Commander, Lieutenant General, Major, Major General, Military Assistant, Military Service, Naval Aviator, Second Lieutenant, Veterinarian, Vice Admiral, Vice Chief of Defence Staff, and Vice Commander.

and Wu, 2015; Güner, Malmendier and Tate, 2008), it is important to examine whether any firm policies reflect such negative relationships. In particular, we ask whether firms with military directors have higher leverage, which could potentially increase the insolvency risk over the long-run. Such evidence helps us understand the potential underlying mechanism that linking military directors to negative firm performance.

We first run an OLS model that is similar in model (2) specification, where we replace firm performance measures with a measure of firm leverage. We control for a wide range of firm-level variables that are found to be important in the literature, including *Market Capitalization*, *Leverage*, *PPE*, *Sales Growth*, *Board Size*, *Board Independence*, *Gender*, *Average Time In Board*, and *CEO Duality*. For detailed variable definitions, see Appendix 1. We also include industry, country and year fixed effects in all regressions and cluster our standard errors at the country-level.

[Insert Table 12 Here]

Table 12 presents our results. We find that military directors are significantly, positively associated with firm leverage. The economic magnitude is large. Consider column 1 in Table 12, for example. The estimates imply that a one standard deviation increase in *Military Director Ratio* (0.046) is associated with an increase in firm leverage by 0.003 (=0.046*0.058), a 0.6% increase evaluated at sample mean. To address the potential reverse causality issue, we use a LFD model where we regress the change of leverage for a firm in year *t* on the change of all independent variables in *t-1*. We find that our results are qualitatively the same.

[Insert Table 13 Here]

8. Conclusion and future research

Understanding the link between wars and its consequences is important, since nearly half of all countries in the world have experienced some form of wars in the past few decades (Gleditsch et

al. 2002, Harbom and Wallensteen, 2007, Blattman and Miguel 2010). In this study, we shed light on this important topic by firstly documenting the negative relationships between wars and economic, financial and legal development. We then discuss and present evidence for a new channel through which wars impact economic outcomes—military directors. While most of previous studies on wars emphasize the damages of conflicts at the macro level (Collier et al. 2003; Barro 1991, Alesina et al. 1996, Alesina and Perotti 1996), we provide new evidence on how wars influence economic performance through a micro lens. We find that military directors damage firm performance, as measured by Tobin's Q and ROA. We also provide some evidence that military directors are also associated with higher firm leverage, suggesting a potential channel through which military directors influence firm performance.

This paper contributes to several strands of literature. First, it relates to studies that focus on the economic legacies of wars (Cerra and Saxena, 2008; Abadie and Gardeazabal, 2003; Justino and Verwimp, 2006). Different from previous studies, we show that war hinders economic performance through the influence of military directors in war-affected areas. This implies that the influence of wars on economy is beyond the direct effects on physical and human capital. Second, this paper adds to a large literature on the relationship between board director's experience and various firm outcomes (Güner, Malmendier and Tate, 2008; Giannetti, Liao and Yu, 2015; Masulis, Wang and Xie, 2012; Benmelech and Frydman, 2015). We contribute to this line of research by documenting that directors with military experience decrease firm growth due to the lack of business experience. Thirdly, we also contribute to the literature on negative war impacts on human capital (Alderman, Hoddinott and Kinsey, 2006; Bundervoet, Verwimp and Akresh, 2009; Shemyakina, 2006). Our study sheds light on this literature by documenting that for those who have found their way into skilled employment, war experience can still exert adverse impact on their performance. Lastly, our study speaks to the literature on post-war economic recovery (Davis and Weinstein 2002, Brakman, Garretsen, and Schramm 2004; Miguel and Roland, 2006). Our

paper shows that war can have lasting impacts through human capital. Although some wars happened in nearly 200 years ago, they still have negatively influence on the affected regions.

Lastly, we discuss several limitations of this study and provide some suggestions for future research. Firstly, there may be other firm policies that are not examined in this study but are affected by the presence of military directors on boards. To provide convincing evidence on the mechanisms that link military directors to firm performance, one need to collect more consistent information on firm policies in a global sample. In addition, if data on detailed board voting decisions exist for a global sample over a period of time, one can even disentangle the advisory and monitoring channels through which military directors may exert impacts on firm performance. Another potential fruitful area of research is policy interventions on veterans serving on corporate boards. It would be interesting to see how government policies that limit veterans serving on corporate boards affect firm performance. However, such policies are difficult to design and implement since there may be heterogeneity on the relationship between military directors and firm growth. Such heterogeneity is itself also a potential research area that warrants further study.

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Figure 1: Number of Wars by Country

