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The Burden of Soviet Defense

A Political-Economic Essay

Abraham S. Becker

October 1981

Rand

PROJECT AIR FORCE

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PREFACE

This report was prepared as part of the Project AIR FORCE study effort "Soviet Strategic Competitiveness: Constraints and Opportunities," which the author directed in close association with the Office of the Assistant Chief of Staff, Intelligence, Hq USAF. A central objective of this effort has been to analyze the role of resource constraints in the evaluation of Soviet military posture and the USSR's strategic competitiveness with the United States in the global arena. Previous Rand studies under this project have examined theory and data relating to the scale, pace, and significance of the growth of Soviet military activity (e.g., Alexander, Becker, and Hoehn, 1979; Becker, 1980; Hildebrandt, 1980a and 1980b), the characteristics of Soviet weapons-acquisition decisionmaking (Checinski, 1981), and selected features of the Soviet economic growth dilemma (Wimbush and Ponomareff, 1979; Nimitz, forthcoming). Given the facts of prolonged Soviet military buildup and declining economic growth rates, the present report examines the institutions and influences that have allowed the USSR to sustain a high and possibly growing burden of defense over so extended a period and speculates on the prospects for change. (The other study in this project dealing directly with issues of the burden of Soviet defense is Ofer, 1980.)

This report should be of interest to broad segments of the U.S. national security, intelligence, and policy communities concerned with assessing the future scale and growth of Soviet strategic competitiveness with the United States. Such an assessment must, of course, weigh Soviet perceptions of external challenges and opportunities. However, the utility of the assessment will also depend critically on a correct evaluation of the relative roles of economic constraints and internal political supports in shaping the Soviet military budget, which factors are the central issues of this report.

SUMMARY

Soviet military expenditures are estimated to have increased in every year without interruption since 1960. Over the same two-decade period, Soviet economic growth has been visibly decelerating. It is a reasonable hypothesis that the high level and uninterrupted expansion of Soviet military spending have been major factors in the retardation of general economic growth. Therefore, the central issues of this report are, first, how to explain the persistence of the buildup over so long a period and on such an impressive scale and, second, whether changes in the pattern may be expected in the future.

Section II defines and analyzes the concept of the Soviet burden of defense, then surveys various empirical measures. Although the retrospective data still allow only general kinds of conclusions, it hardly seems debatable that the Soviet military buildup of the past 20 years has imposed a greater burden on the economy than that experienced by the United States or other developed industrial societies. Moreover, the burden has been growing in recent years.

Section III considers the extent to which the Soviet buildup may be viewed as a response to the external threat to Soviet security in terms of various "action-reaction" models or as a simple function of the size and growth of the economy. Neither of these explanations seems persuasive.

Section IV turns to the political-institutional context for resolution of the first basic issue of this report. Explanations are sought in three sets of variables—national interests perceived by the leadership, group politics and conflict, and the characteristics of the military decision-making apparatus. The persistence of the Soviet military buildup is viewed as reflecting the top leadership's perception of priority national interests and as supported by an institutional structure and decision-making process that insured the maintenance of such priority valuation: positively, by creating a highly compact centralized top policymaking apparatus that facilitated the imposition of military priorities; negatively, by obstructing access and influence in the policy process to whatever "dovish" opposition was potentially capable of being mustered.

Defense burden prospects are explored in Section V. In the coming years, external challenges (particularly, the U.S. military buildup) and opportunities will result in pressure on the Kremlin to maintain or perhaps even increase the pace of its military modernization; worsen-

ing internal economic prospects and attendant political-social problems will make the defense effort increasingly burdensome. Unfortunately for the new generation of leaders that will replace the Brezhnev group, their options for coping with this dilemma will be no different from and perhaps even less palatable than those facing their predecessors. The temptation to "muddle through" is likely to be strong in the absence of politically safe and economically useful alternatives. U.S. government policy has an important role to play in influencing the Kremlin to hold to forms of response that do not endanger world peace.

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I am indebted to a number of people—including, particularly, J. Dale Pafenberg of Air Force Intelligence and Rand colleague Harry Gelman—who read and commented on drafts of this report. Special thanks are due to Gregory Hildebrandt and James Noren of CIA as well as Arnold Horelick and Mark Hopkins of Rand for their detailed reviews of the paper; I have benefitted greatly from their criticisms and suggestions. As usual, responsibility for remaining errors and omissions rests with the author.

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I. INTRODUCTION

There is general agreement in the West that the USSR's overall economic growth has been slowing down markedly. Even Moscow's official data attest to that. Western measurements indicate a decline of the growth rate of Soviet GNP from 6 or 7 percent per year in the 1950s to 5 percent in the 1960s and under 4 percent in the 1970s. The last few years have been particularly bleak—aggregate output grew perhaps no more than 1 percent on the average in 1979-1980. Prospects for the 1980s are for further retardation relative to the averages of the past two decades. In some Western projections, the Soviet rate of economic growth could fall to below 2 percent per year by the mid-1980s.

Over the same two decades, the Soviet Union has been engaged in building up its military forces without letup, although with some fluctuation in the pace of expansion. There is no longer any significant controversy in the West on that, although there is still disagreement on the rates of increase in Soviet military outlays at different times in this period. At the conservative estimate of 4 to 5 percent growth per year, total Soviet military expenditures must have increased between 2.2 and 2.7 times over the 20 years. Moreover, the CIA tells us that there is no evidence yet of any cutting back on the rate of expansion of Soviet military expenditures, certainly not of reducing or even freezing the current absolute level.

The recent economic record and, even more, the future prospects of the Soviet economy must embarrass a regime for whom growth has been an element of its legitimation, a regime that viewed itself in basic economic competition with the capitalist industrial nations. More important, the growth problem threatens political dangers through the creation or intensification of conflict among claimants on the national product, as the annual increases in their allocations continue to shrink. It is at least a reasonable hypothesis that the high level and uninterrupted growth of military spending have been major factors in the deceleration of economic growth. If we assume that Soviet leaders are aware that their military buildup has taken a toll on the economy and that reduction of military spending would yield resources badly needed for civilian development, it is appropriate to inquire into the reasons for the persistence of the military buildup over so prolonged a period and on such an impressive scale, as well as into the likelihood of future change in this pattern.

This study does not aim to provide a theory of Soviet military

expenditure, to explain its annual level, or to predict its future course. The goal is considerably less ambitious: to identify the major factors that must be considered in any effort to construct such a theory and to explore their interrelations. Moreover, among the major factors, the military-strategic and foreign policy elements are dealt with only in terms of their general relation to the basic issue posed. The report concentrates on the domestic economic and political context of military spending. Section II examines the concept of "defense burden," with particular reference to the USSR, and the various Western efforts to measure the Soviet burden. Section III raises the question of the determinants of Soviet military expenditure, distinguishing broadly between internal and external factors and examining the place of economic development as both enabling factor and constraint. This report's main emphasis in its explanation of the persistence of a high Soviet burden is on the political-institutional environment of defense budget decisionmaking (Section IV). The final section considers future options and prospects.

II. THE BURDEN OF SOVIET DEFENSE: MEANING AND MEASURE

The common Western perception of the relation between the Soviet military and civil sectors is that the former is a drain on the latter: The military buildup siphons off valuable resources from the civilian economy and thereby reduces consumption and investment from what it would be at lower levels of military expenditure. This is the essence of the notion that defense constitutes a burden on the society.[1]

Just how high is the Soviet defense burden? How has it changed over time? What is the significance of these data for future Soviet policy? These are the fundamental issues posed time and again. That they continue to be posed in much the same form signifies that professionals and laymen alike are unsatisfied by the answers. In fact, it is not possible to resolve the matter once and for all, as many would like. The problem is more difficult to define and the magnitudes much more difficult to measure than the common sense view leads one to expect. This section will attempt to outline the major issues and some of the approaches taken to measurement and quantification.

The theory of economic burden is a very large subject, but actual measurements are able to respond to only a fraction of the most important conceptual issues. If this section nevertheless devotes extended attention to these issues, apart from the fact that the literature rarely contains such a discussion, it is just because of the imbalance with the empirical implementation. As Abram Bergson (1961, p. 41) observed, "Theory provides the basis not for the precise measurement of abstract ultimates but for the organization of broadly meaningful statistical inquiries." To understand what the statistical inquiries actually tell us, *as well as what they are unable to tell us,* that is "broadly meaningful," it is necessary to understand the conceptual framework. That is the purpose of the first part of Section II, even if the review of empirical studies in the second part is able to conclude only with generalities.

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[1]The West experiences burdens as well, of course, although there is a strand of Marxian analysis that has viewed capitalist military outlays as the counterweight to underconsumption. See Smith, 1977, and the comments thereon cited in note 10 of Section III below. One of the earliest studies of the burden of defense in the United States is Russett, 1969.

THE CONCEPT

Despite its apparent simplicity, the notion of "burden" is complex, especially in the USSR:

1. To begin with, "burden" implies at least two fundamental assumptions: resources allocated to the military have alternative productive uses, and military activities are not valued for themselves but as means to an end. The first assumption is almost self-evident: if resources had no alternative uses, their exploitation would be costless to the society. Hence, a correct measure of the burden requires valuation of defense and other competing uses at social opportunity cost, the value to the society of alternatives forgone.[2] The second assumption also seems necessary but is perhaps controversial. Consumption, for example, involves an opportunity cost but is not usually viewed as a burden on the society; in contrast, military activity in ancient Sparta was the basic social goal, not a means to an end. "Burden" cannot exist where there is only one social goal, whether it is military power or consumer welfare. Where both are simultaneously social goals, there is an ambiguity: Is there a burden associated with each?[3] The second assumption seems to involve political judgments, and Section IV will take up the question of the relevance of the burden concept to the Soviet Union. In this section, both assumptions are accepted as the starting point.

