



UNDERSTANDING PEACE ECONOMICS

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Abstract

This paper develops a definition of Peace Economics. A clear and precise definition is essential to develop a workable economic approach to peacebuilding through economic policy instruments, as well as to properly understand the economic costs and benefits of peace. The paper proceeds by outlining the main pillars of peace economics: (i) the theoretical approach proposed by Boulding concerning the interplay among threat, exchange, and integrative systems; (ii) the consequent allocation of resources between productive and unproductive activities; (iii) the economic impact of military commitment, which generates substantial long-run losses for societies; (iv) the role of deterrence, traditionally regarded as the dominant framework shaping state policies; and (v) the key elements required for a normative approach to peace economics.

Introduction

This paper seeks to develop a definition of Peace Economics. A clear and precise definition is essential to develop a workable economic approach to peacebuilding through economic policy instruments, as well as to properly understand the economic costs and benefits of peace. The first comprehensive definition of peace economics was proposed in Isard (1994): “[...] *peace economics is generally concerned with: (1) resolution, management or reduction of conflict in the economic sphere; (2) the use of*

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economic measures and policy to cope with and control conflicts whether economic or not; and (3) the impact of conflict on the economic behavior and welfare of firms, consumers organizations, government and society. Central to the field are: analyses of conflicts among nations, regions and other communities of the world; measures to control (deescalate) arms races and achieve reduction in military expenditures and weaponry; and programs and policies to utilize resources thus released for more constructive purposes [...]. That is, first, peace economics extends beyond the analysis of interstate conflicts to encompass conflicts among diverse actors, including those occurring at the micro level. Eventually, Isard also underlined the methodology of peace economics, “[...] *It embodies game theoretic, strategic, and other reaction-interaction analyses among parties, wherein hostility and friendliness, and cooperation and defection are involved. Behaving units are taken to engage in appropriative (e.g. military ventures) as well as productive activities, with war often viewed as a rational, purposeful choice of decision makers [...].*” That is, the second aspect of this definition is that rational choice theory does constitute the set of tools to analyze causes and consequences of strategic destructive interactions.

Although comprehensive, this definition requires further refinement. In particular, it should be complemented by a clearer conceptualization of peace at both the micro and macro levels, as well as by a more explicit identification of its analytical foundations. These are rooted in the trade-off between productive and unproductive economic activities, which emerges from the different types of interactions among rational actors. Building on this framework, the chapter proceeds by outlining the main pillars of peace economics: (i) the theoretical approach proposed by Boulding (1963a) concerning the interplay among threat, exchange, and integrative systems; (ii) the consequent allocation of resources between productive and unproductive activities; (iii) the economic impact of military commitment, which generates substantial long-run losses for societies; (iv) the role of deterrence, traditionally regarded as the dominant framework shaping state policies; and (v) the key elements required for a normative approach to peace economics. In doing so, this chapter complements and extends the analyses presented in Caruso (2010), Caruso (2015), and Caruso (2017).

1. The point of departure: the interplay of threat, exchange, and integration

A useful point of departure for understanding the nature of peace economics is the recognition that many behaviors, activities, and actions are intrinsically economic, even if they do not take place within markets as traditionally defined. In classical economic interpretations, markets and the relations structured within them are characterized by the presence of prices. In practice, however, several human actions – though not mediated by prices – are economic in nature because they employ scarce resources and generate economic outcomes. Put differently, economic agents, whether individuals or organizations, frequently engage in interactions that extend beyond the exchange of goods and services for money. Agent behavior is therefore not confined to market transactions but encompasses a broad spectrum of activities that are inherently economic due to the resources they mobilize and their effects on human welfare. Peace and conflict fall squarely within this category. They manifest at both the micro and macro levels: at the micro level, they arise from non-market interactions among individuals, while at the macro level, they primarily reflect interactions among nation-states.

Starting from this observation, Boulding (1963a) proposed a distinction among human and social activities, and thus institutions, along three dimensions: (i) exchange; (ii) integration; and (iii) threat. Exchange relations, in their simplest form, consist of a two-way relationship between two actors, where one exchanges goods or services in return for money or another fungible good. These are, in effect, the traditional relationships and dynamics of the market. Conversely, integrative relations are characterized by unilateral transfers from one actor to another. These may take the form of acts of generosity, or, through mechanisms of reciprocity, transfers intended to increase utility at a later time, albeit in uncertain measure. Systems of threat are instead characterized by a promise of expropriation or violent retaliation by one actor against another should the latter fail to comply with an obligation or directive imposed by the former. In short, all economic and social events and institutions are characterized by the simultaneous presence and combination of these three elements, albeit to varying degrees. All three types of relations may appear at both the micro and macro levels. Consequently, all interactions among individuals, organizations, and even states combine elements of threat, exchange, and integration.