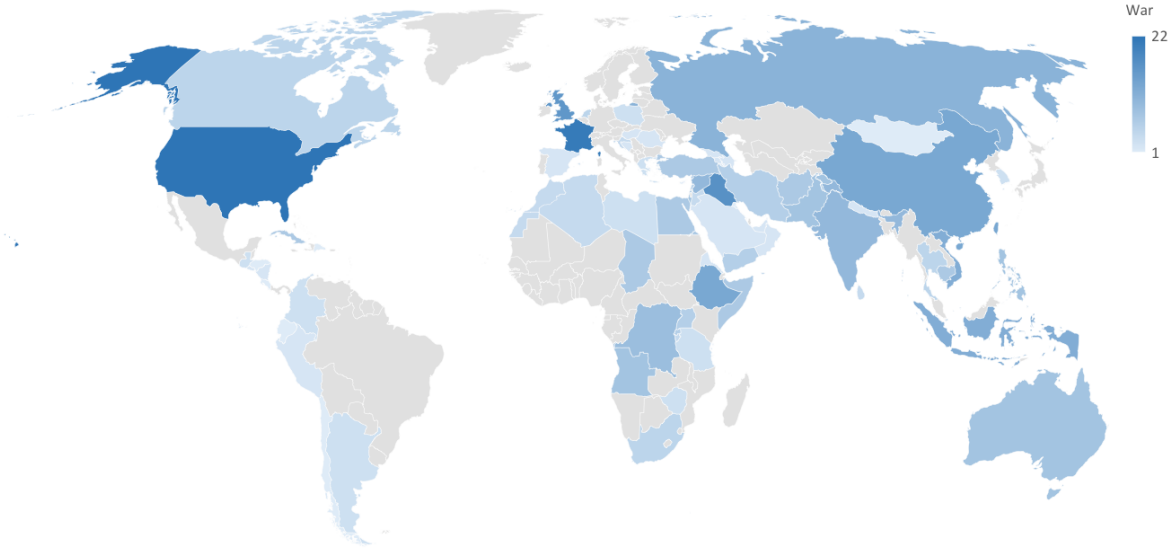

Figure 2: Number of Firms with Military Directors

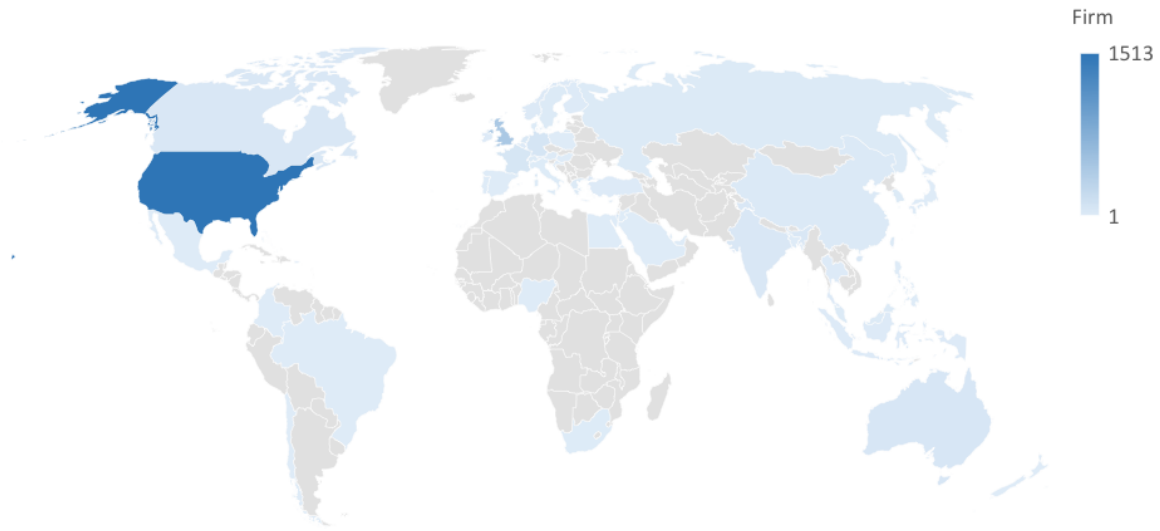

Table 1: Summary Statistics

	Observation	Mean	SD	Min	Max
Macro Level					
War Involve (Number)	5600	0.138	0.405	0.000	4.000
War Involve (Dummy)	5600	0.120	0.325	0.000	1.000
No. of Soldier's Death	5600	33.297	314.349	0.000	4780.603
Private Credit to GDP	2306	32.756	32.222	0.938	212.249
GDP Per Capita Growth %	2691	2.383	6.886	-64.996	92.123
Rule of Law	1506	3.579	1.452	0.000	6.000
Log(GDP per capita)	2744	7.145	1.594	3.625	10.950
Log(Population)	3453	16.394	1.456	11.524	21.004
Total War (Number)	501	2.864	4.599	0.000	22.000
Total War (Year)	501	2.966	6.190	0.000	35.000
Total Soldier Death	501	1381.140	8944.416	0.000	66928.445
MiliFirm	501	20.918	102.008	0.000	912.000
MilDirNum	501	23.858	116.135	0.000	1028.000
Governance Level					
Military Director Ratio	128260	0.016	0.046	0.000	0.714
Military Director Dummy	128260	0.140	0.347	0.000	1.000
Board Size	128260	9.135	3.858	3.000	22.000
Board Independence	128260	0.705	0.175	0.200	1.000
Gender	128239	0.913	0.105	0.571	1.000
Average Time in Board	128260	6.194	3.902	0.300	19.250
CEO Duality	128260	0.312	0.463	0.000	1.000
Legal Expertise	128260	0.100	0.300	0.000	1.000
Foreign Experience	128260	0.286	0.452	0.000	1.000
Financial Expertise	128260	0.243	0.429	0.000	1.000
Firm Level					
Tobin's Q	91468	1.966	1.642	0.436	11.157
ROA	91468	0.009	0.242	-1.407	0.387
Market Capitalization	91468	20.042	2.182	14.773	25.094
Leverage	91468	0.504	0.261	0.008	1.452
PPE	91468	0.524	0.418	0.003	1.932
Sales Growth	91468	14.984	37.247	-74.164	228.532