2. That the measurement of burden requires opportunity cost valuation seems straightforward, but the concept of opportunity cost itself may have sharply different interpretations. At an extreme, the value of the alternatives forgone could be defined as the consequence of total (feasible?) disarmament, with (almost?) all military resources reallocated to civilian use. Such a value, representing the outcome of a revolutionary transformation of economic structure in a state with as extensive a military apparatus as the USSR, could hardly even be guessed at.[4] Generally, however, opportunity cost is defined with reference to marginal shifts of resources, which are unlikely to force significant alterations in relative prices.[5]

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[2]Where interest is in the level of capability of military forces, a different valuation standard would be appropriate. See Becker, 1977, Chapter 2.

[3]Suppose military activity is both an end in itself and a means to survival ("defense"). If consumer welfare is also a social goal, the burden of "defense" would be the amount of consumer welfare sacrificed less the direct (final) benefits of military activity.

[4]Another issue of the meaning of opportunity cost in Soviet conditions turns on the possibility of major transformation of economic structure with respect to the institutional framework of Soviet economic life, centralized planning. See point 5 below.

[5]Opportunity cost must have a time dimension, since the nature and value of alternatives depends on the time period under consideration. Given a sufficiently short period, a higher proportion of defense resources would have to be viewed as specialized with few alternative uses. In the long run, there are no specialized resources; all are fungible. The

3. The military expenditure estimates must encompass the volume of activities whose cost serves as the index of burden. Hence military activities with predominantly civil value or orientation, such as the use of troops to bring in the harvest, should be excluded. It may be argued that although retirement pay also does not contribute to current military capability, it forms part of the present burden of previous effort and so should be counted in the current burden measure. The Soviet Construction and Railroad Troops present a more difficult problem: Only part of their activity has a civil orientation, but ostensibly civil projects may have strategic importance (for example, construction of the BAM railway in Siberia).

4. Assuming that the military expenditures are of the desired scope, they must be appropriately valued. In any economy, prevailing prices may depart from the real social cost of resources used in the military sector. A classical example in the western literature is low pay rates for conscripts compared with the higher wage earned by labor of comparable quality in civilian employment. Conscripts have always made up the bulk of Soviet armed forces.[6] There is also reason to believe that in the USSR, military production was directly subsidized by the Soviet state budget before the 1967-68 price reforms (Sokolov, 1974, p. 294). It has even been alleged that allocation of overhead costs among jointly produced civilian and military products is deliberately rigged to minimize costs of military production (Checinski, 1975, pp. 124-125).[7]

The last two examples touch on a larger issue, the understatement of true social cost that is due to the priority status of the military sector in the USSR. This issue is discussed in point 6 below.

The gap between nominal and social cost of military activity in any country may be less than indicated by these considerations owing to various spillovers into the civil economy. If the effect of expanding military production is to enhance productivity in nonmilitary industry, the social cost of defense is, on this account, less than its nominal cost. Historically, the industrialization of Russia was intimately associated with the military requirements of the state. That association carried

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calendar or fiscal year, which is the conventional time unit of military outlays, is likely to be an intermediate case in this sense.

[6]For an estimate of the magnitude of the gap in the Soviet case, see Brubaker, 1973. The gap between social cost and the pay of military manpower is diminished by the degree to which military training raises the quality of the manpower pool. However, with the passage of time, Soviet recruits are increasingly better educated and trained before entering the service.

[7]Other aspects of the Soviet price and accounting system also contribute to a bifurcation of established price from real social cost: for example, low capital charges and the continued reluctance to allow such charges to affect resource allocation make for particular understatement of costs in a capital-intensive branch of the economy such as production of military hardware.

over to the Soviet regime, as reflected in the prewar Five-Year Plans. One might speculate that in the postwar period much of the aircraft, shipbuilding, and electronics industries were developed for military requirements, hence that spillovers to civilian output might have been a significant factor. The evidence is to the contrary. Campbell (1972, p. 607) concluded that "there is a lot more indication of spillover of managerial innovations than of innovations in processes, materials, hardware" and, with respect to managerial innovations, that the diffusion process is seriously hampered by structural deficiencies in the civil economy.

5. Most of the deficiencies of the price system identified under point 4 may be compensated for (conceptually, at least) by simple adjustments of expenditure estimates. However, the distinction between nominal and social cost in the USSR has another, more complex dimension. Opportunity costing implies efficient operation—at a point on the society's production frontier, the locus of real production possibilities with given resources and technology. At that point, the relative prices of any pair of goods or services produced correspond to the rate at which one of those goods may be transformed into the other at the margin by reallocating existing factors of production. Factor relative prices in turn correspond to ratios of the value of their marginal products. In this idealized context, valuation of resources at marginal cost provides a true measure of the economy's production potential, its ability to provide varying mixes of goods and services given its current resource endowment. Here marginal costs are opportunity costs, for relative product prices are also measures of the rate of transformation into alternative uses. By the same token, the value of military expenditure will also equal the value of civilian output forgone.

However, the Soviet economy is bureaucratized, centrally managed, and, therefore, markedly inefficient.[8] Resource allocation does not take place in response to market price signals but largely by directive. Used primarily for accounting and control, prices are administered and inflexible over time. They are set in accordance with average cost criteria that slight factors of production other than labor and tend to ignore demand considerations. Because of these structural characteristics, the Soviet economy is not able to exploit its production possibilities fully; it falls short of operating on the production frontier.

In an efficiently operating economy, prices constitute economically meaningful weights with which to aggregate production quantities for the measurement of aggregates such as national income. But what meaning can be attached to the Soviet administered prices? Bergson

[8]This is not to argue that western market economies are everywhere more efficient than the Soviet Union.

has devised a rationale of price weighting for Soviet national income accounting along with an appropriate set of adjustments to Soviet established price values to fit that rationale. The Bergsonian framework of "adjusted factor cost" does not pretend to simulate an economy operating on its real production frontier. "Adjusted factor cost" in fact allows "for the possibility of a material shortfall from production potential." It requires only that prices of factors be proportional to their relative productivities *on the average* for the economy as a whole, not in each and every use, and this condition is fulfilled by a series of ad hoc adjustments to prevailing prices. In an "adjusted factor cost" world, opportunity cost expresses the value of alternatives forgone on the average, and the estimates are to be understood as measures of potential "referring not to the schedule of production possibilities but to the community's 'feasibility locus.' Reflecting the prevailing state of inefficiency, the feasibility locus falls short of but probably is broadly parallel to the schedule of production possibilities" (Bergson, 1961, p. 37).

Where this is the theoretical framework, opportunity cost must be viewed with respect to the bounds of real possibilities for reallocation, given the structural inefficiencies that seem endemic to the Soviet economic order. If output consists of "defense" and "nondefense" as in Fig. 1, a conventional production frontier (PP) may represent the USSR's maximum production possibilities only under unrealistic assumptions of drastic political and economic organization. The feasibility locus (FF) reflects the schedule of output combinations feasible with existing institutions.[9]

This view of the Soviet price system indicates the necessity for selective adjustments of prevailing prices (largely deletion of sales taxes and addition of subsidies, including the difference between conscript wages and civilian labor rates, but possibly also imputation of an average rate of return to capital and differential rent to land) to approximate valuation at average factor cost. Insistence on a pure marginal-opportunity cost criterion (defined with reference to the production frontier), requiring far more substantial and problematic adjustments to prevailing prices, would overstate the burden of defense because it would exaggerate the real possibilities for reallocation of defense resources.[10]

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[9]The feasibility locus, in this case, is not drawn parallel to the production frontier, contrary to Bergson's surmise, for reasons discussed later.

[10]The economy may be still more inefficient than described. It may be operating inside the feasibility locus. At present there are significant shortages of many producers' as well as consumers' goods in the Soviet Union, and it is debatable whether this is a necessary concomitant of the planned economy of the Brezhnev era. Strictly, the Bergsonian factor cost adjustments presuppose operation on the feasibility locus. If the disequilibria are even greater than assumed, implying operation inside the locus, the opportunity-cost interpretation of adjusted factor cost is blurred.

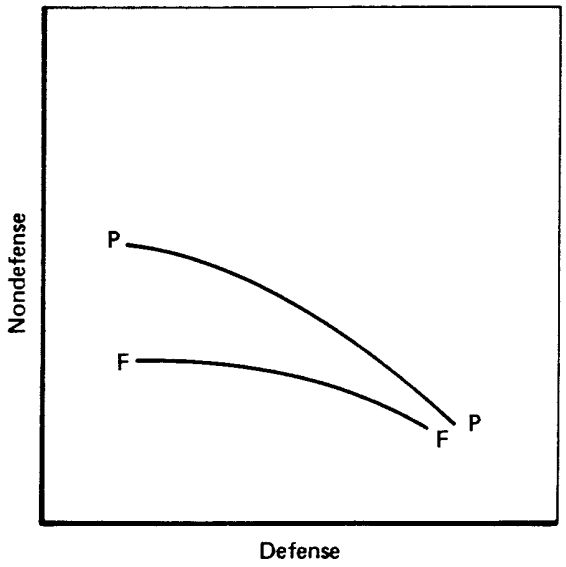

Fig. 1—Production frontier and feasibility locus

Shortfalls from real production possibilities are not unique to the USSR or to central planning systems. Western market economies have inefficiencies too. A purist engaged in measurement of the comparative defense burdens of the USSR and the United States would insist on various adjustments to U.S. income and product flows, as well as to the Soviet values, to correspond to theoretical desiderata. However, even the purist would probably agree that the problem has been statistically weightier on the Soviet side.

6. Because of the limited allocative role of prices in the Soviet Union and the effects of bureaucratic planning and operation, relative prices for the same factors with equivalent quality characteristics may vary across industries or even within the same industry. Therefore, opportunity costs (at prevailing prices) will also vary depending on the particular use to which resources are (hypothetically) reallocated or from which they are (hypothetically) withdrawn. If there are multiple opportunity costs, there can be no unique measure of the burden of defense in terms of the civilian opportunity sacrificed through diversion of resources to military use.

