Cole Davenport

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Military Spending, War Duration, and Regime Type

Military spending is typically one of the main topics of political conversation regarding how a state uses its budget and plays a large role in foreign policy negotiations. The level of military expenditure varies from state to state, as some spend significantly more than others. Existing literature would define military expenditure as all funds that are spent on a state's military, which impacts a state's overall military capability and the resources available to them in times of war. Military expenditure's relationship with war duration is a widely studied topic among existing literature (Bennett and Stam 1996). War duration would be defined by existing literature as the length of a war. Overall, there does appear to be a consensus among existing literature that higher levels of military spending lead to shorter wars and victory for high expenditure states, but trends also point to other factors impacting war duration (Bennett and Stam 1996).

However, the existing literature and research does not take into consideration the role regime type plays in the relationship between military expenditure and war duration. This study answers the question of what factors impact war duration in inter-state wars between democracies and nondemocracies since 1950? This study will take into consideration military expenditures through defense pacts and alliances with world powers to avoid outliers and explain how defense agreements act in conjunction with military expenditure, with the hypothesis being military expenditure is the most important variable when it comes to predicting war length. Additionally, other variables such as terrain, casualties, and who the aggressor is will be considered to determine what factor impacts war duration the most. The cases included in this

study will be all wars fought between democracies and nondemocracies since 1950. It is important for the everyday citizen to understand the relationship between the aforementioned variables and war duration in wars between democracies and nondemocracies because it can explain defense budgets, why states go to war, and help explain war results between states. It is expected that military expenditure will impact war duration more when the democratic state outspends the nondemocracy and play less of a role when the nondemocracy outspends the democracy. This study will be a unique contribution to the literature as it the judges the impact of military factors, specifically military expenditure, on war duration in wars between democracies and nondemocracies has not yet been examined, despite having a relatively large amount of scholarly work relating to the topic.

Literature Review

Military Expenditure and its Effect on War Duration

Studies have found that the level of a state's military expenditure can impact the duration of the war they are involved in (Bennett and Stam 1996). Overall, the size and capabilities of a state's military often can decide the winner, and these factors stem from military expenditure as more expenditure leads to higher capability (Bennett and Stam 1996). When a country has a large military, based on number of units, they can afford more casualties than a state with a small military (Bennet and Stam 1996). This could lead to longer wars when both countries have large militaries as both are able to afford more losses without surrender (Bennett and Stam 1996). However, when one state has a very large military while their adversary has a smaller one, the war is likely to be short due to the smaller state not being able to afford the same number of losses (Bennett and Stam 1996). The same goes for capabilities, which deals with the resources available to a state such as nuclear weapons, guns, or vehicles. When one state has a significant

advantage in military capability over their adversary, the war will likely be short (Bennett and Stam 1996). However, when both sides are evenly matched regarding military capability the war will be longer (Bennett and Stam 1996). These ideas fit into the offense-defense theory which believes that military spending and arms races have made modern wars significantly more costly than in the past, and it becomes necessary to spend to ensure security (Nilsson 2012). Additionally, this theory also assumes that when one side has an offensive advantage, a shorter war is likely than when both states are evenly matched (Nilsson 2012).

In addition, the technology and weapons used by states engaged in war often can predict who will win, as well as the length of the war (Hwang 2012). When a country goes to war, they must decide how to allocate resources, and the amount they are willing to spend on weapons (Hwang 2012). Studies have shown that when a country spends a large amount of their resources specifically on increasing the number of weapons they have, they are unlikely to settle or surrender in a war (Hwang 2012). Thus, countries with large weapon stockpiles are likely to win wars and win them quickly (Hwang 2012). This could potentially explain why democracies are more likely to win wars, as they spend more money on weapons and other military equipment than a nondemocratic country would (Valentino 2010). A democratic country is unlikely to enter a war when they are outgunned because they know losing is likely (Reiter et. al 1998). Hence, democracies enter wars with the idea that they will win quickly, and a large part of a fast decisive win involves being able to out-gun the opponent (Reiter et. al 1998).

