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Military Power and Industrial Competitiveness: The Industrial Dimension of Military Strategy

by

James R. Kurth

I. The US Military Buildup, the American Economy, and the World Market: Economic Constraints on Military Strategy

Today there is among policymakers and policy analysts in the United States almost complete agreement about the need to rebuild US military forces. The consensus of a decade ago on increasing détente has been replaced by a new consensus on increasing defense.

This consensus disappears, however, as soon as the next questions about the US military buildup arise. These are the questions about what kinds and quantities of weapon systems will be procured, what military strategies those systems will implement, and what fiscal policies will pay for the buildup.

Different fiscal policies will of course have different impacts upon the American economy. But different choices of weapon systems and military strategies also will have different economic impacts. These consequences in turn raise questions about what constraints the American economy will impose upon the military buildup.¹

Some advocates of the US military buildup see no serious economic constraints. They note that, in World War II, US military spending went from less than 6 percent of GNP in FY 1941 to 37 percent of GNP in FY 1943 with no serious economic strain and indeed with vigorous economic growth. Similarly, in the Korean War, military spending went from less than 5 percent of GNP in FY 1950 to 13 percent of GNP in FY 1952 with only minor economic disruption.²

Other analysts warn, however, that the economic conditions for a military buildup in World War II and in the Korean War were exceptionally favorable and are unlikely to be repeated. These conditions included (1) effective production, wage, and price controls; (2) relatively low federal spending on nondefense programs; and (3) no pressures on American industry to compete in the world market. By the 1960s, at the time of the Vietnam War, these conditions had disappeared and they will not reappear to assist a large military buildup in the 1980s.

First, in World War II and in the Korean War, the US Government imposed production, wage, and price controls "for the duration." These controls could remain successful, in part because they were legitimized by the war and because the duration turned out to be only two or three years.³ In contrast, the Reagan administration is most unlikely to impose economic controls. If it or its successor

were to do so, however, it would be unlikely to have the advantages of wartime legitimacy and short duration. And the rather unsuccessful experience of the Nixon administration with wage and price controls in 1971-1974 suggests that now even a small war and a short duration may not be enough to make controls effective.⁴

Fundamental changes in the international economy may have made production and price controls largely obsolete. During World War II and even during the Korean War, the American economy operated in the absence of an open world market populated with other major industrial economies. This meant that the American economy was largely unaffected by international operations of business firms acting in response to the economic policies of the US Government. With the development by the 1960s of an open world market composed of several major industrial economies, however, the freedom of maneuver for US economic policymakers diminished. Production controls imposed upon the American economy in an open world market will cause American businessmen to undertake their new investments in capital goods and productive assets in plants abroad rather than at home. Price controls will cause foreign businessmen to buy up American goods at the controlled prices. The result will be a shortage in the United States both of the goods and of the new productive assets with which to continue to produce them. These distortions appeared with the Nixon administration's economic controls, and they would appear with economic controls in the future.

Second, on the eve of World War II federal spending on nondefense programs was only 7 percent of GNP, and on the eve of the Korean War it was 11 percent of GNP. Beginning in the mid-1950s, however, spending on these programs (which include support for transportation, agriculture, energy, and education as well as Social Security, Medicare, and welfare) steadily increased until by 1981 they had reached 17 percent of GNP.⁵ These increases in nondefense federal spending reflected fundamental shifts in the structure of the American economy and the structure of the American population, and they are supported by powerful political constituencies. This means that a new military buildup must be added to a federal budget, a federal tax burden, and a federal deficit which are already very high, compared to the situations in World War II and the Korean War. Some analysts believe that this makes a sharp increase in the military budget much more difficult and disruptive for the economy than before.⁶

Third, American industries now face intense and effective competition in the world market. Some economists fear that the military buildup proposed by the Reagan administration will draw engineers and other technical personnel, who are already in short supply, away from American civilian industries, at the very time that they are needed to maintain these industries or to develop new ones if America is to continue to compete in the world market.⁷

Thus, the relationship between an American military buildup and American economic performance has changed greatly since World War II and the Korean War. The change was already significant by the 1960s. The military buildup of the Kennedy administration and the Vietnam War effort of the Johnson administration only raised US military spending from 9 percent of GNP in FY 1961 to 10 percent of GNP in FY 1968. But in the same period, new social programs, such as the Great Society, raised US nondefense spending from 10 percent to 12 percent of GNP. And, anticipating political resistance, President Johnson refused to increase taxes to pay

for the increased military and social spending. By 1968, this complex of military, social, and fiscal factors had produced serious US inflation, sharp deterioration in the US balance of payments, and the large-scale unloading by foreigners of their holdings of US dollars.⁸

These economic problems continued into the 1970s and indeed became worse. In the 1970s, the era of *détente*, US military spending declined to 5 percent of GNP. US nondefense spending, however, increased to 16 percent of GNP. And, under the impact of declining industrial competitiveness in the world market and increasing expenditures on foreign oil, US inflation accelerated, the US balance of payments deficits greatly increased, and the exchange rate of the dollar declined repeatedly.

