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# Supporting Ukraine Militarily: Why Is the West Divided?

## Abstract

Following Russia's attack on Ukraine on February 24, 2022, Western countries have been providing military assistance to Ukraine. However, relative to GDP, the support from the small Baltic and Nordic countries has been greater than that of the larger European NATO countries. This article introduces first an alliance model to examine the incentive for alliance member countries to invest in their own national security in a deterrence equilibrium with no warfare. It is shown that an underinvestment incentive arises. The Russian invasion to Ukraine changed the rules of the game. Therefore, the article offers an explanation for the distribution of Ukrainian military assistance based on the national security classification of European NATO member states in a two-stage game-theoretic model. This distribution turns out to be conditional on the expectations associated with the second stage of the war game if Russia wins the war in its first stage and if there is uncertainty about NATO's ability to commit to its Article 5 to provide security to all of its members.

JEL-Codes: D720, D740, H560.

Keywords: military aid to Ukraine, alliance theory, NATO, two-stage game.

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#### 1. Introduction

In terms of Europe's future security prospects, the outcome of the war in Ukraine is decisive. Russia launched its attack on February 24, 2022, with superior equipment compared to Ukraine's armament. The manpower of the Russian army was also greater, though not to a decisive extent. After initial hesitation, Ukraine received military aid especially from the USA and Western European countries, but also from Japan and Australia.

In the political rhetoric of the small NATO countries, supporting Ukraine has been viewed as a matter of the supporters' own national security. It is thought that if Russia wins its war, the conflict could escalate as Russia attempts to take the next step in its desire of rebuild its dominance over some European areas and create a new sphere of interest.<sup>1</sup> European decision-makers have often used the expression "Russia must not win the war in Ukraine". This refers to the broader consequences of the ongoing war for Europe. From such a perspective, one should examine the tension between Western countries and Russia in terms of a two-stage game.

However, the strategic perspective is complicated. Military spending within NATO is also a national strategic choice, though regulated by the principles of the alliance.<sup>2</sup> Notably, the European NATO countries' aid to Ukraine has been systematically differentiated based on their geographical proximity to Russia. Therefore, one must explore the strategic interactions within NATO first and subsequently examine how these interactions are reflected in the national-level military support for Ukraine.

This article first examines the determination of European NATO countries' investments in national security within the framework of alliance theory, in the context of deterrence equilibrium with no warfare.<sup>3</sup> Despite NATO's guidelines for defense expenditures, these decisions are made at the national level and vary by country. In the model to be developed, the defense alliance is heterogeneous in terms of the size of the member countries. Additionally, each member is assumed to have a country-specific safety rating.

Resulting from the Russia's attack on Ukraine, a new state of defence arises, and the rules of the game change. The attack incentivizes member countries to assess their risk of being subsequently threatened by Russia if it wins its war against Ukraine. The NATO member countries start providing military aid to Ukraine for a nationally selfish reasons; they believe it supports their own security. Supporting Ukraine is thus not primarily about morality. From a national point of view, a natural requirement is that the last euro allocated to national security produces the same amount of own security as the last invested euro produces consumption opportunities for the people. With regard to Ukraine's aid, the last unit of armaments delivered to Ukraine should produce the same amount of benefit to the

<sup>&</sup>lt;sup>1</sup> The domino theory has made a comeback. The last time it was prominent was during the Vietnam War, although it was then associated with a struggle between ideologies.

<sup>&</sup>lt;sup>2</sup> The European Union has its role in supporting Ukraine but it is conditional on national decisions. As the focus in the current article is on the national strategic choices within the European NATO countries, the military choices of the USA are considered exogenous and are not part of the formal analysis.

<sup>&</sup>lt;sup>3</sup> The seminal view was presented by Olson (1965), while Olson and Zeckhauser (1966) worked it out formally. For a review, see Sandler and Hartley (2001).

donor as the last unit sacrificed for its own defense. These natural national efficiency conditions have to hold also when it comes to considering the choices of member countries in an alliance.

