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Economics and Military Power

Ethan B. Kapstein

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Lieutenant Ethan B. Kapstein, U.S. Naval Reserve

Bissell, Richard and McCormick, Gordon, eds. *Strategic Dimensions of Economic Behavior* (New York: Praeger, 1984). 280pp. $35

Denoon, D.B. *Constraints on Strategy: The Economics of Western Strategy* (McLean, Va.: Pergamon-Brassey's, 1986). 254pp. $26.95

Gansler, Jacques. *The Defense Industry* (Cambridge, Mass.: MIT Press, 1980). 346pp. $11.95

Hartley, Keith. *NATO Arms Co-Operation: A Study in Economics and Politics* (London: Allen & Unwin, 1983). 228pp. $44.95

Kennedy, Paul. *The Rise and Fall of the Great Powers: Economic Change and Military Conflict from 1500 to 2000* (New York: Random House, 1987). 677pp. $24.95

Secretary of Defense Caspar W. Weinberger, *Annual Report to the Congress: Fiscal Year 1987* (Washington: U.S. Govt. Print. Off., 5 February 1986). 336pp.

I

Writing in 1941, Edward Mead Earle argued that "the interrelation of commercial, financial, and industrial strength on the one hand, and political and military strength on the other . . . is one of the most critical and absorbing problems of statesmanship."[1] This is the enduring problem that informs the books under review. As did Earle and other writers, the authors have attempted to refine the problem and point toward its policy resolution. The objective of this article is to examine the propositions that underpin recent scholarship in economics and military power, and to assess the policy implications.

Work in the political economy of defense has a substantial pedigree in postwar scholarship, but this crop of authors, with the exception of former

Dr. Kapstein is the John M. Olin Research Associate and the Executive Director of the Economics and Security Program at Harvard University's Center for International Affairs. A lieutenant in the U.S. Naval Reserve, he drills with the First 0291, Naval Air Station, South Weymouth, Massachusetts.

Defense Secretary Weinberger, differs from their predecessors in a fundamental way: they perceive a United States that is in relative decline. This perceived decline signifies that the U.S. government must take vigorous unilateral and multilateral measures to lower the defense burden. Recommendations to achieve this objective include expanding competition among defense contractors, and a new formula for burden-sharing among the western allies.

From a theoretical perspective, the books, one hopes, will encourage the development of a new synthesis in international relations scholarship. In recent years, international relations has splintered into the two major specialties of political economy and security studies, with little communication across the divide. The literature highlights the need to bridge this gap. Case studies in areas embracing both specialties, such as international arms cooperation, the arms trade, defense budgeting and procurement, and foreign investment in defense-related industries, would provide a first step in that direction. An enduring synthesis can be built only atop a strong empirical foundation.

II

The books reviewed here remind us that defense economics is one of the oldest branches of political economy. As a field of study, defense economics is concerned with the allocation of scarce resources to the defense sector of the economy. While research in this field was relatively active during the early postwar years, it entered a period of decline in the early 1960s. These books signify the end of that drought.

Historically, the financing of warfare has been the most challenging economic task facing rulers. War costs could disrupt national strategy no less than enemy forces. As Fernand Braudel wrote of 16th-century Europe: "The expense of war crippled states. . . . The inglorious and costly Irish wars ruined Elizabeth's finances toward the end of her brilliant reign and, more than any other single factor, prepared the way for the truce of 1604. The cost of war in the Mediterranean was so great that bankruptcy often followed . . . war fleets devoured money and supplies." As Rabelais nicely put it, "coin is the sinews of war."[2]

While historians like Braudel have touched on war economics in their work, it is the central focus of Paul Kennedy's study. He examines the "*interaction* between economics and strategy as each of the leading states in the international system strove to enhance its wealth and its power, to become (or to remain) rich and strong" (Kennedy, p. xv). Beginning with the Habsburg Empire in the 16th century, Kennedy argues that the challenge that has faced all great powers has been the demand to match capabilities with commitments. "Imperial overstretch" and increasing war costs have doomed all those who would create and maintain a Holy Roman Empire or One-Thousand-Year Reich.