Many economic analysts therefore believe that, in the 1980s, the military buildup proposed by the Reagan administration will likely cause major economic disruption, and that this will happen whichever way it is financed. If the buildup is financed by large budget deficits (the choice of the Johnson administration and the current practice of the Reagan administration), the results will be renewed high inflation rates, continued high interest rates, continued low investment in capital goods, and thus even less ability of American industry to compete in the world market. If the buildup is financed by further reductions in nondefense federal spending (the initial choice of the Reagan administration), this will mean cuts not only in social welfare but also in economic infrastructure, such as transportation, education, and essential urban services. This too will weaken the ability of American industry to compete.⁹ And if the buildup is financed by still higher taxes (the apparent choice of leading Republicans in Congress), the results will again be less private resources for investment in capital goods and less ability of industry to compete.¹⁰

The current economic distress in the United States exists even *before* the expenditures and deficits of the Reagan administration's military buildup have actually begun to work their way through the economy. The economic consequences of the projected military buildup will hit an already feeble economy and almost all sectors of the American population. Powerful political reactions against the buildup will follow soon thereafter.

The impact of the Reagan administration's program upon lower-income groups, including skilled as well as unskilled workers, is already obvious and familiar. This in turn causes a substantial military buildup to be opposed by many Democrats in Congress, especially those from the Northeast and the Midwest. More interestingly and perhaps more importantly, however, will be the impact upon higher-income groups, including businessmen. Businessmen in general will not be able to sustain several years of high real interest rates and the economic recession (or depression—more than 10 percent unemployment) which will result from them. Businessmen in the Northeast and the Midwest in particular will not be able to sustain several years of erosion of the transportation, education, and utility infrastructures which they need to service their plants and to market their goods. This in turn will cause the military buildup to be opposed by many Republicans in Congress, especially again those from the Northeast and the Midwest. With large numbers of both Democrats and Republicans in Congress opposed, the military buildup will not be able to be sustained over the sufficient number of years (say, five to ten) required to bring weapon systems in adequate quantities from development to deployment.

In short, the US military buildup projected by the Reagan administration does not have a sufficient economic base and political constituency to sustain it for more than two or three years. It is highly likely that something in the projected buildup will have to give. This might mean the cancellation of one or more major nuclear systems, such as the B-1 bomber, the MX missile, or the D-5 missile. It might mean the procurement of far smaller numbers than now planned of new conventional weapons systems, such as "tactical" aircraft, advanced tanks, and surface ships. Or it might mean a continued pattern of inadequate funding for maintenance, training, and operations to insure the reliability of these weapons.¹¹ Each of these possibilities would have serious consequences for US military power.

The cancellation of the B-1, the MX, or the D-5 would go a long way to dismantle the long-established "strategic" triad (bombers, ICBMs, and SLBMs) to replace it with a dyad (or even a monad). It would radically disrupt the balance of functions, and the balance of power, among the military services, especially between the Air Force and the Navy. The service which loses a major "strategic" system sees itself losing what has been called its "organizational essence."¹²

The cutback in procurement of "tactical" aircraft, tanks, or ships might seem less dramatic than the cancellation of a "strategic" system, but it could have more important consequences for US military strategy. With such cutbacks, the United States could no longer maintain in Western Europe a credible strategy of "flexible response," of conventional defense based upon US tanks and aircraft. It would be driven to adopt an alternative strategy for Nato.

One option, of course, would be definitive reliance on US "tactical" nuclear weapons, such as the neutron bomb, and a strategy of limited nuclear war. This option, however, probably would be blocked by political opposition within the Western European allies. Another option would be greater reliance upon passive conventional defense, such as mines and antitank barriers. But this option also faces substantial political opposition, particularly within West Germany where significant political elites see an extensive network of mines along the "Inner German Border" as a symbolic confirmation of the permanent division of Germany.¹³ Frustrated by European politics, the United States might be tempted by a third option, a "maritime strategy" which would deemphasize the US defense of Western Europe and would focus instead on the defense of US interests elsewhere with American seapower. Such a development, associated with the advocates of a foreign policy of "global unilateralism," would in fact be the biggest shift in US military strategy since the 1940s.¹⁴

Finally, the continued neglect of maintenance, training, and operations would bring about new and dramatic instances of US military failures, such as the effort in April 1980 to rescue the American hostages in Iran. And these would do much to undermine the credibility of US military power.¹⁵

Economic constraints on US military forces, then, will drive US policymakers to very hard choices and very significant changes in the mid-1980s. As we have seen, some of these economic constraints result from large increases in nondefense federal spending, which in turn resulted from fundamental shifts in the structure of the American economy (e.g., the need for federal support of transportation and education) and the structure of the American population (e.g., the growth in the numbers of the elderly). These changes were largely inevitable and their

consequences for the federal budget are largely irreversible. The economic constraints are greatly multiplied and magnified, however, by the sharp decline of American competitiveness in the world market, which in turn resulted from a second set of fundamental shifts, those in the structure of the international economy. These changes were also largely inevitable, but the decline in American competitiveness is not necessarily irreversible.