Table 2: War and GDP Per Capita Growth

This table presents the results of regressing GDP per capita growth on proxies of wars. The dependent variable is the *GDP Per Capita Growth %* for each country in each year. Our key interest variables are two indicators for war. *War Involve (Number)* is the total number of wars in a country in each year. *War Involve (Dummy)* is a dummy variable equals one if there is a war in a country in each year. *No. of Soldier's Death* is the average number of deaths per war for a country in each year. *Log (GDP per capita)* is nature logarithm of the GDP per capita. *Log (Population)* is the nature logarithm of the total population in each country. Robust standard errors are clustered at country level and *t*-statistics are in brackets. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
War Involve (Number)	-1.3937**	-1.5095***	-1.2108**			
	(-2.56)	(-2.93)	(-2.25)			
War Involve (Dummy)				-2.1721***	-2.2812***	-1.8596***
				(-3.43)	(-3.91)	(-2.98)
No. of Soldier's Death	-0.0007	0.0006	-0.0008*	-0.0004	0.0008	-0.0005
	(-1.40)	(0.77)	(-1.83)	(-0.83)	(1.20)	(-1.32)
Log(GDP per capita)		-0.1391	-1.0089		-0.1596	-1.0484
		(-1.05)	(-0.96)		(-1.19)	(-1.00)
Log(Population)		0.3257	-4.8786*		0.3308*	-4.9958*
		(1.64)	(-1.73)		(1.70)	(-1.77)
Constant	2.6425***	-1.7196	81.5555*	2.7212***	-1.5805	83.5289*
	(10.79)	(-0.49)	(1.71)	(11.13)	(-0.45)	(1.75)
Country Fixed Effects	NO	NO	YES	NO	NO	YES
Year Fixed Effects	NO	NO	YES	NO	NO	YES
No. of Countries	71	70	70	71	70	70
R^2	0.010	0.013	0.159	0.014	0.017	0.162
Observation	2691	2583	2583	2691	2583	2583

Table 3: War and Private Credit to GDP

This table presents the results of regressing private credit to GDP on proxies of wars. The dependent variable is the *Private Credit to GDP* for each country in each year. Our key interest variables are two indicators for war. *War Involve (Number)* is the total number of wars in a country in each year. *War Involve (Dummy)* is a dummy variable equals one if there is a war in a country in each year. *No. of Soldier's Death* is the average number of deaths per war for a country in each year. *Log (GDP per capita)* is nature logarithm of the GDP per capita. *Log (Population)* is the nature logarithm of the total population in each country. Robust standard errors are clustered at country level and *t*-statistics are in brackets. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
War Involve (Number)	-4.4398	-2.5872	-3.5931**			
	(-1.04)	(-1.11)	(-2.32)			
War Involve (Dummy)				-8.9473***	-5.2491**	-4.8662**
				(-2.66)	(-2.09)	(-2.44)
No. of Soldier's Death	-0.0004	-0.0003	0.0019	0.0016	0.0008	0.0025
	(-0.07)	(-0.11)	(0.75)	(0.32)	(0.28)	(0.94)
Log(GDP per capita)		12.3582***	10.0858***		12.2773***	9.9672***
		(7.42)	(3.48)		(7.47)	(3.44)
Log(Population)		6.6631***	-34.5367*		6.7260***	-35.0825*
		(3.31)	(-1.72)		(3.35)	(-1.75)
Constant	33.5384***	-164.9606***	507.9705	34.0993***	-165.0988***	517.1748
	(10.31)	(-4.56)	(1.57)	(9.94)	(-4.59)	(1.60)
Country Fixed Effects	NO	NO	YES	NO	NO	YES
Year Fixed Effects	NO	NO	YES	NO	NO	YES
No. of Countries	69	69	69	69	69	69
R^2	0.004	0.450	0.809	0.010	0.451	0.809
Observation	2306	2272	2272	2306	2272	2272

Table 4: War and Rule of Law

This table presents the results of regressing the rule of law index on proxies of wars. The dependent variable is the *Rule of Law* from ICRG database. Our key interest variables are two indicators for war. *War Involve (Number)* is the total number of wars in a country in each year. *War Involve (Dummy)* is a dummy variable equals one if there is a war in a country in each year. *No. of Soldier's Death* is the average number of deaths per war for a country in each year. *Log (GDP per capita)* is nature logarithm of the GDP per capita. *Log (Population)* is the nature logarithm of the total population in each country. Robust standard errors are clustered at country level and *t*-statistics are in brackets. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	(1) Rule of Law	(2) Rule of Law	(3) Rule of Law	(4) Rule of Law	(5) Rule of Law	(6) Rule of Law
War Involve (Number)	-1.2719***	-0.9847***	-0.3925**			
	(-4.54)	(-3.58)	(-2.57)			
War Involve (Dummy)				-1.3460***	-1.0586***	-0.4140**
				(-4.81)	(-3.77)	(-2.54)
Number of Soldier's Death	-0.0002	-0.0003	0.0001	-0.0001	-0.0002	0.0001
	(-0.79)	(-1.02)	(0.58)	(-0.64)	(-0.89)	(0.66)
Log(GDP per capita)		0.5098***	0.3628*		0.5093***	0.3644*
		(6.60)	(1.86)		(6.59)	(1.88)
Log(Population)		0.2288***	1.5709*		0.2292***	1.5803*
		(4.66)	(1.99)		(4.67)	(1.99)
Constant	3.7420***	-4.0927***	-26.2460*	3.7467***	-4.0908***	-26.4039*
	(25.93)	(-3.89)	(-1.96)	(25.93)	(-3.90)	(-1.97)
Country Fixed Effects	NO	NO	YES	NO	NO	YES
Year Fixed Effects	NO	NO	YES	NO	NO	YES
No. of Countries	63	61	61	63	61	61
R^2	0.094	0.361	0.801	0.097	0.365	0.801
Observation	1506	1403	1403	1506	1403	1403