To illustrate this point at the macro level, consider trade agreements among nation-states. Such agreements incorporate elements of exchange (the obligations

undertaken, which can be quantified in terms of value), elements of threat (penalties or sanctions for non-compliance), and elements of integration (mutual concessions on key aspects of the agreement). The relative intensity of these components varies according to the level of hostility between the countries. Two “friendly” countries will emphasize exchange and integration, whereas two rival or hostile countries will emphasize threat. Trade relations can thus be characterized either by obstacles and barriers or by deeper forms of integration. In free trade areas, interdependence between states will display more evident components of exchange and threat than of integration, whereas in supranational arrangements such as the EU, integrative aspects dominate. There are also cases in which exchange is strongly shaped by threat, as in the case of economic sanctions, where commercial relations persist but are heavily influenced by ongoing hostility.

At the micro level, interactions among individuals provide additional illustrations. Consider the employment relationship. First, it is characterized by exchange, as the worker gives up leisure time in return for wages. Second, a relation of threat exists, since the employer has the power to dismiss the worker. Third, the employment contract may include an integrative component, as many forms of work effort arise voluntarily and cannot be explained solely in terms of exchange or threat. Volunteering, for instance, is dominated by the integrative component, whereas slavery is a labor relation in which the threat component dominates both exchange and integration. The example of slavery makes the economic implications of this framework immediately clear. Slavery is intrinsically unproductive and tends to perpetuate negative effects on development over time (Acemoglu & Wolitzky, 2011; Mitchener & McLean, 2003). To unify these insights and provide concrete analytical tools, Boulding illustrates his theory through the social triangle (Fig. 1). Each point inside the triangle represents varying intensities for the three elements – exchange, integration, and threat – allowing for a nuanced understanding of the economic and social dimensions of human interactions.

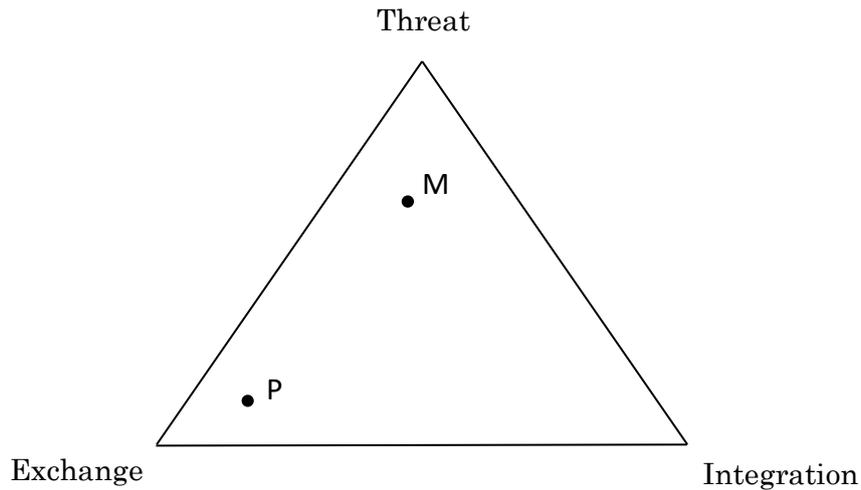


Figure 1: The Social Triangle.

Point P, for example, lies close to the maximum intensity of exchange, plausibly representing a quasi-market relationship. Point M, closer to threat and coercion, corresponds to a relationship characterized by subjection and conflict between at least two rational agents. Consider states as an illustration. When viewed as rational unitary actors, states engage in exchange relations through international trade. These relations may encounter obstacles and barriers or be more integrated, as in the case of a free trade area or deep economic integration, such as the EU. In the first scenario, interdependence between states is likely dominated by exchange and threat, with integrative elements less prominent. In the second scenario, integrative aspects are more salient. Therefore, at point P, productive activities within economies substantially exceed unproductive and destructive ones, whereas at point M the opposite scenario is plausible. There are also contexts in which exchange is heavily shaped by threat and conflict. Economic sanctions provide a clear example: although exchange relations persist, they are profoundly influenced by hostile interstate relations. A free trade area or an organization – such as the EU – is more likely to foster the expansion of exchange relations than a situation in which states belong to opposing spheres of influence, as during the Cold War. Different combinations of exchange, threat, and integration correspond to different economic outcomes in terms of the balance between productive and unproductive activities, particularly destructive ones.