A renewal of the competitiveness of American industry in the world market would go far to ease the economic constraints on US military power. Michael Howard has recently written that it is important to recall "the forgotten dimensions of strategy," and he notes in particular those that deal with a nation's technological and social qualities.¹⁶ In the next section, we shall focus on a dimension that lies between the technological and the social ones, that is, the industrial dimension of military strategy.

II. The Diffusion of Industrial Power and the Erosion of Military Power: Military Allies as Industrial Adversaries

In the 1940s and the 1950s, the United States was extraordinarily competitive in the world market. Virtually anything it produced, it could sell. In part this was the result of World War II which had destroyed most of America's industrial competitors. But it was also in part the result of an American monopoly in high-technology industries and American productivity in lower-technology ones.¹⁷ The United States had a handsome surplus in its international balance of trade, and this surplus could in turn finance large-scale expenditures on US military forces deployed overseas within America's allies, such as West Germany and Japan. A productive and competitive economy with high employment also provided a healthy base for federal taxes and federal spending. In such a happy condition, the United States could maintain a vast system of military alliances and spend 10 percent of its GNP on defense. In the slogan of the Eisenhower administration, "peace and prosperity," the former was underwritten by the latter.

These very conditions of peace and prosperity among American allies, however, led first to the rebuilding of their old industries (textiles, steel, shipbuilding, chemicals) and then to the building of new ones (automobiles, electronics) within these allies. These new or renewed industries had "the advantages of backwardness" in their production processes, that is, lower wages and higher technology than their American counterparts. This led in the 1960s to the erosion of American competitiveness in the world market, successively in textiles, steel, shipbuilding, automobiles and finally even electronics.¹⁸ It had been America's superiority, both quantitative and qualitative, in these industries that had been the basis for the American victory in World War II.

At about the same time, in the 1950s and 1960s, the Soviet Union also developed its own formidable industries, those devoted to military production. It especially emphasized the production of tanks and "tactical" aircraft, those winning weapons in the land battles of World War II.

Had the allies of the United States built up their own militaries at the rate that they were building up their industries, many of the current US defense and industrial problems would have been solved or indeed might never have arisen. But the allies did not do this. Indeed, there developed by the 1970s a rough inverse correlation

between military spending as a percentage of GNP and industrial competitiveness in the world market. A continuum went from high military spending and low market competitiveness to low military spending and high market competitiveness, in a sequence composed of the United States, Britain, France, West Germany, and Japan. But the high military spending of the United States compared to its allies was not the only, or even the major, reason for declining American competitiveness. A large number of other factors were at work too, including "the advantages of backwardness," that is, lower wages and newer production technologies in the allies.¹⁹

By the 1970s, America's military allies in world politics had become America's industrial adversaries in the world market. The allies were undercutting the economic base of the US military defense of them. And, with the consequent rise of protectionist pressures in the United States, they were undercutting the political base of the alliance with them. The economic and political bases of US military commitments have been hollowed out by the relentless workings of the world market.²⁰

It is interesting to note that Britain in the late nineteenth century was in a condition in some ways similar to that of America in the late twentieth century. Britain then was the center of a vast system of international and imperial obligations, "the Pax Britannica," built upon an industrial base, once "the workshop of the world," that was becoming progressively less competitive in the world market. By the 1890s, Britain was pressured by the new industrial power of the United States and the new military and industrial power of Germany.²¹ Similarly the United States now confronts the new industrial power of Japan and the expanded military power of the Soviet Union. The British past can provide some salutary warnings about the American future.

What are the possible strategic responses that the United States might make as it confronts this problem of the withering of the industrial base for its military power? We shall consider in this essay four possible responses: (1) an attempt to use economic "interdependence" as a substitute for US military power; (2) an attempt to use alliance diplomacy as a substitute for US military power; (3) an attempt to restore US military power, based upon a reform of procurement policy; and (4) an attempt to restore US military power, based upon an economic policy of industrial transformation.

III. Economic Interdependence as a Substitute for Military Power

Confronted with the dilemma of a military strategy that seems to be too costly for a nation's economy, there is a natural temptation among some political elites to deny that there is any real problem and to believe instead that the use of military force, by any nation, is no longer viable. It is asserted that economic "interdependence" among nations has made military force obsolete, or at least obsolescent.