The main results of the paper are as follows. First, in the deterrence equilibrium with no warfare and analogously to the results of Olson and Zeckhouser (1966), both the high-safety and the low-safety member states in a military alliance underinvest in their national security. Moreover and second, large members states invest more in national security than small member states. Third, if the member countries expect that the activization of the NATO Article 5 is credible, none of them has an incentive to help Ukraine militarily. Fourth, member countries with high safety ratings have an inventive to undersize their support for Ukraine. On the other hand, if NATO member countries with low safety ratings expect that Russia will win its war against Ukraine, compared to the average, they have an incentive to oversize their military support for Ukraine.

#### 2. Russia, Ukraine and NATO: some remarks

In economic terms and for the members in a defense alliance, national security is an international pure public good. However, member countries have an incentive to allocate to their defence as is seen to benefit their own national security. They tend to overlook the impact that their security spending has on the security of the other member countries.

After the end of the Cold War, most NATO countries waived conscription. Only a third of them adhered to the agreed 2% of their gross national product for maintain their own defense capability. In the USA, defense equipment production is reasonably concentrated. In the NATO countries of Europe, defence spending is generally national and differentiated. Implementation of joint procurements has been minimal. Although the population of the European NATO countries is three times larger than that of Russia and the GDP is almost 10 times larger, Russia apparently considered the European NATO countries weak enough when it militarily attacked Ukraine in February 2022. As a result, the European NATO countries have begun to raise their defence budgets. For example, the defence budget of Poland exceeds 4 % relative to its GDP in 2024.

Ukraine is not a NATO member country, and the protection offered by Article 5 cannot apply to it. This imposes a significant constraint on the strategic dimensioning of support for Ukraine. The support has been based on the hope that Ukraine will succeed against Russia, while avoiding the escalation of the war. As the military aid has been restricted to Ukrainian territory, UN rules are not violated. However, there has been fears that the military aid might escalate into a full-scale war between Russia and the West. Russia presumably could not win such a war, which raises questions about the use of its tactical nuclear weapons.<sup>4</sup>

<sup>&</sup>lt;sup>4</sup> According to American sources, Russia has 1,000-2,000 of these weapons while the USA has 100 in Europe, source: *Nonstrategic Nuclear Weapons*, Congressional Research Service, CRS, March 7, 2022. Moreover, France and Britain are nuclear NATO states

#### 3. European allies' aid to Ukraine: data<sup>5</sup>

For the background of the study, some data is helpful. Among the Western countries, the United States has been the most significant supporter of Ukraine. During the first two war years, its aid was 0.20 % of its GDP. By December 12, 2024, the United States alone pledged in arms and military aid to Ukraine a total surpassing 61.4 billion.<sup>6</sup>

The aid from European NATO countries to Ukraine has been national and nationally differentiated. In the small Baltic and Nordic countries, military aid has been the largest relative to their GDP. In the Baltic countries, it has ranged 1.14% to 1.55% of GDP, and in the Nordic countries, from 0.44% to 0.79% of GDP. In the large NATO countries located further away from Russia, aid has only been 0.07% and 0.14% of GDP, with the exception of Germany. These include Italy, France and Spain. Initially, Germany was slow in providing aid, but its contribution has since strengthened, rising to the 0.36% of GDP. Britain's aid has been of a similar magnitude as that of the USA's, at 0.22% of GDP. The goal of the current paper is to formulate a theory that explains these observations. The focus will be on the European NATO countries.

#### 4. Deterrence equilibrium without warfare

The empirical data reveal that the military support to Ukraine by the European NATO member countries is strikingly divided. The purpose of the analysis is to explain this strategic diversity. Gametheoretic mechanisms are involved in two ways. First, the mechanisms within NATO revolve around the interactions of defence spending among the member countries. Second, the allocation of military aid from the domestic military capacity to help Ukraine is determined based on the expectations concerning the military threat if Russia is victorious in its invasion of Ukraine.