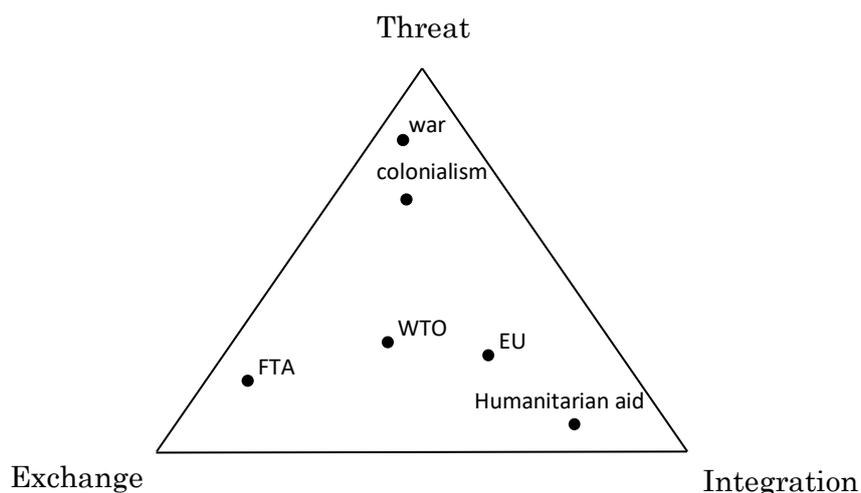


Figure 2: Examples of Relations Between States in Boulding's Triangle.

In Figure 2, Boulding's triangle is revisited with illustrative examples of relations between states. In a war scenario, a threat system reaches its full expression, with the relationship between two states entirely shaped by enacted threat. Similarly, colonial systems often functioned as threat systems aimed at the expropriation of subjected populations. In contrast, economic relations such as those in a free trade area are closer to the extreme of pure exchange, whereas the World Trade Organization exhibits more evident integrative components. The EU, initially established as an economic organization, demonstrates a deeper level of integration over time. In practice, the dominance of one type of relation over the others tends to reshape the allocation of resources between productive and unproductive activities, leading to different economic outcomes. Where exchange relations prevail, productive activities tend to flourish. Conversely, in contexts dominated by integrative or threat-based relations, unproductive activities are more prevalent, albeit in different forms.

Productive activities are those that enhance a society's well-being through the creation of new wealth. They include business activity, investment, and exchange – the traditional core domain of economic science. Unproductive activities, by contrast, consume scarce resources without generating new wealth for society. These can be further divided into (i) transactional unproductive activities and (ii) destructive unproductive activities. Transactional unproductive activities arise from rent-seeking or redistributive behavior and, although they do not create new wealth, may be developmentally neutral. Integrative relations tend to generate such transactional unproductive activities. A classic example is that of lawyers: their function is not strictly

productive, but rather to redistribute existing wealth among parties involved in legal processes. Societies with excessive numbers of lawyers may become more litigious and less productive. The existence of the state also exemplifies transactional unproductive activity, as one of its enduring functions is wealth redistribution. Different types of state institutions produce varying economic outcomes, yet an excessively large state is generally perceived as an obstacle to long-term economic development. By contrast, destructive unproductive activities are particularly harmful, as they destroy productive capital – especially human capital. All violent activities, as well as efforts aimed at containing violence, fall into this category. In short, economic development depends on the balance between productive and unproductive activities.

The distinction among economic activities has deep historical roots. Franciscan theologians such as Peter John Olivi and John Duns Scotus debated credit practices and the nature of economic life, laying the conceptual groundwork of peace economics. A more systematic formulation appears in François Quesnay's *Tableau économique* (1758), which clarified that the balance between productive and unproductive activities determines a society's economic performance. Quesnay also highlighted the role of government in supporting productive activities, guaranteeing property rights that encourage investment, and preventing the formation of unproductive financial rents.

More recently, Baumol (1990/1996) offered a broader framework explaining how unproductive and destructive activities affect long-term societal development. He argues that entrepreneurial activity can take different forms depending on whether society rewards productive versus unproductive behavior, leading to profound differences in development across societies. For instance, in the High Middle Ages, wealth was often acquired through military ventures. The violent appropriation of territories and castles was a legitimate means for medieval nobles to increase their fortunes. Although this violent competition generated certain innovations, particularly in military technology, the overall social outcome remained negative. Drawing on Boulding's framework, one can argue that, unlike systems dominated by exchange or integration, threat-based systems – characterized by an absence of peace – tend to weaken economic development by channeling resources toward destructive unproductive activities.