Table 5: War and Military Directors

This table presents the results of regressing the supply of military directors on proxies of wars. The dependent variable is either *MilDirNum*, the total number of military directors in a country, or *MiliFirm*, the total number of firms that have at least one military director. Our key interest variables are two indicators for war. *Total War (Number)* is the total number of wars in a country before a given year. *Total War (Year)* is the total number of years that a country is at war before a given year. *Total Soldier Death* is the total number of casualties for a country before a given year. *Log (GDP per capita)* is nature logarithm of the GDP per capita. *Log (Population)* is the nature logarithm of the total population in each country. *Log (Market Capitalization)* is the nature logarithm of the total value of the stock market for a country in a year. Robust standard errors are clustered at country level and *t*-statistics are in brackets. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	(1) MilDirNum	(2) MilDirNum	(3) MilDirNum	(4) MiliFirm	(5) MiliFirm	(6) MiliFirm
Total War (Number)	36.085*			33.745*		
	(1.905)			(1.895)		
Total War (Year)		27.082**			24.273**	
		(2.373)			(2.369)	
Total Soldier Death			0.154***			0.139***
			(150.836)			(143.734)
Log(GDP per capita)	-41.042	-54.866	-41.931	-36.224	-49.867	-38.200
	(-1.485)	(-1.349)	(-1.284)	(-1.374)	(-1.262)	(-1.193)
Log(Population)	27.475	-40.914	-19.535	22.067	-40.342	-21.224
	(0.570)	(-1.174)	(-0.868)	(0.531)	(-1.192)	(-1.083)
Log(Market Capitalization)	0.818	-1.861	-0.252	0.568	-1.855	-0.414
	(0.531)	(-1.070)	(-0.278)	(0.397)	(-1.126)	(-0.475)
Constant	-296.145	1120.847	677.766	-225.672	1077.706	680.852
	(-0.352)	(1.384)	(1.278)	(-0.314)	(1.389)	(1.388)
Country Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
No. of Countries	74	74	74	74	74	74
R^2	0.906	0.942	0.974	0.900	0.936	0.970
Observation	433	433	433	433	433	433

Table 6 Military Director and Firm Performance

This table presents the results of regressing firm performance measures on military directors. The dependent variables is either *Tobin's Q* in column (1) and (2) or *ROA* in column (3) and (4). Our key interest variables are two measures of military directors. *Military Director Ratio* is the ratio of military directors over the total number of directors in a board. *Military Director Dummy* is an indicator that equals one if a firm has a military director and zero otherwise. *Market Capitalization* is the nature logarithm of the value of the stock market. *Leverage* is the ratio of total liability to total assets. *PPE* is the ratio of the value of property, plant and equipment to total assets. *Sales Growth* is three-year average growth rate of the net sales. *Board Size* is the total number of board directors in year *t*. *Board Independence* is the ratio of non-executive directors over the total number of directors in year *t*. *Gender* is the ratio of the male directors over the total number of directors. *Average Time in Board* is the average tenure of all directors in board. *CEO Duality* is a dummy variable that equals one if the CEO is also the chairman of the board. Robust standard errors are clustered at country level and *t*-statistics are in brackets. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	Tobin's Q		ROA	
	(1)	(2)	(3)	(4)
Military Director Ratio	-0.4119**		-0.0200	
	(-2.15)		(-1.29)	
Military Director Dummy		-0.0617***		-0.0052**
		(-2.84)		(-2.57)
Market Capitalization	0.2342***	0.2343***	0.0494***	0.0494***
	(9.76)	(9.78)	(18.35)	(18.34)
Leverage	0.2397*	0.2402*	-0.1314***	-0.1313***
	(1.89)	(1.90)	(-18.45)	(-18.46)
PPE	-0.3783***	-0.3786***	0.0205**	0.0204**
	(-5.57)	(-5.58)	(2.46)	(2.45)
Sales Growth	0.0029***	0.0029***	0.0002***	0.0002***
	(3.04)	(3.04)	(3.48)	(3.48)
Board Size	-0.1189***	-0.1181***	-0.0043***	-0.0042***
	(-6.65)	(-6.69)	(-5.70)	(-5.63)
Board Independence	-0.7044***	-0.7044***	-0.0426***	-0.0424***
	(-5.00)	(-5.01)	(-3.38)	(-3.38)
Gender	0.1837*	0.1822*	-0.0564***	-0.0565***
	(1.86)	(1.84)	(-4.57)	(-4.58)
Average Time in Board	-0.0195***	-0.0195***	0.0088***	0.0088***
	(-7.96)	(-7.93)	(11.58)	(11.56)
CEO Duality	-0.0504	-0.0502	0.0073	0.0073
	(-0.83)	(-0.83)	(1.03)	(1.03)
Constant	0.8526***	0.8422***	-0.8413***	-0.8427***
	(3.41)	(3.34)	(-10.34)	(-10.33)
Industry, Country, and Year Fixed Effects	YES	YES	YES	YES
R^2	0.181	0.181	0.260	0.260
Observation	93697	93697	91460	91460