This section considers first the deterrence equilibrium with no warfare. The European NATO member countries are assumed to have an implicit safety classification,  $s \in (0,1)$ , (*s* represents *national security*). A low *s* indicates a low safety class while a high *s* indicates a high safety class. Countries bordering Russia are assumed to have lower safety class than those located further away from Russia.

They both are assumed to have national welfare function of the Olson-Zeckhauser variety, with the qualificaation that the safety classification is country-dependent. Their citizens obtain utility both from consumption,  $x_i > 0$ , and national security. The degree of national security is affected by their own defence investments,  $q_i > 0$ , normalized by their safety classification,  $s_i$ ,  $q_i/s_i > 0$ . The marginal utility of the defence investment is hence assumed to be lower for a NATO member country with a high safety class than for the member country with a low safety class. Moreover, the defence investments of the other member country provide additional safety as a positive externality to the comember. The national welfare function of both alliance members is assumed to be of the Cobb-Douglas variety

$$U_i = \theta x_i^{\alpha} (q_i/s_i + q_j)^{\beta}, \qquad (1)$$

<sup>&</sup>lt;sup>5</sup> The figures on the aid of the European countries are based on data from Kiel's research unit (Kiel Institute for the World Economy, Ukraine support tracker).

<sup>&</sup>lt;sup>6</sup> Source: https://www.state.gov/u-s-security-cooperation-with-ukraine/.

and similarly for country *j*, where  $\alpha > 0$ ,  $\beta > 0$  are elasticities, and  $\theta > 0$  is a scaling factor.

The impact of national safety class on national security is revealed in the above formulation in that an incremental investment in national security results in less safety for a high safety country compared to a low safety country,

$$\frac{\partial \ln U_i}{\partial q_i} = \beta \frac{1}{q_i + s_i q_j},\tag{2}$$

with

$$\frac{\partial \left(\frac{\partial \ln U_i}{\partial q_i}\right)}{\partial s_i} < 0. \tag{3}$$

The budget constraint of member country i is

$$Y_i = x_i + pq_i, (4)$$

where  $Y_i$  is GDP, the price of consumption is 1 ja p is the unit price of defence expenditures and the same for country j. The GDP is exogenous in the model and is used to measure the size of the country.

Solve first the distribution of the defence expenditures across the member countries if they operate purely in terms of national interests, excluding the externality of those investments on the safety of the co-member country. This amounts to considering the Nash equilibrium of the alliance.

The constrained Lagrangean of the logarithmic version of the welfare function reads as

$$\max L_{x_{i},q_{i}} = ln\theta + \alpha lnx_{i} + \beta ln(q_{i}/s_{i} + q_{j}) + \lambda [Y_{i} - x_{i} - pq_{i}], \quad i = 1, ..., n,$$
(5)

where  $\lambda > 0$  is the shadow price of the budget constraint. Consider the optimal policy with an interior solution,  $x_i > 0$ ,  $q_i > 0$ . The necessary conditions are<sup>7</sup>

$$\frac{\partial L}{\partial x_i} = \alpha \frac{1}{x_i} - \lambda = 0, \ \frac{\partial L}{\partial q_i} = \beta \frac{1}{q_i + s_i q_j} - \lambda p = 0, \tag{6}$$

with the marginal utilities of consumption and national safety as

$$MU_{x_i} = \alpha \frac{1}{x_i}, \quad MU_{q_i} = \beta \frac{1}{q_i + s_i q_j}.$$
(7)

<sup>&</sup>lt;sup>7</sup> These conditions are also sufficient as the Cobb-Douglas welfare function is strictly concave in the decision variables.