However, large military expenditure does not always impact war duration as alliances and defense pacts can create outliers (Ringsmose 2009). Defense pacts and alliances have an impact on war duration and limit the need for a large amount of military spending because it creates the ability to free ride as smaller countries can often get away with relying on larger

countries, such as the United States, for security (Ringsmose 2009). Military spending by smaller states in defense pacts is used more as the price of admission rather than to be used in an offensive manner, as they rely on the large capability of the larger states for their own defense (Ringsmose 2009). This can impact war duration because if several states band together with the assistance of a large military power, the war will likely be short because the military capabilities will outweigh the other side drastically.

It can be concluded that scholars do believe that military spending does effect war duration when one side largely out spends the other. However, scholars have yet to examine the impact of military spending on war duration specifically in wars between democracies and nondemocracies. Instead, the literature appears to take a broader approach to the topic, focusing generally on the relationship between military expenditure and war duration without stressing whether the regime type of the combatants matters. While it is noted democratic countries are more likely to win wars, it has not been established how this impacts war duration. This leaves room for contribution to the existing literature, as examining how military expenditure fits into war duration in wars between democracies and nondemocracies heretofore is an overlooked and understudied aspect of military conflict.

Other Factors Impacting War Duration

Despite the existing literature that supports a link between military expenditure and war duration, there are other factors that scholars argue could also have an effect on war duration (Bennett and Stam 1996). First, the strategies used by states could have an impact on the length of wars (Bennett and Stam 1996). There are various strategies a state could use, but the two strategies that most drastically impact the length of war are "maneuver strategies" and "attrition strategies" (Bennett and Stam 1996). Maneuver strategies create a narrow point of attack, while

mobile forces attack the enemy from the rear (Bennett and Stam 1996). This is a strategy that could absolutely devastate an opponent, but also leaves the attacking force incredibly vulnerable, thus leading to a quick result one way or the other (Bennett and Stam 1996). An attrition strategy is one that is designed to wear down the opponent over time and does not rely on speed or a single battle like the maneuver strategy does (Bennett and Stam 1996). Russia's current war against Ukraine appears to be a textbook case of the attrition strategy. Wars that involve attrition strategy tend to be longer, as it requires a longer period of time to wear down the opponents' resources and units (Bennett and Stam 1996). When an attrition strategy is used, the war will typically end in a settlement (Briffa 2014). This is because attrition strategy tends to drag the war out, forcing one side to settle or risk complete destruction (Briffa 2014).

Terrain can also have an impact on the length of a war. When the terrain is mountainous and rugged, wars will likely be longer, whereas if the war is fought on an open plain it will be shorter (Bennett and Stam 1998). Difficult terrain, like mountains or jungles, can make movement of troops or units more difficult as travel can potentially become hazardous (Shaver et. al 2019). This can lead to a longer war because states will have difficulty incorporating a strategy that leads to overwhelming victory because of the difficulties involved with movement (Shaver et. al 2019). Another way to put this, is that it is more difficult to inflict high casualty rates if the enemy is harder to target as a consequence of complicated terrain (Shaver et. al 2019).

Regime type can influence the length of a war. Overall, democracies experience shorter wars than nondemocracies (Filson and Werner 2004). Democracies are more likely to win wars in which they initiate, but also wars where they are the target because they often will only enter wars if they know the costs are lower and have a high probability of success (Filson and Werner

2004). Leaders in democratic countries will go to war if it increases their ability to get reelected and winning a war decisively and fast increases these chances (Filson and Werner 2004). Democracies are very likely to win a war very quickly because of this aforementioned low-cost and high-win probability theory, but democracies often settle faster as than compared to nondemocracies (Reiter and Stam 2002). Democracies will not drag wars out typically because they want to keep the costs low, thus leading to shorter wars (Reiter and Stam 2002). As noted, despite the extant studies completed regarding regime type and war duration, military expenditure, and its impact on war duration between different regime types has not yet been examined. I contribute to the literature by looking specifically at whether war duration varies on the basis of military expenditure rates when the conflict pits democracies against nondemocracies.