In real-world settings, unproductive and destructive activities can never be entirely eliminated. While some level of unproductive activity may be desirable, an

economy dominated by threat, violence, or their containment is ultimately unproductive and prone to decline. For example, a police force is necessary for security, but few would endorse a police state. Similarly, a military may provide security, but an excessively large military is often associated with authoritarian regimes, in which individual rights are systematically curtailed. There is thus a plausible non-linear relationship between the size of the police and military forces and overall well-being: development and security may increase up to a point but decline once these commitments exceed certain thresholds. The Soviet Union exemplifies an extreme case of a threat-based, unproductive system. Society was tightly controlled by multiple police forces, more than 15% of GDP was devoted to the arms race, and productive economic activity was systematically discouraged. In light of these factors, it is unsurprising that the Soviet system eventually collapsed. Because threat-based systems are intrinsically unproductive, they are ultimately prone to economic and social decline.

2. How a false belief takes root: the strange case of military spending

In the previous section, we noted that destructive unproductive activities act as a major brake on economic development. Unproductive destructive activities are those that stem from the potential or actual use of violence. The most important of them is undoubtedly military spending, which therefore tends to weaken economic development of societies. Samuelson (1970) famously identified the *trade-off* between ‘butter’ and ‘guns’ as a central problem of economic policy. In that analysis, ‘butter’ referred to all goods produced in the civilian sector, while ‘guns’ referred to the resources typically allocated to military purposes. One of the classic goals of economic policy was to increase the production of butter and limit that of guns.

Despite extensive research, media and political debates often revive the flawed claim that war or military spending can act as engines of economic growth. This belief remains unfortunately widespread, despite its lack of empirical support. A large body of economic literature documents the negative impact of military expenditure and armed conflict on growth and development. In particular, recent contributions surveyed by Dunne and Tian (2020) converge on the conclusion that military spending has a negative effect on economic growth. As said, the detrimental impact of militarization and war on development is not a new issue, but it remains widely debated. Interestingly,

in explaining the negative effects of the Vietnam War on the U.S. economy, Klein (1971) pointed out that “[...] it is a common view that war brings economic prosperity or that the economy of the United States needs war in order to preserve a high level of economic activity [...]” before concluding that “[...] it soon became evident that the war was extremely bad for the American economy [...]”. As noted above, the most straightforward point concerns the ‘diversion of public resources’. Once a given amount of public funds is allocated to one category of public spending, it cannot be used elsewhere. In other words, when public spending is directed toward unproductive rather than productive uses, the outcome for a society’s economic capacity can only be negative. This general proposition can be detailed to highlight the several channels through which military spending contributes to economic decline. For the sake of brevity, these can be grouped into five main dimensions: (i) a reduction in human capital accumulation; (ii) an increase in rent-seeking activities; (iii) a decline in civilian investment; (iv) rising inequality; and (v) distortions in technological innovation.

The first and most significant channel concerns the compression of human capital accumulation, with persistent effects on long-term development paths. In many contexts, young people perceive military service as an alternative – or at least an obstacle – to education. Not surprisingly, the abolition of conscription in the post-Cold War period has been associated with a significant increase in educational participation. Military enlistment tends to replace or delay schooling, generating in the long run a distortion in the production and accumulation of human capital, particularly in countries with compulsory conscription systems. Empirical evidence shows that in OECD countries conscription during the Cold War significantly reduced levels of human capital between 1960 and 2000 (Keller et al., 2009). Further indirect confirmation comes from Cipollone and Rosolia (2007), who examine the effects of draft exemptions granted to specific male cohorts in areas affected by the 1980 Irpinia earthquake in Italy. The measure led to an increase of more than 2% in the number of male high-school graduates, with comparable spillover effects on female cohorts. Accordingly, in the absence of conscription, economies tend to reach structurally higher levels of human capital. The negative impact on human capital is even more pronounced when considering the direct effects of participation in armed conflict. In such contexts, losses in educational attainment are particularly severe. For example, comparisons between cohorts involved in World War II in Austria and Germany and those in neutral

countries, such as Switzerland and Sweden, reveal a substantial reduction in years of schooling in the belligerent economies (Ichino & Winter-Ebmer, 2004). More generally, empirical evidence documents significant losses in education and schooling in countries affected by armed conflict (see, among others, Bertoni et al., 2019; Swee, 2015; León, 2012; Shemyakina, 2011).

Second, military spending is associated with the typical problems of sectors characterized by rent-seeking, widely analyzed in the public choice literature. This is particularly relevant because states often act as monopsonists in the arms market or participate directly in military production through equity stakes in large industrial firms. In such contexts, public procurement power may encourage collusive behavior among firms operating in oligopolistic structures. As already noted by Adams (1968) and Adams and Adams (1972), the inefficiencies associated with the military-industrial complex translate into significantly higher costs, lower quality than required by the state, and exceptionally high profits for producing firms.

