

The National Defense Budget and Its Economic Effects

National defense is the only category of Federal spending in which the Administration has budgeted major increases. The expanded budget reflects the Administration's commitment to greater defense capability. Naturally, the prospect of sizable increases in defense budgets has substantial economic implications, and the purpose of this article is to analyze those economic implications. One important issue is how much defense is likely to cost over the next five years. Related to that is whether the increase in the March 10 budget proposal will be sufficient to satisfy the requirements of alternative defense strategies. Another important question is what the potential effects on the economy will be of a medium-term defense buildup that is as large as (or conceivably larger than) the one proposed by the Administration.

Before moving into that economic analysis, the article provides some background on the context—in terms of defense planning—in which defense budgets are inevitably made. This section draws heavily on the published research of leading defense scholars. It focuses on two dimensions of defense planning that have a significant impact on the size and composition of the defense budget: the choice of conventional war strategy and decisions about major weapon systems and personnel compensation.

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Because of the complexity of the issues involved, from the technical standpoints of both defense planning and economics, there are no definitive answers to many of the questions that have been raised. Nevertheless, an analysis of the defense outlook supports these preliminary conclusions:

- The Reagan administration's defense budget proposal for fiscal year 1982 represents an across-the-board funding increase to the Carter defense program and not a basic strategy change. In fact, there has been no publicly announced change in basic defense strategy for conventional forces since the start of the Nixon administration.
- Any reassessment of conventional war strategy may require major changes in budgets for fiscal year 1983 and beyond.
- Even without such a reassessment the Administration still has major multibillion dollar issues to resolve, primarily on strategic nuclear weapons and personnel costs. Until these decisions are made, it will be difficult to place a firm estimate on how much defense is likely to cost over the next five years.
- Regardless of the outcome of those decisions, however, it appears likely that there will be pressures for defense expenditures significantly in excess of what is contained in the

Table 1

Defense Budget Authority Estimates and Projections

By fiscal year, in billions of dollars

Defense budgets	1981	1982	1983	1984	1985	1986
Pre-January 1981 policy	173.7	198.1	219.0	238.0	252.0	256.8
Carter proposal*	173.7	200.3	225.0	250.5	277.5	306.5
Reagan proposal	180.7	226.3	259.6	294.9	333.0	374.3
Reagan vs. pre-January policy	+7.0	+28.2	+40.6	+56.9	+81.0	+117.7
Reagan vs. Carter	+7.0	+28.0	+34.6	+44.4	+55.5	+ 67.8

*Carter numbers have been adjusted to reflect economic assumptions in the Reagan proposal.

Administration's multiyear projections. For one thing, the costs of the force levels that would satisfy the major competing strategies appear to exceed the funding levels for 1982-86 contained in the March 10 budget revisions. In addition, higher than anticipated defense inflation rates and the persistence of cost growth (overruns) of major defense acquisitions could erode the purchasing power of the Administration's projected budget levels.

- Budget increases for national defense could create inflationary pressures, although that outcome is not inevitable. It depends on a number of conditioning factors, including the size, composition, and speed of the buildup, capacity utilization in industry, and the course of monetary policy. In procurement, the projected increase (measured in constant dollars) is larger, more rapid, and of longer duration than the Vietnam war buildup. An analysis of that period suggests that a policy of not monetizing defense-induced increases in the Federal deficit would not have been sufficient to ensure against a rise in the inflation rate lasting for some time. But, in contrast to that earlier period, inflationary pressures from the defense increase may be mitigated in 1982 by the existence of underutilized industrial capacity. Also relevant is that, in most instances, the Administration budget does not increase quantities of goods to be bought in 1981 and 1982 above plans that were publicly announced in 1980 or, in many cases, above levels that were actually purchased in 1980. Rather, the proposal by and large funds growth (since the

start of 1980) of the estimated unit costs of weapon systems. For 1983 to 1986, the inflationary consequences are more uncertain for three reasons: because defense procurement may be increased more than currently projected; because of uncertainty about whether nondefense investment resulting from business tax cuts and prospective economic growth will place excessive demands on a few sectors of the economy that also supply goods to defense; and because it is impossible to accurately predict the response of the public and of inflationary expectations to an extended period of monetary restraint.

In all likelihood, the high cost to the budget and the economy of expanding defense may lead to demands by some for more nondefense budget cuts or smaller tax cuts, while others may call for scaling back or delaying plans for new defense purchases. Such a debate would highlight one danger that has been stressed by several defense scholars: that is, if a new defense strategy is formulated in isolation from domestic policy options, the ultimate outcome may be undesirable, in that the country may not be willing or able to purchase the forces required by that strategy. Consequently, they argue that it is very important to formulate and to choose an affordable defense strategy through a process that explicitly weighs the costs and risks of different strategies against the benefits of tax relief and alternative nondefense budgets. In recognition of this interdependence, many experts see a need for a comprehensive review of major policy alternatives by the Administration, similar to an interdepartmental analysis coordinated by the National Security Council staff in the early 1970s.

