Measuring U.S. Foreign Policy Effectiveness

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Abstract

This manuscript presents a methodology whereby policymakers can assess the United States' influence in the world. This submission differs from most scholarship on the topic in that it develops a return on effort score which takes into consideration the US goals and priorities. In terms of methodology, this manuscript applies the Analytic Network Process to develop relative priorities associated with the Political, Economic, Social, Technological, Environmental, and Legal framework while considering key drivers (military and economic) across combatant commands and regions. This study's conclusions will assist US military and policy practitioners in allocating resources and capabilities across the world to maximize the US influence relative to its goals.

Keywords: *World influence; U.S. goals; Analytic Hierarchy Process; National Resource Allocation; Measuring Influence*

Introduction

It is not an exaggeration to suggest there has never been a more important, if not complicated, time for the U.S. to assess its impact in the world than today. The complexity, inherent to any such assessment is magnified by the reality all decision-makers currently face. Confronted with a world that is uncertain, in a state of extraordinary flux, hurtling from dramatic event to dramatic event, while trying to assure the body polity regarding safety and security, how to prioritize national resource allocation and the resulting return is difficult at best.

Events across the globe are occurring at a breathtaking pace with consequences both short and long term. It is not an exaggeration to suggest the way events are unfolding raise important questions regarding the role of the U.S. in the world today, and in the years to come. If past decades were marked by certainty and clarity regarding the way the U.S. interacted with the world, that has been called into question recently.

The post-World War II world, both during and after the Cold War, was largely characterized by respect for institutions, alliances, and reciprocity. This enabled a certain degree of predictability in how U.S. decision-makers were able to determine priorities, resource allocation, and goals. That, however, did not enhance, much less guarantee, mechanisms for determining the effectiveness of decision making. Predictability, however, must not be equated with effectiveness; doing something "out of habit" must not be implicitly understood as the best, or worse, course of action. Ascertaining the effectiveness of American military power toward achieving U.S. interests, particularly at this moment in history, is of overwhelming importance; it is precisely this dilemma that we address.

In this paper, we propose an application of the Analytic Network Process (ANP) (Saaty, 2001) to develop national priorities based on the U.S.'s espouse role in the world and develop a proposed measure to assess the impact. To develop the proposed model we structure the remainder of this paper as follows: Section II - The Importance of Assessing America and the World; Section III - Resource Allocation; Section IV - Hierarchy and Prioritization; Section V - The United States; and Section VI - Conclusion.

The Importance of Assessing, America and the World

The question of how to assess, much less define, effectiveness, in a world devastated by a pandemic, impacted by significant economic turmoil, shifting alliances, retrenchment from global engagement, increasingly sophisticated threats (cyber) posed by nation states and non-state actors alike, identification of legitimate threats, and recognition and acknowledgment of direct and indirect challenges posed by members of the global community, pose extraordinary dilemmas to decision-makers. Measuring effectiveness has historically bedeviled policy makers. While mantras, clichés, and political spin are easily, and quickly spouted, they are not an accurate indicator of a sophisticated approach.

In the US Army War College biannual *Key Strategic Issues List (KSIL) 2021-2022*, we find that much of the KSIL start with the word “assess” (Cunningham, 2020). Assessing is such a critical undertaking because it provides policy makers a way to justify to their constituents, the U.S. taxpayer, that the National investment is paying off. In fact, Lieutenant Colonel Freier in his 2005 piece specifically states that it is important for policymakers to understand the price associated with the maintenance of the U.S. global position (Freier, 2020). However, what LTC Freier omits in his discuss is the need to assess the effectiveness of those investments on the U.S. attempt to achieve its global position. While understanding the “price” is important, without knowing what is important (priorities) and the resultant impact, the price is meaningless. Paying for an asset that is never used is a waste; and, getting something that one does not value is also worthless. Hence, the need to understand the price as it relates to priorities and effectiveness is imperative.

It is this most significant gap that is the focus of our research and scholarship. We are engaged in developing effectiveness measurement tools for a variety of conflicts, dilemmas, and challenges confronting local, national, and foreign decision-makers. In doing so, we focus on the development and implementation of tools that enable decision-makers to determine whether there is, truly, a “return on investment”. In the development of such a model — applicable to an extraordinarily broad range of challenges — we aim to provide decision-makers with unique tools to ascertain the effectiveness of their policies. This is particularly acute when lives are at a stake, the financial investment is enormous, and the consequences of missteps are devastating.