This was a common notion among British elites, especially those in the banking and financial center known as the City of London, in the late nineteenth and early twentieth centuries, especially after the Boer War.²² And it was a common notion among American elites, especially in the foreign policy "establishment," in the late 1960s and early 1970s, especially after the Vietnam War and during the era of *détente*.²³

In the American atmosphere of the early 1980s, it might seem most unlikely that these ideas about the obsolescence of military force and the efficacy of economic interdependence could be revived. The current discussion of the Soviet military threat would seem to preclude this. In fact, however, such ideas probably will reappear in American political elites in the next few years. The underlying problem that helped produce these ideas in the late 1960s and early 1970s was the sharp increase in the stress that military spending imposed upon the American economy, including American financial elites. As we have discussed above, this problem of military spending imposing economic stress is unsolved and indeed is even worse now than it was in the 1970s. In addition, there has always been in the United States a tendency toward the substitution of economic for military power, based upon the Lockean or liberal tradition with its deep suspicion and rejection of power and force.²⁴

Further, West European governments, banks, and industries still believe in the notion of the efficacy of economic interdependence and they act upon it, as is demonstrated when they continue to loan to the martial-law regime in Poland and to the Soviet Union for its natural-gas pipelines. Many American firms share these interests and ideas, especially international banks with loans to West or East European governments or enterprises and multinational corporations with subsidiaries producing in Western Europe.

There is also possible a more cynical version of the ideas of the obsolescence of military force and the efficacy of economic interdependence. In this version, it is admitted that the use of military force is still a viable option for some foreign nations; it is maintained, however, that these foreign nations are not going to use their military force against the national interests of one's own country, even though they might do so against some small or remote state. Political elites are tempted to adopt this cynical version when a foreign nation, which was supposed to have accepted the idea of the obsolescence of military force, decides instead to use that force and to invade another country.

This was the notion behind the British appeasement policy of the 1930s, when the German use of force against some countries (e.g., Spain, Austria, Czechoslovakia) led the British to still greater efforts to weave networks of economic interdependence with Germany by increasing trade and loans to it.²⁵ And it perhaps is the notion among some West Europeans nowadays, when the Soviet use of force against some countries (e.g., Afghanistan, Poland) has led to a similar economic response of increasing trade and loans to the Soviet bloc.

These historical examples of course cast the idea of economic interdependence as a substitute for military power in a rather unfavorable light. There is, however, a good case that might be made for something like it, that is, the idea of limited containment. The United States and its allies may come to decide that some form of limited containment would be the most reasonable, while still quite adequate, overall strategy. Here, two distinctions might be useful, taken separately or together:

(1) Containment of superpowers versus containment of other powers. The interests of the United States and its allies certainly require the containment of the military expansion of the Soviet Union. But they do not always require the containment of other powers, whose military expansion may not upset the balance of power.

(2) Containment of military invasion versus containment of political influence based on military and economic aid and advisors. The history of the past twenty years shows that, when Soviet or other foreign influence in a country is based on military and economic aid and advisors and even with an ideological affinity, it is still reversible and indeed has often been reversed (China, Indonesia, Egypt, Somalia). It is only when Soviet influence is based on military occupation (Eastern Europe, Afghanistan) or when it is based upon military protection against the United States (Cuba, Vietnam) that it has become irreversible. These considerations might permit the development of a definition of containment which would largely be limited to military invasion.

A strategy of limited containment would still face serious problems, however. First, even if containment is only the containment of the military expansion of the Soviet Union, most of America's current defense challenges remain, in particular the defense of Western Europe and the Persian Gulf against a Soviet military attack. And thus America's problem of military needs exceeding economic resources also remains unresolved.

Second, as the historical example of Italy's invasion of Ethiopia suggests, successful aggression by a lesser power can establish an international climate which encourages later and more dangerous aggression by a major power. The response of the Reagan administration to the Argentine invasion of the Falkland Islands and its support of the British resulted in part from its recognition of the wider dangers that can develop in a climate of international lawlessness.

IV. Alliance Diplomacy as a Substitute for Military Power

There is a second response that can be undertaken by a nation whose economic power has become inadequate for its military challenges, and that is to devolve military responsibilities to those very military allies and industrial adversaries that pose the dilemma, i.e., to depart from an assumption that there is a bipolar world and return to an assumption that the world is best conceived as a balance of power.

Britain did something like this at the end of the nineteenth century. During the 1890s and 1900s, Britain recognized that it was overextended in relation to the late industrializing but now rapidly growing powers of the day, especially Germany and the United States but also France, Russia and Japan. The British determined that the greatest single threat to them came, as it always had, from the greatest European land power, which then was Germany. Accordingly, they came to an accommodation or even to an alliance with each of the other powers which posed a lesser threat, in order to concentrate their resources and their energies upon containing Germany. These accommodations were crystalized in the Anglo-American understandings after 1895, the Anglo-French entente of 1904, the Anglo-Russian entente of 1907 and the Anglo-Japanese alliance of 1902.

Analogously in recent years, the United States has urged its Nato and Japanese allies to build up their own military defenses, has come to an accommodation with China in regard to the East Asian mainland, and has sought to construct "special relationships" with major regional powers in the Third World such as Iran in the 1970s and Egypt in the 1980s.