Defense strategy

The March 10 budget submission increased former President Carter's proposal for defense budget authority by \$7.0 billion in 1981 and \$26 billion in 1982. For fiscal years 1983-86, the Reagan administration has projected budget authority that on a cumulative basis exceeds the Carter projection by over \$200 billion, starting with a \$35 billion increase for 1983 and culminating in a \$68 billion increase for 1986 (Table 1). It is not generally realized that the Carter proposal was itself an increase in dollar terms above a projection of policies in effect prior to January 1981. For fiscal year 1986, the Reagan administration budget authority exceeds that baseline by almost \$120 billion. The pattern of the outlay increases in the March 10 budget revisions is similar, but the size of the changes is slightly smaller since outlays generally lag behind budget authority.

In contrast to the proposed tax cuts (with their supply-side rationale) and the nondefense outlay cuts (with their detailed justifications such as increasing state flexibility and privatization of government activities), the defense spending increases are not the outgrowth of a new strategic plan. Statements by the Administration suggest a belief that the Carter defense budget was simply not large enough. The size and not necessarily the direction of the defense budget was the immediate problem. Consequently, the Administration's proposal for 1981 and 1982 contains relatively few new initiatives but, instead, contains increases across the board. The lack of any new plan may also be a result of the short amount of time the new Administration had to review the Carter five-year defense program prior to submitting budget revisions on March 10.

The last major change in defense conventional force strategy occurred at the start of the Nixon administration. As a result of National Strategic Study Memorandum 3 (NSSM-3), a crosscutting analysis of alternative foreign and domestic policy options, defense planning has taken place under a requirement of simultaneously satisfying one major war and one minor war or contingency—for example, a Warsaw pact attack on central Europe and a North Korean attack on South Korea. This so-called "one and one-half war" strategy was adopted after it became clear that the two and one-half war strategy used since the early 1960s was not affordable and possibly unnecessary.¹ (For strategic nuclear forces, United States policy has for some time espoused mutual deterrence through the maintenance of a triad of submarine-based missiles, land-based missiles, and nuclear weapons de-

livered by fixed-wing aircraft. Targeting assumptions were altered somewhat by the Carter administration, but basic elements of strategic nuclear policy remain unchanged.)

Recently, certain questions have been raised about defense conventional force planning. The first question concerns whether the United States has been purchasing the kinds of forces that provide the capability to satisfy the one and one-half war strategy. A fundamental assumption underlying the one and one-half war strategy is that United States forces are fungible and can be moved from bases in the United States to wherever crises might occur. In the past several years, defense conventional force programs have been geared to fighting a major war in Europe and the assumption has been that the types of forces that would meet this requirement would also satisfy a minor contingency. However, defense analysts have maintained that it is not clear whether the armored divisions or heavy fighter aircraft required for a major war in Europe would be appropriate for a minor contingency, such as intervention in the Caribbean or southern Africa, where speed and maneuverability may be more important than sophisticated firepower.² Also, investments have not been made recently in the airlift and sealift necessary for a one and one-half war strategy.

A second and more fundamental question is whether the one and one-half war strategy is still appropriate in the current international environment. For example, various Persian Gulf scenarios are, in theory, supposed to be satisfied by force planning for a minor contingency. However, the kinds of forces required for these situations may be very different from those required either for a European war, a defense of South Korea, or intervention in the Caribbean.³

The questions that have been raised about force planning imply alternative approaches to the formulation of the defense program for fiscal year 1983 and beyond. As the Administration prepares the 1983-87 five-year defense program, it may consider the following options that have been put forward by various defense planners:

- The Administration could validate its earlier decision to increase the Carter program across the board. This would mean stating that the

² Stansfield Turner, "Toward a New Defense Strategy", *New York Times Magazine* (May 10, 1981), pages 14-17, 50, 55.

³ Dov Zackheim suggests that, for Persian Gulf contingencies, the Marines may need equipment to permit them to operate beyond the beach and not merely near the coast. See *The Marine Corps in the 1980s* (Congressional Budget Office, May 1980).

¹ Henry Kissinger, *White House Years* (1980), pages 220-22.

March 10 proposals were made because of a firm belief that the size rather than the direction of the pre-Reagan defense program was the problem and not because of insufficient time to formulate a new defense strategy.