In Nash equilibrium, the loss in the national safety when resources for consumption are increased, their marginal rate of substitution is given by

$$MRS_{i}^{qx} = -\frac{dq_{i}}{dx_{i}} = \frac{\partial lnU_{i}}{\partial x_{i}} / \frac{\partial lnU_{i}}{\partial q_{i}}$$
(8)

or,

$$MRS_i^{qx} = \frac{\alpha}{\beta} \frac{q_i + s_i q_j}{x_i} = 1/p.$$
(9)

Instead of solving explicitly the allocation of total income between consumption and defence, it is sufficient to state that in a Nash equilibrium, there will be underinvestment in defence among the member countries. Instead, the Samuelson (1954) criterion for Pareto-efficient allocation suggests that internalizing the externalities requires

$$\Sigma_i MRS_i^{qx} = 1/p. \tag{10}$$

Therefore,

*Proposition* 1 (Olson-Zeckhouser, 1966). The member countries in a defence alliance underinvest in their defence.<sup>8</sup>

This concerns both high-risk and low-risk countries. Moreover,

**Proposition 2** (Olson-Zeckhouser, 1966). Large member countries in a defence alliance invest more in national security than small member countries.

It is sufficient to prove the results in a case with a simplified parametrization  $\alpha = \beta = 1/2$ . Then, the marginal rate of substitution in equation (9) is

$$\frac{q_i + s_i q_j}{x_i} = 1/p. \tag{11}$$

A similar condition holds for country *j*. Elimination consumption  $x_i$ , the reaction function for country *i* is

$$q_i = \frac{Y_i - ps_i q_j}{2p}.$$
(12)

<sup>&</sup>lt;sup>8</sup> The result concerning the under-investment incentive of the member countries is also shown in Kanniainen and Ringbom (2017). However, a qualification should be mentioned in the case of asymmetric information. Kanniainen (2018) has shown that when a potential threat faces uncertainty of the attack target's ability to defend, the target has an incentive to over-invest in its own defense to strengthen the potential attacker's perception that the defender is serious.

Similarly for country *j*. Therefore, the reaction curves are downward sloping in the  $(q_i, q_j)$  axis. Focusing on their intersection with positive defence expenditures, the Nash equilibrium satisfies for member country *i* (similarly for country *j*),

$$pq_i^N = \frac{2Y_i - s_i Y_j}{4 - s_i s_j} \quad i, j = 1, 2.$$
(13)

This demonstrates both the own and mutual impacts of member country size on defence expenditures,

$$\frac{\partial q_i^N}{\partial Y_i} > 0, \quad \frac{\partial q_i^N}{\partial Y_j} < 0.$$
(14)

In addition, the second inequality in (14) shows that the magnitude of the free-riding effect stated in Proposition 1 depends positively on the size of the co-member in the alliance.

It also holds in the Nash equilibrium that

$$\frac{\partial q_i^N}{\partial s_i} < 0. \tag{15}$$

Thus, the member country with a greater safety class invests less in its security than a member country with a lower safety class. A precise condition for this to hold is  $Y_i < 2Y_j/s_j$ , in other words that the country is not abnormally large.<sup>9</sup>

#### Some empirical regularities in defence expenditures within NATO

The theoretical model explored predicts that the larger a member country of the defense alliance is, the higher are its defense expenditures. Smaller member countries have lower defense expenditures for the additional reason that they have an incentive to free-ride on the defence expenditures of larger member countries. The model also predicts that the riskier a country is in terms of its security classification, the larger its defense budget will be. How do these predictions hold up in light of the data?<sup>10</sup> If all member countries of the defense alliance followed the agreed 2 percent criterion for defense spending as a share of GDP, the correlation between the size of the country measured by GDP and defense spending would be 100 percent. This would remain the same if the size of the country were measured on an ordinal scale (smallest = 1, largest = size of the defense union). By focusing on European NATO countries, excluding the United States, Canada, and Turkey, the correlation coefficient turns out to be r = 0.72. If, on the other hand, the same calculation is conducted for the EU countries and the size of the country is measured by GDP, the correlation coefficient gets the value r = 0.97.