This was the argument (in an unpublished paper) of Rush Greenslade, who saw the Soviet economy as being in a constant state of "gross and pervasive disequilibrium." The opportunity cost of resources in the USSR may be higher or lower than production cost in the given current employment, depending on the branch of the economy to which the resources would be (hypothetically) reallocated and relative productivities in that branch. However, the Bergsonian factor cost adjustments are designed in effect to simulate an equilibrium consonant with the Soviet central planning mechanism.[11] In principle, unique opportunity costs (relative to the feasibility locus, not to the production frontier) are generated by factor prices set proportional to relative productivities on the average in the economy as a whole. It remains true that given Soviet disequilibrium conditions, particular reallocations could yield greater output changes than are indicated by the adjusted factor costs. This is but another way of expressing the average nature of these costs.

The Greenslade argument is related to another, bearing on the reasons for the presumed superior efficiency of the military sector,[12] which has given rise to an interesting controversy about the effect of possible shifts of resources from defense to other parts of the economy. Institutional research has suggested that Soviet military production and R&D may be more efficient than their civilian counterparts because of the special environment in which the military activities are carried out. In particular, Nimitz has argued that the military is an economizing buyer, who operates in sharp contrast to the "take what you can get" spirit of the seller's market that prevails in the civilian economy.[13] It would seem to require radical structural reorganization of most branches of the economy before the resources employed in advanced weapons R&D and production could be utilized nearly as effectively for nondefense needs (Nimitz, 1974 and unpublished papers).

In contrast, Ofer believes the apparently superior performance of the Soviet military R&D is attributable largely to the benefits of priority status. The beneficiaries of that status do not pay the price of discrimination against civilian enterprises, which surfaces only fractionally in the costs of nonmilitary activities; most of the price for

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[11]For this reason, adjusted factor cost is probably best understood as applying to long run production potential attainable by the Soviet planning system.

[12]Although not all students of the question are convinced this is correct: for example, Lee, 1979a. Brezhnev appears to share the disputed view. At the October 1980 Central Committee Plenum, he called for mobilization of the nation's "strongest scientific collectives," which he defined as the Academy of sciences plus "scientists and designers working in defense sectors," to improve civilian machine-building. *Pravda*, October 22, 1980.

[13]But see footnote 14.

priority discrimination is reflected in quality deterioration, delays, bottlenecks, and general inefficiency of the civilian sector. Moreover, priority is a policy artifact that can be transferred, at least on a partial and selective basis, so that performance in limited civilian areas could be substantially improved without radical social-political transformation (Ofer, 1980; also, Ofer, 1975).

Nimitz's approach is related to the Greenslade argument because the implication of her views is that military costs, even after Bergsonian adjustments, overstate the burden of defense measured in terms of average civilian opportunities forgone. Ofer explicitly asserts that the burden is understated by the unaccounted-for costs of the priority system. He is probably correct in the main lines of this argument, and Nimitz agrees that this supplies a necessary corrective. However, Ofer seems to assert also that if priority status were accorded other branches of the economy, instead of military R&D and procurement, the rate of productive innovation would be raised in the new civilian beneficiary of priority treatments and by roughly the same proportion as the decline that would be experienced in the military sector. This argument is less convincing, for it depends on a problematic characterization of the environment of military R&D and production compared with that of civilian counterparts.

Our interest here is not in the controversy over the sources of the military sector's presumed relative efficiency but in the implications for the burden of defense.[14] One way of summarizing the connection is in terms of the relation between the production frontier, PP, and the feasibility locus, FF, in Fig. 1. FF reflects a marginal rate of transformation between defense and nondefense persistently unfavorable to the latter. If the arguments of the opposing sides have been correctly understood, Nimitz would concur in the drafting because she emphasizes the special and generally untransferable environment of economic decisionmaking in the defense sector; Ofer would assert that the diagram incorporates the pernicious effects of the priority system. Elimination of priority mechanisms altogether should make FF generally parallel to PP, as Bergson thought was likely to be the general rule.

7. Finally, in a dynamic economy, the size of the burden of military expenditure, measured as the ratio of the latter to some national aggregate such as GNP, may be sensitive to the date of the costs or prices,

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[14]The discussions of relative efficiency hinge on indirect evidence relating largely to quality of product. There have been no direct comparisons of resource productivity in the two sectors, and it is, therefore, possible that what seems like greater military efficiency may be merely willingness to absorb the higher costs of higher quality. There is, in fact, some evidence in the accounts of recent Soviet emigres suggesting that for the military, cost consciousness takes a back seat to quality control.

whether or not they are appropriately defined by criteria set out earlier, in which numerator and denominator are measured. Where relative prices (to be understood here as either costs or prices) and quantities are changing, index number effects can be expected—that is, real volume increases will differ when calculated with price weights of different years, and a structural indicator such as burden will vary for any particular year, depending on whether it is measured in prices of that or some other year. Of course, any index measure of growth runs the risk of decreasing relevance the more remote the price weights from the period of comparison.

If Gerschenkron effects may be expected,[15] comparisons of growth using alternately early and late period weights can illuminate the pattern of intervening structural change. This also applies to calculations of final output distribution at a point in time, although the relevance of early weights is much diminished. For example, for the period 1960-1980, growth indexes at 1960 prices would be expected to exceed those at 1980 prices, and the comparison should shed light on the size and character of intervening changes in sectoral relative prices and quantities. If 1980-weighted indexes of defense and GNP are proportionate to the 1960-weighted indexes, it will not matter whether burden in 1980 is calculated at 1960 or 1980 prices. However, the ratio of index numbers (1980-weighted to 1960-weighted) will probably differ for military expenditure and GNP because the latter reflects price and quantity changes in sectors other than defense.

The difference may fall in either direction—the 1980 burden may be larger or smaller in 1960 than in 1980 prices. The former would be true in a special case of the Gerschenkron hypothesis: The military product mix changed in favor of commodities whose price (relative to other military goods and services) declined as their output expanded, and price change in the military sector, the most dynamic in the economy, was more substantial than in other parts of the GNP. Suppose, however, that rising military output emphasized high-technology goods whose costs, because of their complexity, rose relative to those of low-technology articles.[16] Then the rate of growth of military expenditure at 1960 prices would be less than at 1980 prices. If the Gerschenkron effect still held for GNP except defense, the 1980 burden at 1960 prices would be lower than at 1980 prices.[17]

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[15]Alexander Gerschenkron hypothesized that weights of an early point in an industrialization effort tend to produce higher measured rates of growth over a particular interval than weights drawn from a later year of the industrialization.

[16]In the normal case, producers may be expected to produce more of those goods that decrease in relative cost. The military presumably responds to different signals.

[17]The argument in the text implies rapid change in product mix, however. If high technology has long production runs, indexes with early-period price weights would still show higher growth rates than those with later period weights.

Thus, comparison of burden measurements at constant prices—with both early and later-period weights—can provide interesting sidelights on structural change over the period of measurement. However, opportunity-cost burden calculations have two functions: They can contribute to understanding the economic effects of past decisions, but they can also illuminate the nature of the policy choices available to a national leadership. For the latter purpose, it is clearly desirable to weigh alternatives in the contemporary context and, therefore, to use current prices for the measurement of burden.[18]

MEASUREMENT APPROACHES

As noted at the beginning of the section, the two domains of defense burden and empirical evidence are not tightly connected. Conceptual guidelines in any field are not always matched by statistics; some problems of theory cannot be translated into data measurements. So it is with the burden of defense. The empirical studies cited below vary in the implicit or explicit respect they pay to most of the factors discussed in the previous subsection. However, the issues raised in point 6—relating to the effect of military priority on the burden—have not yet received empirical application.

The Defense/GNP Ratio

The simplest and the most frequently used approach to assessment of the USSR's defense burden divides Soviet military expenditure by GNP as a measure of the defense drain on aggregate resources. Specialists have differed in their calculations of the defense/GNP ratio because of divergent estimates of both numerator and denominator, but the numerator has clearly been the focus of most disagreement. Table 1 summarizes the available estimates dealing with the entire period since World War II.[19]

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[18]Whether early or late period prices are chosen as weights, numerator and denominator of the ratio of Soviet defense to GNP must be expressed in rubles. This also applies to measurements at any point in time. Comparisons with the United States can sometimes be seen in the press that mix ruble and dollar values. But dollar prices measure relative scarcities and preferences obtaining in the United States; they bear no relation to those of the USSR. It is only in terms of Soviet resource tradeoff rates that a measure of the Soviet "burden" can have any meaning. For an illustration of the dangers of computing either country's defense burden in the other's prices, see Becker, 1960, pp. 106-107.

[19]Table 1 does not include all published estimates of the defense/GNP ratio. Some of these are referenced in note 21. The Chinese have made statements about the

The entries in Table 1 may be categorized in several ways. With regard to the scope of the numerator, the table includes the results of two types of estimates. The estimates by Bergson, Becker, and Anderson derive from computations of Soviet national income and product, and the calculation of the defense/GNP share is only incidental to that purpose. The estimates by Lee and the CIA focus on military expenditure. The Bergson-Becker-Anderson calculations use the explicit allocation to what is called "defense" in the Soviet budget, although all the writers were aware of the probability that these figures understated the true volume of military outlays by significant (but unknown) amounts. They counted, instead, on catching up concealed outlays in residuals of the national income accounts, assuming that the locus of concealment was not other identified components (such as investment or social welfare outlays). Lee and the CIA consciously aim at comprehensive estimates of military outlays by sharply different methods.[20] Over the years, several specialists have tried augmenting the explicit budget allocation to "defense" with estimates of the outlays concealed elsewhere, but these efforts are generally viewed as unsuccessful.[21] The Lee approach combines that method with estimation of military procurement through manipulation of Soviet statistics on the production of machinery and equipment. CIA makes no recourse at all to Soviet economic statistics (except for R&D) but estimates Soviet military outlays independently by the "building-block" method.