- The NSSM-3 strategy could be retained, as in the first option, but with less emphasis placed on the purchase of equipment for a war in Europe and more placed on the demands of minor contingencies. Forces could be reconfigured so that they are in fact fungible. In particular, this would mean more light divisions, more numerous but lighter and less capable ships and aircraft, more vertical takeoff and landing aircraft, and a major increase in airlift and sealift.
- The more demanding minor contingencies in the Persian Gulf and Korea could be raised to permanent scenarios. This new strategy—a “one plus two one-half wars” strategy—would require prepositioning more men and equipment in the Persian Gulf, a greater capability for the Marines to operate beyond the beach, and improved sealift and possible better airlift. It is not clear how the less demanding minor contingencies fit into this option. One possibility would be to assume that forces designated for Korea or the Persian Gulf could be moved and applied, if needed, to intervention in other areas.
- Defense planning could be geared toward a capability to respond simultaneously to one major war plus multiple minor contingencies. The strategy would be the most expensive option because it would include purchasing forces to fight (at the same time) a European war, Persian Gulf and Korean wars, and a certain number of small third world skirmishes.

Published reports of the recently approved defense policy guidance for the preparation of the 1983-87 five-year defense plan cite a planning strategy of preparation for what is termed worldwide war. Without specifics about assumptions concerning simultaneity of operations and the number of regions, it is extremely difficult to ascertain whether this guidance represents a strategy change. It could mean planning for more than one major conflict and multiple minor contingencies or it could be a new way of presenting and implementing the NSSM-3 strategy. Although the Administration supplied budget projections for 1983-86 with

the March 10 revisions to the 1982 budget, it will be difficult to assess how much defense actually will cost over the next five years until basic defense strategy is clarified.

Major policy decisions

A second factor that makes an assessment of the likely five-year defense budget totals difficult is the fact that the Administration has yet to make some major policy decisions, many of which are not related to conventional war strategy. Although the alternatives are not necessarily to invest billions or to spend nothing on the major programs involved in these decisions, even small alterations in the programs can have large dollar effects and may affect the funding levels for other programs, both large and small, over the next five years.

- *MX basing.* The question is whether to proceed with the proposal for thousands of miles of roads for the mobile missile (MX) or to deploy the missile in existing Minuteman silos. If the latter option is adopted, deployment would probably be accompanied by an antiballistic missile (ABM) system. Deployment of an ABM system would probably mean either disregarding the treaty or modifying it at the scheduled review by the United States and the Soviet Union in 1982. This is a \$30-40 billion decision (in 1982 dollars).
- *Manned bombers.* The Administration budget contains research and development funds for a new manned bomber, similar to the B-1. The decision that must be made is whether to move forward with further development and procurement or to make changes to B-52s and FB-111s until the Stealth bomber is ready. At a minimum, this is a \$20-30 billion decision (in 1982 dollars).
- *Air defense.* The Air Force would like to replace its F-106 aircraft used for strategic defense of the United States with F-15s. This is about a \$5 billion decision (in 1982 dollars).
- *Theater nuclear forces.* The issue is whether or not to proceed with placing more ground-launched cruise missiles and Pershing missiles in Europe. NATO (North Atlantic Treaty Organization) allies would like them there, but individual countries prefer not having the missiles located on their soil. This is a \$5 billion decision (in 1982 dollars).

- **Shipbuilding.** It is not clear that the United States shipbuilding industry currently has sufficient capacity to increase production rates for nuclear warships as rapidly as implied by the recently announced Navy shipbuilding program. Options include reopening one or more Government shipyards to new construction or building more conventionally powered ships.
- **Manpower.** Recent pay raises have helped improve retention in the military. However, current plans call for as much as a 200,000 increase in active duty man-years. Even without a force buildup, the services will probably face recruiting shortfalls, given the quality and composition constraints imposed by the Congress. The current approach of using across-the-board pay raises as an incentive is expensive (a 10 percent pay raise costs over \$3 billion per year). But shifting to an elaborate system of targeted incentives could distort the pay system. A recently formed high-level task force on military manpower will apparently consider numerous options including reinstating the draft. That would dramatically lower the optimal capital-labor trade-off in defense and would imply a much smaller increase in defense procurement.⁴
- **Mobility forces.** Flexible forces need to be movable. Current capabilities are thought to be inadequate. The Administration has to decide on the mix of airlift and sealift and the levels of procurement for additional aircraft and/or ships. This is a \$15-25 billion decision (in 1982 dollars). The decision is somewhat dependent on basic decisions about conventional war strategy.

⁴ The manpower problem is very complex. For example, since the start of the all-volunteer force, military unit labor costs have fallen in real terms. In an unconstrained situation, the services could raise salaries and bonuses to attract more recruits up to a point where the estimated marginal product of an extra dollar spent on labor equals the marginal product of an additional dollar spent on procurement. However, the resource-allocation decision is constrained in various ways. Pay levels are restricted by comparisons between civilian and military Government employees (it is difficult to conceive of Congressmen approving base pay levels for colonels that exceed their own salaries) and comparisons within the military (it would be difficult to have a pay system where the salary and initial bonus for an unskilled recruit exceeds the pay of a three-year veteran). As a result of such constraints, the military does not appear to have had the option to become more labor intensive despite the real decline in unit labor costs.