Additionally, as expected casualties can serve as a strong indicator for the length of a war. When looking at battle-related deaths, the longer a war lasts the more deaths that there will be (Pettersson 2022). This is essentially unanimously agreed upon by scholars who study war duration, as the longer a war lasts then the more time there is for battle-related deaths to occur (Pettersson 2022). Overall, the number of casualties should serve as a very strong indicator of how long a conflict lasts, despite being more of a byproduct of duration than an exact cause.

Data and Methods

The data for this study are compiled from military expenditure data and duration data from the Correlates of War Project (Singer 2016), as well as combatant information from Bennett and Stam's 1996 "Duration of Interstate War." This information, when combined, provides statistics about the selected cases, which are wars between democracies and non-democracies since 1950. The expectation for this study is that high military expenditure will

have a stronger correlation with shorter war duration for democracies than it will for nondemocracies. I expect that when democracies outspend nondemocracies the war will be short. However, when nondemocracies outspend democracies the duration of the war will likely not be impacted as much because democratic countries are more likely to use military expenditure to build up their capabilities to deter attacks but also prevail when war is necessary. They do not need to worry about uprisings or being overthrown like a nondemocracy does, which could impact the way a nondemocracy uses military expenditure (Pilster and Böhmelt 2011). Nondemocracies may be more focused on the security of the leader's title within the state as opposed to national security which could lead to lesser capabilities in an inter-state war (Pilster and Böhmelt 2011). Additionally, whenever democratic countries are the aggressor, I would expect the war to be shorter as democracies typically choose to fight wars, they will have a high chance of easily winning, while nondemocracies are more willing to engage in riskier wars (Reiter and Stam 1998). Overall, empirical data should show that democracies have greater military expenditures at the beginning of the war compared to nondemocracies, which hints toward who is the victor.

In addition to examining the correlation between military spending and war duration, I will examine the ratio of military spending between democracies and nondemocracies and determine if higher gaps between states lead to shorter wars. I would expect this to be the case, and the higher the gap between the states is, then the shorter the war will be. Furthermore, I will account for other variables that could potentially have an impact on war duration. These dummy variables will include terrain and significant aid from a world power. The terrain data are be extracted from PRIO-GRID data, which shows mountainous and forest data for countries (Tollefsen et al. 2012). When a country has a value of more than .4% for mountainous terrain, it

will be considered difficult terrain (Tollefsen et al. 2012). Additionally, when a country has more than 40% forest it will be considered difficult terrain (Tollefsen et al. 2012). It is expected that difficult terrain will correlate positively with war duration but will not have as much of an impact as military expenditure. Military alliance data are retrieved from the Correlates of War project data, which shows formal alliance between at least two states that fall into the classes of defense pact, neutrality or non-aggression treaty, or entente agreement (Gibler 2009). If a country is allied with a major power such as the United States or the Soviet Union, this will likely be significant to war duration. I would once again expect alliances to have a correlation with war duration, but not as strongly as military expenditure.

Furthermore, who the aggressor of the war is will be considered. In other words, how does a democracy initiating a war impact duration, and how does a nondemocracy impacting a war impact duration? Casualties will be examined as well, and its relationship with war duration. I expect that when a democracy is the aggressor of a war, then the war will likely be shorter as it will be a swift victory, and longer when nondemocracies are the aggressor as they are prone to riskier wars (Pilster and Böhmelt 2011). Additionally, I would expect that the longer a war lasts, then the higher the casualties will be due to a longer amount of time allowed for battle-related deaths. For both of these variables, data from the Correlates of War Project on inter-state disputes will be used (Gibler 2009). The method used for all variables mentioned will be correlation data. I will take the selected variable and see how the data correlates to war duration to establish a statistical relationship, and determine what variable impacts war duration the most.