For too many years, policy makers have articulated, rationalized, and justified enormous financial outlays for decisions whose effectiveness was not subject to rigorous analysis but based on rhetoric. Take for instance General Westmorland’s litany of, “... we have turned the corner” or Defense Secretary McNamara’s reliance on “body counts” as if those determined effectiveness. In a more contemporary context, President Bush’s “Mission accomplished” reflected a telling misunderstanding of operational realities as did President Trump’s declaration of defeating ISIS.

However, while developing models for determining effectiveness is essential, looking back — albeit briefly — into the history of the U.S.’s role in the world possibly sheds light on the years to come. Xenophobia and isolationism reflect such an approach; recall George Washington’s Farewell Address in which he warned of the dangers of “foreign entanglements.”

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Washington's words, along with George Kennan's X article in which he brilliantly articulated the principle of "containment" reflect important strains in U.S. national security. The roughly 240 previous years of U.S. history seems eclipsed with the current global seismic activities and the status of the United States. The United States is faced with growing challenges to its global hegemony. In light of increasing challenges, the global community is right to doubt the policy directions of the U.S. regarding the allocation of resources: financial and otherwise.

Resource Allocation

Under the best of circumstances, resource allocation in such a complex system is difficult. How then, are the U.S.'s decision and policy-makers expected to allocate resources and capabilities in such a complex system under great uncertainty; how are their constituents expected to hold them accountable; and, how might they measure the impact / effectiveness that 'investments' have?

There have been attempts to measure U.S. influence in the world, but none dealt with how successful that influence is. For example, Soft Power 30 ranks the United States as 5th in the world with respect to soft power with its score and subsequent rank continuing to decline; U.S. News & World Report ranks the United States 7th overall 'best country'; and, Aid Data questions how stakeholders in other countries perceive the United States' performance in terms of "policy advice, influence in setting reform priorities, and helpfulness in reform implementation." Each of these rating agencies measures the impact of a country as compared with others without consideration for how a particular country performs with respect to the amount of effort and investment made relative to its own goals. This is an important distinction since the question of performance is largely a function of what the country values and how it allocates its resources and capabilities to affect the desired ends; not necessarily how it performs with respect to other countries' attempt to influence the world. The distinction is significant when examining how each country determines its national priorities. Stated differently, what any of these rating agencies thinks is important to score may not be important at all to any ranked country. If the criteria against which the country is scored is not important, then the country may not invest anything to scoring well on those dimensions.

To develop a measure of how effective the U.S. influence in the world is we need to know: (1) How the U.S. allocates resources to different regions of the world to create influence; and, (2) how to measure goal achievement, i.e., given the goals of the U.S. in the world, how well are those goals attained. Allocating national resources requires knowledge of the importance of the goals; i.e., the goals need to be prioritized. Prioritization provides an understanding of what is most important. Resources are then allocated according to priorities. What we also need know is the degree to which the goals are attained with the allocated resources. Combining the two yields a measure of effectiveness like a benefit to cost ratio or return on investment (ROI).

Hierarchy and Prioritization

According to the Congressional Research Services (CRS), report R44891 (2020), the role the United States has traditionally had in the world can be described in terms of four key elements: Global Leadership; Defense and Promotion of Liberal International Order; Defense and

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Promotion of Freedom, Democracy, and Human Rights; and, the Prevention of Emergence of Regional Hegemons in Eurasia. This last goal is not often explicitly stated in public by U.S. policymakers. It is based on: (1) the demographic and economic activity in Eurasia; and, (2) the region's lack of self-regulating dependability to prevent the emergence of a regional hegemon.

Allocating national resources requires knowing what goal takes priority, a missing component of the CRS' report. To develop an agenda for such complex qualitative goals, relative priorities are necessary for resource allocation. However, prioritization provides an understanding of what is most important and what is least but says nothing of how *well* the resources were allocated. It is also necessary to know the degree to which the goals are attained with the allocated resources.