The cost of defense

Although decisions about overall strategy and about specific weapon systems and policies make it impossible to fix firmly the cost of defense over the next five years, it is likely that there will be pressures for more funds than included in the March 10 budget proposal and projection.

The first reason for this is that the force levels and investments needed to satisfy the major alternative strategies may cost more than was allotted in the March 10 budget revisions. (Recall that the budget projections for 1983-86 did not represent a commitment to a new strategy.) Although one analyst concludes that an alternative that resembles a one plus two one-half wars strategy would cost the same or less than the funding levels contained in the Administration's budget projection, that estimate appears to be understated. For example, the ten-year costs for modernizing and fully equipping three reserve divisions are given as \$3 billion (\$100 million per year, per division).⁵ A more realistic estimate, using recent Army data, is two or three times that amount. Also, the cost estimate assumes the upgrading of reserve and national guard divisions and air wings, an assumption that holds down total costs but is probably unrealistic. In particular, most analysts believe reserve divisions probably could not be expected to operate as front line divisions if they were comprised entirely of reserves. Rather, reserve companies or battalions would have to be combined with a cadre of active duty forces. This would require a major change in the organization of the national guard and to a lesser extent of the reserves. Such changes have been resisted by the reserves and by the services. Another practical problem has been recruiting and retention in the reserves. Summing up, if the reserve ground forces in the one plus two one-half wars strategy are replaced with active duty forces, the five-year costs exceed the Administration projection by 5 to 10 percent or \$50-100 billion (1982 dollars). A strategy of preparing to fight a worldwide war (interpreted here to mean one major contingency and multiple minor contingencies) would require capabilities that exceed a one plus two one-half wars strategy and consequently would cost more. (This assumes, of course, the Defense Department does not proclaim the strategy and then fails to provide the funds to purchase the required capabilities—as was the case with the two and one-half war strategy of the sixties.)

A second reason why additional pressures might

⁵ William W. Kaufmann, *Setting National Priorities* (Brookings Institution, May 1981).

emerge for defense increases is cost growth (overruns) of major weapon system procurements. In January 1980 and January 1981 the Carter administration submitted budget requests that documented substantial increases in the unit prices of major weapon systems over the previous year's estimates. For example, in January 1981 the unit price for the SSN 688 attack submarine exceeded the January 1980 estimate by 20 percent. The cost increases over the same period for the XM-1 tank was 76 percent. In January 1980 the unit price of the F-18 fighter aircraft was estimated to be 25 percent higher than in January 1979. (In all three cases, there was no change in the quantities purchased.) The 1979-80 cost growth of the F-18 was followed by a 40 percent increase in the unit price between 1980 and 1981. In this case, the quantity to be purchased was cut.

Cost growth of weapon systems can be attributed to changes in requirements or technical specifications, poor estimates of inflation, and changes in quantities purchased. There is no precise way to predict changes in requirements and specifications. However, an unsettled conventional war strategy would

make such changes more likely. Changes in quantities purchased are generally an outgrowth of other problems. When requirements and inflation push costs up, budget constraints often dictate a reduction of or a slowdown in purchases. Usually, these reductions force manufacturers to produce in uneconomical quantities.

One factor that is clearly a potential source of pressure for increased defense funds is inflation. For the purposes of budget preparation, the Department of Defense has traditionally priced their proposed purchases with Administration projections of the gross national product (GNP) deflator. However, since 1975 the deflator for defense durables has consistently grown at a faster rate than the GNP deflator. In 1980, the difference was about 1 percent (Table 2). In addition, there is some disagreement about the likelihood of the Administration's March 10 GNP deflator forecast. The forecast had inflation declining rapidly over the next few years. In July the Administration lowered its forecast for inflation even further. A less optimistic path for defense inflation, such as one projected this spring by the Congressional Budget

Table 2

Inflation for Defense Durable Goods

By calendar year; fourth quarter to fourth quarter rates of growth; in percent

Deflators	1975	1976	1977	1978	1979	1980
Defense durable goods	10.2	7.0	12.0	8.6	8.1	10.8
Gross national product deflator	7.8	4.7	8.1	8.4	8.1	9.9
Difference	+ 2.6	+2.3	+ 5.9	+0.2	—	+ 0.9

Table 3

Effect of Higher Inflation for Purchases on Defense Cost

By fiscal years

Category	1982	1983	1984	1985	1986
Budget authority difference* (in billions of dollars)	+ 6.7	+13.9	+22.7	+34.1	+48.7
Outlay difference (in billions of dollars)	+ 3.6	+ 8.9	+15.5	+24.3	+35.8
Administration defense inflation (in percent)	8.7	7.3	6.2	5.5	5.0
Congressional Budget Office (CBO) defense inflation (in percent)	11.4	10.0	9.0	8.8	8.5

* Difference is the result of using higher CBO defense inflation rates.

