Military training instills deference, respect to hierarchy and depersonalization. When military training is mandatory, military culture instilled in training becomes a cultural trait. We hypothesize that military training generates a culture that in the civilian context increases adaptability. A military mindset decreases communication noise, resistance to change and improves efficiency, resulting in improved adaptability. We empirically test the hypothesis using a global dataset on conscription and international trading. We compare the adaptation speed of countries with and without mandatory military enlistment. We seek to contribute to the military, institutionalism and international business literature.
Introduction

Research on institutional development predicts that firms in weak institutional contexts will be at a disadvantage when competing in global markets. However, South Korean firms are leading players in the global economy, even though in the last century the country faced occupation, secession, war, dictatorship, and acute economic crises. Firms such as Samsung and Hyundai are examples of South Korean relevance in highly competitive markets such as technology and automobiles. Empirical research on the topic is highly contentious (Marano et al 2016). Theoretical and methodological problems plague the field (Biggart and Hamilton, 1992, Ailon 2008, McSweeney 2002, Franke and Richey 2010, Tung and Verbeke 2010). The search for one single holistic institutionalism theory may be limiting advances in the field, so we should propose multiple smaller theories (Beugelsdijk et al 2017, Devinney and Hohberger 2017).

In this research, we seek to contribute to the cross-field of International Business (IB) and institutionalism by if military training affects internationalization outcomes. We observe that military training may have important consequences on how South Koreans face adaptation in complex environments. South Korea presents conscription to all men between the ages of 18 and 28 years. Research on the effects of military training suggests that it affects personality (Jackson et al. 2012), behavior (Koch-Bayram and Wernicke 2018), and changes general view of the world (Navajas et al, 2019). Time spent in military service has such an influence in one’s mindset that the transition back to civilian life entails a cultural shock (Bergman et al, 2014). Moreover, there is evidence that military culture is transferred to civilian life (Navajas et al, 2019, Koch-Bayram and Wernicke 2018, Yellin 2012, Mangum and Ball, 1987).

The main outcome variable is the adaptation speed. International trading requires constant adaptation to changes in the landscape, including social, economic and political contexts. Adaptation requires analysis, planning, and execution. Typically, analysis and planning occur in the top management teams, and plans are broken down and communicated to lower levels to be executed. In complex contexts such as crises, cognitive limitations hinder analysis, and firms are forced to adapt by trial and error. Consequentially, multiple course corrections may cause noise and confusion, leading to resistance and errors. Military training counters these issues because it instills deference, respect to hierarchy and depersonalization. Deference and depersonalization reduce resistance to change, while respect to hierarchy decreases noise in communication, therefore improving efficiency.
We test the relationship between military training and adaptability using a dataset of international trading at the product level. Dataset presents information about more than 200 countries between 1995 and 2017. Our empirical strategy is to run a difference in differences (DiD), using the 2008 mortgage crisis as the cutoff point. We divide the dataset into two groups of countries, the first group composed of countries with conscription (test group) and the second group composed of countries with no conscription (control group). We calculate the difference in international trading output after the crisis and before the crisis and compare the differences between the test and control groups.

We seek to contribute to the literature merging military studies and international business. The relevance of the military on the business context cannot be understated: in 2017, military spending corresponded to a USD 650 billion budget only in the USA. We also seek to contribute with a proposed causal mechanism of the influence, thus opening the “black box” of culture (Devinney and Hohberger 2017).

Theoretical Development

Korea began the 20th century a poor country, depending on the protection of its neighbor China, with a negligible industry and economically irrelevant in the world stage. It was then colonized by Japan, enduring a reduced state of liberty. Following the aftermath of WWII, Korea was liberated and divided into two countries with antagonist ideological orientations. It then became one of the main stages of the Cold War, with war breaking in 1950. The end of the war in 1953 was never formalized in a treaty, leading to a dormant but permanent state of belligerence. In 1960, South Korea faced a military coup, followed by a dictatorship that lasted until the ’80s. Despite all political turmoil in its modern history, South Korea emerges in the XXI century as a main contender in the global economy, fighting for leadership in competitive markets, such as the high tech and automotive industries.

The development of South Korean firms cannot be dissociated from its institutional context. In the reconstruction effort following both WWII and the Korean War, the South Korean government stimulated business through multiple mechanisms. The government offered financial support to companies, granted subsidies, tax exemptions, and eased administrative and regulatory requirements. Also, the South Korean government sold industrial assets previously seized from Japanese colonial rule to South Korean firms without a clear market-based system of choice (Tudor, 2019). Previous research on institutionalism tends to assume
that governmental interference in the markets hurts sustainable long-term growth more than helps it (Guillen, 2000, Khanna and Rivkin 2001, Chang and Hong, 2002, Khanna and Yafeh, 2007). Yet, South Korean firms are strong, and the country’s economy thrives.