Table 7: Military Director and Firm Performance, Lagged Difference Model

This table shows the results of military directors on firm performance from a lagged difference model. The dependent variables are the differenced value of Tobin's Q in column (1) and (2) and ROA in column (3) and (4). Our key interest variable is either Δ*Military Director Ratio*, the change of the ratio of military directors on boards in year *t-1*, or Δ*Military Director Dummy*, the change of military dummy variable in year *t-1*. Control variables are the same as in Table 6, but, instead of the levels, we are using the value of change in year *t-1*. For detailed variable definition, see Appendix 1. Robust standard errors are clustered at country level and *t*-statistics are in brackets. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	ΔTobin's Q		ΔROA	
	(1)	(2)	(3)	(4)
ΔMilitary Director Ratio	-0.623***		-0.004	
	(-2.794)		(-0.166)	
ΔMilitary Director Dum		-0.054**		0.000
		(-2.132)		(0.421)
ΔMarket Capitalization	-0.201***	-0.201***	-0.023***	-0.023***
	(-11.854)	(-11.890)	(-8.694)	(-8.698)
ΔLeverage	-0.102**	-0.102**	0.035**	0.035**
	(-2.112)	(-2.088)	(2.131)	(2.133)
ΔPPE	0.219***	0.219***	0.016	0.016
	(6.792)	(6.779)	(1.347)	(1.347)
ΔSales Growth	-0.000	-0.000	-0.000	-0.000
	(-0.961)	(-0.956)	(-0.954)	(-0.954)
ΔBoard Size	-0.009***	-0.009**	-0.000	-0.000
	(-2.906)	(-2.628)	(-0.223)	(-0.239)
ΔBoard Independence	0.007	0.003	-0.013	-0.014
	(0.159)	(0.068)	(-0.859)	(-0.861)
ΔGender	0.116	0.115	0.018	0.018
	(1.560)	(1.539)	(1.417)	(1.396)
ΔAverage Time in	-0.005***	-0.005***	-0.001	-0.001
	(-2.808)	(-2.800)	(-1.419)	(-1.435)
ΔCEO Duality	0.010	0.010	0.002	0.002
	(0.838)	(0.824)	(0.789)	(0.785)
Constant	-0.021***	-0.021***	-0.005***	-0.005***
	(-2.970)	(-2.950)	(-4.224)	(-4.205)
R^2	0.017	0.017	0.008	0.008
Observations	56884	56884	55282	55282

Table 8: Military Director and Firm Performance, GMM Model

This table presents the results of two-step dynamic GMM estimations of military directors on firm performance, allowing for two lags of the dependent variables. All independent variables are instrumented by their lagged values in year *t-3* and *t-4*, assuming they influence the outcome variables only through their values in *t-1*. The dependent variable is either *Tobin's Q* in column (1) and (2) or *ROA* in column (3) and (4). Our key interest variable is either *Military Director Ratio*, the ratio of military directors on board, or *Military Director Dummy*, an indicator that equals one if a firm has at least a military director on board and zero otherwise. Control variables include *Market Capitalization*, *Leverage, PPE*, *Sales Growth*, *Board Size*, *Board Independence*, *Gender*, *Average Time in Board*, and *CEO Duality*. For detailed variable definition, see Appendix 1. AR (1) and AR (2) are tests for first-order and second-order serial correlation in the first-differenced residuals, under the null hypothesis of no serial correlation. *T-statistics* are based on robust standard errors and presented in brackets. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	Tobin's Q		ROA	
	(1)	(2)	(3)	(4)
Military Director Ratio	-0.710**		-0.084	
	(-2.254)		(-1.383)	
Military Director Dummy		-0.085**		-0.013**
		(-2.391)		(-2.017)
Market Capitalization	-0.049***	-0.048***	0.013**	0.013**
	(-2.759)	(-2.745)	(2.219)	(2.234)
Leverage	0.328***	0.328***	0.004	0.004
	(3.129)	(3.139)	(0.202)	(0.200)
PPE	-0.030	-0.029	-0.010	-0.010
	(-0.400)	(-0.394)	(-0.736)	(-0.749)
Sales Growth	0.000	0.000	-0.000	-0.000
	(0.434)	(0.432)	(-0.285)	(-0.316)
Board Size	-0.014**	-0.013**	-0.004**	-0.004**
	(-2.132)	(-1.999)	(-2.549)	(-2.425)
Board Independence	0.151	0.157	0.010	0.011
	(0.947)	(0.982)	(0.348)	(0.390)
Gender	-0.072	-0.075	-0.005	-0.005
	(-0.377)	(-0.396)	(-0.144)	(-0.148)
Average Time in Board	-0.001	-0.001	-0.001	-0.001
	(-0.189)	(-0.275)	(-1.263)	(-1.284)
CEO Duality	0.002	0.000	0.003	0.003
	(0.066)	(0.008)	(0.396)	(0.393)
L.Tobin's Q	0.711***	0.708***	-	-
	(9.285)	(9.264)	-	-
L2.Tobin's Q	-0.013	-0.011	-	-
	(-0.298)	(-0.251)	-	-
L.ROA	-	-	0.697***	0.695***
	-	-	(9.447)	(9.364)
L2.ROA	-	-	-0.059**	-0.059**
	-	-	(-2.377)	(-2.343)
Constant	1.313***	1.303***	0.000	0.000
	(2.666)	(2.655)	(.)	(.)
AR(1) test (*p*-value)	0.000	0.000	0.000	0.000
AR(2) test (*p*-value)	0.261	0.278	0.000	0.000
Year Dummies	Yes	Yes	Yes	Yes
Observations	70365	70365	67762	67762

Table 9: Military Director and Firm Performance by PSM

This table presents the results of one to one Propensity Score Matching of nearest-neighbor based on *Market Capitalization, Leverage, PPE, Sales Growth, Board Size, Board Independence, Gender, Average Time in Board,* and *CEO Duality*. The dependent variable in Panel A is *Military Director Dummy* which is a dummy variable that equals one if firm has at least one military director on board. For detailed variable definition, see Appendix 1. Robust standard errors are clustered at country level and *t*-statistics are in brackets. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

Panel A: Determinants of Board with Military Directors	
	Military Director Dummy
Market Capitalization	0.0660***
	(9.72)
Leverage	0.1599***
	(3.72)
PPE	0.0025
	(0.08)
Sales Growth	-0.0004
	(-1.35)
Board Size	0.1460***
	(35.80)
Board Independence	1.1400***
	(14.66)
Gender	0.3331***
	(2.97)
Average Time in Board	0.0120***
	(4.14)
CEO Duality	0.0011
	(0.05)
Constant	-5.5566***
	(-23.22)
Industry Fixed Effects	YES
Country Fixed Effects	YES
Year Fixed Effects	YES
Pseudo R^2	0.1167
Observation	93292