Ceteris paribus, if one had to decide which of the roles to focus on, which one would it be? We know that even if the U.S. achieved the goals at their highest degree, the influence on the world would not be the same. What we need is a set of criteria to ascertain the relative importance of the goals. U.S. decision-makers promoting the four goals in the world, are most assuredly thinking about the political, economic, social, technological, and military aspects of the nation. However, like the four roles, the relative importance of the national level criteria fluctuates over time. When the economy is good, economic considerations may not be as important as political considerations; or, when there are times of crises with respect to national security, the military may be relatively more important than national technological advancement. The four goals are not equally important. If they were, the U.S. would allocate equal amount of resources to each of them. President Trump's budget for FY 2021 totals \$4.829 trillion (Office of Management and Budget, 2020); 60% of the budget goes to mandatory expenditures such as Social Security, Medicare, and Medicaid. Discretionary spending is allocated \$1.485 trillion. Military spending is included in discretionary spending and it is estimated at \$636 billion. The Department of State and other International Programs are allocated \$40.8 billion. Thus, military spending that supports the goal Defense and Promotion of Liberal International Order is budgeted fifteen times more resources than non-military spending that supports the goal Defense and Promotion of Freedom, Democracy, and Human Rights. Hence, the goals are not equally important in the eyes of Congress or the Administration.

We propose an approach that has as an objective the development of an ANP (Saaty and Vargas, 2006) model to measure the effect of U.S. policies and intervention to effect national goals. The ANP model is based on a theory known as the Analytic Hierarchy Process (AHP) (Saaty and Vargas 1982). The AHP is a general theory of measurement used to derive relative priorities on absolute scales (invariant under the identity transformation) from both discrete and continuous paired comparisons in multilevel hierarchic structures. These comparisons may be taken from actual measurements or from a fundamental scale that reflects the relative strength of preferences and feelings. One of the strengths of this theory is that it can be used to measure physical and psychological events. By physical, we mean the realm of what is known as tangibles in so far as they constitute objective reality outside the individual conducting the measurement. By contrast, the psychological, to which judgments used in decision making belong, is the realm of the intangibles, comprising the subjective ideas, feelings, and beliefs of an individual, of a group working together, and more generally of society. To evaluate the

importance of the goals, the decision criteria, and the alternative allocation of resources and capabilities, relative measurement must be taken.

Relative measurement is the development of a scale to measure an intangible attribute, i.e., an attribute for which no scale to measure it exists. Thus, each individual has its own scale in mind. However, if there were a scale to measure the attribute, relative measurement would provide an answer in relative terms. For example, consider that we want to measure the weight of three cantaloupes, C_1 , C_2 and C_3 , but we do not have a weight scale with us. The store where we are going to buy them has a scale, but we get to the checkout counter we would like to ascertain which one is heavier. We get two cantaloupes, C_1 and C_2 , one in each hand and we try to feel which one is heavier. We do that with each pair of cantaloupes, (C_1, C_2) , (C_1, C_3) and (C_2, C_3) . We cannot compare all of them at once. Each pairwise comparison provides an estimate of relative heaviness, but how do we decide which one is heaviest? If we decide that between C_1 and C_2 , C_2 is heaviest, then we can compare C_2 and C_3 and we are done. Suppose that C_2 is the heaviest of the three cantaloupes, so we buy C_2 . However, our result did not give us an estimate of how much heavier C_2 is than the other two cantaloupes. If the store were to give us the actual weights of the cantaloupes, w_1 , w_2 and w_3 , we could estimate, when we compared C_1 and C_2 balancing them on our hands, which one is heavier with the ratio w_1/w_2 or w_2/w_1 . It is easiest to estimate how much heavier the heavier one is as a function of the lighter one than vice versa. This is equivalent to what is known in psychometrics as fractionation and multiplication. If we arrange these comparisons in a matrix form, we have:

$$\begin{array}{c} \begin{array}{ccc} & C_1 & C_2 & C_3 \\ \begin{array}{c} C_1 \\ C_2 \\ C_3 \end{array} & \begin{bmatrix} \frac{w_1}{w_1} & \frac{w_1}{w_2} & \frac{w_1}{w_3} \\ \frac{w_2}{w_1} & \frac{w_2}{w_2} & \frac{w_2}{w_3} \\ \frac{w_3}{w_1} & \frac{w_3}{w_2} & \frac{w_3}{w_3} \end{bmatrix} \end{array} \end{array} \quad (1)$$

Note that if we took the ratio of the weights, we have a result without units; it is an absolute number. On the other hand, had we taken the differences, e.g., $w_1 - w_2$, if the weight is given in pounds, the difference will be in pounds. Thus, taking the ratio to estimate the weight does not need a scale unit. All we need to do is estimate in absolute terms how much heavier one is than the other one.