The Iranian example of course illustrates some of the problems with a strategy of devolving military responsibilities to allies. The devolution may not be so much to a

“most loyal ally” (in the British phrase of an earlier day) or to a “regional pillar” (in the American phrase of the 1970s), but to a house of sand.²⁶ Note what became of the objects of British devolution within a generation or two. Russia collapsed in revolution in 1917, France collapsed from invasion in 1940, and Japan turned from an ally to an enemy, culminating in its conquest of the British Empire in the Far East in 1942. Only the British devolution to America fulfilled its great expectations. But of course these were fulfilled very handsomely indeed, with the United States coming to Britain’s aid, decisively if belatedly, in two world wars with Germany and one cold war with the next of the greatest European land powers, the Soviet Union.

Similarly, the collapse of the great expectations for the Shah’s Iran are a prefiguration of other possible collapses of pro-US regimes in the Third World or in China. China in particular has a history of oscillating between modernizing (Westernizing) and nationalizing (anti-Westernizing) tendencies.

As with the idea of economic interdependence, these historical examples cast the idea of military devolution in a rather unfavorable light. Here too, however, there is a good case to be made for a limited version of it, one which focuses on America’s older and closer allies, the West European countries and Japan. Whatever their political divisions and problems, these nations are far more likely to remain stable in regard to their basic political systems and basic foreign policies than the countries of the Third World, particularly those in the Middle East.

The expansion of military responsibilities in Western Europe and Japan will not come about easily, of course. In these countries, there has been for many years formidable political opposition to major increases in military spending. In the West European nations, taxes and government expenditures on nondefense programs account for even higher percentages of the GNP than in the United States; their governments face particularly inflexible budgetary constraints. These constraints are acute in the present period of prolonged economic recession and high unemployment. Conversely, in these nations, exports to the Soviet bloc account for higher percentages of the GNP than in the United States; they benefit particularly from the economics of détente. These benefits are even more attractive in the present period of economic distress. The Nato allies now seem to be too divided and stalemated internally to undertake large and sustained increases in military spending. It is likely that the West Europeans will pursue a policy of further economic cooperation and further diplomatic accommodations with the Soviet Union.

Nevertheless, there is still a good case for new US diplomatic efforts to promote greater allied military contributions. Robert Komer has written about the possibilities as well as the difficulties.²⁷ He advocates in particular programs which could increase Nato’s capabilities substantially at a modest economic cost. These include systematic use of mines, urban barriers, and field fortifications in West Germany and expanded European infrastructures for the prepositioning of US military equipment. These clearly defensive measures would have an additional political virtue for West European governments, in that this kind of military buildup need not conflict with their détente policies. If a US administration were to focus its attention and efforts in alliance diplomacy on these relatively undramatic programs, it could probably bring its Nato allies into agreement.

The US ally with the greatest economic potential for assuming more military responsibilities is of course Japan. The Japanese have the advantages of a GNP which

is almost 40 percent that of the United States, the most competitive industries in the world market, a defense budget which is only 1 percent of GNP and, compared with the West Europeans, relatively low taxes and government expenditures on nondefense programs.

The most obvious possibility being considered is for Japan to undertake the major responsibility for naval forces in the Western Pacific. The role of the United States would shift to one of providing a substantial but not necessarily the largest portion of conventional naval forces in major areas of the Western Pacific, rather like it provides a substantial but not the largest portion (which is provided by West Germany) of the conventional land forces on the Central Front of Western Europe. This shift of naval responsibility would permit the United States to make permanent what it has been doing in recent years, the deployment of naval units from the Western Pacific to the Indian Ocean, in defense of the oil resources of the Persian Gulf.

V. Procurement Reform and the Revival of Military Power

In the past year or so, there has been considerable discussion among some younger Democrats in Congress and some former members of the Carter administration about another path, that of a revival of US military power and competence based upon a different conception of the quality of weapons systems than that which has been prevalent for many years. This view, put forward in particular by Senator Gary Hart and by James Fallows in his book, *National Defense*, holds that most US weapons systems have become so expensive and so complicated that they can no longer be deployed with the numbers, flexibility, and reliability which are necessary to make them effective in a real combat situation.²⁸ The alternative, it is argued, is to procure greater numbers of less expensive and less complicated systems, e.g., five F-5s instead of one F-15, four simple tanks instead of one M-1, and two medium aircraft carriers instead of one nuclear-powered supercarrier. The advocates of this view describe themselves as members of a movement for military reform.