Office (CBO), and the use of specialized deflators for defense purchases would imply a much larger increase in defense costs. By fiscal year 1986, defense procurement costs would exceed the projection in the March 10 budget revisions by almost \$50 billion (Table 3). This should not be taken to mean that the CBO forecast is more likely to be right. Rather it is meant to show how sensitive the defense budget (and its purchasing power) is to the course of inflation. Even relatively moderate differences in inflation projections can be associated with big differences in projections of defense budget authority and outlays.

The economic effects of the defense buildup

Having reviewed the defense budget outlook, it appears safe to conclude that, although total costs cannot be projected precisely, pressure will be considerable for funding that is at least as great as projected in the March 10 budget revisions. Using these figures as a starting point, the next question is what are the potential economic effects of the buildup. The economic consequences can be roughly divided into effects on the aggregate economy stemming from excess demand caused by the increase in defense-related Government purchases and effects on certain sectors of the economy caused by the supply or capacity limitations of defense industries. These latter effects, depending on their size, may result in changes or distortions that spread to the economy as a whole.

Aggregate demand and inflation

Some economists believe that the defense buildup will exacerbate our inflation problems. Lester Thurow compares the projected increase to the Vietnam buildup, pointing out that the constant dollar rise in outlays between 1965 and 1970 was only \$24.2 billion in 1972 prices, compared with the \$41 billion increase between 1981 and 1986 projected by the Reagan administration.⁶ Thurow argues that the defense increase and the tax cut combined will overstimulate aggregate demand and lead to a new round of inflation. His concern is similar to that expressed by Wassily Leontief in various interviews. Leontief believes that: "If handled improperly, these huge jumps in military spending will mean higher inflation, a worsening balance of payments gap, a drain on productive investment, soaring interest rates, increasing taxes, a debased currency and, in the longer term, more unemployment."

⁶ Lester Thurow, "How to Wreck the Economy", *New York Review of Books* (April 6, 1981). His figures are slightly high for the 1965-70 increase which was \$21 billion, but he also does not point out that the spending peak was in 1968. The constant-dollar growth between 1965 and 1968 was \$32 billion. See *Federal Government Finances* (Office of Management and Budget, March 1981).

Other economists dispute the contention that the defense increase will be inflationary.⁷ They contend that the defense spending increase in the Vietnam era was inflationary primarily because the Federal Reserve monetized the deficit increases produced by the defense buildup and allowed the money supply to grow too rapidly. According to this school of thought, Administration goals for cutting the rate of growth of money and credit in half by 1986 (compared with 1980 rates of growth) are consistent with the view that the Federal Reserve will not monetize near-term deficits that result from the defense increase and the tax cut. Thus, even though the defense increase is large, Federal Reserve money stock targets will effectively put a lid on nominal GNP and inflation. This hypothesis about the effects of monetizing the deficit is an extremely important one.⁸ Unfortunately, it is not possible to turn back the clock in order to validate or refute arguments about the effects of fiscal or monetary policy in the sixties. To evaluate the effects of a defense buildup, for any specified growth path of the money stock all that can be used is economic logic and historical statistical relationships. In simplified terms, the analysis goes something like this.

Initially, an increase in Government purchases for defense would result in more real aggregate demand, compared with a path for the budget and the economy that does not include a defense buildup. This could be expected to result in more inflation unless the economy were operating well below capacity. (In 1965, the economy was operating near full capacity.) The higher nominal GNP, resulting from more real aggregate demand and possibly more inflation, leads to an increase in desired money holdings. However, since the growth path for the money stock is fixed, interest rates are higher. Eventually, higher rates choke off the additional GNP growth and inflation slows. At some point, GNP and interest rates might even converge back to the levels that would have been reached in the absence of the defense stimulus.

The description of the dynamics of a surge in defense spending, combined with an unchanged path for money growth, leaves a number of questions unanswered. In particular, how long would it have taken for higher interest rates to slow real growth and inflation

⁷ Herbert Stein, "The Economics of American Defense, Q & A.", *Wall Street Journal* (July 7, 1981).

⁸ Variants of the same arguments have been used both for the defense increase and for the tax cut proposal. See "The Reagan Program for Economic Recovery and the Kennedy Tax Cuts", a staff study prepared for the Joint Economic Committee, April 1981. According to this study, an additional feature of the tax program is that the real portion of nominal GNP will increase while the inflation component will decrease because of supply-side incentive effects.

and, before that occurred, how much inflationary momentum would develop? The length of lags and the relative magnitudes of various economic effects are primarily empirical rather than theoretical questions. To analyze them, two experiments were performed on an empirical model designed to capture the historical behavior of the United States economy, the Federal Reserve-MIT-Penn (FMP) econometric model. In the first experiment, we compared estimates of the path the economy followed in 1966 through 1969, assuming