CIA burden estimates are presented in two ranges (amalgamated in Table 1), intended to reflect U.S. and a possible Soviet definition of defense expenditures. The lower, U.S.-definition range consists of national security activities that would be funded by the U.S. Department of Defense, military-related nuclear programs (that would be funded primarily by the U.S. Department of Energy), and the defense-related activities of the Soviet Border Guards. The higher range adds military retirement pay and veterans' programs, space programs (that would be funded by NASA in the United States), civil defense, military assistance, and the financing of Internal Security, Railroad and Construction Troops. Thus, the higher end of the range incorporates elements that may not be encompassed by other estimates in Table 1 (retirement pay, veterans' programs), but some of the activities covered are in part

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share of defense in "national income" by which they may mean the Soviet concept of net material product (*Peking Review*, November 28, 1975, p. 9, and January 30, 1976, pp. 10-11). A calculation of this sort was also made by the French ("XXX," 1976). The numerators in these calculations are reviewed in Becker, 1979, pp. 361-364.

[20]For discussion of the differences, see Becker, 1979, and Hanson, 1978a, pp. 403-410.

[21]Cohn, 1970, 1973, and 1975. Professor Cohn has since repudiated the first set of estimates and apparently abandoned this approach (Cohn, 1978). Earlier, I also experimented with this approach (Becker, 1963). See also SIPRI, 1974, Appendix B; and IISS, 1975, p. 10, and 1976, pp. 109-110.

Table 1

ESTIMATES OF THE DEFENSE SHARE OF SOVIET GNP, SELECTED YEARS, 1944-1980

(In percent)

	Budget "Defense"[a,b]			Comprehensive Military Outlays[a]		
	Current AFC[c]		Current EP[c]	Current EP[c]		1970 Factor Cost[c]
Year	Bergson	Becker	Anderson	Lee (1)	Lee (2)	CIA
1944	36.8	—	—	—	—	—
1950	10.9	—	—	—	—	—
1955	10.3	—	—	11.5	12.1	—
1958	—	6.9	—	8.5	9.1	—
1960	—	5.8	—	8.9	9.4	—
1964	—	6.5	5.7	10.2	10.7[d]	—
1966	—	—	5.4	10.0		
1970	—	—	—	11.7	12.6	11-13
1975	—	—	—	14.5	14.4	
1980	—	—	—	—	18[e]	12-14

SOURCES: Bergson, 1961, p. 237 (1944, 1950, 1955) and p. 302 (1948, 1953). Becker, 1969, p. 96. Anderson, 1968, p. 15. Lee (1): Lee, 1977, p. 97. I have calculated the ratios from the data Lee provides. On p. 98 Lee presents the ratios directly but they diverge inexplicably from the implied ratios of p. 97. Lee (2): *CIA Estimates*, 1980, p. 21; Lee, 1979b, pp. 414-415. CIA: *CIA Estimates*, 1980, p. 7.

[a] Numerator.

[b] Exclusive of military pensions.

[c] Valuation of numerator and denominator

[d] 1965.

[e] Projection.

— = not applicable

EP = established prices

AFC = adjusted factor cost

nonmilitary (Internal Security, Railroad and Construction Troops). In general, the distinction between military and civil uses of nominally military assets has not been a central concern of the Western estimators.

The accuracy of the CIA estimates has been sharply criticized at various times both within the government (Marshall, 1975, pp. 157, 161, 167-168) and by other specialists (*CIA Estimates,* 1980: testimony by Franklyn Holzman, William Lee and Steven Rosefielde). The Agency itself has stressed the differential reliability of its calculations: With respect to ruble outlays, estimates of the procurement of major equipment and military pay, for example, are believed

to be more accurate than those for operations and maintenance, and greater confidence is expressed in the latter than in the estimate of military R&D (see, for example, CIA, 1978a, p. 14). Given the nature of the CIA's methodology—building up to a global total by estimates of components—and the dependence on technical means of intelligence, there may be an inherent downward bias in the estimates because of insufficient coverage.[22] However, as noted, CIA's count may also overstate the desired measure of burden by including activities with predominantly civilian value or orientation.

Those who charge that the CIA estimates are too low also fault the price weights used in Agency calculations. This involves such issues as regional differences in prices and costs (did the Soviet buildup along the Chinese frontier entail unusually large costs because of locational difficulties and price regulations?) (Marshall, 1975, p. 161), the extent to which CIA-estimated costs and prices capture qualitative improvement in Soviet weapons, or the extent of price change in the military relative to the civilian sector (are the ruble-dollar ratios used by the CIA to translate dollar into ruble values of procurement still too low?) (Rosefielde and Lee, in *CIA Estimates,* 1980, pp. 12-15, 26-28, 30).[23]

The calculations reflected in Table 1 also differ considerably in terms of the valuation basis for both defense and GNP. Those by Bergson and Becker reflect factor cost calculations at current prices in line with the theoretical considerations outlined earlier. The CIA figures are also at factor cost but in terms of 1970 rather than current-year rubles, which raises some of the issues outlined in point 7 of the previous subsection. Lee's valuation is said to be current prices, although he sees little divergence of current from "constant" prices; he has apparently made no attempt to convert established-price values into factor costs.[24]

Thus, the entries in Table 1 have limited comparability. Unfortunately, no single series of consistent scope and valuation also extends over most of the postwar period and has the desired characteristics sketched earlier. Nevertheless, despite its limitations, Table 1 makes it possible to infer some idea of the rough trend over time.

From the intensive height of the military effort in World War II,

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[22]Rosefielde, in *CIA Estimates,* 1980, argues that the Agency's weapons count is understated. In principle, any possible coverage bias may be avoided by estimating methods that manipulate Soviet economic and financial statistics (budgets, industrial production, and national income data). These methods confront other problems in the scarcity and ambiguity of Soviet data. For further discussion, see Becker, 1979, pp. 361-364; Cockle, 1978; Hanson, 1978a.

[23]For CIA's rebuttal, see *CIA Estimates,* 1980, pp. 73 ff.

[24]Lee's GNP estimates ("the result of a very modest effort—about 50 man days") are reported in Lee, 1979b. For CIA's GNP calculations for 1970, see CIA, 1975. The 1970 structure is extended by sector of origin indexes for succeeding years.

the drain on economic resources was sharply reduced in the early postwar years. Khrushchev claimed that there had been a 75 percent demobilization of manpower in the 2½ years after the end of the war in Europe, from 11,365,000 in May 1945 to 2,874,000 at the beginning of 1948 (*Pravda,* January 15, 1960).[25] Most probably, 1948 saw the trough of the postwar demobilization, as the overt "defense" allocation increased 19 percent in 1949 and 5 percent in 1950 (Plotnikov, 1954, p. 433). Although Bergson calculated annual GNP values at current and constant prices for the period 1948-1955, he did not publish the annual series at current-year adjusted factor cost. From other evidence, some reduction in military expenditure (and therefore in the defense/GNP ratio) probably took place in the first couple of years after the death of Stalin.[26]

There is an inconsistency of view in Table 1 regarding the change between 1958 and 1960. These were the years in which Khrushchev was attempting to redirect the military structure from reliance on conventional to greater emphasis on strategic nuclear forces, in some small part for economic reasons. This writer's research suggested that in the early 1960s total military outlays, not just the official "defense" figure, could not have been larger than about a tenth of GNP, both valued at current adjusted factor cost (Becker, 1969, pp. 164-165). Other estimates for the 1960s generally vary between 9 and 12 percent, and there is some disagreement over the direction of change during the Brezhnev era (Block, 1973, pp. 187-192). Before the 1976 revision of its ruble series, CIA estimated the defense share of GNP in the early 1970s as 6 to 8 percent (*Allocation of Resources,* 1974, pp. 25, 68; CIA, 1976, p. 16). The CIA revision drove its estimate up to 11 to 13 percent.

It is now clear that Soviet military expenditure was rising from the early 1960s.[27] The Agency estimates that the defense/GNP ratio—measured at 1970 prices—hovered around the level of 11 to 13 percent between 1965 and 1978; the decline in the growth rate of GPN in the last two years raised the defense/GNP share to 12 to 14 percent. CIA has not yet released the results of its revised ruble calculations for the first half of the 1960s. Lee, one of the sharpest critics of the CIA ruble calculations,[28] believes that Soviet military outlays in the 1970s

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[25]Some 70 percent of the total decrease may have occurred in 1945 alone. See Donchenko, 1970, pp. 97-98.

[26]For 1955 alone Bergson (1978, p. 49) revised his estimates of the accounts, and the revised defense/GNP ratio at adjusted factor cost is 12.3 percent. For an older calculation for 1955 alone, see Bornstein, 1959.

[27]Quite possibly, this was foreseen in the Control Figures of the Seven Year Plan, published in 1959. See Becker, 1969, pp. 201-203, 207-208.

[28]E.g., "the CIA estimates are as inaccurate today as they were before the CIA doubled them in 1976. The CIA estimates are not merely wrong; they are irrelevant." (Lee, 1979a, p. 5.)

expanded at an average annual rate exceeding 8 percent[29] and GNP increased at better than 5 percent, hence the defense/GNP ratio rose from 12 to 13 percent in 1970 to 18 percent in 1980.[30]

Unfortunately, CIA is not able to estimate the Soviet defense/GNP ratio in prices of each given year. At some point in the next few years, presumably, the Agency will change the price weights of its calculations, because 1970 prices are becoming an increasingly less accurate representation of resource tradeoffs in the USSR; also, a major Soviet price reform is scheduled for 1982. The defense/GNP ratio will probably be different in prices of the 1980s than in those of 1970, although for reasons set out earlier it is difficult to forecast the direction, let alone the magnitude, of the change.