An economy characterized by widespread rent-seeking tends to experience weaker growth paths, partly because of the distortion and crowding out of private investment (Murphy et al., 1993). Consistent with this framework, military commitment exerts a negative effect on private investment. Recent studies, including Saeed (2025) and Dunne and Smith (2020), identify reduced investment as one of the main transmission channels of this effect. The issue of reduced capital accumulation due to lower investment is not unique to contemporary economies. Williamson (1984) showed that growth rates in the British economy during the Industrial Revolution were relatively modest partly because of the impact of wars with France.

Another channel of economic deterioration concerns rising income inequality. Most empirical studies support the existence of a negative relationship between military spending and income distribution, as highlighted in the recent survey by Peltier (2025) and in numerous empirical contributions (among others, Caruso & Biscione, 2022; Biscione & Caruso, 2021; Graham & Mueller, 2019). This relationship operates through three main mechanisms. First, lower levels of education – as already discussed – tend to increase structural income inequality. Second, increases in military spending often come at the expense of social spending, which plays a crucial redistributive role. At the same time, in arms-producing countries, wage growth in the defense sector may affect income distribution asymmetrically.

Finally, military commitment may distort innovation in civilian sectors. As Arrow (2000) pointed out, the military and civilian sectors draw on the same pool of human resources, which is limited. This distortion in the allocation of human capital can be particularly significant in countries with low mobility and rigid labor markets. Moreover, because military production is designed for highly specific purposes, converting military products and applications to civilian markets entails substantial costs. In brief, the nature of the technology matters [see also Arrow and Li (1993), Intriligator (1990), Isard (1988)]. Technologies developed in the military sector are often so specialized that the costs of adapting them for civilian use are very high, discouraging adequate investment in such applications. Yet, research on military innovation has been characterized by secrecy for many years. As Hartley (2011) pointed out “*defense research and development is surrounded by secrecy, myths and emotions...*”. The outputs of military research are intended to provide a concrete strategic advantage over enemies and adversaries, and the researchers involved are bound by strict secrecy requirements. These constraints both delay innovation and prevent the exploitation of potential commercial returns. As a result, innovations developed in the military sector – along with any associated potential benefits – tend to reach civilian markets only with delay. Secrecy requirements are so pervasive that they can limit not only the civilian applications of military innovations, but also the use of civilian innovations for military purposes¹. Reflecting this, Guellec and Van Pottelsberghe de la Potterie (2004) showed that among the various sources of R&D, military R&D was the only one negatively associated with productivity growth. At the same time, de Rassenfosse et al. (2024) show that the secrecy traditionally surrounding military research has, in practice, reduced the number of related technological inventions.

Another concern is that military spending increases long-term fiscal sustainability risks. Consider the rise in public debt driven by military spending, and in more severe cases the additional costs of sustaining war. Historically, excessive public debt generated by wars has led to the collapse of empires and to broader economic decline. The Roman Empire offers a clear example. Under Septimius Severus, military spending tripled and continued to rise under his successors. This was followed by severe economic stagnation and political instability during the third-century crisis (235–284

¹ A clear example in this regard is the U.S. legislation known as the *Invention Secrecy Act* of 1951.

CE). A similar pattern can be found in the Spanish Habsburg period and the general crisis of the seventeenth century. From Philip II (1556–1598) to Philip IV (1621–1665), the Spanish Empire repeatedly faced financial crises driven by its military commitments.

3. Deterrence, stability and security

A further aspect of the analysis relates to the negative impact of rising military spending on security and peace. Contrary to common belief, a country's security tends to decline as the number of available weapons increases. Military spending in one country typically leads to higher military spending elsewhere, especially among not-allied states. Such increases are perceived as a 'threat' and prompt others to respond in kind, generating a generalized proliferation that ultimately undermines security. The experience of nuclear deterrence and the absence of direct war between the United States and the Soviet Union during the Cold War has led many to believe that more weapons increase not only national security, but also the stability of the international system. This belief is widespread but, in many respects, misleading. Classical Cold War deterrence is not easily replicable in today's context and has several well-known limitations, many of which are discussed in Zagare and Kilgour (2000).