Kennedy uses one historical example after another to support his thesis that states must build military power on a strong economic foundation. Typical is his comment that "military power rests upon adequate supplies of wealth, which in turn derive from a flourishing productive base, from healthy finances, and from superior technology" (Kennedy, p. 439). While some reviewers have accused Kennedy of economic determinism, nowhere does he argue that a strong economy provides the necessary *and* sufficient condition for power; he asserts that the Vietnam war exposed that fallacy. He does believe, however, that if state power is to endure, it can be done only within the context of a self-sustaining economic system.

Yet it is difficult to find an argument in Kennedy's book that can be acted upon by policymakers. While he makes an implicit protectionist argument—for example, that "there could be serious implications for American grand strategy if its industrial base continues to shrink" (Kennedy, p. 530)—he does not propose a list of positive policy prescriptions. This would be unobjectionable if the book were proffered solely as a work of history. But his time span is 1500-2000, thus making it an exercise in futurology as well as history. He recites much of the common wisdom with regard to the Japanese economic challenge, but leaves unclear the military-strategic implications of a booming Pacific Rim. Unfortunately, Kennedy is vague as to the lessons to be derived from his intriguing study.

From an analytical standpoint, Kennedy's work is reminiscent of the postwar realist literature. Indeed, a fundamental proposition of the realists was that a powerful state must possess a strong economy. Such an economy would be characterized by a high level of gross national product and advanced technology, and a foundation of rich human and natural resources.

Recognizing the economic dimension of national power, N.J. Spykman wrote in 1942 that: "the relative power of states depends not only on military forces but on many other factors—size of territory, nature of frontiers, size of population, absence or presence of raw materials, economic and technical development, financial strength . . . they have value in themselves, and they are means to power." Modern warfare, Spykman argued, "can be fought successfully only on the basis of a rich supply of strategic raw materials and an enormous industrial output." He recognized that the prosecution of a great power war would demand the "full participation" of the national economy.[3]

James Schlesinger echoed a similar theme in his work on the political economy of defense. He asserted that states must build an adequate "mobilization base" to produce materiel for war, taking into account the "scarcity of real resources . . . ." This scarcity demanded that the use of economic resources "be coordinated and synchronized in accordance with an overall plan of production." Such plans should be prepared in peacetime, not in the heat of battle. Schlesinger argued that the efficient use of economic capabilities could provide the critical margin needed for victory.[4]

The most noted realist thinker, Hans Morgenthau, was also sensitive to the economic dimension of national power. Morgenthau suggested that geography, natural resources, industrial capacity, and population all influenced military capability. He noted that: "the technology of modern warfare and communications has made the overall development of heavy industries an indispensable element of national power . . . it is inevitable that the leading industrial nations should be identical with the great powers, and a change in industrial rank, for better or for worse, should be accompanied or followed by a corresponding change in the hierarchy of power."[5]

For the older realists and defense economists, who were writing at the peak of U.S. power, there was no question regarding the supremacy of America's defense industrial base. The United States possessed human, material, and financial capital in abundance, far outstripping any rival. While Soviet advances in atomic weapons and rocketry during the 1950s shook American complacency, it was clear that the arsenal of democracy could beat any foe in a global contest. Realists like Schlesinger and Morgenthau saw the United States as autarkic for military purposes, and indeed capable of meeting alliance needs during wartime. The concept of "dependence" on overseas suppliers for critical military inputs was foreign indeed.

The books under review depart from traditional realism at this juncture. While such authors as Kennedy and Gansler would agree with the realists that military power is the key currency of international relations, they recognize that the domestic competition for resources on the one hand, and international shifts in comparative advantage on the other, have worked to undermine, in the United States and other alliance countries, the postwar defense economy. Challenges to Nato's stability are coming not just from the Soviet Union, but more pointedly from economic competitors like Japan and the newly industrializing countries.

This economic competition is taking place at a time when the military commitments of the United States remain widespread. David Denoon, in his *Constraints on Strategy*, expresses the problem succinctly: "the military debates in the West have developed from the unsettling recognition that there is an imbalance between the West's strategy and its capabilities" (Denoon, p. 2). While the United States claims a declining share of the west's economic output, it remains the big spender in an alliance composed of free riders.

The problem of military security in an age of economic interdependence provides a major theme in current literature, and it is this global dimension that moves the works beyond traditional studies. Clearly, one of the challenges for scholars in the next decade will be to define, describe and analyze the economic/security trade-offs that policymakers will inevitably face in light of economic interdependence. Does direct foreign investment in defense-related industries threaten national security, or should it be encouraged? Do joint Nato arms programs offer an efficient route to weapons procurement, or are they more costly than national procurement? To what extent should governments permit sourcing of defense materiel from abroad? The books under review will have served a large part of their purpose if they stimulate research on these and related questions.