The next step is to obtain from the ratio comparisons $\left\{ \frac{w_i}{w_j} \right\}$ the relative weights of the objects. Relative weights would be $\left\{ \frac{w_1}{w_1 + w_2 + w_3}, \frac{w_2}{w_1 + w_2 + w_3}, \frac{w_3}{w_1 + w_2 + w_3} \right\}$. It turns out

that if we multiply the first column by w_1 , the second by w_2 , and the third one by w_3 , and sum across the rows we get:

$$\begin{array}{c} C_1 \quad C_2 \quad C_3 \\ \begin{array}{c} C_1 \\ C_2 \\ C_3 \end{array} \begin{bmatrix} \frac{w_1}{w_1} \times w_1 & \frac{w_1}{w_2} \times w_2 & \frac{w_1}{w_3} \times w_3 \\ \frac{w_2}{w_1} \times w_1 & \frac{w_2}{w_2} \times w_2 & \frac{w_2}{w_3} \times w_3 \\ \frac{w_3}{w_1} \times w_1 & \frac{w_3}{w_2} \times w_2 & \frac{w_3}{w_3} \times w_3 \end{bmatrix} = \begin{bmatrix} 3w_1 \\ 3w_2 \\ 3w_3 \end{bmatrix} \end{array} \quad (2)$$

Thus, we recover the weights by dividing each value by the sum of all the values, and this would yield the relative weights of the objects:

$$\left\{ \frac{w_1}{w_1 + w_2 + w_3}, \frac{w_2}{w_1 + w_2 + w_3}, \frac{w_3}{w_1 + w_2 + w_3} \right\} \quad (3)$$

In real life, we may not know the weights, but we may be able to estimate them by assigning a positive number. For example, we could have the following matrix:

$$\begin{array}{c} C_1 \quad C_2 \quad C_3 \\ \begin{array}{c} C_1 \\ C_2 \\ C_3 \end{array} \begin{bmatrix} 1 & a & b \\ 1/a & 1 & c \\ 1/b & 1/c & 1 \end{bmatrix} \end{array} \quad (4)$$

In matrix notation, entry (1,2), for example, represents the (row number = 1, column number = 2). Entries in the positions (1,1), (2,2) and (3,3) are now 1, the result of dividing a positive number by itself. The entries in the transposed positions, i.e., the transposed entry of (1,2) is the entry in the (2,1) position, are the reciprocal of the original entries, e.g., if entry (1,2) is a then the entry (2,1) is $1/a$.

Now the entries of the matrix of pairwise comparisons are educated guesses of the underlying ratios of the weights we seek. To estimate the relative weights, Saaty proposed a first order approximation by first normalizing to unity each of the columns, and then averaging the resulting rows (1980). For the matrix given in (4) we would have:

$$\begin{aligned}
 & \begin{bmatrix} 1 & a & b \\ 1/a & 1 & c \\ 1/b & 1/c & 1 \end{bmatrix} \rightarrow \begin{bmatrix} 1/(1+\frac{1}{a}+\frac{1}{b}) & a/(a+1+\frac{1}{c}) & b/(b+c+1) \\ (1/a)/(1+\frac{1}{a}+\frac{1}{b}) & 1/(a+1+\frac{1}{c}) & c/(b+c+1) \\ (1/b)/(1+\frac{1}{a}+\frac{1}{b}) & (1/c)/(a+1+\frac{1}{c}) & 1/(b+c+1) \end{bmatrix} \\
 & \rightarrow \begin{bmatrix} \{[1/(1+\frac{1}{a}+\frac{1}{b})]+[a/(a+1+\frac{1}{c})]+[b/(b+c+1)]\}/3 \\ \{[(1/a)/(1+\frac{1}{a}+\frac{1}{b})]+[1/(a+1+\frac{1}{c})]+[c/(b+c+1)]\}/3 \\ \{[(1/b)/(1+\frac{1}{a}+\frac{1}{b})]+[(1/c)/(a+1+\frac{1}{c})]+[1/(b+c+1)]\}/3 \end{bmatrix} \quad (5)
 \end{aligned}$$

The mathematical model that provides the solution to our estimation problem is known as a principal eigenvalue problem (Saaty, 1977).