There is a striking contrast between the estimates of Table 1, with all their gaps and inconsistencies, and the pattern of the counterpart ratio in the United States. The American ratio rose through the Vietnam war to a high of 9 to 9½ percent in 1967-1968 and then declined steadily thereafter. At about 6 percent now (1981), the defense share of GNP in the United States is less than half as high as it is in the USSR.

Statistical and Modeling Approaches

Apart from the somewhat fuzzy state of the data, analysis of burden in such aggregative terms appears simplistic. It is necessary to examine the effect of given defense levels on other components of aggregate output, on the various civil sectors. In the long run, when all resources are fungible, the burden of defense may be viewed as diffused throughout the rest of the economy. There is no more reason to single out consumer durables than, say, housing or food production as the disadvantaged claimants. But this is a very long run indeed and probably of little policy interest. In the very short run, no sectoral interests can be sacrificed, for resources are too specialized to be transferred effectively. There are, therefore, no choices to be made. The significant policy issues can relate only to a period in which options are available.

Soviet discussion of the burden of defense is scarce, and most of what appears is simply a general acknowledgment that alternative uses of resources exist. Apart from periodic resurfacing of the controversy over the appropriate relative weights to be accorded producers'

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[29]*Ibid.*, p. 10, although in a later paper the midpoints of a series at 1970 prices imply a growth rate close to 10 percent per year. See Table 2 of his prepared statement in *CIA Estimates*, 1980.

[30]For more or less skeptical reaction to Lee's claims, see Becker, 1979, pp. 362-364; and Hanson, 1978a.

and consumers' goods (Marxian divisions I and II of the social product, Soviet groups A and B of industrial production), only an occasional reference is seen to the drain on a particular sector, such as agriculture[31] or, one of Khrushchev's favorites, chemical fertilizers.[32]

Western analyses begin with calculations of the changes over time in the end-use structure of GNP (for example, Cohn, 1970). However careful and detailed the calculations may be, this approach is essentially one of searching for tradeoffs by inspection and, as one specialist observed, "is impressionistic at best" (Cohn, 1973, p. 152).[33] A more precise technique is regression analysis, for which total output is broken down into sectoral elements. Unfortunately, many of these studies have been hindered by unsatisfactory time series of military expenditures. In his 1973 paper Cohn (pp. 153-154) estimated the effect of defense separately on investment, consumption, and major components of each. He found (a) that "Soviet defense expenditures have adversely affected Soviet economic growth," (b) "strong evidence of inverse movements between defense expenditures and those for both capital investment and private consumption," and (c) "even closer relationships" between weapons procurement and producer durables production.[34]

A set of static indicators of the sectoral burdens may be obtained from an input-output table, to the extent that military-related flows may be identified and isolated. Such a table can yield measures of the direct and indirect amounts of sectoral output allocated to military uses. The CIA estimates that the sum of direct and indirect military uses absorbs about one-third of the Soviet output of machine building and metalworking, one-fifth of that of metallurgy, and one-sixth of the production of both chemicals and energy (*Allocation of Resources,* 1977, p. 19). The input-output table can also serve as the base for the calculation of total requirements (savings) by sector for a marginal expansion

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[31]In 1969 a high official of the Ministry of Finance blamed "aggravation of the international situation" for cutbacks in agricultural investment (Semenov, 1969, p. 16).

[32]After the 1963 test ban agreement, Khrushchev stated: "Now we shall reduce expenditure on defense, and this money as well we shall direct to the production of chemical fertilizers" (Khrushchev, 1964, p. 51, cited in Ploss, 1971, p. 85). Khrushchev may have had some exaggerated notions of the short run transferability of defense resources, but perhaps this comment, like his other occasional public remarks on the subject, had more political than economic content.

[33]For an argument that health care has been traded off against investment and defense, see Eberstadt, 1981, p. 26.

[34]In customary practice, this technique shares a difficulty with the inspection approach. Defense in year t is, to a considerable extent, the product of investment decisions in year t − x. In a planned economy, the current tradeoff rates between all investment and defense should be small if defense outlays were properly projected and integrated with investment plans. The actual tradeoffs occurred earlier, so that inverse movements in the same year between military procurement and all investment could be the result of unforeseen difficulties. Bond and Green, 1977.

(decrease) of defense final demand. This type of analysis has been done in the West to examine bottlenecks to resource transfers, but no such calculations for defense have been published for the USSR.[35]

An alternative, dynamic approach to assessing the effect of defense spending on investment, consumption, the capital stock, or whatever, is by simulation of actual or hypothetical growth paths through manipulation of econometric models of the Soviet economy.[36] These can range from the simple to the elaborate. A study by Calmfors and Rylander took off from a simplified, aggregated growth model used by Bergson and examined two sets of future tradeoffs, defense vs. consumption and defense vs. investment. They found weak tradeoffs:

> Strong economic pressure to keep down the rate of increase of defense expenditure must . . . be assumed. On the other hand a major reduction of Soviet defense expenditure can hardly be expected for economic reasons alone since the implied consumption and/or production gains seem insignificant.

These conclusions, the authors maintain, would be nullified only if there were a tangible increase in the rate of growth of factor productivity (Calmfors and Rylander, 1976, pp. 383-393). As one would expect, then, the results are sensitive to the assumed values of major parameters of the model.

The Calmfors-Rylander exercise was extended in a number of ways by Bergendorff and Strangert (1976): use of a six-sector input-output model instead of a one sector model, experimentation with other forms of the basic production function, and differential treatment of consumption and investment. Because of the multiple cases Bergendorff and Strangert dealt with, their results are more difficult to summarize, but they too emphasize the importance of factor productivity: "Unless substantial improvements in productivity are achieved growth rates of defense spending would have to be held below the growth rate of GNP" (Bergendorff and Strangert, 1976, p. 418).

A more sophisticated econometric model is SOVMOD, developed jointly by the Stanford Research Institute and the Wharton Econometric Forecasting Associates (Green and Higgins, 1977). The model is now in its fourth generation (Bond and Levine, 1981). The first generation used Cohn's estimates of Soviet military expenditures. Among other exercises, SOVMOD simulated a hypothetical defense buildup over

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[35]Systematic research on Soviet input-output tables has been done by Vladimir Treml and his associates. See, for example, Gallilk and others, 1979.

[36]Other approaches to statistical-economic simulation of Soviet economic processes are possible—notably, optimizing models. But empirical results are available so far only from the econometric studies.

three years in the 1960s. The results included a decline in new capital investment by almost the full amount of the increase in military outlays, and a retardation of output growth that peaked several years after the initial shock (Green and Higgins, 1977, pp. 63, 71-73). The model was also used for long-run projections, and a more defense-intensive variant was found to be particularly damaging to investment (Green and Higgins, 1977, pp. 117-118).

In the exercises with several generations of this model, the results have been sensitive to the particular series used for military expenditures. Moreover, in various scenario simulations some of the largest deviations from baseline projections were the result of assumptions about unfavorable exogenous conditions (weather, trade prospects). Progress in these exercises has depended in part on standardizing the defense data but also on improvement of the model (Bond and Green, 1977, Chapter III). In a recent paper, Bond and Levine (1981) have used SOVMOD-IV to compute alternative projections of Soviet GNP growth in the 1980s, varying the rate of growth of military expenditure. These projections will be reviewed in Section V.

A similarly large, complex model is the CIA's SOVSIM (CIA, 1979a). A 1979 CIA paper reporting simulation of Soviet growth prospects in the first part of the 1980s includes a variant of reduced military expenditures (CIA, 1979b). This, too, will be discussed in Section V.

SUMMARY

It hardly seems debatable that the Soviet military buildup of the past 20 years has constituted a heavy burden on the economy. The share of Soviet GNP allocated to the military sector is high relative to that of the United States (and, of course, to that of any other developed industrial society); it was probably higher in the early 1950s than in the late 1950s or in either half of the 1960s; it seems to be growing in recent years with the slowdown of the economy. More elaborate approaches to measurement of the burden support each other in the expectable demonstration of a primary tradeoff between defense and investment, with inevitable, lagged effect on aggregate growth. Effects on consumption depend on government resource allocation policy. These are the apparent qualitative conclusions. Given the differences in form and type of model, structure of assumptions, and particular data used, the quantification of these relations is bound to vary.

It is regrettable that such a summing up of the available empirical studies must appear so inconclusive. Data problems connected with the estimation of military outlays are partly to blame. Also, there is no

sufficiently long and reliable series of national income accounts to trace the evolution of the ratio of defense to GNP. Finally, the econometric models have possibly been insufficiently differentiated to provide a realistic view of the tradeoffs between military spending and growth of GNP or its major components. Nevertheless, the general picture is clear, and it provides a sufficient foundation for transferring the inquiry to the explanation of the conundrum posed in the Introduction.

III. EXTERNAL VS. INTERNAL DETERMINANTS OF SOVIET MILITARY EXPENDITURE

THE ROLE OF THE EXTERNAL THREAT

In this, as in many other political-economic matters, one can hardly do better than begin with Adam Smith (1937, Book V, Chapter I, Part I):

> The first duty of the sovereign, that of protecting the society from the violence and invasion of other independent societies, can be performed only by means of a military force. But the expence both of preparing this military force in time of peace, and of employing it in time of war, is very different in the different states of society, in the different periods of improvement.

The very purpose of a military force leads to a focus on the external threat as the explanation for the size and trend of expenditures to raise and maintain that force. A substantial literature has grown up, developing in theoretical-abstract, empirical or just descriptive terms the theme of functional relation between a state's military effort and the external threat. These efforts have not been conspicuously successful, despite the intuitively obvious nature of the relation. One reason is that national defense budgets have domestic functions—economic, political, or social—that are more or less unrelated to external developments. A second and more important reason is that mathematical-statistical treatment naturally attempts to isolate the foreign influence from domestic factors affecting the state's response, in what have come to be known as action-reaction models of international arms competitions.[1] However, the distinction between foreign and domestic influence is not always obvious, because they are linked by what may be called "operative" images. Foreign affairs are perceived by particular men in a particular milieu. The point is a commonplace, but it is worth restating the corollary, that the determinants of foreign policy are in a significant sense entirely domestic: The meaning and implications of external events are perceived through prisms of domestic manufacture

[1]The best known of these is the class of Richardson models, in which changes in the military expenditures of two states are explained by the levels of their own and the other state's military outlays.