Panel B: Average treatment effects		
	Tobin's Q	ROA
Observation	13588	13305
Mean of Treated	1.9475	0.0312
Observation	13588	13305
Mean of Matched Non-Treated	1.9996	0.0359
Difference-in-Mean	-0.0521***	-0.0047*
t-statistics	-2.85	-1.85

Table 10: Military Director and Performance, Controlling for Other Board Directors' Characteristics

This table presents the estimated impacts of military directors on firm performance while controlling for other board director characteristics. The dependent variables is either *Tobin's Q* or *ROA*. Our key interest variable is either *Military Director Ratio*, which is the ratio of military directors on boards, or *Military Director Dummy*, which is an indicator that equals one if a firm has at least military director and zero otherwise. Other board director characteristics include *Legal Experience*, an indicator that equals one if the ratio of directors with legal background is above the industry median value and zero otherwise, *Foreign Background,* an indicator that equals one if the ratio of directors with foreign experience is above the industry median value and zero otherwise, and *Financial Experience,* an indicator that equals one if the ratio of directors with financial experience is above the industry median value and zero otherwise. For detailed variable definitions, see Appendix 1. Robust standard errors are clustered at country level and *t*-statistics are in brackets. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	Tobin's Q		ROA	
	(1)	(2)	(3)	(4)
Military Director Ratio	-0.375*		-0.014	
	(-1.958)		(-0.910)	
Military Director Dummy		-0.056**		-0.004*
		(-2.580)		(-2.028)
Market Capitalization	0.236***	0.236***	0.051***	0.051***
	(9.437)	(9.452)	(19.634)	(19.617)
Leverage	0.245*	0.245*	-0.130***	-0.130***
	(1.939)	(1.944)	(-18.332)	(-18.343)
PPE	-0.378***	-0.378***	0.018**	0.018**
	(-5.477)	(-5.486)	(2.076)	(2.073)
Sales Growth	0.003***	0.003***	0.000***	0.000***
	(2.968)	(2.968)	(3.434)	(3.430)
Board Size	-0.118***	-0.117***	-0.004***	-0.004***
	(-6.484)	(-6.514)	(-6.319)	(-6.254)
Board Independence	-0.703***	-0.703***	-0.026**	-0.026**
	(-4.758)	(-4.769)	(-2.306)	(-2.299)
Gender	0.179*	0.178*	-0.054***	-0.054***
	(1.913)	(1.891)	(-4.458)	(-4.473)
Average Time in Board	-0.019***	-0.019***	0.009***	0.009***
	(-8.314)	(-8.288)	(11.258)	(11.232)
CEO Duality	-0.052	-0.052	0.007	0.007
	(-0.860)	(-0.858)	(1.073)	(1.076)
Legal Expertise	-0.083***	-0.082***	0.001	0.001
	(-3.901)	(-3.882)	(0.385)	(0.437)
Foreign Background	0.049**	0.049**	-0.031***	-0.031***
	(2.082)	(2.085)	(-11.206)	(-11.236)
Financial Expertise	-0.072***	-0.072***	-0.017**	-0.017**
	(-2.889)	(-2.876)	(-2.329)	(-2.311)
Constant	-0.245	-0.250	-0.986***	-0.986***
	(-0.938)	(-0.954)	(-14.069)	(-14.052)
Industry, Country, and Year Fixed Effects	Yes	Yes	Yes	Yes
R^2	0.181	0.181	0.263	0.263
Observations	92681	92681	90454	90454

Table 11: Military Director and Performance, Controlling for Frontline Experience

This table presents the estimated impacts of military directors on firm performance while controlling for the front-line experience. *Front Line* is the ratio of the military directors that possess the front line experience over the board size. The front-line soldier experience is identified using the role name in the military. The dependent variable is either *Tobin's Q* or *ROA*. Our key interest variable is either *Military Director Ratio*, which is the ratio of military directors on boards, or *Military Director Dummy*, which is an indicator that equals one if a firm has at least military director and zero otherwise. For detailed variable definitions, see Appendix 1. Robust standard errors are clustered at country level and *t*-statistics are in brackets. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	Tobin's Q		ROA	
	(1)	(2)	(3)	(4)
Military Director Ratio	-0.382*		-0.012	
	(-1.728)		(-0.690)	
Military Director Dummy		-0.064**		-0.006**
		(-2.352)		(-2.378)
Front Line	-0.006	0.007	-0.003	0.000
	(-0.312)	(0.288)	(-1.071)	(0.141)
Market Capitalization	0.234***	0.234***	0.050***	0.050***
	(9.612)	(9.630)	(18.236)	(18.244)
Leverage	0.241*	0.242*	-0.131***	-0.131***
	(1.872)	(1.876)	(-17.971)	(-17.986)
PPE	-0.378***	-0.379***	0.020**	0.020**
	(-5.437)	(-5.447)	(2.358)	(2.359)
Sales Growth	0.003***	0.003***	0.000***	0.000***
	(2.979)	(2.979)	(3.424)	(3.425)
Board Size	-0.119***	-0.118***	-0.004***	-0.004***
	(-6.537)	(-6.593)	(-5.701)	(-5.622)
Board Independence	-0.712***	-0.712***	-0.042***	-0.042***
	(-4.976)	(-4.985)	(-3.298)	(-3.300)
Gender	0.180*	0.178*	-0.056***	-0.056***
	(1.824)	(1.803)	(-4.476)	(-4.488)
Average Time in Board	-0.019***	-0.019***	0.009***	0.009***
	(-7.879)	(-7.855)	(11.604)	(11.633)
CEO Duality	-0.051	-0.051	0.007	0.007
	(-0.846)	(-0.845)	(1.029)	(1.029)
Constant	-0.196	-0.201	-0.961***	-0.961***
	(-0.751)	(-0.766)	(-12.595)	(-12.595)
Industry, Country, and Year Fixed Effects	YES	YES	YES	YES
R^2	0.180	0.180	0.260	0.260
Observations	92681	92681	90454	90454