The Kennedy book, with its attendant publicity, has encouraged more people to think about the complex linkages between economics and military power than any other recent work of scholarship. But students who are looking for detailed analytical arguments regarding the defense economy will not find it to be of much practical use. In this sense, *The Rise and Fall* is best viewed as "background" reading.

Given the size of the U.S. defense budget and its impact on the American economy, there remains a curious paucity of policy-relevant literature regarding the "military-industrial complex." As Jacques Gansler points out in *The Defense Industry*, "in view of the importance of the defense industry to America's overall strategic and economic posture, there is a surprising dearth of quantitative and scholarly research on the subject" (Gansler, p. 2). Indeed, his work helps to fill a 20-year gap in the literature, insofar as the last major text on defense economics was the 1960 RAND study, *The Economics of Defense in the Nuclear Age.*[6]

Ironically, the RAND text may have contributed to the demise of defense and mobilization economics as a field of study. According to the authors, the nuclear age had rendered extensive economic planning for a long war irrelevant. They argued that a prolonged conventional war was unlikely to occur and should be "least important in our preparations." Nuclear weapons had made "destructive power . . . so cheap that wars can be won or economies destroyed before there is time for mobilization."[7]

This view, it should be noted, contrasted sharply with that espoused by Soviet strategists at the time. As two Soviet military officers stated in 1961: "The exceptional role which will be played by nuclear strikes against the enemy's vital regions in the initial stage of the war does not contradict the thesis that the outcome of such a war will be to a decisive extent determined by the result of the competition of the economies of the warring states."[8] Unlike their American counterparts, Soviet planners took seriously a "broken-back" scenario in which conventional warfare followed on the heels of a nuclear exchange.

During the 1950s and early 1960s, the American strategic doctrine of massive retaliation dovetailed with fiscal orthodoxy in minimizing U.S. defense budgets. A dialectical approach to conflict emerged, in which strategic planning focused on nuclear war on the one hand or limited regional conflicts on the other. In either case, economic factors did not loom large.[9]

With the Kennedy administration's shift toward a doctrine of "flexible response," a new era of defense planning began. It was now American policy to meet aggression along the entire range of conflict, including prolonged conventional war with the Soviet Union. This meant that the United States had to reconsider the posture of its mobilization and industrial base. And yet, when confronted with the economic requirements of flexible response, America balked. Paul Kennedy points out that the Vietnam war diverted military resources away from problems on the Central Front, permitting the Soviet Union to achieve nuclear parity and develop its conventional forces (Kennedy, p. 406). By the 1970s, Department of Defense mobilization exercises had revealed a weakened defense industry that was characterized by reliance on sole source suppliers for critical components, declining productivity, dependence on foreign sources for strategic minerals and energy, outdated plants, critical labor shortages, and an absence of planning.[10]

Upon entering office, a major commitment of the Reagan administration was to rebuild the nation's defenses. Given the prolonged neglect of this sector, the price tag promised to be enormous: $1.5 trillion over five years.[11] As the table illustrates, the net effect would raise defense spending as a proportion of gross national product from 5.2 percent in 1981 to 6.2 percent in 1986 (Weinberger, p. 315).

Perhaps the simplest and most powerful lesson of the defense economics literature is that "defense is not a costless activity . . . it involves considerable sacrifices of public and private sector civil goods and services" (Hartley, p. 3). President Dwight D. Eisenhower summarized the costs in his unique manner: "The cost of one modern heavy bomber is this: a modern brick school in more than 30 cities. It is two electric power plants, each serving a town of 60,000 population. It is two fine, fully equipped hospitals. It is some 50 miles of concrete highway."[12]

As Kennedy observes, states have used several methods for financing national defense, including loans, plunder, colonial wealth, and the issuance of public debt. President Reagan chose to provide for his defense budget not by raising taxes, but through a combination of deficit financing and domestic spending cuts. This deferred a portion of the program's costs to future generations who were not yet of voting age, and to others who were not even born.[13]