Two research streams help us illuminate this tension. First, firms in contexts with institutional voids may circumvent these voids by developing capabilities internally, this way transforming a challenge in competitive advantage (Khanna and Palepu 1997). Second, the relationship between institutions and performance outcomes is more complex than previously assumed and involves underexamined elements (Devinney and Hohberger 2017). Our investigation follows the latter, and in the following sections we review the received wisdom and outline the bases for our hypothesis.

**Formal institutions**

The literature on institutions and international business can be organized in three main categories: formal, informal and interaction between formal and informal institutions. The most relevant formal institutions are regulatory, economic and political (Holmes et al, 2011). Formal institutions have multiple effects on business: weak formal institutions increase transaction costs (due to opportunistic behavior and lack of transparency) (Lee and Weng, 2013), risks associated to political instability (such as a coup-d’état) (Maitland and Sammartino 2015) or economic uncertainty (changes on monetary policies, for example).

Countries with strong regulatory practices, adequate property rights legislations, and more stable political contexts offer the grounds for firms to obtain better resources and develop more advanced capabilities (Wan and Hoskisson, 2003). Strong formal institutions decrease risk and opportunistic behavior; making markets more efficient and competitive (La Porta et al. 1998, Marano et al 2016).

On the other hand, weak formal institutions can lead firms to develop coping skills that may become a competitive advantage in an internationalization context (Li and Yue 2008, Luo and Tung 2007, Khanna and Palepu, 1997, Puffer et al 2010). Business groups enable the internalization of capabilities generated in contexts with institutional voids (Chang and Choi 1988, Guillen 2000, Khanna and Rivkin 2001, Chang and Hong 2002).
**Informal institutions**

Formal institutions are tangible and observable, this way they are natural candidates for empirical research. Informal institutions also received a lot of attention from the scholarly community, most notably, under the frame of cross-cultural studies. The attractivity of cultural studies is related to its relevance: culture affects assumptions, the framing of the problems and how problems are perceived and evaluated. Moreover, an important subject to IB studies is the cultural distance, because it affects the exchange of symbols and signs, directly affecting communication. Culture is so important to IB that Hofstede’s entitles his 1994 article: “The Business of International Business is Culture”. The subject is relevant and fascinating, but it is also complex and controversial. Culture cannot be simply defined, observed or measured. Also, there is no consensus on the boundaries or definitions of culture, the prevalence of its traits and the identification and relevance of its biases (Brewer and Venaik, 2011, McSweeney 2002, Ailon, 2008). Research under the cross-cultural framework spans thousands of papers, including literature reviews that themselves received thousands of citations (for example, Kirkman et al 2006). These citations in turn also became the object of literature reviews (Beugelsdijk et al 2017, Devinney and Hohberger 2017).

These works suggest that the main steps necessary to advance the field are: 1-dissociate culture effects from country effects (Kirkman et al 2006); 2-explore additional cultural dimensions than those proposed by Hofstede (Beugelsdijk et al 2017); 3- open the ‘black box’ of cultural dimensions to uncover the underlying causal mechanisms of its effects (Devinney and Hohberger 2017).

Our theory addresses these steps by adopting an atomistic theory of culture (in contrast to the more common comprehensive and holistic approaches). We acknowledge the existence of multiple theories of culture that have the potential to advance knowledge in the field (Devinney and Hohberger 2017). The atomistic view of complex theories can be seen in other disciplines such as economics (Kay, 2004). An atomistic view of culture allows the matching of appropriate measures and observational levels – a frequent problem in cross-cultural studies (Venaik and Brewer 2011).

**Interaction between formal and informal institutions**

Formal and informal institutions are inevitably intertwined. Informal institutions are habits and behaviors emerging as solutions from daily problems. For example, markets and money emerged to help transact products. Rules are created to ensure the existence of these
institutions and protect the negotiating parties. Some of the rules are then formalized, through the written code, the creation of the rule of law, and the allocation of enforcement power. Once in place, formal institutions begin to influence people’s behavior. Formal institutions gain relevance and evolve. Money that was once a tool for trading becomes a reserve of value and unit of measure, markets develop rules for improving competition by decreasing informational asymmetry or by banning monopolistic practices (Kay, 2004).

“Culture reflects and induces beliefs and assumptions prevalent in society. Culture shapes worldview, sensemaking and affects interpretations offered by others. Culture affects the development of formal institutions by influencing what problems are identified, their relevance, the generation of solutions, and the evaluation of solutions” (Peng et al 2008).