The military reformers' weapons procurement program of "simpler, cheaper, and more" could well become the basis for the defense policy of Congressional Democrats, especially those from the Northeast and the Midwest, in the next year or two. And it could also become the basis for the defense platform of the Democratic Presidential candidate in 1984.²⁹ The reform program could have a special appeal to Democratic political figures for both strategic and economic reasons. Traditionally, support for the Atlantic Alliance and US defense of Western Europe has enjoyed a rather broader consensus among the major groups in the Democratic Party than among those in the Republican Party, and support for the Alliance has been somewhat stronger in the Northeast and the Midwest than in other regions of the United States. The idea of "simpler, cheaper, and more" tactical aircraft and tanks can readily appeal to Democratic advocates of an effective and credible conventional defense of Western Europe. In addition, some congressional supporters of the reform procurement program also believe that it would be more labor-intensive and less technology-intensive than the Reagan administration's procurement program, and that the reform program consequently would employ greater numbers of blue-collar workers than the current one. The idea of "simpler, cheaper, and more" can readily appeal to many traditional

Democratic politicians, whose constituencies include blue-collar labor in defense-related industries.

The military reformers make a good case that their procurement reform would result in US conventional military forces that would be more effective and more credible, although of course this is a matter of enormous controversy.³⁰ But even if this procurement reform were successful in restoring the effectiveness and credibility of US military power, it would not significantly ease the economic constraints which we have discussed earlier in this essay. First, it is quite likely that greater numbers of cheaper weapons would still add up to total defense expenditures which would be equivalent to expenditures on the current program of fewer numbers of costly weapons. The budgetary constraints on US military power would not really be resolved but would merely be reproduced.

Further, this procurement reform would not ease the problems of American industry in the world market. There would still remain the deficit in the US balance of trade and the pressures within the United States for protective trade barriers against West European and Japanese products, and these factors would continue to erode the economic and political bases of US military alliances.

Together, these problems drive us to a consideration of the possibilities for a revival of American industrial competitiveness as the most solid basis for a revival of US military power.

VI. Industrial Transformation and the Revival of Military Power

Is it inevitable that a once-leading industrial power must lose its competitive edge in the world market to new industrial powers, who have the advantages of newer plants and newer production methods, and that it must sink into industrial decline?

This was, it is true, what happened to Britain in the late nineteenth century in relation to Germany and the United States and then in the 1950s to 1970s in relation to virtually all of Western Europe. If the United States were to follow the British path in industry, it could indeed be condemned to follow the British path in foreign policy, i.e., to attempt to find substitutes for military power in economic interdependence (e.g., the British appeasement policy of the 1930s) or in strategic devolution (e.g., the British alliance policy of the 1900s).

Another industrial path is possible, however, that which was followed by Germany and by America itself in earlier times. In the late nineteenth century, Germany and America did not merely catch up with and overcome Britain in the production of the leading British industries of steel, railroad equipment, and shipbuilding. They went even further and developed entire new industrial sectors, such as the chemical and electrical industries at the end of the nineteenth century and the automobile and aviation industries in the early twentieth century; and in these new industries, Germany and America would remain consistently ahead of Britain down to the present day.³¹

The United States, more than any other country, has had a long history of successful industrial transformations, of moving out of old industries and into new ones (as Japan has been doing in the last decade). New businesses could provide a revived industrial base and a renewed competitive lead in the world market. This would provide a strong tax base for military expenditures. And the competitive lead in the world market would reduce the pressures in America for protective tariff

barriers against our industrial allies as well as reducing the pressures from the balance of payments on the deployment on US military forces abroad; it would provide a restoration of the balance of economic cooperation versus economic competition with Western Europe and with Japan.

The new industrial sectors in the American economy would probably include semiconductors, computers, telecommunications, and robotics in the 1980s, and biotechnology, lasers, and "space industrialization" in later years. And there would also be new high-technology niches in older industries, such as steel "mini-mills" which have higher productivity than large integrated steel mills, numerically controlled machine tools, special chemicals, and certain automobile components.³²

The United States still has a comparative advantage in developing new industries such as these. First, the United States has the largest and most innovative complex of scientific institutions in the world, the main source of the industries of the future. Second, the United States has by far the largest defense budget among its allies. This has provided and can continue to provide, through long-term procurement contracts, exactly what new companies in new industries need to get them through the first, difficult stages of growth. The infant semiconductor industry in the 1960s, for example, was nurtured primarily with long-term contracts from the Defense Department and from NASA. Other industries which got their start from defense spending have been synthetic rubber, computers, antibiotics, communications satellites, and lasers. Defense contracts support one-third of the scientists and engineers and one-third of the research and development budgets in the United States.³³

An economic strategy of industrial transformation, however, could have implications for US military power that went beyond rebuilding the tax base, the balance of payments, and the political constituency for free trade. It would come to shape in controversial or unforeseen ways US weapons procurement and military strategy. When the industries which are engaged in the production of semiconductors, computers, telecommunications, and lasers for the civilian world market also undertake production for military purposes, the most obvious kinds of weapons systems are precision-guided munitions (PGMs). An economic strategy based upon industrial transformation is likely to generate pressures for a military strategy based upon PGMs.³⁴

Like the procurement reform of "simpler, cheaper, and more," the military efficacy of PGMs is a matter of enormous controversy. Indeed, many of the advocates of the former are critics of the latter. They see many PGMs as too complex and too unreliable to be effective in actual combat situations, and they see the reliance upon PGMs as a prime example of the high-tech, quick-fix mentality.³⁵