First, classical deterrence was developed within non-cooperative game theory for dyadic rivalries – situations involving only two actors, whether states or alliances. Analytically, deterrence can be understood as a Nash equilibrium considered stable because neither actor has an incentive to deviate. Although such an outcome may not be optimal in terms of the actors' payoffs, it is nonetheless desirable insofar as it is stable. This result depends on common knowledge between the two actors regarding initial conditions, the structure of the game, and expected alternative outcomes. In a multipolar world, however, deterrence becomes more complex and the conditions that once suggested intrinsic stability tend to disappear. The likelihood that an actor will have incentives to depart from the *status quo* increases if it can obtain higher returns by unilaterally adjusting its military capabilities. Moreover, as the number of actors grows, the costs of acquiring and sharing information rise significantly compared with a dyadic setting, affecting knowledge about actors and their arsenals, and ultimately undermining stability. In short, in a game with more than two actors, achieving a stable

equilibrium is considerably more difficult. Models such as those of Quackenbush (2006) and Nakao (2020) show that deterrence in multi-actor settings with incomplete information tends to lose stability.

Second, Cold War deterrence was fundamentally shaped by the presence of nuclear weapons. In that context, the prospect of mutual destruction profoundly altered incentives and expected outcomes (the logic of *mutually assured destruction*). As shown by Intriligator and Brito (1984), deterrence based on conventional weapons is not stable. In theory, stable deterrence can exist only when the costs each actor can impose on the other are so high as to be unacceptable. This does not imply that nuclear armament should be seen as a *policy* recommendation; rather, the importance of the Brito–Intriligator framework lies in showing that certain levels of armament can produce unstable outcomes². Rearmament policies may therefore generate greater instability rather than greater security. From this perspective, the ongoing rearmament in Europe could become a source of instability rather than reassurance.

The distinction between nuclear and conventional weapons is thus crucial for understanding deterrence strategies. It is also important because differences in military capabilities create inequalities even among allied countries, opening new avenues of instability. The divide between richer and poorer countries becomes more pronounced: if security and deterrence depend primarily on military resources, wealthier countries will inevitably enjoy an advantage. This point becomes clearer when we consider the nature of defense. In public debate, defense is often treated as a pure public good – non-rival and non-excludable – equally accessible to all. In reality, defense is better understood as an *impure (or quasi-) public good*, since no state can guarantee full protection to all citizens, especially under conditions of conflict and scarce resources. The only partial exception is nuclear deterrence, where protection is tied to the logic of *mutually assured destruction*.

Clarifying the nature of defense is therefore essential for interpreting the effects of rearmament policies. In this regard, it is useful to recall the *Colonel Blotto game*, first

² More generally, the relationship between conventional and nuclear weapons cannot be overlooked. Nuclear deterrence may paradoxically lead to higher spending on conventional armaments. In this regard, in his Nobel lecture Thomas Schelling recalled that the increase in conventional forces in Europe during the Cold War reflected the widespread belief that nuclear weapons would never actually be used (Schelling, 2006). In other words, conventional arsenals were expanded precisely to avoid resorting to nuclear weapons. Schelling’s insight is illuminating because it shows how rising military spending can also carry a largely ‘symbolic’ value.

formulated by Borel (1921), which models strategic competition between two actors allocating limited resources across multiple battlefields. Victory in each engagement depends on the resources committed, but overall success depends on winning the majority of battles. However, when objectives differ and actors have asymmetric endowments, the game may admit multiple equilibria, not all of which are Nash-stable. For example, Chowdhury et al. (2021) show that in a Blotto-type conflict model, the value assigned to individual battlefields strongly affects resource allocation: rational actors devote more resources to the most valuable fronts. As more realistic assumptions are introduced, achieving stable and non-rival deterrence becomes increasingly difficult. Applying à la Blotto logic to hypothetical defense agreements and alliances would imply accepting that some strategic positions might be sacrificed to preserve others, and even these outcomes might not be stable. Stable equilibria may exist, but they are likely to involve unavoidable inequalities. In addition, as Sandler and Hartley (2001) pointed out the assumption of a military alliance as a pure public good is difficult to get confirmation in reality. Then, when deterrence is undertaken by an alliance, some degree of unfairness is likely to emerge.