Findings

Overall, based on the data that was compiled, it is safe to say that the original hypothesis stating that military expenditure would play the strongest role in the duration of wars between

democracies and nondemocracies since 1950, has not panned out. Rather, it appears that other variables play more of an impact on the duration of these selected wars.

Table 1. Military Factors, War Duration, and Regime Type

Variable	Correlation	P-Value
Terrain	0.575*	0.001
Casualties	0.875*	0.001
Aggressor	0.312	0.064
Exp. Ratio	-0.016	0.926
Mil. Ex. (Dem)	-0.017	0.92
Mil. Ex. (Non-Dem)	-0.172	0.362
Alliances	0.097	0.575

Not surprisingly, as displayed in Table 1, casualty numbers are seen as a very good indicator of the length of a war. With a correlation of .875 this would indicate that the longer a war lasts, then the more likely it will be that there is a higher death toll associated with the war. While casualties are more of a byproduct of duration as opposed to a cause, they serve as a strong indicator of how long the duration of wars between democracies and nondemocracies will last.

Additionally, the terrain of a conflict has a significant positive relationship with the length of a war during this time period. If the area that a state goes to war in has a significant number of forests, jungles, or mountains then the war will likely be longer. This is not necessarily unexpected, as wars such as the Vietnam War, The Korean War, and the U.S War in Afghanistan took place during this time period and lasted a very long time.

Additionally, difficult terrain could potentially provide a reason for military expenditures to not matter as much to the war efforts. For example, in the Afghanistan War and Vietnam War the United States and other democratic countries involved, significantly outspent the nondemocratic side and had far more military capability. However, the war dragged out for a long period of time in both cases. In both wars, the terrain was difficult for both sides, which may have evened the playing field for the relatively weaker and outgunned nondemocracy.

Also, these wars that have difficult terrain are often fought in the home country of the nondemocracy, which gives them an advantage. If the democratic country is the invader, then the nondemocratic country would know how to use the terrain to their advantage more than the democratic country. Soldiers are able to conceal themselves in the jungles or mountains and make it more difficult for the democratic country to clear them out, thus prolonging the war and making expenditure less important than the difference in capability between states.

Furthermore, there is a weak positive correlation between the aggressor of the war and the duration, but no statistical significance. It is known that democratic countries choose to engage in wars in which they believe they have a high probability of winning, however the wars where democratic countries are the aggressor appear to be longer (Reiter and Stam 1998). While this correlation is by no means strong, it does show that democratic countries may be willing to engage in longer, riskier wars where they do not necessarily have a high chance of winning if they view it as necessary. Democratic countries appear willing to engage in risky wars if the specific war fits into the ideology of the democratic state such as the containment of communism or the war on terror.

Additionally, alliances are not related to war duration, contrary to expectations. The correlation between alliances and war duration is not significant and thus has no relationship to

length of a war. Originally, it was believed that a weaker country being backed by a stronger country would prolong wars as the alliance would even the capabilities between the stronger side and relatively weaker country. However, this does not appear to be the case as the data indicate there is not a statistically significant relationship or even a weak correlation between the two variables. When further examining the selected cases, the duration of wars where a significant alliance is present has a very wide range. For example, the Yom Kippur war lasted a short 3 months while an alliance was present, however a war such as the Vietnam War lasted 121 months. This inconsistency on the impact of alliances on duration means there is no correlation with the length of a war.

Lastly, the most surprising finding of this study is the data regarding military expenditure. It was expected that military expenditure would play a large role in deciding the length of war duration, as it was originally believed that if one side greatly outspent the other then the war would be short due to relative capabilities. However, as the data show, military expenditure does not play much of a role in deciding war duration in wars between democracies and nondemocracies since 1950. When it comes to military expenditure of the democratic state, there is a very weak negative correlation that does not hold any statistical significance. It was originally believed that this relationship would be very strong and serve as a strong cause for shorter wars the more a democratic country spent, however this is not the case.