<sup>&</sup>lt;sup>9</sup> Intuitively, if a country is very large compared to the other members, it may act independently without taking a strategic role in relation to the other member countries.

<sup>&</sup>lt;sup>10</sup> Data source: Nato (2024) Defence Expenditure of NATO Countries (2014-2024), <u>https://www.nato.int/nato\_static\_fl2014/assets/pdf/2024/6/pdf/240617-def-exp-2024-en.pdf.</u>

Let us use the country's distance from Russia as a country's safety risk. Take the number of countries between each NATO country and Russia via the shortest route from the member country to Russian territory as such a measure. By dividing the countries into 5 risk categories (0 = 1 low security category, 4 = 1 high security category), the pairwise correlation coefficient between the security category and the share of GDP of defense spending in the data of 2024 European NATO countries is -0.51 ( $p = 0.0058^{***}$ ). For comparison, before the war, it was 0.147 (p = 0.49) in the 2014 data. Europe has therefore become more insecure. The GDP share of defense spending is better explained by a country's security category than by its size. For example, the correlation of the GDP share of defense expenditure with the size of the country as measured by GDP in 2024 with data from European NATO countries (28 countries) was -0.11 (p = 0.58) and in 2014 (24 countries) it was 0.244 (p = 0.25). Thus, in 2014 we were closer to the alliance theory than in 2024.

5. Change in game: military aid to Ukraine under the uncertainty of NATO's commitment to its Article 5

Turn now to consider the case where Russia has carried out its invasion to Ukraine. It has been speculated that Russia has wider military goals in Europe, appearing to have a clear desire to regain control of other European regions.<sup>11</sup> It could even initiate aggression against a NATO country.<sup>12</sup> However, no European member country of the North Atlantic Treaty Organization (NATO) has ever been the object of a military attack. Its Article 5, however, dictates that should this happen, the member states have the responsibility to provide help to the member country subject to a military attack.<sup>13</sup>

The problem with Article 5 is its credibility. In this section, the Ukrainian military aid is analyzed in light of expectations concerning the safety of NATO member countries in the event that Russia is victorious in its invasion of Ukraine.<sup>14</sup>

https://comptroller.defense.gov/Portals/45/Documents/defbudget/FY2024/FY2024\_Budget\_Re-

<sup>&</sup>lt;sup>11</sup> The Soviet Union broke up in 1991, resulting in the formation of 15 independent states. Most of its allies in Europe joined NATO.

<sup>&</sup>lt;sup>12</sup> Concerns have been expressed that Russia could militarily test, for example, the Baltic borders, attack Norway's Svalbard, threaten Poland or Moldova (which is not a NATO country). The commander of the Swedish Defense Forces has expressed concern about the island of Gotland and the Finnish island of Åland. Russia's interest in its position in the Baltic Sea is obvious.

<sup>&</sup>lt;sup>13</sup> Apart from tactical nuclear weapons, NATO's overall military strength is superior to that of Russia. The planned defence budget of the USA for the year 2024 is \$842 billion Source::

<sup>&</sup>lt;u>quest\_Overview\_Book.pdf</u>). The aggregated defence expenditutes of the European Union member countries were €240 billion in 2022, about \$259 billion, (Source: <u>https://eda.europa.eu/publications-</u> <u>and-data/defence-data</u>). It has not been straightforward to obtain precise figures on Russia's defence budget since 2022. According to Military Balance, it would amount to 7,54 % of Russian GDP in 2024. This gives an estimate of \$135 billion.

<sup>&</sup>lt;sup>14</sup> As Clausewitz reminds us, in war it is crucial "not to take the first step without considering the last", von Clausewitz (1832).

For the technical analysis, it is helpful to consider the case where the defense alliance has only two members *i* and *j*: one with a low safety class (= *i*) and one with a high safety class (= *j*). Whatever the outcome of the Ukrainian war, the NATO country with a high safety classification does not expect aggression from Russia in stage 2 of the war game. Hence, its decision problem is analogous to that analyzed above in the context of credible deterrence. The member country with a high safety classification does not have an incentive of providing military support to Ukraine, as it would only result in a loss of its welfare.