Federal Budget Trends

Fiscal Year	Federal Outlays as a % of GNP	DoD Outlays as a % of Federal Outlays	DoD Outlays as a % of GNP	Non-DoD Outlays as a % of Federal Outlays	Non-DoD Outlays as a % of GNP	DoD Outlays as a % of Net Public Spending*
1950	16.0	27.5	4.4	72.5	11.6	18.5
1955	17.6	51.5	9.1	48.5	8.6	35.6
1960	18.2	45.0	8.2	55.0	10.0	30.3
1965	17.5	38.8	6.8	61.2	10.7	25.2
1970	19.8	39.4	7.8	60.6	12.0	25.5
1971	19.9	35.4	7.0	64.6	12.8	22.4
1972	20.0	32.6	6.5	67.4	13.5	20.7
1973	19.1	29.8	5.7	70.2	13.4	19.0
1974	19.0	28.8	5.5	71.2	13.5	18.3
1975	21.8	25.5	5.6	74.5	16.2	16.5
1976	21.9	23.6	5.2	76.4	16.7	15.4
1977	21.1	23.4	4.9	76.6	16.2	15.5
1978	21.1	22.5	4.7	77.5	16.4	15.2
1979	20.5	22.8	4.7	77.2	15.8	15.4
1980	22.2	22.5	5.0	77.5	17.2	15.3
1981	22.7	23.0	5.2	77.0	17.5	15.8
1982	23.7	24.5	5.8	75.5	17.9	16.7
1983	24.3	25.4	6.2	74.6	18.2	17.4
1984	23.1	25.9	6.0	74.1	17.1	17.6
1985	24.0	25.9	6.2	74.1	17.8	17.6
1986	23.3	26.4	6.2	73.6	17.2	17.6
1987	21.8	27.5	6.0	72.5	15.8	17.9

*Federal, state, and local net spending excluding government enterprises (such as the postal service and public utilities) except for any support these activities receive from tax funds.

How effective is defense spending in the United States? Gansler's work, written at the beginning of the Reagan era, represents the most ambitious effort to address this question. His fundamental proposition is that: "the industrial base of U.S. defense is becoming both economically inefficient in the production of defense material and strategically unresponsive in terms of the production speedup required to meet an emergency" (Gansler, p. 4).

The author backs this contention with an impressive array of evidence drawn from detailed studies of various defense programs. According to the author, the root of the defense industry problem is located in the absence of rational planning. Unlike the Soviet Union and many western countries, in which long-term planning encourages optimal production decisions, the annual defense appropriations and review process in the United States disrupts the defense economy. Gansler sketches a Rube Goldberg-type system in which the Defense Department, Congress, and private contractors all provide input to the decision-making process. Productive efficiency is impeded by government micromanagement and a lumpy procurement system that prevents firms from taking full advantage of learning curve effects.

Gansler's theoretical approach to defense economics is not derived from classical market analysis, but rather from the theory of the "second best." This is an area of economics which proposes that if the conditions of perfect competition do not prevail in a market, and for structural reasons cannot be achieved, then it is not necessarily optimal to introduce *some* market instruments as a partial corrective; rather, it may be appropriate for policymakers to take decisions which diverge from free market dictates.[14] From a defense policy perspective, it would be irrelevant to suggest that the defense industry would be more efficient if only there were a free market of buyers and sellers, since such a market is unlikely to be established.

To begin with, the defense economy is a monopsony; it is a market with one major buyer (the Defense Department). Additionally, "the Department of Defense is the regulator, the specifier of new products, the 'banker,' the judge of claims" (Gansler, p. 5). This singular control of the market by one entity makes the defense market different from most others in the economy.

In economic theory, a monopsonist is said to have great power in a market composed of numerous sellers and is basically a price maker rather than a price taker. But a peculiar feature of the defense market is that "the buyer and seller have a far greater mutuality of interest; price plays a relatively minor role" (Gansler, p. 29). Instead, what the buyer seeks is *performance.*

Former Secretary of Defense Caspar Weinberger addressed this emphasis in his 1987 *Annual Report.* He stated that "technological superiority is a key element in the West's efforts to maintain a stable deterrence . . . US policy seeks to offset the Soviet's numerical advantage with our strong suit—superior high technology" (Weinberger, p. 302). But the high cost of technology means that the United States can purchase only small numbers of the advanced ships and planes that private contractors design. Gansler observes that whereas the United States could afford to buy 3,000 tactical aircraft per year during the 1950s, in the 1970s it purchased just 300 per year (Gansler, p. 21). Defense industry executive Norman Augustine has expressed the problem as "Augustine's Law," which states that given the growing costs of technical innovation, by the year 2000 the Defense Department will be able to purchase only *one* airplane. Despite America's undoubted technological superiority, the decreasing size of the conventional arsenal raises doubts about its ability to fight a prolonged, conventional war with the Soviet Union.