This way, one important stream of research examines the relationship between formal and informal institutions to shed light on their interactions (Holmes et al 2011, Marano et al 2016).

Our atomistic approach follows previous studies that examine the influence of institutions such as juridical tradition on financial returns (La Porta et al. 1998). Law tradition spreads in a combination of geopolitical and historical events (such as imperialism, conquest, education, and imitation). Different law systems provide different levels of protection to equity or bondholders, not only in the rule of law but in the system of institutions that support and enforce the written code. The protective and enforcing mechanisms vary across law traditions, but more importantly, the logic of the juridical tradition sticks once implanted and spreads to other institutions (Tolbert and Zucker 1983). Cultural traits are identifiable because they reproduce consistently.

Our atomistic approach to evaluate cultural effects on business outcomes is inspired by the South Korean case. South Korea imposes military conscription (compulsory enlistment) known for shortening or halting the career of country-wide famed artists and sportsmen. All males between the ages of 18 and 28 years must serve in the military for two years. The South Korean conscription is required only from men, but women can voluntarily join military training. As we are interested to advance knowledge in how institutions affect a country’s economic success, we explore if long-term, country-wide military training affects cultural dimensions relevant to firms.
Military training

Research on military training has presented evidence that it affects personality, behaviors, and worldviews. Research has shown that military training decreases agreeableness (Jackson et al., 2012), fraudulent behavior (Koch-Bayram and Wernicke 2018), and tolerance (Navajas et al, 2019). On the other hand, it increases authoritarian and belligerent behavior, and discipline (Navajas et al, 2019). Moreover, military service changes the general worldview (Navajas et al, 2019) to a point that it generates cognitive dissonance from civil life (Bergman et al. 2014).

Our central argument is that military training affects how people respond to change, in such a way that it favors adaptation to complex environments. Military training instills a culture of obedience to hierarchy, deference, and depersonalization. Several mechanisms are designed to achieve military training goals. First, a system that punishes nonconformity and rewards conformity. Nonconformity can be punished by the authority through shame/stigma, punishment, and incarceration. Second, conformity is socially enforced. For example, when cadets are taught how to march, the group is exempted from the drill only when each cadet march correctly. This creates an environment of social coercion that threatens nonconforming cadets with exclusion from the social group. Third, a culture of reward can be seen through the system of awards and decorations, but also through the more implicit respect to hierarchy and positions.

Depersonalization can be illustrated by the trial of former Nazi officer Adolf Eichmann for crimes committed in WWII. Asked if it was difficult to send Jews to death, Eichmann answered: "To tell you the truth, it was easy. Our language made it easy". Shocked, the interviewer asked for an explanation. "We called (the language) amtssprache (office language, or bureaucratic language). So, if somebody asked why we did it, we simply answered amtssprache: we had to do it". In other words, military personnel is trained to detach themselves from personal responsibility for their actions. Action is motivated by higher-order goals such as patriotism. Detachment from personal values decreases variance in response to orders, and eases resistance to superior orders, making change more efficient. Management relies on the predictability of human behavior (Gulati et al 2005) and military training improves predictability.

Coordination

Military training affects adaptation because it decreases coordination friction. “Coordination problems refer to the difficulties to align actions. The need for coordination
emerges due to the cognitive limitations of individuals (bounded rationality). Individuals lack shared and accurate knowledge about the decision rules that others are likely to use. Also, individuals do not know how one’s own actions are interdependent with those of the others” (Gulati et al., 2005). This way, search processes are required to investigate others’ decision rules and the interdependence of the relationship. “Literature presents three categories of mechanisms to achieve coordination: programming, hierarchy, and feedback, each of which served to enhance the predictability of other’s actions and to increase knowledge about how actions are interdependent” (Gulati et al., 2005).

Hierarchical organizations are characterized by a predominance of vertical flows of information, while non-hierarchical organizations are characterized by a balance between horizontal and vertical flows of information. Every communication step is a potential source of noise, thus hierarchical structures tend to decrease noise because they decrease the number of communication steps [see figure 1]. Noise affects coordination efficiency because demands for additional feedback to check and correct dissonances – in other words, noise increases interdependence, which in turn increases costs.

[insert drawing comparing hierarchical and horizontal organizations]

Deference to an authority tends to increase efficiency in a resource-constrained environment (Huang et al. 2015), in emergency and crisis (Sandler and Mintz, 1974, Wilson, 1968), and in stressful situations (Sinha 1990).

The depersonalization nature of military training decreases needs for coordination within an organization because it instills people with shared values, ideas, and worldviews. Mindset, goals, assumptions are aligned, decreasing communication noise thus easing coordination through decreased interdependence.