The importance of this model lies with the fact that now we can estimate relative measures for intangible attributes. Saaty used the absolute scale given in Table 1 to estimate the pairwise comparisons, and spent his lifetime validating it in practice (1977). Remember that the scale in Table 1 is an estimate. If actual measurement were available, we could use those to compute the relative weights.

The first experiment Saaty performed to try to validate perception with the Fundamental Scale of Table 1 was the optics experiment (1977). Four objects were placed at the following distances measured in yards from a light source: 9, 15, 21, 28. In normalized form these distances are: 0.123, 0.205, 0.288, 0.384. Next, he asked two independent sets of judges to estimate pairwise comparisons of the brightness of the objects, labeled in increasing order according to their nearness to the source where the judges were located. The result was two pairwise comparison matrices:

$$\begin{array}{ccccc}
 \text{1st Trial} & C_1 & C_2 & C_3 & C_4 \\
 C_1 & \begin{bmatrix} 1 & 5 & 6 & 7 \end{bmatrix} \\
 C_2 & \begin{bmatrix} 1/5 & 1 & 4 & 6 \end{bmatrix} \\
 C_3 & \begin{bmatrix} 1/6 & 1/4 & 1 & 4 \end{bmatrix} \\
 C_4 & \begin{bmatrix} 1/7 & 1/6 & 1/4 & 1 \end{bmatrix} \\
 \text{2nd Trial} & C_1 & C_2 & C_3 & C_4 \\
 C_1 & \begin{bmatrix} 1 & 4 & 6 & 7 \end{bmatrix} \\
 C_2 & \begin{bmatrix} 1/4 & 1 & 3 & 4 \end{bmatrix} \\
 C_3 & \begin{bmatrix} 1/4 & 1/3 & 1 & 2 \end{bmatrix} \\
 C_4 & \begin{bmatrix} 1/7 & 1/4 & 1/2 & 1 \end{bmatrix}
 \end{array} \quad (6)$$

Table 1. The Fundamental Scale

Intensity of Importance	Definition	Explanation
1	Equal Importance	Two activities contribute equally to the objective
3	Moderate importance	Experience and judgment slightly favor one activity over another
5	Strong importance	Experience and judgment strongly favor one activity over another
7	Very strong or demonstrated importance	An activity is favored very strongly over another; its dominance demonstrated in practice
9	Extreme importance	The evidence favoring one activity over another is of the highest possible order of affirmation
2, 4, 6, 8 Reciprocals of above	Intermediate values between the two adjacent judgments If activity i has one of the above nonzero numbers assigned to it when compared with activity j, then j has the reciprocal value when compared with i	When compromise is needed
Rationals	Ratios arising from the scale	If consistency were to be forced by obtaining n numerical values to span the matrix

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The relative brightness from the trials were:

Relative brightness (1st trial)	Relative brightness (2nd trial)
0.61	0.62
0.24	0.22
0.10	0.10
0.05	0.06

There is a law in optics known as the inverse square law that states that the brightness of an object located at a distance from a source of light is inversely related to the square of the distance of the object to the source of light. Table 2 gives the inverse square law of the four objects considered.

Table 2. Inverse Square Law of Optics

Distance	$1/\text{Distance}^2$	Normalized Distance^2	1 st Trial	2 nd Trial
9	0.01234568	0.607	0.61	0.62
15	0.00444444	0.218	0.24	0.22
21	0.00226757	0.112	0.10	0.10
28	0.00127551	0.063	0.05	0.06

Note that after applying the inverse square law of optics to the distances, the relative values (3rd column of Table 2) is very close to the estimates of relative brightness obtained in the two trials. There are many experiments like this that support the idea that judgments could be used to estimate in relative terms the importance of intangibles in decision-making.