This points to the paradox of contemporary American defense planning. While the United States has reaffirmed its commitment to conventional deterrence, it has financed the development of limited numbers of increasingly expensive technologies. But modern conventional wars are wars of attrition. As Martin van Creveld argues in his outstanding contribution to McCormick and Bissell's *Strategic Dimensions of Economic Behavior*, the First and Second World Wars demonstrated that "there are no real limits to the productive forces that it is within the power of modern industrialized economies to unleash. . . ." (Van Creveld, "The Origins and Development of Mobilization Warfare," p. 31.) Nor should the mobilization capacity of the Soviet Union be underestimated. Unlike the United States, Russia has always taken conventional war seriously. Van Creveld asserts that the ability of the Soviets to withstand a prolonged conflict puts them "in a position to have their cake and eat it too" (Van Creveld, p. 40).

The Defense Department's answer to this cost vs. performance trade-off has been to espouse the doctrine of competition. Secretary Weinberger argues in the *Annual Report to the Congress* that "the most powerful force for efficiency in production is competition" (Weinberger, p. 23). Of course, Weinberger is not speaking about free market competition, since the defense market is not composed of numerous buyers and sellers. In this case, competition is a euphemism for second-sourcing techniques.

Former Secretary of the Navy John Lehman was in the forefront of this new approach to defense procurement. By using second-sourcing, in which an additional supplier was brought on board a defense contract that had been won by another firm, he was able to lower the unit cost of several navy platforms. The price of the Aegis cruiser, for example, dropped from $1.2 billion to $900 million a copy, while the F/A-18 fighter's cost fell from $22.5 million to $18.7 million. All things being equal, Lehman could buy eight Aegis cruisers for the price of six, thus expanding the size of the fleet. Currently, with the exception of aircraft carriers, "the Navy has more than one producer for every ship it buys."[15]

Gansler notes another possible method for introducing important savings into the defense budget: the purchasing of foreign equipment. While acknowledging that "it is a basic tenet that the U.S. defense industry must be self-sufficient" (Gansler, p. 1), he questions whether this posture can be maintained. Indeed, the defense industry today imports a substantial amount of its components (up to 20 percent for some weapons systems). This "globalization" of the defense industry suggests opportunities for cost savings, at the security risk of foreign dependence.

As Gansler and the other authors all recognize, the trade-off between dependence and autarky in the defense sector is bound to become a heated issue in the 1990s. For the first time in its modern history, the United States is likely to have a defense industry which relies on foreign suppliers for items ranging from armor plating to ceramics to semiconductors. As dependence rises, pressure will inevitably be placed on the Defense Department to expand the size and scope of its stockpiles. Stockpiling, in turn, will drain resources from other budgetary items. Already, the department has been severely criticized for maintaining unacceptably low levels of ammunition, fuel, and other basic military inputs.[16]

III

Another approach to globalization has involved the multinational production of weapons systems. In recent years, international arms cooperation has been embraced by nearly every party to the defense debate. The "Nunn Amendment," named after Senator Sam Nunn of Georgia, earmarks defense funds for cooperative programs within Nato, and it has won overwhelming support on Capitol Hill and within the defense bureaucracy. There are at least two explanations for this phenomenon: first, arms cooperation deals appear to provide political benefits in dealing with Nato allies; second, such deals hold out the promise of reducing the costs of new weapons systems.[17]

Keith Hartley's book, *NATO Arms Co-Operation*, although sometimes contrary, is the best guide to the economics of defense cooperation. He disagrees with the assertion that cooperative programs lead to reduced costs. The economic benefits of joint weapons development, he argues, have been much exaggerated on both sides of the Atlantic.

Taking as his main example the F-16 fighter aircraft, which was produced on assembly lines in Europe and the United States, he found that coproduction "cost the European nations 18 percent more than if they had purchased the aircraft directly from the USA" (Hartley, p. 93). This corroborates Gansler's finding that "the result of the F-16 sale to Nato was that the cost of the aircraft to the United States was significantly higher, because of the complexity of the multinational program" (Gansler, p. 206).