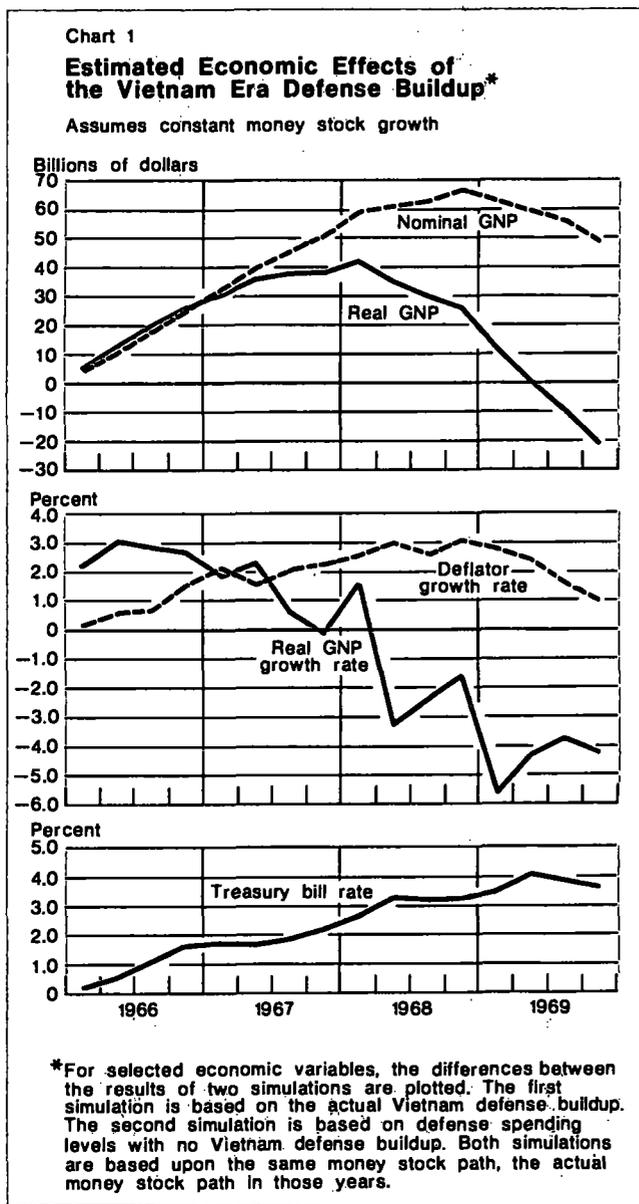
the historical defense buildup, with estimates of the path of the economy without that defense buildup—taking the actual historical pattern of monetary expansion for both cases. In the second experiment, we compared the path the economy might have taken with the Vietnam defense buildup, but under a more restrictive monetary policy, with the path the economy might have taken without a defense buildup but with the historical growth of money.

The results of the first experiment, reported in Chart 1, are that twelve quarters after the start of the buildup in 1966 the inflation rate with the defense buildup exceeds the rate under the no-buildup assumption by 3 percentage points. The estimated differences narrow after that because of the lower real growth resulting from higher interest rates. The results of the second experiment show an inflation rate after eight quarters approximately 1 percentage point higher than for a simulation of the economy without a defense buildup but with the historical pattern of monetary growth. All econometric estimates are subject to a considerable margin of error, and the results of experiments like these should be assessed with caution. Nevertheless, the empirical relationships do tend to refute the hypothesis that the defense buildup in and of itself had no inflationary consequences.

The hard question is whether economic conditions today are enough like those that existed in the mid-1960s to justify similar conclusions about the inflationary effects of a medium-term defense buildup. Clearly, there are more differences than similarities. The economy is operating further below its potential than it was in the earlier period, and unemployment is higher. Also, the defense increase is proportionally smaller; using the Administration's economic assumptions and defense estimates, defense outlays as a percentage of GNP would increase by 1.8 percentage points between 1980 and 1985, compared with 2.1 percentage points between 1965 and 1968. But the inflation rate is initially far higher, and the public's inflationary expectations are more unstable. Under these circumstances, what seems to be a fair conclusion is that, while the increase in the defense budget may not cause the inflation rate to go up, it could tend to retard progress toward reducing inflation under maintenance of a policy of monetary restraint.