(although the process may be affected by external influences). It is the images thus perceived that are operative in foreign policy decisionmaking, and the role of the external stimulus can be fully understood only by examining the prisms through which the external world is perceived.

These two spheres, the foreign and the domestic, are sometimes viewed as competing frameworks of explanation, whereas they should be considered as complements.[2] In any case, it is a remarkable fact of the literature on arms race modeling in the 20th century that it took many years before the unique emphasis on adversary levels of expenditure as the independent variable was replaced by a more differentiated effort to link internal structural-institutional factors or perceptions of threat with expenditure dynamics.[3]

This is also an important reason why the dominant western rationalizations of Soviet policymaking have come to grief. In the early 1960s one could imagine that in response to perceived weakness relative to the USSR's main adversaries, the Soviet military budget would be molded chiefly by evaluation of the NATO (and Chinese) threat. But if the initiation of a Soviet military buildup could thus be projected, it would also have been natural to forecast a diminution of the effort as "parity" was approached or achieved. As we know, the effort has not yet diminished.

It is true that no less an authority than Nikita Khrushchev implied that the Soviet defense budget in his time was largely dictated by U.S. military activities (Khrushchev, 1970, p. 572, and 1974, pp. 411-412). Eisenhower once complained to him that U.S. military leaders "keep grabbing for more" money to prevent falling behind the USSR, and he asked Khrushchev, "How is it with you?" "It's just the same," Khrushchev responded:

> Some people from our military department come and say "Comrade Khrushchev, look at this! The Americans are developing

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[2]The role of external considerations, even understood as crucially shaped by perceptions, has been sharply downgraded by the "behavioral revolution" in social science. Traditional political science was criticized for excessive faith in rational actors seeking to maximize national interest. The new credo was that state decisions arise through the clash of men and organizations in the pursuit of particular interests. It is not "facts" of the outside world or even the perceptions of these "facts" that determine decisions but the result of internal conflict, institutional and personal.

As was perhaps only to be expected, the pendulum seems to have swung too far, and efforts are being made to attain a new balance, one in which the conflicting viewpoints may find at least partial reconciliation. I find the synthetic approaches—"discriminatory eclecticism," to use A. H. Brown's phrase (1974, p. 10)—more congenial than either the thesis or antithesis alone.

[3]For a review of the literature, see Moll and Luebbert, 1980. The authors note with regret that "the increasingly sophisticated mathematical models of the 1970s have not shown insights in proportion to their complexity" (p. 156).

> such and such a system. We could develop the same system, but it would cost such and such." I tell them there's no money; it's all been allotted already. So they say, "If we don't get the money we need and if there's a war, then the enemy will have superiority over us." So we discuss it some more and I end up giving them the money they ask for.

However, there are reasons to doubt that the anecdote fully describes actual Soviet practice under either Khrushchev or his successors. Far from slavishly imitating American practice, the Soviets have evolved a distinctive style of military development. Some American designs have been copied and the Soviet military has been alert to U.S. activities, but the Soviet military force is far from a carbon copy of the American. Nor can it be shown that the level or trend of Soviet military outlays has moved in tandem with that of the United States.

Pryor (1968), for example, believed that 48 percent of the variation in the defense spending of either the USSR or the United States in the period 1950-1962 could be explained by the spending of the other. He concluded that the strong statistical interaction was probably due to response to a common phenomenon, such as the state of tension between the two states or changes in military technology. However, because only half the variation in spending could be explained in this fashion, he recognized that other factors were operating as well but felt that "consideration and testing of such variables would lead us too far afield" (pp. 112-113).[4] Pryor developed his estimates of Soviet outlays by the method of budgetary residuals (adding portions of unidentified residuals in the Soviet state budget to the official "defense" allocation), a highly uncertain procedure at best.[5] In any case, had he extended his test to the years after 1962, using CIA or other western estimates of Soviet military expenditure, the significance of the interaction factor would have dropped sharply.

A three-way defense expenditure interaction model—USSR, U.S., and PRC—was constructed by Despres and Dhrymes. The model was reviewed, revised, and fitted with revised CIA estimates for the Soviet Union by Shishko (1977), who found that U.S. and Chinese defense expenditure were of little help in explaining changes in Soviet military outlays. The USSR level of a given year was primarily determined by Soviet military expenditures and GNP in the previous year. Shishko concluded that existing models were probably too crude to capture any interaction process that did exist.[6]

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[4]Pryor suggested that part of the residual difference might be explained by more detailed analysis of changes in military technology.

[5]See above, notes 21 and 22 of Section II.

[6]In a double sense: First, "our understanding of the gross interaction process is probably worse than we credit ourselves with in that naive models which have achieved

A novel variant of the action-reaction hypothesis was developed by Hutchings, who attempted to relate Soviet military outlays to foreign policy changes. He found that "defense spending tends to be at a minimum at the beginning and end of a [middle term] plan-period and to rise to a peak towards its mid-point." The explanation advanced is that defense spending is subordinated to development needs at the start of a plan, and the military has to raise international tensions to obtain increased shares (Hutchings, 1971, pp. 523, 526). The hypothesis is dubious on its face, and Hutchings' insistence on the reliability of the explicit allocation to "defense" in the Soviet state budget deprives the findings of any potential interest.

Figure 2 shows the relation of Chinese, Soviet, and U.S. defense spending, using CIA unclassified estimates and compilations for the period 1968-1978. These data indicate that from 1968 (the high-spending point of the Vietnam war) to 1976, the real value of U.S. defense outlays declined without interruption, while Soviet military spending at constant ruble prices is estimated to have grown without interruption; Chinese military expenditure in constant yuan rose one and one-half times in three years but leveled off thereafter at little over the 1970 mark.[7] Note that the U.S. expenditure curve in Fig. 2 also describes the path of the ratio of U.S. spending to the dollar-value of Soviet activities—from about 1.4 to 1 in 1968 to 0.7 to 1 in 1975-1978.

The data presented in Fig. 2 are intended to reflect outlays at constant prices. This is the best measure of the change in military activity. However, we do not know whether Soviet images of U.S. actions and intentions are influenced by this indicator or by others. Perhaps Soviet planners are more inclined to monitor other U.S. budgetary measures, such as obligational authority or funds available, or to introduce time lags and leads into their calculations. Still, these indicators are not likely to diverge substantially from the movement of expenditure, as long as account is taken of price inflation. If Moscow is inclined to ignore the effects of inflation,[8] it could derive a sharply different picture of the trend in the U.S. military budget: At current prices, U.S. outlays on national defense (excluding veterans' benefits

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a certain amount of political respectability explain very poorly the past course of the military competition" (p. 10), and second, because "each expenditure level may imply vastly different combinations of force size and force deployment; at the same cost, smaller forces in a forward deployment may appear more threatening than larger forces stationed at a distance. Military expenditures alone may hide too much to be the principal variable in a model of military competition" (p. 11).

[7]The sharp rise in Chinese military expenditure followed a Soviet buildup on the Sino-Soviet border; the largest increases came in 1969-1970, following actual armed clashes on the frontier.

[8]As it may occasionally do for propaganda purposes: see, for example, Konobeev, 1981, pp. 123, 126.

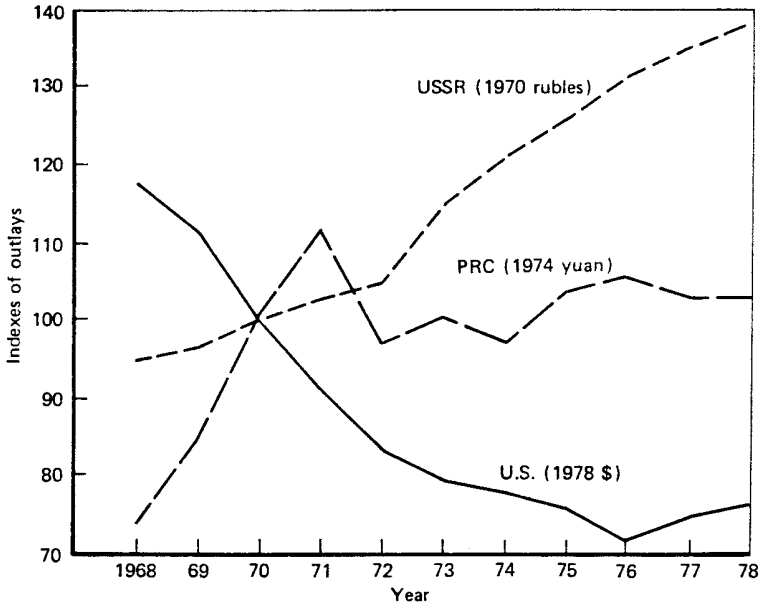

Fig. 2—Comparative growth of U.S., Soviet, and Chinese military outlays, 1968-1978 (1970 = 100)

but including atomic energy and other defense-related activities) almost tripled between 1960 and 1980; deflated for price change, however, 1980 outlays were below those of 1960 (U.S. Bureau of the Census, 1980, p. 366).

If Soviet leaders' impressions of aggregate U.S. military activity have been formed on the basis of U.S. value statistics, these impressions cannot have been substantially at variance with the pattern of Fig. 2. However, the Kremlin may have been more impressed by other indicators of U.S. intentions—for example, statements by congressional or administration figures. It is therefore not possible to refute the hypothesis of Soviet reaction to U.S. action conclusively—at least, not on the basis of quantitative evidence. Moreover, no account has been taken here of non-U.S. NATO and non-Soviet Warsaw Pact expenditures. In general, then, to explain the overall Soviet military buildup in relation to the actions of its major adversaries would require a far more complex

model—in terms of number of actors, period of time covered, and use of perceived intentions, rather than realized outlays at constant prices —than is found in Fig. 2. Failing that, the simple best predictor of Soviet military expenditure has been past expenditure (see also Rattinger, 1975).[9] At the same time, because simple action-reaction models do not explain the expenditure trends, the data do suggest the desirability of examining Soviet leadership perceptions and their decisionmaking environment. This is the task of Section IV.