But as Hartley recognizes, "weapons procurement policy tends to embrace objectives other than defense and protection" (Hartley, p. 5). Among the other concerns of bureaucrats and elected officials are employment, the balance of payments, the acquisition of advanced technology, and foreign policy effects. Any analysis of cooperative weapons programs must incorporate the perceived benefits as well as the costs. While these benefits could be quantified, they are left outside most defense program analyses.

Focusing solely on cost structures, Hartley posits several reasons for the additional expenses associated with multinational programs. First, such programs result in higher research and development costs, owing to duplication of efforts, travel, translation, measurement, and so forth. Second, when two assembly lines are purposely built, each may fail to achieve the scale necessary to make the line economic. Third, joint ventures normally take longer to complete than national projects, with inflation leading to higher costs. Finally, the intrusion of additional government bureaucracies leads to incessant meddling in project management.

Unlike Gansler, Hartley does not adopt a "second-best" approach to the defense economy. Rather, he advocates the broadening of competition in the Nato weapons market. He recommends the creation of a Nato "free-trade area" in which governments act as competitive buyers of weapons, abolishing national entry barriers. This would establish "effective competition" since it would allow the many Nato defense suppliers to compete for the business of the 16 Nato defense ministries.

As a first step in this evolution, Hartley suggests that governments begin to apply the principle of comparative advantage to weapons procurement. They should be willing to buy more weapons "off the shelf" from foreign suppliers, focusing indigenous production on armaments that can be produced efficiently. Unfortunately, even these recommendations fly in the face of a weapons market characterized by, in the words of one Nato official, "monopolistic practice, government preference and protectionism."[18]

In assessing the future of arms cooperation, it should be kept in mind that Nato members continue to have divergent security interests outside the geographic scope defined by the North Atlantic treaty. Indeed, even the Nato promise of a common response to Soviet aggression must be discounted to some degree by each member. As Hitch and McKean observed: "One ally cannot put complete trust in military support by another even in the event of a major war whose threat brought the alliance into being. Hence each ally will have some reason to avoid specialization so extreme that it could not operate independently in military operations and each member is likely to have, in addition, some special military objectives unshared or imperfectly shared with its allies."[19]

Nonetheless, given the widespread availability of advanced weaponry, Hartley makes a strong case for the advantages of an international—as opposed to joint or multilateral—approach to procurement. And he disarms European critics of such a policy by showing that the end result would not be greater dependence on the United States. He points out that Europe is competitive in several areas, including vertical take-off and landing (VTOL) aircraft, communications, and various types of missiles (Hartley, p. 63). In a recent study, *The Economist* reached a similar conclusion, stating that "contrary to the common suspicion, the entire alliance would not finish up buying everything from the United States. There are several things Europe could make better and cheaper."[20]

Were the defense industry like any other, the trend toward specialization and off-the-shelf procurement would already be far advanced. But instead we continue to see duplication of effort at tremendous cost. The French are unilaterally pursuing a new jet fighter program, the Rafale, while a consortium of European countries is building the European Fighter Aircraft (EFA). Ironically, each of these planes will be more expensive and less advanced than an older, off-the-shelf fighter from the United States. In order to have any economic payback, each new program must win a substantial share of an increasingly crowded export market. This implies stiff competition in the future on the high-technology end of the world's arms trade.[21]

What are the prospects for the international security environment in light of this glut of advanced weapons? The books reviewed are disappointing in their failure to give us guidance. But the creation of such a glut will be among the most important security trends in the next decade, possibly undermining the positive value of any Soviet-American progress in arms control and containment of regional conflicts. As the defense industry becomes an increasingly commodity-like business, insecurity will be among its paradoxical spin-offs.

IV

The authors of the reviewed books have pointed to two future trends in the defense economy: first, globalization; second, relative American decline. What are the policy implications of these trends? What prescriptions do the authors provide?