Cost push and bottlenecks

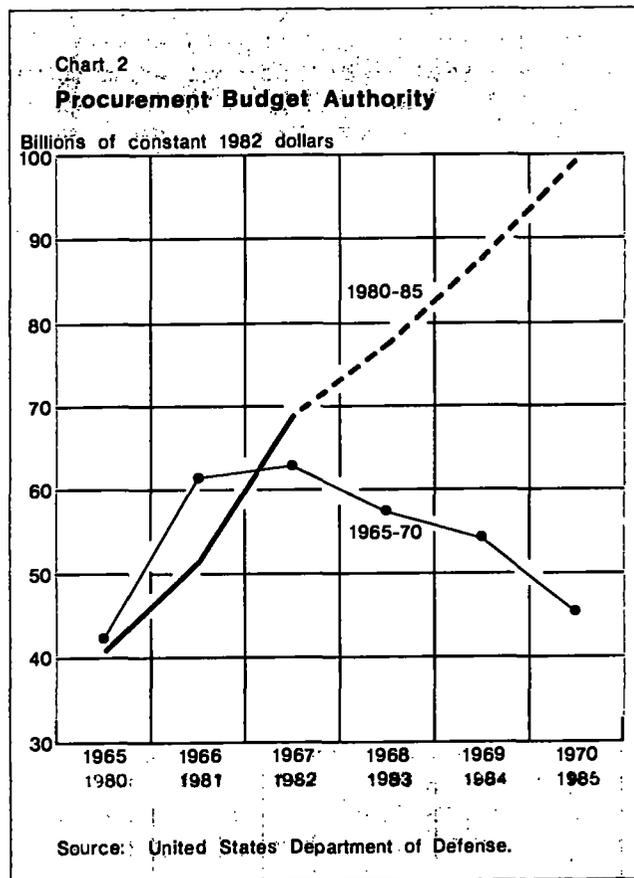
In addition to these macroeconomic considerations, there is a risk of inflationary effects if the defense buildup confronted supply or capacity limitations in the industries that support defense procurement. The defense increase proposed by the Administra-



tion is heavily concentrated in procurement. As shown in Chart 2, the growth of procurement budget authority between 1980 and 1982 in constant dollars exceeds the growth of 1965 through 1967, i.e., 70 percent vs. 49 percent. The magnitude of the planned procurement spending suggests that, to the extent to which the demand for defense goods in the near term is price inelastic (or insensitive to price increases) and United States industrial capacity is limited, the procurement buildup could have effects similar to the 1979 oil price shock where supply limits confronted a temporarily inelastic demand. Also, the Administration plans sustained real growth of procurement, compared with the Vietnam era when real budget authority for procurement fell in each year from 1968 through 1970. These further increases in defense spending will be occurring at the same time that the effects of the business tax cut will be building rapidly. (For example, the estimated Federal Government revenue loss from the business tax cuts will grow by \$22 billion between 1985 and 1986, compared with only \$7 billion between 1981 and 1982. There is some concern expressed by private-sector economists that the demand for defense goods will crowd out spending on business investment goods.⁹ For example, based on the 1972 input-output tables, it appears that increased capital spending resulting from the business tax cuts would place demands on several of the same industries that directly or indirectly supply the defense sector. These include aircraft and parts, ordnance and accessories, communications equipment, shipbuilding, and electronics.

The capacity problems faced by the defense sector as a result of the defense buildup are unclear at present. This is partially because the items that will be purchased in 1983 through 1986 have not yet been identified. However, even the current situation is ambiguous. Most analysts agree that, at the prime contractor level, there does not appear to be a problem. For example, a number of aircraft assembly plants are producing at less than full capacity. One of the reasons for this is that the Reagan budget did not represent an increase in planned aircraft purchases. Although both the Carter and Reagan budgets represent increases in dollar terms to the funding levels resulting from Congressional action through the end of the 96th Congress, increases in estimates of unit costs meant that the actual number of aircraft to be purchased under both budgets was actually lower than had been anticipated only several months earlier.

⁹ Gary M. Wengrowski and Rosanne Cahn, "Impact of Defense Buildup Underestimated", *Economic Research* (Goldman Sachs Economics, June/July 1981).



The F-18 aircraft is a case in point. In the January 1980 budget and throughout the rest of the calendar year, the Carter administration publicly stated its intention to purchase 96 F-18 aircraft per year, starting in fiscal year 1982. The manufacturer made plans for producing the aircraft. In January 1981, the Carter administration cut the 1982 purchase to 58 aircraft because of budget problems. The Reagan administration in March increased the 1982 quantity to 63 aircraft—33 short of the amount planned several months earlier. For the F-16 aircraft, 175 planes were purchased in 1980 and 180 have been bought in fiscal year 1981. Although the original plan was to buy 180 aircraft in fiscal year 1982, cost and budget problems caused the Carter administration to reduce its request to 96. The March 10 budget revisions increased the 1982 request to 120 aircraft, 60 less than purchased in 1981. This same phenomenon is repeated throughout the defense program for aircraft and missile purchases. Another reason for the extra capacity at aircraft assembly plants is the slowdown or postponement of commercial purchases. In shipbuilding, decreasing Federal support for com-

mercial shipbuilding has led to delays in commercial construction and resulting excess capacity among prime contractors for nonnuclear ship construction. Finally, the auto industry appears to have the capacity to accommodate an increase in purchases of trucks and tracked combat vehicles for defense.