ECONOMIC SIZE AS DETERMINANT

In the second half of the passage cited, Adam Smith pointed to variations in military expenditure by type of social-economic organization and stage of development. In recent years, several efforts have been made to "explain" levels of spending on defense in various countries by cross-national and intertemporal regression analysis emphasizing major macroeconomic variables. Pryor examined the available data for NATO and Warsaw Pact countries (revalued in a single currency) and found that at any point in time within both groupings the defense share of GNP tended to be related to the absolute level of GNP, but not to GNP per capita (Pryor, 1968, p. 126).[10] The negative finding was also an important result of Benoit's research with regard to developing countries. Benoit discovered a strong, positive correlation between the defense share of GNP and rates of growth of GNP and therefore raised the possibility of an income effect—that rapid growth made possible

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[9]The concept of reactive military growth has been applied in relation to the advance of military technology, when perceived on the adversary's side or observed in one's own laboratories and development plants. In the latter case, the action-reaction cycle is totally self-generated. The role of technological momentum as an explanatory device is discussed in Section IV.

[10]GNP per capita is found to be one of the determinants of nonpersonnel military expenditures per military person. See also Hollist, 1977. Hollist speaks of "technology" but seems to mean only GNP. The absence of any relation between the defense share of GNP and GNP per capita seems to undercut the hypothesis derived from Lenin's theory of imperialism that "as the per capita GNP increases, capitalist nations must resort to ever-increasing relative levels of defense expenditures, in order to stave off the general crisis of capitalism." (Pryor, 1968, pp. 89, 93. See also Kennedy, 1975, pp. 74-78.) Another writer comes to the same conclusion on the basis of data for 15 "advanced capitalist" countries at three dates over a 20-year period. He suggests, instead: "The alternative approach is that the functions of military expenditure [in capitalist states] were not primarily to maintain demand, and that its economic consequences may have been contradictory—expenditure necessary for strategic reasons had economic consequences which, in fact, undermined the system it was intended to support." (Smith, 1977, pp. 66, 69. For further discussion of this article, see Volume 2, No. 3, September 1978, of the same journal.)

high allocations to defense. But the absence of any significant correlation between defense as a proportion of GNP and GNP per capita and the fact that "in multiple regression analysis, economic growth did not emerge as a significant determinant of the defense burden" caused him to reject the hypothesis (Benoit, 1978, p. 275).[11]

The notion that defense spending is significantly related to GNP or other aggregate output measures in the *short run* seems counter-intuitive. It is implausible to expect a nation's year-to-year military efforts to vary directly with its economic fortunes. To the extent that decisions are made with some reference to external events, domestic economics will generally be expected to adjust to perceptions of foreign threat. The extreme example is Anwar Sadat's description of Egypt's situation and his calculation on the eve of the October 1973 war. He said he told his top advisers then: "I would like to make something clear to you. Our economy is less than zero. I do not have a loaf of bread for 1974. Nevertheless, may God do what is best" (Sadat, 1976, p. D-15).

Whatever the truth of this story, Sadat's message is that political-military considerations were overriding. Clearly, Egypt could sustain such an effort only for a short period of time. Over a longer period the magnitude of the effort would have to adjust to real resource capabilities, but for a while part of the economic future could be mortgaged to sustain priority goals. Many other less extreme examples can be cited of deviation in both directions: Military outlays need not necessarily rise with increases in national output as they frequently will not fall with decreases in GNP. Adjusted for inflation, U.S. defense outlays dropped monotonically between 1968 and 1976 while GNP increased. Total Soviet military expenditures are estimated to have declined both in the immediate years after World War II and in the mid-1950s. Explanations can be adduced in each case, but they will not reflect a concern for keeping a constant relation between total military effort and aggregate national output.[12] With regard to the developing countries he studied, Benoit concluded that

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[11]Westing (1978) concluded that military expenditures were "moderately" closely correlated with GNP for the entire population of 159 de facto nations in the world of 1975 ($r = 0.777$). However the correlation was considerably higher among the group of 89 "poor" nations ($r = 0.943$) than among the group of "wealthy" nations ($r = 0.758$). Westing's conclusion seems somewhat different from Benoit's:

> When a nation is able to do so, it is at present arriving (either consciously or intuitively) at a level of military expenditures that is highly consistent, on the one hand, with the size of its population and, on the other, with the extent of its productive land area. . . . The military expenditures of many poor nations can be expected to increase as they become wealthier in the years to come, barring dramatic changes in the world order (p. 27).

However, the last phrase in this quotation is crucial and suggests clear agreement with Benoit. For the latter's conclusion, see below.

[12]In part, the difficulty arises from the crudity of the measurement: "It is commonly assumed that resource constraints must be reflected in models. . . . But measuring the

> the main determinant of the size of the defense burden was the expectation of political and military leaders of the need for forces to deter, to threaten, or to engage in combat. Basically the defense burden was high in areas where combat had occurred or threatened to occur or which were on the boundaries between rival power blocs. (Benoit, 1978, p. 275.)

Over the middle term, especially if one can assume stabilization of the (perceived) external threat, one may reasonably expect greater regularity in the relation between defense and general economic activity. CIA has estimated that between the mid-1960s and the late 1970s, Soviet defense expenditures rose at approximately the same rate as GNP. It would hardly be appropriate to conclude from this that the Politburo adjusts the annual defense budget to the planned level of national output, even allowing for the fact that Soviet planners do their national accounting in terms of material product, which excludes most services, and not Western GNP. To begin with, the trend noted is an average; the CIA estimates of both GNP and military expenditure show year-to-year fluctuations, not necessarily of the same relative size. Moreover, the expenditure estimates are believed to be more accurate as to trend than as to annual values. Third, the CIA estimates are compiled in 1970 prices. There is no evidence that Soviet planners use that price set as their framework of weights for analysis of time change. It is much more likely that they use the data available to them—for example, industrial production indexes that use linked weights (July 1955 prices for the period 1955-1967, July 1967 prices for the period 1967-1975, and January 1975 prices since 1975).

It is true, then, that over most of the Brezhnev period (with the exception of the last few years), military spending has, on the average, remained within bounds that, by Western measurement, correspond roughly to the overall growth of the economy in that period. However, the rate of aggregate economic growth was slower in the 1970s than in the 1960s, especially in the last half of the 1970s. So far there is no indication that Soviet military expenditure plans are taking account of that fact.

In the long term, as the passage from the *Wealth of Nations* reminds us, the level of development must bear considerably on the observed scale and quality of military activity. Not every indicator of scale will be equally affected, as can be seen from the fact that the Tsar mobilized an army in World War I about the same size as that raised by the Soviets in World War II (Dupuy, 1970, p. 990; *Pravda*, January 15, 1960).[13] Between these two dates, military technology changed

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sheer size of the economy . . . on the health of the currency . . . implies simplistic notions about how resource constraints impact on armaments." Moll and Luebbert, 1980, p. 171.

[13]The intervening variable is evidently size of population, as Pryor pointed out.

considerably, but the effect of the rapid economic development over those decades may also be seen in the sharp changes in the magnitude and quality of support facilities—communication, transport, supply, military medicine, etc.

Defense capability is not just arms and men, forces in being, but capacity of the economy to sustain the waging of war. Development is obviously of great importance in this respect, and Soviet writers have traditionally emphasized the point. The guarantee of deterrence of imperialist attack on the socialist states, Marshal Grechko wrote, lay in "strengthening the economic and defense might of the USSR and of all the states of the socialist commonwealth" (Grechko, 1975, p. 7). More generally,

> the defense capability of socialist countries is based on their economic and scientific-technical power. This means that each new step in the construction of the material-technical base of communism is simultaneously a new level in the strengthening of the defense potential of the Soviet Union and that of the entire commonwealth of socialist states. (Sokolov, 1974, p. 420.)

The importance of the economic base is underscored in an era of "military-technical revolution" (Sokolov, 1974, pp. 7-8). The demands on the national economy for military preparedness are vastly enlarged by the sophistication and costliness of modern weapons,[14] while the possible scale and intensity of general nuclear war make it dangerous to count on building up military potential once hostilities have begun.[15] The Soviets have thus understood from the beginning that a powerful modern economy is the foundation of a strong military establishment, and their emphasis on the expansion of heavy industry, transportation, and communication—later, on research and development in high technology areas—as a path to developing armed might is too well known to require elaboration.[16]

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[14]The demands are not only in terms of technologically more advanced capital but also for more highly skilled labor. The mass production of military industry in World War II in the USSR was accomplished largely with unskilled labor (Khavin, 1963, p. 42).

[15]"In a possible missile-nuclear war, the economy will determine [the war's] course and outcome first of all and mostly by what it is able to give for the war before the war begins, in peacetime, in the process of military construction" (Trifonenkov, 1966, p. 12).

[16]Military power depends not only on quantities of resources but also their utilization. Here the Soviets have traditionally claimed an advantage over their adversaries through the superiority of the socialist system (Sokolov, 1974, p. 88). The relative efficiency of the Soviet and U.S. defense establishments is still a contentious issue, but whatever the ultimate verdict, it seems doubtful that it will depend on the differences between socialism and capitalism.