The equilibrium with deterrence is not necessarily any more credible for the NATO member country with a low safety-classification. The rules of the game have unexpectedly changed from its point of view, implying that there will be two stages in the war game under the new rules. While Russia has launched a military attacked against Ukraine, it may continue its invasion into another European country in the next stage.<sup>15</sup> The Russian roulette starts.

While the NATO member country with a high safety classification may not regard it as necessary to adjust its defense strategy, the case is different for the member country with a low safety classification. Its decision problem is more complicated. It has to form expectations of the security guarantees associated with NATO Article 5. And it has to evaluate its expected cost of warfare if it becomes the object of Russian invasion. Such a threat is taken to exist even though the war in Ukraine ends with a ceasefire. It has an incentive to expand its defense capacity, allocating part of it to military aid in Ukraine. Investment in a member country's own safety and in supporting Ukraine are substitutes.

The low-safety member country *i* can therefore expect to confront aggression from Russia in stage 2 of the game if Russia is victorious in its invasion of Ukraine. In terms of the Tullock (1967) formulation<sup>16</sup>, the probability of Russia being victorious in its attack on Ukraine can be stated as

$$0 < p^u = \frac{R}{z_o + z_i + R} < 1, \tag{16}$$

where *R* is the military capacity of Russia,  $z_o$  is the Ukrainian defence capacity, and  $z_i$  is the military aid to Ukraine by the low-safety country. If confronted by Russian aggression, the member country with a low safety classification will subsequently lose its war against Russia with probability

$$0 < p^{i} = \frac{R}{q_{i} - z_{i} + R} < 1.$$
(17)

<sup>&</sup>lt;sup>15</sup> Russia's victory in its war against Ukraine can be interpreted to mean that it will be able to control Ukraine's territory, politics, and economy. Concerns have been expressed that Russia might resort to tactical nuclear weapons to defeat the Ukrainian forces. Potential use of tactical nuclear weapons in Ukraine has been analyzed by Kanniainen (2024) in terms of the so called "Madman theory". <sup>16</sup> Based on Tullock (1967), the concept of the probability of victory in war has been extensively employed in war theory.

Therefore, the aid to Ukraine by the low-security country has two opposite effects. It will strengthen Ukraine's success in its defense war. On the other hand, the aid reduces its own defense capability should Russia attack it in the second stage of the war.<sup>17</sup>

Denote  $0 \le t \le 1$  as the probability at which the member country *i* expects that NATO is unable to commit to its Article 5. Moreover, suppose that the member country expects to suffer a cost *C* if it loses its war against Russia. Then, its defense strategy in stage 1 of the game is dictated by maximizing the expected welfare subject to its expectations of the consequences in stage 2 of the war game. The degree of national security of the low-security country will now be adjusted by its military aid to Ukraine,  $z_i \ge 0$ , as  $(q_i - z_i)/s_i > 0$ .

Given the expectation of the low safety country concerning the inability of commitment of the alliance to its Article 5,  $0 \le t \le 1$ , and the expected cost of war *C* to the low-safety member country, its expected social welfare over the two periods (assuming zero discounting) can now be stated as

$$\max E[W]_{x_i, q_i, z_i} = ln\theta + \alpha lnx_i + \beta ln((q_i - z_i)/s_i + q_j) - tp^u p^i C + \lambda [Y_i - x_i - pq_i],$$
(18)