In measurement theory, when a set of objects, or alternatives in general, are compared, they always must be compared with respect to one criterion and only one criterion at a time. No comparison can take place without a criterion in mind. When multiple criteria are involved, we must compare the alternatives with respect to each of the criteria. What makes relative measurement so interesting is that we can now combine the relative scales because they are all measured in the same units. Since the criteria may not be equally important one could think about using a weighted average of the different relative scales. There are different opinions as to how to combine the different scales obtained from each criterion, but if one is careful when defining the criteria so that they do not overlap in meaning, the weighted average is usually a good estimate. This is known as *hierarchical synthesis* because instead of criteria and alternatives, one could think of criteria, sub-criteria, sub-criteria of sub-criteria and so on, all the way down the hierarchy to the alternatives that usually occupy the bottom level of the hierarchy. The top level of the hierarchy is the goal.

A logical extension of the Analytic Hierarchy Process is the Analytic Network Process (Saaty, 1980). Instead of considering hierarchies as in Figure 1, we consider a network of

relations between the criteria, the sub-criteria, the alternatives, and so on as in Figure 2. An important characteristic of networks is that they allow for feedback between clusters.

Figure 1. A Hierarchy Figure 2. A network

For example, when comparing maneuvers for an operation, alternative units need to be prioritized with respect to, mass, objective, offensive, security, economy of force, maneuver, unity of command, surprise, and simplicity. To select the right unit, we need to assign priorities to the criteria. However, each unit could perform better under different criteria. There may be statistics that tell us, for a given operation, under which criterion each type of unit performs better. This would be equivalent to comparing the criteria or attributes of the operation under each alternative. This is a feedback loop from the cluster of alternatives to the cluster of criteria.

The Analytic Hierarchy / Network Process (AHP and ANP) is the process that could help develop the relative priorities of the goals through the decomposition of criteria, drivers, and alternatives in a hierarchy or a network (Saaty, 2001; Saaty and Vargas, 2009). Hence, we need a set of criteria to ascertain the relative importance of the goals. Figure 3 is a representation of what the network might look like to evaluate the role of the United States in the world. The four goals as espoused by R44891 are captured at the ‘top’ of the hierarchy. The political, economic, social, environmental, technological, and legal (PESTEL) criteria that the nation considers when advancing its agenda are represented as overarching considerations. The United States has at its disposal, Political Aid, Economic Support, Social Development, Technology Sharing, and Military Aid as mechanisms to ‘influence’ other countries by which it can use military and nonmilitary means. For instance, during peacekeeping exercises, the Army often conducts health clinics to host countries using military medical personnel. This is a case where the Government, through military resources, assists in ‘social development.’ Likewise, the military may purchase through local providers needed resources. The result is that the military is used for economic development in a host country to meet the U.S. Role in the World.

Figure 3: Graphic representation of proposed network given the United States role in the world.

As further illustrated in Figure 3, to achieve its espoused role in the world, a nation-state has both military and nonmilitary resources and capabilities at its disposal to influence global outcomes. The allocation of these two categories of resources (drivers) depends upon the degree to which the decision-makers think that any one driver will deliver the desired outcome in any region of the world. For example, economically, the GDP of a nation is an indicator of its potential influence on the world. For this discussion, we have divided the world into six economic regions and compiled an Inter-Regional Input-Output model. The regions and their contribution to the total World GDP are Africa (0.63%), Asia Pacific (36.04%), Central Asia (3.34%), European Union (28.26%), North America (22.82%), and South America (8.9%).

The United States Military

The other driver that the U.S. has to influence the world is its military power. The U.S. military includes five branches divided into six major commands: Africa Command (AFRICOM), Central Command (CENTCOM), European Command (EUROM), Indo-Pacific Command (PACOM), Northern Command (NORTHCOM), Southern Command (SOUTHCOM). It is extremely complicated to determine how resources are allocated to these combatant regions. Thus, we estimated the allocation through expert judgment in the context of the AHP based on the perceived influence we had from media and personal experience: AFRICOM, 2%; CENTCOM, 18%; EUROM, 19%; NORTHCOM, 8%; PACOM, 32%; and

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SOUTHCOM. 21%. Next, we estimated the relative degree of influence on seven regions of the world based on the military and economic allocations as follows: African continent (2.8%), Asia Pacific (33.7%), Central and South America (11.3%), Central Asia (5.5%), European Union (13.2%), and U.S. and Canada (33.5%). We perceive that Asia Pacific region and North America receive most of the resources to attain the four goals.