Another limitation of excessive reliance on deterrence is that many deterrence models are static, whereas the current situation more closely resembles a dynamic ‘arms race’. Military spending by one country tends to trigger increases in others – especially among non-allied states – because such increases are perceived as threats, leading to generalized proliferation and reduced collective security. Since Richardson (1960), dynamic models of arms races have shown that stability is possible only when reaction coefficients are relatively low – that is, when countries respond less than proportionally to each other’s military spending. The stability of deterrence is further undermined by the growing role of military technology. The development of drones, autonomous weapons, and artificial intelligence is changing incentives for conflict. According to the analytical models of conflict in Hirshleifer (2001), even a perceived technological advantage can increase the likelihood of escalation by raising expectations of victory. In this context, the contribution of Thomas C. Schelling and M. H. Halperin in *Strategy and Arms Control* (1961) remains highly relevant. They emphasized the importance of arms control agreements between rival states, especially during periods of rapid technological change. Such agreements should be based on continuous communication and information exchange. Verification mechanisms and regular data sharing reduce

incentives for preventive attacks and enhance international stability. Schelling and Halperin did not advocate complete disarmament but instead emphasized a realistic model of cooperation aimed at building trust through dialogue and credible control mechanisms. From this perspective, the stability of deterrence depends less on the sheer quantity of weapons than on the credibility of response capabilities. In other words, indiscriminate arms accumulation does not in itself guarantee effective deterrence. Weapons are instruments, not ends; what matters is the ability to develop a credible strategy.

4. Positive peace and normative peace economics

As noted above, a crucial role of peace economics is to provide evidence on the costs and losses associated with the unproductive burden generated by threat systems, including deterrence, continuing conflict, and arms races. Second, peace economics must develop a normative dimension by contributing to the design and strengthening of effective policies and institutions aimed at establishing peace and mitigating violent conflict. In this respect, peace economics should propose models that move beyond deterrence and arms-race dynamics, emphasizing instead cooperation and investment in productive activities to minimize the unproductive burden on the economy. Following this line of reasoning, peace economics takes the positive study of conflict as its point of departure and ultimately aims to develop as a normative science, as emphasized in Isard (1994), Arrow (1995), Coulomb et al. (2008), and Caruso (2010).

In his well-known 1956 book, Tinbergen listed “International Peace” as the first objective of economic policy. In his words: *“Maintenance of international peace. This point would not have usually been considered as an item on the agenda of economic policy even up to a few decades ago. Today it has to be, since the very foundations of our existence are at stake”*. Tinbergen was the first to identify international peace as a primary objective of economic policy, recognizing that peace is a prerequisite for sustained, long-term economic development. In his review of the book, Arrow (1958) observed: *“Actually, the aim of peace, despite its prominence on the list, is referred to again only once in the book and then in a manner which can be described best as an obiter dictum. Clearly, peace affects economic well-being as it affects most other things but it seems to me that it can hardly be regarded as an aim of policy until it can be shown*

that economic policy affects peace". Arrow thus underscored the gap between the ambition of including peace as a primary objective of economic policy and the availability of mechanisms capable of achieving it. He argued that peace can become a meaningful policy objective only if supported by evidence demonstrating how economic policy can effectively influence peace outcomes, thereby bridging Tinbergen's vision with concrete policy instruments. Accordingly, the central challenge for normative peace economics is to provide scholars and policymakers with economic policy tools capable of mitigating actual or potential violence, as well as with viable metrics of peace that can be explicitly incorporated into an objective function. This requires a departure from the standard perspective: peace should not be regarded merely as a positive spillover of economic growth, but rather as a clear and explicit objective of economic policy.

From this perspective, it is useful to distinguish between domestic peace and international peace. By domestic peace, one may refer to the condition within political communities that minimizes violence and destructiveness. A workable definition of domestic peace can be closely aligned with the approach proposed by Galtung (1969). He defines peace in relation to development by encompassing both (i) the absence of direct and overt violence (negative peace) and (ii) the absence of structural violence (positive peace), whereby society is characterized by social justice and an egalitarian distribution of power. According to this view, peace cannot be reduced to the mere control or reduction of violent behavior; it must also address the structural conditions that generate inequality and constrain individual opportunities. In this sense, peace theory is inherently intertwined with both conflict theory and development theory. Conflict resolution is primarily associated with negative peace, while development theory contributes to positive peace through the establishment of just and equitable institutional arrangements. For example, on this spirit, Balestra and Caruso (2026) propose a measure of domestic peace structured around four core dimensions: (i) health, (ii) standard of living, (iii) quality of institutions, and (iv) spread of violence.

Klein et al. (2008) offer a definition of international positive peace based on four dimensions, namely (i) the absence of major territorial claims, (ii) the presence of institutions for conflict management, (iii) high levels of functional interdependence, and (iv) satisfaction with the status quo. By identifying key structural determinants of positive peace, Klein et al. (2008) develop a normative framework for fostering a stable international environment. While these definitions differ in scope and emphasis, they

share several common features: (i) peace is understood as a structural property of societies; (ii) it extends beyond the mere absence of violence; and (iii) it requires institutional arrangements that both (iv) reduce incentives for conflict and (v) anticipate and prevent violence by enabling the peaceful resolution of disputes.