The first-order conditions for an interior optimum are

$$\frac{\partial E[W]}{\partial x_i} = \alpha \frac{1}{x_i} - \lambda = 0, \qquad (18a)$$

$$\frac{\partial E[W]}{\partial q_i} = \beta \frac{1}{q_i + s_i q_j} - t p^u \frac{\partial p^i}{\partial q_i} C - \lambda p = 0,$$
(18b)

$$\frac{\partial E[W]}{\partial z_i} = -\beta \frac{1}{q_i - z_i + s_i q_j} - t \left[ \frac{\partial p^u}{\partial z_i} p^i + \frac{\partial p^i}{\partial z_i} p^u \right] C = 0.$$
(18c)

In order to characterize the optimal strategy of the high-risk country based on these first-order conditions, let us state the signs of the partial derivatives of the probabilities in (16) and (17) as

$$\frac{\partial p^{i}}{\partial q_{i}} < 0, \ \frac{\partial p^{u}}{\partial z_{i}} < 0, \frac{\partial p^{i}}{\partial z_{i}} > 0.$$
(19)

Compared to the case where deterrence is credible, there is an extra mechanism, the expected cost of being the object of Russian aggression in the second stage. Therefore,

*Proposition* **3.** The member country with a low safety class will invest more on its defence, compared to the deterrence equilibrium.

<sup>&</sup>lt;sup>17</sup> Apart from the costs to Ukraine, the warfare has resulted in substantial losses to Russia. In terms of modeling, not much would be gained by changing the notation R for Russian war capacity.

This conclusion can be seen from (18b) because the externality created by the high-security country through its investment  $q_j$  is unchanged and because  $\frac{\partial p^i}{\partial q_i} < 0$ .

Moreover, the optimal allocation to Ukraine by the low-security country has to balance between the incremental ability of Ukraine to resist the Russian aggression and its own national security if it will be the object of the Russian aggression in the second stage. One can see that through the first term on the right-hand side of (18c) an incremental military aid to Ukraine will reduce the national security of the low security member state – giving up defence equipment to Ukraine will reduce the defence capability of the aiding country. However, there is an additional mechanism related to the cost of war for the low-security country: because  $\frac{\partial p^u}{\partial z_i} < 0$ , the probability of Russian victory in its war against Ukraine is reduced. However, because  $\frac{\partial p^i}{\partial z_i} > 0$ , the probability of the Russian victory in the second stage warfare against the low-security member country will be increased. The significance of these latter effects will depend on the expected probability of NATO activating its Article 5 and the cost to the low-security country if NATO fails to activate it. The optimal aid to Ukraine will balance between these three effects. To summarize,

**Proposition 4.** Moving from a deterrence equilibrium to a threat of warfare state will result in a strategic re-evaluation of the defence spending of a low-safety state. It will increase its defence spending, allocating part of it to military aid for Ukraine depending on the expected probability of the alliance's commitment to its Article 5 and the expected cost of war to the low-safety member state if NATO fails to activate this article.

#### 6. Final remarks

Before the Russian invasion of Ukraine in 2022, the distribution of defence capacity within NATO member countries was settled in a state referred to as deterrence equilibrium in this paper. This resulted in a strong defence capability compared to Russian military strength. The Russian invasion of Ukraine changed the rules of the game. Although Ukraine was not a NATO member country, the smaller European NATO countries, apart from the United States, provided more military help to Ukraine than the larger NATO member countries.

With NATO's credible commitment to collective defense under Article 5, in case any member becomes the target of aggression, such a strategic choice is hard to explain. Doubts about the credibility of this commitment help to understand why smaller NATO countries, especially those close to Russia's borders, began to see aid to Ukraine as a substitute for their own defense capacity.

This paper has analyzed the impact of this strategic choice on their defense policies. It has shown how uncertainty about NATO's commitment affects their national safety and how the probability of Russia's victory in its war in Ukraine influences the security risk for a low-security NATO member country. Furthermore, it has evaluated the possibility of these countries surviving if Russia turns its aggression towards them and the cost of such aggression to the defending country. It has shown that they will definitely invest more in national defense, but the allocation of their defense capacity to aid Ukraine depends on the expected outcomes of the warfare in Ukraine and their own struggle for survival.

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