Before examining these questions, it should be emphasized that these major assertions are certainly not incontrovertible. Such scholars as Bruce Russett and Susan Strange have disputed the "myth" of vanishing American hegemony. As Strange reminds us, most of the important rules governing international life reflect American preferences.[22] Russett has focused our attention onto the fact that the United States continues to outstrip any competitor along a wide range of vital military and economic indicators. In paraphrasing Mark Twain, he states that reports of America's death are greatly exaggerated.[23]

Regarding economic interdependence and the globalization of the defense industry, an ambivalent picture emerges. According to a recent report by the Office of Technology Assessment: "some argue that the United States is becoming (or is in danger of becoming) too dependent on others for our defense technology. Others take the opposite position, that we are missing out by failing to take full advantage of the technological capabilities of our friends and allies."[24] In studies undertaken by the National Defense University, it appears that U.S. dependence on foreign suppliers varies greatly from one weapons system to the next, making generalizations difficult.[25]

Assuming that the authors are correct in their assertions, what policies emerge? Perhaps the major conclusion to which all authors would agree centers on the need for greater competition among defense contractors. Competition brings out the "best" in the American economy and harnesses it to the military's needs. By enhancing competition, it is argued, the Department of Defense could get better equipment at cheaper prices.

While market competition is unlikely in the near future—Hartley's proposal for a Nato free-trade zone seems untenable—a first step would be to encourage more suppliers to bid for the services of the defense monopsonist. This requires an overhauling of current procurement practices, already a focal point of Defense department efforts, and greater use of "dual-use" technologies whereby the military adopts civilian items to its needs.[26]

A second point on which the authors converge concerns defense burden-sharing among the western allies. The authors generally agree with the proposition that Japan and the Nato allies have been "free-riding" on U.S. defense expenditures, and that a more equitable arrangement is appropriate. Paul Kennedy, for example, says that "Japan seems to be getting off lightly from the costs of defense" (Kennedy, p. 468). Unfortunately, the authors do not provide us with an alternative formula for burden-sharing, nor do they suggest ways in which a new formula might be adopted by alliance members. Nonetheless, this literature, combined with recent political debate on defense spending, suggests that the issue of defense burden-sharing will not go away anytime soon.

A final point on which the authors would agree focuses on the need for a longer term approach to defense planning and budgeting. The current system of annual budgeting in the United States is incompatible with the desire to optimize defense research and development, and procurement. In an age when defense contractors must spend millions of dollars of risk capital simply to prepare *proposals*, and when a single airplane like the Stealth bomber costs $450 million, an annual decision-making process impedes efficiency. Another way of stating this proposition is that if the Congress wishes to maintain its annual veto power, it must accept the costs associated with that right.

There are also several recommendations which the authors dispute among themselves. Perhaps the most important revolves around the issue of protectionism. Paul Kennedy makes an implicit protectionist argument in his book, citing the need for a strong domestic mobilization base and the need for skilled manpower. Yet he appears ambivalent about paying the costs associated with such a capability. Jacques Gansler expresses similar ambivalence about the costs and benefits of autarky. Keith Hartley, in contrast, advocates widespread competition within an area defined by alliance members. Former Secretary of Defense Weinberger, while clearly unwilling to dismantle the U.S. defense industrial base, praised in his *Annual Report* Congressional funding of international arms cooperation and passage of legislation that permitted "side-by-side comparative testing" of foreign weapons (Weinberger, p. 270). In sum, while the authors differ about the permissible scope of globalization, they see it as an inevitable direction that defense procurement will take.

The menu of policy options developed in this literature provides plenty of room for further study at several levels of analysis. A major gap in the literature concerns the domestic politics of defense budgeting, and more work in this area is needed.[27] Hartley advocates a Nato free-trade zone from an economic perspective, but here an international political economy analysis could prove useful; the obvious question concerns the possibility of an arms acquisition "regime." With Gansler as a partial exception, the works also give little sense of the comparative politics of defense budgeting and procurement. Is it true that the European countries and the Soviet Union take a longer term view toward their defense programs? If so, is it true that this approach is more efficient?

From an academic viewpoint, however, the great value of these books lies in their marriage of economics and national security. Work at this intersection has a long tradition, but it has been dormant in recent years as students of political economy and security studies have gone off on separate tracks. A leading student of international political economy, Robert Keohane, has argued that "it is justifiable to focus principally on the political economy of the advanced industrial countries without continually taking into account the politics of international security."[28] For their part, scholars of international security have almost entirely overlooked economics. These books should encourage a needed synthesis in international relations scholarship that, one hopes, will be built on a strong foundation of case studies.

Notes

1. Edward Mead Earle, "Adam Smith, Alexander Hamilton, Friedrich List: The Economic Foundations of Military Power," in Earle, ed., *Makers of Modern Strategy* (Princeton, N.J.: Princeton Univ. Press, 1941), p. 118.
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