From an economic perspective, linking domestic peace with international conceptions of peace naturally invokes the notion of a public good. As a public good, peace is by definition non-rival and non-excludable. These properties can be sustained within systems that generate stable institutional environments characterized by effective mechanisms for conflict resolution at the international level, as well as domestic institutions capable of ensuring fair and equitable drivers of long-term development. In this sense, international and domestic peace necessarily coexist. This perspective rules out idealized constructions often developed in economic theory, such as the notion of a benevolent dictator.

Differently from military alliances, peace can therefore be understood as a public good in the form of a stable institutional arrangement that supports the long-term consolidation of productive activities, while simultaneously limiting the weight of unproductive – and particularly destructive – activities. As an institution, peace provides rational agents – including individuals, organizations, and governments – with a set of norms and rules that shape behavior and expectations. Stability is a central element in the production of this public good. Boulding (1963b, 1978) emphasizes that peace is intrinsically linked to stability, conceiving it as a “homeostatic” quality – that is, a self-regulating mechanism capable of detecting and counteracting early signs of tension. According to Boulding, stable peace systems incorporate proactive mechanisms that address movements toward conflict at their incipient stages. Whereas deterrence and arms races generate instability and unproductive outcomes, peace-oriented systems foster stability and superior long-term productivity.

Finally, from this perspective, in Figure 3 the Boulding’s triangle is revisited with a clear-cut example concerning the difference between peace and deterrence. Peace entails stronger integrative relationships among polities, alongside well-established exchange relations.

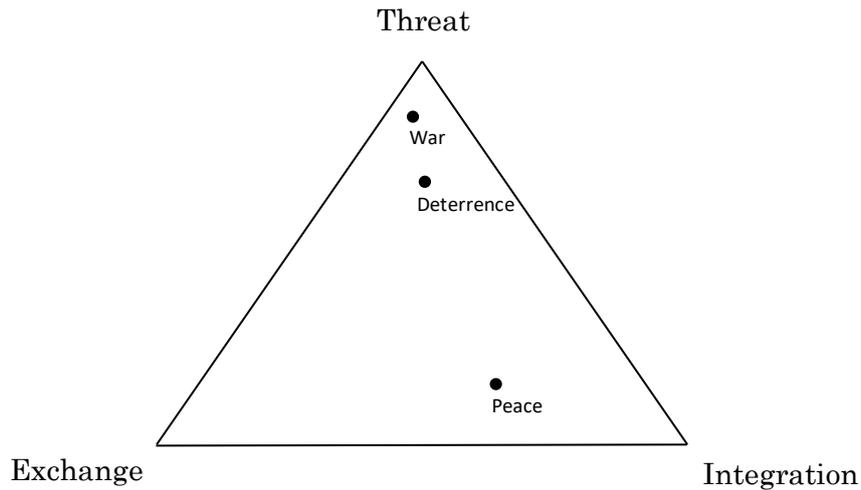


Figure 3: Peace, War, and Deterrence in Boulding's Triangle

Conclusions

This chapter has outlined a conceptual framework for peace economics in both positive and normative terms. The point of departure for understanding peace economics lies in the interplay among exchange, threat, and integration, as proposed in Boulding (1963a). This interplay, in turn, determines the allocation of resources between productive and unproductive activities. Any human activity related to the actual or potential use of force or violence is inherently unproductive. From this perspective, military spending can be classified as a destructive and unproductive expenditure that significantly undermines long-term economic development.

To mitigate such destructive unproductive spending, both domestic and international systems should increasingly take the form of exchange-based arrangements, complemented by integrative relations. A policy for peace can therefore succeed only if democracy and international cooperation regain prominence at the global level. A central pillar in the transition toward more peaceful equilibria is the reduction of military arsenals. Rearmament in one country tends to induce rearmament in others, thereby increasing insecurity and reinforcing threat-based dynamics. Since peace constitutes a global public good, cooperation among members of the international community in the area of disarmament is essential. At the same time, governments must resist the persistent claim that military industries generate net economic returns

and instead recognize military spending for what it is, a destructive and unproductive expenditure.

Improvements in peace levels must occur at both the domestic and international levels. While a viable metric of international peace is still lacking, investment in domestic peace may represent an essential policy step, as peaceful and democratic polities tend to cooperate more internationally than autocratic regimes. For the domestic dimension, a metric of positive peace appears feasible by accounting for key dimensions of societal development. The current challenge for scholars is therefore to design policies that enhance domestic peace and to develop metrics for international peace that can ultimately be incorporated into a coherent objective function for economic policy.

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