Many advocates of PGMs argue that a conventional military strategy based upon them would be not only more effective but also cheaper than one based upon "tactical" aircraft and tanks. But this too is a controversial question. It seems just as plausible that PGMs will not significantly ease the economic constraints on US military power. Historically, new weapons have first been used merely as extensions of old ones. Thus, the airplane was first used as a reconnaissance vehicle to improve the accuracy of artillery, and the tank was first used as a pathbreaker to ease the advance of infantry. It is not surprising that many current PGMs are deployed upon, and are extensions of, aircraft and tanks. And it is not surprising too that such

combination systems are even more expensive than the aircraft and tanks which they replace. PGMs will not inevitably dissolve the economic constraints upon the military budgets of the United States and its allies.

In the longer run, however, the procurement of PGMs probably will be able to take advantage of the economies of mass production, increasing returns to scale, and "learning curves" so characteristic of the semiconductor, computer, and telecommunication industries. Because of the advantages of its large scientific establishment and its large defense budget, the United States could be in a better position than any other military or industrial power to excel in the development, production, deployment, and operation of new PGMs. And successive generations of PGMs might also provide technological spinoffs to civilian industry, such as helping to make the telecommunication of information rather than the transportation of persons a central focus of the future economy. Together, these new military and civilian products would become major new American exports in the world market.

VII. Conclusion

US defense policy in the 1980s will be driven by American economic conditions away from the current program of the Reagan administration. In their search for alternative policies, some political elites will be tempted by the promises of economic interdependence or strategic devolution. We believe that these paths can easily lead to debacles and dead ends, although there is solid good sense in their limited versions of containment focused on Soviet military expansion and of the buildup of conventional military forces by Western Europe and Japan.

Some political elites will seek to revive US military power with a reform of weapons procurement. Here, too, there is solid good sense, but the reformers will find their efforts inhibited and their achievements limited by continuing American economic decline.

The most fundamental and solid policy goal should be a revival of US military power based upon an American industrial transformation. This will provide both a danger and an opportunity for US military power. The danger is that the new industrial sectors will propel US military forces into over-reliance on complicated, delicate weapons systems and on unrealistic, quick-fix military strategies. The opportunity is to employ the new technologies of the new industries to make weapon systems which will be more simple, more effective, more reliable—or as a mathematician might put it, more "elegant"—than their predecessors.³⁶ It is an opportunity to combine the best of the ideas of industrial transformation and procurement reform.

NOTES

1. Analyses of the economic constraints on the military buildup, arriving at a variety of conclusions, are presented in the following: (1) Staff of the Carnegie Panel on US Security and the Future of Arms Control, "Defense Spending and the Economy: Projections and Choices," *Challenges for U.S. National Security* (Washington, D.C.: Carnegie Endowment for International Peace, 1981), pp. 23-39; (2) Philip Odeen, "Domestic Factors in U.S. Defense Policy," *America's Security in the 1980s, Part I*, Adelphi Papers number 173 (London: The International Institute for Strategic Studies, 1982), pp. 22-31; (3) Lester Thurow, "How to Wreck the Economy," *The New York Review of Books*, 14 May 1981, pp. 3, 6; (4) James Fallows, *National Defense* (New York: Random House, 1981), pp. 3-11.