At the subcontractor level, there may be a problem. The war production base at this level has shrunk as a result of the defense reductions in the early 1970s. For example, between 1968 and 1975 the number of aircraft subcontractors declined by 35 percent.¹⁰ Forgings and pressed steel for airframes and landing gears are produced at only a few plants. Three of the most important materials for these forgings—titanium, chromium, and cobalt—are imported from South Africa and Zaire and are subject to supply interruptions. Assembly plants cannot put together aircraft if the pre-fabricated materials are not available. However, the Defense Department, in general, and the Air Force, in particular, report a drop in production lead times during the past several months. One of the reasons for this appears to be that prime contractors have reserved future positions in the production lines for forgings in anticipation of accelerated defense purchases. When the acceleration was not so great as anticipated, other contractors were able to obtain their forgings more quickly.

An important part of the defense procurement increase is for missiles and other systems used by aircraft, ships, and tanks that contain sophisticated electronics and guidance mechanisms. The electronics industry is currently operating below capacity. However, defense may face problems in this area since the electronics chips needed for missile and guidance systems are more sophisticated and much fewer in number than those needed for electronics games and toys. Manufacturers are apparently not particularly anxious to produce fifty to one hundred complex chips for defense rather than a million for civilian applications unless the profit per item is large.

Some economists such as Thurow are concerned that attempts to increase defense production will draw top analysts and engineers away from high technology nondefense industries at the same time that our major competitors, such as Japan, are proceeding forward, unhindered by a similar defense buildup. It is extremely difficult, if not impossible, to evaluate this argument. However, it is clear the procurement budget will contain large funding increases for high technology items like missiles and electronics equipment,

and some shortages of engineers have begun to appear on the West Coast.¹¹

In summary, the budget increase in defense procurement is very large and will apparently far exceed the Vietnam procurement increase. Such a large increase could pose problems for the economy as a whole by driving up prices in certain sectors or crowding out investment. However, upon careful examination, it appears that the near-term increase in the quantity or number of items purchased is smaller than had been anticipated by prime contractors; consequently, there appears to be sufficient capacity at the prime contractor level, and possibly even at the subcontractor level, to accommodate the increases proposed for 1982. The longer range outlook depends on the size and composition of the proposals that will be made in connection with the 1983 budget, after decisions are made about defense conventional war strategy and major issues like basing for the MX missile.

Conclusion—a new NSSM-3?

This article has argued that there is a likelihood of pressures for greater increases in defense spending than embodied in the Administration's five-year plans and that there is a risk but not the certainty that those increases could prove to be inflationary. Several responses by the Administration and the Congress are possible to lessen those pressures and reduce the danger of inflationary consequences. They include identifying further cuts in nondefense spending, foregoing approved tax cuts, or rejecting the arguments in favor of more defense spending and imposing an arbitrary ceiling on defense budget increases.

That these would be difficult choices underscores the importance of not formulating a conventional war strategy, or planning defense forces, in isolation from their economic implications. Alternative strategies entail different risks, and for any given strategy alternative force levels mean different risks.¹² The military risks and costs attached to each strategy need to be stacked up against the benefits of domestic spending and tax relief. Otherwise, the following illustrative scenario might occur: The Defense Department could adopt a planning strategy geared to fighting simultaneously one major war plus multiple minor wars or contingencies and commence purchases of the appropriate types of equipment—for example, F-18 fighters

¹⁰ James Fralick, "The Coming Squeeze on Defense Industries", *Morgan Guaranty Survey* (May 22, 1981).

¹¹ Fralick, *loc. cit.*

¹² This latter point is exemplified by the analysis of defense forces by Phillip Morrison and Paul Walker. They argue that the advent of new technology makes it possible to scale back defense spending dramatically at an acceptable risk of being unable to meet requirements. See "A New Strategy for Military Spending", *Scientific American* (October 1978), pages 48-61.

and AV-8B vertical takeoff and landing aircraft. However, cost growth, inflation, and other budget and economic problems could mean that the quantities purchased would have to be scaled back so that it would become likely that neither the major war nor the minor contingencies could be fought successfully. In this case, it would have been preferable to evaluate alternative decision packages prior to choosing a defense strategy. One package could, hypothetically, contain the benefits of funding adequately the requirement of the major war plus multiple minor wars or contingencies and the costs—in foregone consumption, investment, and productivity—of smaller tax cuts. An-

other package might contain the economic benefits of tax relief and the costs or risks of funding adequately only the capability of fighting simultaneously one major war and one minor skirmish and not attempting to purchase the capability to satisfy the requirements of demanding Persian Gulf scenarios. In fact, five decision packages along these lines were assembled and evaluated in the early 1970s, prior to adoption of the then new one and one-half war strategy. Similar crosscutting alternatives may be needed for the 1980s prior to the adoption of a new defense strategy to ensure that the broad economic implications are fully and explicitly considered.

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