Table 12: Military Director and Firm Policies

This table presents the results of regressing firm *Leverage* on military directors. *Leverage* is the ratio of total liability to total assets. Our key interest variable is either *Military Director Ratio*, which is the ratio of military directors on boards, or *Military Director Dummy*, which is an indicator that equals one if firm has at least one military director sitting on the board and zero otherwise. *Market Capitalization* is the nature logarithm of stock market capitalization. *PPE* is the ratio of the property, plant and equipment to total assets. *Sales Growth* is three-year average growth rate of the net sales. *Board Size* is the total number of board directors on board. *Board Independence* is ratio of non-executive directors over board size in year *t*. *Gender* is the ratio of the male directors to board size. *Average Time in Board* is the average tenure of all directors on the board. *CEO Duality* is a dummy variable that equals one if a firm's CEO is also the chairman of the board. Robust standard errors are clustered at country level and *t*-statistics are in brackets. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	(1) Leverage	(2) Leverage
Military Director Ratio	0.0580**	
	(2.58)	
Military Director Dummy		0.0118***
		(2.89)
Market Capitalization	-0.0054**	-0.0054**
	(-2.38)	(-2.41)
PPE	0.1266***	0.1266***
	(10.32)	(10.32)
Sales Growth	-0.0001	-0.0001
	(-1.47)	(-1.47)
Board Size	0.0127***	0.0125***
	(4.96)	(4.83)
Board Independence	0.0772***	0.0770***
	(5.00)	(4.96)
Gender	-0.0361*	-0.0359*
	(-1.74)	(-1.73)
Average Time in Board	-0.0056***	-0.0056***
	(-5.59)	(-5.57)
CEO Duality	0.0182***	0.0181***
	(6.96)	(6.93)
Constant	0.2621***	0.2648***
	(8.08)	(8.22)
Industry Fixed Effects	YES	YES
Country Fixed Effects	YES	YES
Year Fixed Effects	YES	YES
Cluster	YES	YES
R^2	0.187	0.188
Observation	93705	93705

Table 13: Military Director and Firm Policy, Lagged Difference Model

This table shows the results of military directors on firm leverage from a lagged difference model. The dependent variable is the change in value in *Leverage* in year *t*. Our key interest variable is either Δ*Military Director Ratio*, the change of the ratio of military directors on boards in year *t-1*, or Δ*Military Director Dummy*, the change of military dummy variable in year *t-1*. Control variables are the same as in Table 6, but, instead of the levels, we are using the value of change in year *t-1*. For detailed variable definition, see Appendix 1. Robust standard errors are clustered at country level and *t*-statistics are in brackets. ***, **, * denote significance levels at 1%, 5% and 10% respectively.

	(1) ΔLeverage	(2) ΔLeverage
ΔMilitary Director Ratio	0.109***	
	(5.956)	
ΔMilitary Director Dummy		0.014***
		(6.798)
ΔMarket Capitalization	-0.014***	-0.014***
	(-8.619)	(-8.609)
ΔPPE	0.129***	0.129***
	(5.730)	(5.730)
ΔSales Growth	-0.000	-0.000
	(-1.466)	(-1.481)
ΔBoard Size	0.007***	0.007***
	(5.544)	(5.584)
ΔBoard Independence	0.042***	0.043***
	(2.856)	(2.891)
ΔGender	-0.078***	-0.078***
	(-3.544)	(-3.524)
ΔAverage Time in Board	-0.001	-0.001
	(-1.289)	(-1.297)
ΔCEO Duality	0.003	0.003
	(1.263)	(1.258)
Constant	-0.002***	-0.002***
	(-4.150)	(-4.156)
R^2	0.041	0.041
Observation	87371	87371

Appendix 1: Variable Definition

Variable Name	Description	Source
Macro Level Variables		
War Involve (Number)	The number of wars in a country in a year.	COW War
War Involve (Dummy)	A dummy variable equals to one if there is a war in a country in year.	COW War
No. of Soldier's Death	The average number of soldier death (in thousands) in wars in a country.	COW War
Total War (Number)	The number of wars for each country a given year.	COW War
Total War (Year)	The number of years a country is in wars before a given year.	COW War
Total Soldier Death	The number of soldier deaths for a country before a given year.	COW War
Log(GDP per capita)	The natural logarithm of Gross Domestic Product per capita	World Bank
Log(Population)	The natural logarithm of total population in a country.	World Bank
GDP per Capita Growth %	Gross domestic product per capita growth.	World Bank
Private Credit to GDP	The total amount of credit channelled into the private sector scaled by a country's GDP.	World Bank
Rule of Law	Law and Order from ICRG database. To assess the "Law" element, the strength and impartiality of the legal system are considered, while the "Order" element is an assessment of popular observance of the law. Thus, a country can enjoy a high rating of 3 in terms of its judicial system, but a low rating of 1 if it suffers from a very high crime rate if the law is routinely ignored without effective sanction (for example, widespread illegal strikes).	ICRG
MilDirNum	The total number of directors with military experience for a country in a given year.	BoardEx
MiliFirm	The total number of firms that have at least a military director on board for a country in a year.	BoardEx
Firm Level Variables		
Market Capitalization	The natural logarithm of the market value of a firm.	WorldScope
Leverage	The ratio of total liability to total assets.	WorldScope
PPE	The ratio of the property, plant and equipment to total assets.	WorldScope
Sales Growth	Three-year average growth rate of the net sales.	WorldScope
Tobin's Q	Sum of equity market capitalization and total liabilities divided by the sum of the book values of common equity and total liabilities.	WorldScope
ROA	The ratio of the earnings before interest and tax to total assets.	WorldScope
Governance Level Variables		
Military Director Ratio	Ratio of the number of military directors over board size.	BoardEx