Interestingly, the correlation between war duration and military expenditure of nondemocracies is stronger than the correlation of war duration with the military expenditure of democracies. While still not a significant relationship, it does show that when nondemocracies have a large amount of military expenditure the war is may be shorter than when a democratic

country has a large amount of military expenditure. The opposite was originally believed to be true, but the data lean in the other direction.

Finally, there is no statistical significance or strong correlation when it comes to the ratio of military expenditure during a war, which is the number of the democratic side's military expenditure subtracted by the nondemocratic side's military expenditure. Once again, the data reveal that the original hypothesis was wrong, and that when one side significantly outspends the other there is limited impact on the length of a war. An example of this could be the Korean War where the democratic side outspent the nondemocratic side significantly, however the war still lasted a relatively long time. Overall, it appears that military expenditure as a whole does not impact war duration as much as originally believed.

Conclusion

The question of what factors impact war duration in wars between democracies and nondemocracies since 1950 is not one that necessarily has one simple answer. It was originally believed that military expenditure would be the most important factor that explained the length of a war, however this did not prove to be the case. Military expenditure had a very weak relationship with war duration, as did other variables such as who the aggressor is, as well as alliances formed. The factors that proved to be the most significant in relation to war duration were the terrain of the area, as well as the number of casualties associated with the conflict. Overall, these findings present explanations for how long wars between nondemocracies and democracies last since 1950 and could potentially help predict war length in the future.

References

Bennett, D. Scott, and Allan C. Stam. 1996. "The duration of interstate wars, 1816–1985." *American Political Science Review* 90(2): 239-257.

Briffa, Mark. 2014. "What determines the duration of war? Insights from assessment strategies in animal contests*." Plos One* 9(9): e108491.

Filson, Darren, and Suzanne Werner. 2004. "Bargaining and Fighting: The Impact of Regime Type on War Onset, Duration, and Outcomes." *American Journal of Political Science* 48(2): 296–313.

Gibler, Douglas M. 2009. "International military alliances, 1648-2008." CQ Press. Vol. 4.

Hwang, Sung-Ha. 2012. "Technology of military conflict, military spending, and war*." Journal of Public Economics* 96.1-2, 226-236.

Nilsson, M. 2012. "Offense–Defense Balance, War Duration, and the Security Dilemma." *Journal of Conflict Resolution* 56(3), 467–489.

Pilster, Ulrich, and Tobias Böhmelt. 2011. "Coup-Proofing and Military Effectiveness in Interstate Wars, 1967–99." *Conflict Management and Peace Science* 28(4), 331–350.

Pettersson, Therese. 2022. "UCDP Battle-related Deaths Dataset Codebook Version 22.1" URL: https://ucdp.uu.se/downloads/ Accessed: March 21, 2023.

Reiter, Dan, and Allan C. Stam. 1998. Democracy, War Initiation, and Victory. *American Political Science Review*, vol. 92, no. 2, pp. 377–389.

Reiter, Dan, and Allan C. Stam. 2002. *Democracies at War.* Princeton: Princeton University Press.

Ringsmose, Jens. 2009. Paying for protection: Denmark's military expenditure during the Cold War."*. Cooperation and Conflict* 44.1, 73-97.

Shaver, Andrew, David B. Carter, and Tsering Wangyal Shawa. 2019. "Terrain Ruggedness and Land Cover: Improved Data for Most Research Designs*." Conflict Management and Peace Science* 36(2) 191–218.

Singer, David. 2016. Reconstructing the Correlates of War Dataset on Material Capabilities of States, 1816-2016 Version 6. *International Interactions*, 14: 115-32.

Tollefsen, Andreas Forø, Karim Bahgat, Jonas Nordkvelle and Halvard Buhaug. 2012. "PRIO-GRID: A unified spatial data structure." *Journal of Peace Research,* 49(2): 363-374.

Valentino, Benjamin A., Paul K. Huth, and Sarah E. Croco. 2010. "Bear any burden? How democracies minimize the costs of war." *The Journal of Politics* 72(2) 528-544.