**Change and adaptation**

Firms venturing on international markets face environments with high levels of uncertainty. Multiple challenges emerge from the interactions, between informal and formal institutions, such as political, economic and social factors. The costs associated with the entry in a new, unfamiliar market is usually examined by the literature of entry and the liability of foreignness. Firms may decrease the liability of the foreignness by entering a new market with a gradual process (Zaheer, 1995, Johanson and Vahlne 1977), by institutional mimicry (Ang et al, 2015) and by bandwagon learning (Belderbos et al 2011). Other factors affect the entry process,
such as geographic reach (Zhou and Guillen, 2015), firm size, state ownership and age (Li et al 2019). Liability of foreignness may have roots not only on the firm level but also on the individual level (Mata and Alves, 2018).

We build on this received wisdom examining firms’ adaptive responses to changing environments. Adaptation is an important topic in the evolution of technologies, markets, and societies (Nelson and Winter, 1982, Dosi, 1982, Tushman and Anderson, 1986; Henderson and Clark, 1990, Christensen and Bower, 1996). Adaptation is difficult due to the tacit knowledge embedded in the practices and processes of the firm. Stabilized habits and socially embedded knowledge become forces of stasis. Military training acts as a force contrary to these forces decreasing resistance to change. The ability to change in the face of novelty depends on the restructuration of relationships and on the redevelopment of relationship rules.

"Samsung completed its first production facility in six months, rather than the industry norm of two to three years. Samsung managers managed the plans, design, and construction of the facility all at the same time. Samsung's managers and engineers stayed in barracks during the construction period, returning to their homes only once a week to change their clothes" (Chang 2008).

Military training counters resistance not only by instilling a culture of obedience and conformity but also by establishing strong respect for hierarchy. Typically, the top management evaluates the socioeconomic context, establishes the strategic goals and communicates those goals to lower levels. In turn, the lower management levels are responsible to convert the strategic goals into executable plans, execute the actions, evaluate the progress and apply corrections. The size of the firm may generate high levels of communication noise, which may escalate in a context of constant change. While top management teams can quickly understand mistakes and strategy shortcomings, as they are constantly examining and scooping the landscape, the communication processes and consequential change are slower. Moreover, imperfect communication and often conflicting changing goals may lead to resistance. The design of the firm also affects organizational outcomes. Arguably, organizations with more decentralized decision processes will be slower in the course correction process.

_Hypothesis_: **Conscription increases adaptation speed in complex environments**
Data and Method

Data comes from the CEPII BACI project, a world trade database disaggregated at the product level. Data is provided at the HS 6-digit product disaggregation, for more than 200 countries since 1995. We evaluate the effect at the country level. Data on conscription was gathered from various sources and it is currently under revision.

We analyze the period surrounding the 2008 mortgage crisis. As other economic crises, the 2008 mortgage crisis disrupted the world’s economic landscape, with a steep decrease in cash availability, international trading and general economic activity. The years following the crisis reconfigured world economic dynamics, forcing countries, firms and individuals to change and adapt the views and assumptions of the world.

We employ a difference in differences method with a cutoff in September 2008, when the mortgage crisis broke out. In that month, the failure of financial players led to a bank run, which in turn reduced the availability of funds in the entire economy. Firms ran off money to run daily operations, and resources at the period were harshly constrained. North American government made a series of interventions in the economy following the system collapse.

The first difference is designed to measure adaptation speed. It is a comparison of trading revenue after the crisis and trading revenue before the crisis. We choose export revenue as the measure of performance because it is a more appropriate measure in cross-country and cross-industry context (Brush and Vanderwerf, 1992, Batjargal 2013).

The second difference compares the adaptation speed between groups. The comparison across groups involves a group of countries with military conscription (treatment) to the group of countries without military conscription (control). We want to know if the adaptation speed between the groups is significantly different. Further results will indicate the demand for a matching procedure.

Military training is typically mandatory only for men, but our hypothesis has a strong assumption that military training becomes a country-level trait. To evaluate the effect of non-mandatory women military training, we will moderate the main effect with the proportion of women employed and with the proportion of women on the executive board. This data is gathered from the OCDE Gender Equality dataset.

We will also include the traditional macroeconomic variables used in the literature.
Contributions

We seek to contribute to the literature of International Business by proposing an atomistic theory of culture. We examine how a limited and coherent set of ideas and a culture of deference affect adaptation speed in the face of acute crises. We test empirically the hypothesis with global trade data employing a difference in differences method. We also seek to contribute to the cross-field of military and business studies.
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