Military Director Dummy	A dummy variable equals one if a firm has at least one military director on board, and zero otherwise.	BoardEx
Board Size	Number of board directors in the board in a year.	BoardEx
Board Independence	The ratio of non-executive directors over board size in a year.	BoardEx
Gender	The ratio of the number of male directors to board size.	BoardEx
Average Time in Board	The average tenure of board directors in a year.	BoardEx
CEO Duality	An indicator that equals one if a firm's CEO is also the chairman of the board, and zero otherwise.	BoardEx
Front Line	The ratio of the military directors that possessing the front-line soldier experience. The front-line soldier experience is identified when the role name of the employment in the military is: Adjutant General, Admiral, Air Marshall, Air Vice Marshall, Brigadier General, Captain, Chief of Air Staff, Chief of Defence Staff, Chief of General Staff, Chief of Naval Staff, Chief of Operations, Commandant, Commander, Commander-in-Chief, Commanding General, Commanding Officer, Commentator, Deputy Commander, Deputy Commander-in-Chief, Field Marshall, First Lieutenant, First Sea Lord/Chief of Naval Staff, General, Lieutenant, Lieutenant Colonel, Lieutenant Commander, Lieutenant General, Major, Major General, Military Assistant, Military Service, Naval Aviator, Second Lieutenant, Veterinarian, Vice Admiral, Vice Chief of Defence Staff, and Vice Commander.	BoardEx
Foreign Background	An indicator that equals one if the ratio of directors with foreign background is above the industry median value and zero otherwise. Foreign background is identified when the nationality of a director is different from the country he/she is working in.	BoardEx
Financial Expertise	An indicator that equals one if the ratio of directors with financial experience is above the industry median value and zero otherwise. Financial experience is defined as previous working experience in the financial industry.	BoardEx
Legal Expertise	An indicator that equals one if the ratio of directors with legal background is above the industry median value and zero otherwise. Legal experience is defined as previous working experience in the legal industry.	BoardEx

Appendix 2: Summary Statistics by Country

Country	Firm	War	Country	Firm	War	Country	Firm	War	Country	Firm	War
Afghanistan	N/A	7	Denmark	31	N/A	Jersey	42	N/A	Puerto Rico	1	N/A
Algeria	N/A	4	Dominican Republic	N/A	1	Jordan	1	4	Qatar	3	N/A
Angola	N/A	8	Ecuador	N/A	1	Kazakhstan	1	N/A	Romania	1	2
Argentina	12	3	Egypt	7	7	Kenya	3	N/A	Russia	66	11
Armenia	N/A	2	El Salvador	N/A	2	Kuwait	1	1	Rwanda	N/A	6
Australia	876	8	Eritrea	N/A	2	Lebanon	N/A	6	Saudi Arabia	15	2
Austria	47	N/A	Ethiopia	N/A	13	Libya	N/A	3	Sierra Leone	1	N/A
Azerbaijan	1	2	Falkland Islands	1	N/A	Luxembourg	56	N/A	Singapore	287	N/A
Bahamas	2	N/A	Faroe Islands	2	N/A	Macau	7	N/A	Slovenia	1	N/A
Bangladesh	1	N/A	Finland	51	N/A	Madagascar	1	N/A	Somalia	N/A	7
Barbados	1	N/A	France	498	21	Malaysia	181	N/A	South Africa	225	5
Belgium	86	N/A	Gabon	1	N/A	Malta	4	N/A	South Korea	65	3
Bermuda	62	N/A	Georgia	1	2	Mauritius	2	N/A	Spain	131	2
Bosnia	N/A	2	Germany	361	N/A	Mexico	50	N/A	Sri Lanka	N/A	4
Brazil	74	N/A	Gibraltar	4	N/A	Monaco	10	N/A	Sweden	124	N/A
Burundi	N/A	4	Greece	50	3	Mongolia	2	1	Switzerland	122	N/A
Cambodia	1	7	Guatemala	N/A	3	Morocco	2	4	Syria	N/A	10
Canada	946	5	Guernsey	39	N/A	Namibia	1	N/A	Taiwan	59	N/A
Cayman Islands	15	N/A	Honduras	N/A	1	Nepal	N/A	2	Tanzania	1	3
Chad	N/A	7	Hong Kong	485	N/A	Netherlands	172	5	Thailand	26	5
Channel Islands	1	N/A	Hungary	11	2	New Zealand	57	N/A	Turkey	28	7
Chile	29	1	Iceland	6	N/A	Nicaragua	N/A	2	Uganda	N/A	6
China	547	13	India	456	10	Nigeria	19	N/A	Ukraine	4	N/A
Colombia	12	3	Indonesia	37	12	Norway	116	N/A	United Arab Emirates	25	2
Congo	N/A	9	Iran	N/A	6	Oman	1	2	United Kingdom	2309	16
Costa Rica	N/A	1	Iraq	N/A	17	Pakistan	2	8	United States	5821	22
Cote D'Ivoire	1	N/A	Ireland	114	N/A	Panama	1	N/A	Vietnam	4	12
Croatia	2	4	Isle Of Man	30	N/A	Papua New Guinea	6	N/A	Virgin Islands(Brit)	12	N/A
Cuba	N/A	7	Israel	144	8	Peru	6	2	Yemen	N/A	6
Curacao	2	N/A	Italy	110	N/A	Philippines	34	8	Zambia	2	N/A
Cyprus	20	1	Jamaica	1	N/A	Poland	29	3	Zimbabwe	1	3
Czech Republic	2	N/A	Japan	446	N/A	Portugal	30	N/A			