2. Carnegie Panel, p. 28. More detailed historical statistics for federal defense and nondefense spending as a percent of GNP are given in "Federal Government Finances: 1983 Budget Data," compiled by US Office of Management and Budget, Budget Review Division, Fiscal Analysis Branch, February 1982; especially Table 12, pp. 71-75.
3. Thurow, p. 3.
4. The Nixon administration's economic policies are discussed in David P. Calleo, *The Imperious Economy* (Cambridge, Mass.: Harvard University Press, 1982).
5. These and comparable statistics below are given in Office of Management and Budget, Table 12.
6. Odeen, pp. 23-25. Total federal spending (both defense and nondefense) as a percent of GNP was 12.5 percent in FY 1941, 16 percent in FY 1950, 19 percent in FY 1964, and 23 percent in FY 1981.
7. Thurow, pp. 3, 6.
8. Calleo.
9. On the impact of cuts in economic infrastructure, see especially the special issue of *Business Week* on "State and Local Government in Trouble," 26 October 1981; and the special issue of *Newsweek* on "The Decaying of America," 2 August 1982.
10. The dismal trade-offs of fiscal policy are discussed in Fallows, pp. 3-11.
11. The pattern of inadequate funding for maintenance, training, and operations is discussed extensively and systematically in Thomas H. Etzold, *Defense or Delusion?: America's Military in the 1980s* (New York: Harper and Row, 1982).
12. Morton H. Halperin, Priscilla Clapp, and Arnold Kanter, "Organization Interests," in John E. Endicott and Roy W. Stafford, Jr., eds., *American Defense Policy*, 4th ed. (Baltimore: Johns Hopkins University Press, 1977), pp. 207-223.
13. The option of defense with mines and antitank barriers is advocated and discussed in Robert W. Komer, "Maritime Strategy vs. Coalition Defense," *Foreign Affairs*, Summer 1982, pp. 1137-1138; and John Keegan, "Soviet Blitzkrieg: Who Wins?" *Harper's*, May 1982, pp. 52-53.
14. Komer, pp. 1125-1144.
15. Etzold.
16. Michael Howard, "The Forgotten Dimensions of Strategy," *Foreign Affairs*, Summer 1979, pp. 975-986.
17. Charles S. Maier, "The Politics of Productivity: Foundations of American International Economic Policy after World War II," in Peter J. Katzenstein, ed., *Between Power and Plenty: Foreign Economic Policies of Advanced Industrial States* (Madison: University of Wisconsin Press, 1978), pp. 23-49.
18. The evolution of US industries in the world market is discussed in James R. Kurth, "The Political Consequences of the Product Cycle: Industrial History and Political Outcomes," *International Organization*, Winter 1979, pp. 1-34; and Stephen D. Krasner, "United States Commercial and Monetary Policy: Unravelling the Paradox of External Strength and Internal Weakness," in Katzenstein, ed., pp. 51-87.
19. A comprehensive analysis of the causes of American industrial decline is given by Ira C. Magaziner and Robert B. Reich, *Minding America's Business: The Decline and Rise of the American Economy* (New York: Harcourt Brace Jovanovich, 1982).
20. Calleo; and James Chace, *Solvency: The Price of Survival—An Essay on American Foreign Policy* (New York: Random House, 1981).
21. See especially Correlli Barnett, *The Collapse of British Power* (New York: Morrow, 1972); and Robert Gilpin, *U.S. Power and the Multinational Corporation: The Political Economy of Foreign Direct Investment* (New York: Basic Books, 1975), sections on Britain.
22. Barnett, chap. 3.
23. Carl Gershman, "Selling Them the Rope: Business and the Soviets," *Commentary*, April 1979, pp. 35-45; and his "The Rise and Fall of the New Foreign-Policy Establishment," *Commentary*, July 1980, pp. 13-24. A well-known academic exposition of the idea of economic interdependence is Robert O. Keohane and Joseph S. Nye, *Power and Interdependence: World Politics in Transition* (Boston: Little, Brown, 1977).
24. This tradition is discussed in Stanley Hoffmann, *Gulliver's Troubles, or the Setting of American Foreign Policy* (New York: McGraw Hill, 1968), chaps. 5-6.
25. Robert Paul Shay, Jr., *British Rearmament in the Thirties: Politics and Profits* (Princeton: Princeton University Press, 1977).
26. A comprehensive critique of British and American efforts to devolve responsibilities in the Persian Gulf is given by J.B. Kelly, *Arabia, the Gulf and the West* (New York: Basic Books, 1980).
27. Komer, pp. 1125-1144.
28. Gary Hart, "What's Wrong with the Military," *The New York Times Magazine*, 14 February 1982, pp. 16-19, 40-41, 43; Fallows, *National Defense* (Fallows was a speech writer for President Carter); R. James Woolsey, "Defense and Arms Control," *The New Republic*, 31 March 1982, pp. 21-23 (Woolsey was an Under Secretary of the Navy in the Carter administration).
29. The article by Woolsey appeared in a special issue of *The New Republic* on "The Agenda After Reagan: First Draft for a 1984 Democratic Platform."

30. See, for example, the critique by Edward Luttwak, "Why We Need More 'Waste, Fraud, and Mismanagement' in the Pentagon," *Commentary*, February 1982, pp. 17-30.

31. Kurth, pp. 1-34.

32. Robert B. Reich, "Industrial Policy," *The New Republic*, 31 March 1982, pp. 28-31; and the special issue of *Business Week* on "America's Restructured Economy," 1 June 1981, especially pp. 94-98.

33. Reich, pp. 29-30.

34. The relationship between high-technology industries and precision-guided munitions is analyzed by Mary Kaldor, *The Baroque Arsenal* (New York: Hill and Wang, 1981).

35. Fallows, especially chaps. 2-3. A military strategy based upon PGMs is advocated by Philip Morrison and Paul F. Walker, "A New Strategy for Military Spending," *Scientific American*, October 1979, pp. 2-15; and Paul F. Walker, "Precision-guided Weapons," *Scientific American*, August 1981, pp. 37-45.

Criticisms of the efficacy of PGMs are given in Robert Kennedy, "Precision ATGMs and NATO Defense," *Orbis*, Winter 1979, pp. 897-927; Ori Even-Tov, "The NATO Conventional Defense: Back to Reality," *Orbis*, Spring 1979, pp. 35-49; and Edward Luttwak, "Deus Ex Missiles," *The New Republic*, 9 August 1982, pp. 16-18.

36. Woolsey, "Defense and Arms Control," pp. 22-23.

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