Next, we ask ourselves, how good of a job is the U.S. really in attaining the four goals. To answer this, we use a rating system to elicit judgements on how well policy makers or others perceive the U.S. is doing with respect to achieving its espoused role in a region. The inputs are synthesized to produce a benefit/cost score for each region. This is what we perceived: African continent (2.6%), Asia Pacific (18.4%), Central and South America (6.7%), Central Asia (4.7%), European Union (32%), and U.S. and Canada (35.6%). The ratio of the region's perceived score and the relative influence scores reveal how well the U.S. allocated resources, i.e., the ROI: African continent ($0.026/0.028 = 0.93$); Asia Pacific ($0.184/0.337 = 0.55$); Central and South America ($0.067/0.113 = 0.60$); Central Asia ($0.047/0.055 = 0.84$); European Union ($0.32/0.132 = 2.42$); and, U.S. and Canada ($0.356/0.335 = 1.06$). For the scores, anything below a one suggests that the U.S. did not achieve the goals in that region and needs to increase resources allocated to that location; a one suggests that for each Dollar invested, the United States is getting exactly that as a return; and, anything over a one suggests that there is a positive return greater than the amount invested. Note that except for the European Union and the U.S. & Canada, the U.S. is not being very effective at attaining the goals in the other regions of the world and resources would need to be increased.

The results presented here are for illustrative purposes only but were developed on judgements based on the perceptions of *informed* stakeholders. The advantages of the approach suggested here are many. Models can be updated and rerun as new information is obtained. Budgets such as the National Defense Authorization Act can be allocated relative to priorities and reallocated as national priorities shift. Representatives can present to their constituents the impact that their national investments are having in a manner that is transparent and replicable.

One of the benefits of this approach is the potential to get a great deal of input in order to assess the overall utility of particular piece of legislation or policy. It is possible to assess both military and non-military drivers by getting input from larger stakeholder groups to determine the aggregated priorities. Once the aggregated global priorities are generated, we are able to drill down within each of the clusters to determine how stakeholders value each of the nodes in the model as well as provide estimates of sensitivities to each. Determining the sensitivities of each criterion allows the decision makers to know how much society would have to shift its priorities before changing its collective mind.

Conclusion

In this paper, we presented an approach to develop relative priorities at a national level for resource allocation to achieve the U.S. role in the world. Further, the approach provided the means for evaluating the extent to which the nation received a return on its investment through a scorecard rating. While the model that we developed here is a high-level national model, it is possible to drill down into each cluster and node to achieve deeper resolution. For instance, each of the various military elements (Army, Navy, Air Force, Marines, Coast Guard) can conduct a similar assessment to determine the effectiveness of its force in fulfilling its individual mission toward the national objective. Likewise, the various Departments (i.e. Treasury, Energy, Agriculture, etc.) could do similar activities. This process has the potential to help facilitate budgetary development and discussions.

Additionally, the approach is not static. As national interests shift, updates to the model can be run to reflect the shifting priorities. The updated models will then reflect not only the new priorities but also updated return on effort scores illustrating the degree to which the country is achieving its espoused role in the world.

The Return on Investment score developed herein is similar to an asset to debt ratio or Tobin's Q. Any score below parity (1) suggests that the investment is losing value for the nation. Hence, if the nation wants to achieve its role in the world in that region, then more effective means of implementation need to be developed. At parity, the country is achieving exactly what it is investing. Above parity, the U.S. is getting a greater return than what it has invested. An investigation into what is driving those areas of greater return may result in lessons learned that might be transferable to regions that are not performing as well. For instance, we see from the results that EUCOM only has a 19% priority, but that Europe's ROI score is 2.42 suggesting that for the relatively lower rate of 'investment', the U.S. has a greater ROI in Europe. Drilling deeper into the driving force behind those results may result in significant knowledge that may be transferable to, say, Africa.

Finally, the relative weighting approach conducted here provides a scale that allows us to compare "apples and oranges." Recall that the relative weighting approach applied here does not need a scale unit to determine the weights thereby allowing us to compare elements of the hierarchy within a class or cluster.

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