This is the permissive side of the coin. The other is constraints. Over the long haul, stage and level of development also place limits on military activity, although such limits must be understood broadly, as Benoit showed. Sadat, I suggested, mortgaged the future for his Ramadan gamble, but mortgage size depends on asset value and the loan must eventually be repaid. Except in the very short term, guns vs. butter is a real dilemma for most real economies. Also, it is a characteristic of the tradeoff between consumption and arms production that after a point the more a state wishes to buy of the one, the more it has to sacrifice of the other, as diminishing returns to increases of inputs in the expanding sector set in. This dictum, which economists know as the diminishing marginal rate of transformation, is a short or medium-run formulation. But even in the long run, it is not possible to have prolonged high rates of growth of military outlays and continued rapid expansion of the civil economy without equally rapid technological progress or substantial help from others. Not surprisingly, however, no hard and fast rules can be suggested to supply concrete meaning for "prolonged," "continued," "high," and "rapid."

SUMMARY

Where then, do we stand, in the search for explanations of the prolonged Soviet military buildup?

1. If Soviet military spending over the past two decades has been a response to U.S. (or even NATO plus Chinese) military outlays, the models portraying that phenomenon have not yet been developed. The role of the external threat in Soviet resource allocation decisions must be reviewed in terms of decisionmakers' perceptions and the institutional context in which decisions are taken.
2. The growth and modernization of the Soviet economy have constituted the foundation for the development of Soviet military power, but it hardly seems likely that the military budget has been tailored to the Central Statistical Administration's national income statements. In the last few years, rates of military spending are being maintained despite marked slowdown in overall economic growth.
3. Nevertheless, economic constraints are real even when they are disregarded. In the pursuit of the political utility derived from military programs, policymakers may pay high and

growing opportunity costs. The point of crisis surely depends on particular circumstances.

It clearly is necessary to peer more closely at the Soviet "particular circumstances." This report's attempt considers both the economics and the politics of the issue, although inevitably in much abbreviated form. Section IV examines the political-institutional context of Soviet military spending: What domestic political conditions and forces stimulated or protected the buildup? The explanation of prospects for future change in the final section considers the existing and probable near-future economic policy options and their political costs and benefits.

IV. THE POLITICAL-INSTITUTIONAL CONTEXT

> What depends upon a few persons is, in a great measure, to be ascribed to chance, or secret and unknown causes: what arises from a great number may often be accounted for by determinate and known causes. (Hume, 1963, p. 112.)

Generals the world over, it is said, picture the external threat in worst form scenarios and press for high defense budgets. Soviet generals are hardly likely to deviate from the norm. "Soldiers will be soldiers," Khrushchev grumbled in his retirement: "They always want a bigger and stronger army. They always insist on having the very latest weapons and on attaining quantitative as well as qualitative superiority over the enemy." They were, of course, heroes, ready to sacrifice their lives for the motherland. Nevertheless,

> leaders must be careful not to look at the world through the eyeglasses of the military. Otherwise the picture will appear terribly gloomy; the government will start spending all its money and the best energies of the people on armaments. (Khrushchev, 1974, p. 540.)

Yet the Soviet leaders went a long way in that direction, despite a generally falling rate of economic growth that accompanied the continually rising trend of Soviet military expenditure. Was there no opposition to the military claims? Do the military control the polity? But it is a commonplace that ultimate power resides in the Party hierarchy, and it is not professional officers who dominate the Politburo.[1]

Evidently, the military had the required political support for its claims on national resources. The nature of that support and the process by which it is generated and sustained are the keys to understanding the persistence of Soviet military buildup over the better part of two

[1]No military representative sat on the Politburo between 1957 (the dismissal of Marshal Zhukov) and 1973 (the appointment of Marshal Grechko). The defense minister has been a member since 1973, but since 1976 the post has been held by Dmitri Ustinov, who, although a Marshal of the Soviet Union, is an industrial specialist rather than a professional officer. At the same time, other members of the Politburo speak directly for the concerns of the economy and society as a whole, for example, the Chairman of the Council of Ministers or the secretary of the Party Central Committee concerned with agricultural questions.

decades. It should surprise few people that the shape of those keys is still only a shadowy image to those not a part of the inner circle of Soviet top-level decisionmaking. In a society that still prefers to conceal its mode of operation, the heaviest cloak protects the deliberations at the apex of the hierarchy.[2] At the same time, what we do know about Soviet decisionmaking indicates that the protection of the military's large claim on resources over such an extended period is engineered by mechanisms at various subnational levels of decisionmaking that complement and guarantee the implementation of top-level policy choices.

Alexander Dallin has offered the assumption that

> the stability of a given Soviet policy orientation tends to be greatest when there is a reinforcement or cumulation of (a) perceived national interest at the top; (b) self-serving interest on the part of multiple subnational groups and actors; and (c) a network of bureaucratic politics that creates vested interest in the status quo. (Dallin, 1981, p. 347.)

The persistence of Soviet military buildup may be viewed as reflecting the top leadership's perception of priority national interests. It may also be seen as supported by an institutional structure and decisionmaking process that insured the maintenance of such priority evaluation: positively, by creating a highly compact, centralized, top policymaking apparatus that facilitated the imposition of military priorities; negatively, by obstructing access and influence in the policy process to whatever "dovish" opposition was potentially capable of being mustered. These elements are considered in turn.

PERCEIVED NATIONAL INTEREST

In private conversations, Soviet representatives often point to "objective" factors in the geopolitical situation of the USSR that make for a high level of security mindedness in Moscow: long and topographically open frontiers, poor internal transportation, extreme weather conditions, the two-front threat of China and NATO, and the instability of the regions immediately to the south of the USSR in the Middle East and South Asia. Do Soviet leaders then view Soviet military activities as a burden on the society and economy undertaken to cope with these "objective," geopolitical security problems? In the previous section, the

[2]Jerry Hough sees this as an extreme form of a common phenomenon: "The principle of cabinet secrecy that is typical for a parliamentary system has been carried to its ultimate extreme in the Soviet Union" (Hough and Fainsod, 1979, p. 292).

idea that defense constitutes a "burden" on the national economy was viewed as depending on two assumptions: that defense has an opportunity cost; but also that like government administration, it is at best a means, undesirable in itself, to a worthier end. Because investment, too, may be looked on as socially useful only by virtue of its contribution to future benefits, consumption alone would be regarded as an ultimate good.

Despite the classification of defense as a nonproductive activity in Marxian accounting, this is *not* the way Soviet leaders have tended to view the matter. The USSR is not a modern-day Sparta,[3] but the role of military preparedness in the leaders' "utility functions" is much more than that of an instrument to achieve other social ends. For Stalin, the self-perceived man of steel, that product was not just an input to other industries but closer to a final good. Military power and the economic base that underlies it were clearly ends in themselves.[4] The value of power probably still ranks high on the preference scale of the present top leadership. An analysis of this question would involve an examination of the basic security concepts of the Soviet leadership and the relation of these concepts to Soviet political culture.[5] This is not the place for a detailed excursion into that complex subject, but it would be desirable to note a few pertinent features.

The dominant American notion of national security is essentially static defensive. This is not to say that Washington's policy is necessarily and always passive or untainted by aggression, but that it is primarily concerned to insure that the external world not become an unfriendly place in which to operate, which might redound to the detriment of life in the United States itself. To this has been added the post-1945 conviction that nuclear weapons fundamentally changed the nature of war

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[3]See, however, Pipes, 1980, pp. 1-12. The subject of Pipes's article is Soviet "militarism," but he does not define the term. He calls it the "principal instrumentality" of militancy ("a commitment to violence and coercion") and the two are "as central to Soviet communism as the pursuit of profit is to societies with market-oriented economies . . . for sound reasons derived from Russian history, the ideology of communism, and the Soviet view of the nature of future war" (p. 1). There is much truth in his development of these three sources of Soviet militarism. However, the logic of the argument leads to extreme conclusions: e.g., "in the Soviet Union . . . industrialism is a byproduct of militarism" (p. 1) and "the philosophy of economic determinism, as reinforced by the experiences of World War I and World War II, has tended to erase in the consciousness of Soviet leaders the line separating the military and civilian sectors, with *the civilian sector being increasingly regarded as an ancilla of the military*" (p. 10; italics added). For a contrasting view, see Holloway, 1980.

[4]In Bialer's view (1981, p. 426), military development was the sole goal of Soviet economic expansion under Stalin.

[5]One definition of political culture is "the subjective perceptions of history and politics, the fundamental beliefs and values, the foci of identification and loyalty, and the political knowledge and expectations which are the product of the specific historical experience of nations and groups" (Brown, 1977, p. 1).

and therefore the foundations of national security. American strategic nuclear conceptions have focused on the level of punishment, in terms of economic damage and population fatalities, that could be credibly promised to a potential aggressor to deter him from an act that could destroy the world.

In contrast, the view of national security held by the Soviet political-military leadership appears fundamentally dynamic and outward thrusting. The apparent Soviet commitment to develop a broad-based set of military capabilities across the whole spectrum of war fighting situations may be ascribed in part to what Lambeth (1980, p. 5) called "classical principles of military thought," to prudent, old-fashioned military logic.[6] Recently, western observers have highlighted the conceptual distinctions and the differences in force posture implications between American notions of deterrence, based on "mutual hostage" relations of the superpowers in the nuclear era, and Soviet concepts of deterrence, concerned with the requirements for surviving and winning wars should they occur.[7] However one envisions the scenario of central war in Europe, it seems clear that the USSR will not again have the luxury of selling space for time, of evacuation to the Urals, to begin a post-hostilities buildup of military production and forces. Moreover, frantic mobilization efforts in crisis periods are enormously costly. To prevail in future war, Moscow sees the necessity for superior forces in being at the inception of the conflict. Gradual but steady accretion of a large, broad-spectrum force structure accords with this perception of needs and realities. It also leads to open-ended demands (over time) on the military budget, for the broad-spectrum war-fighting doctrine seems to have no inherent concept of sufficiency.

The image of selling space for time relates to a bygone age of military technology, but it evokes an enduring theme of Soviet leadership self-perception, the threat to the survival of the social-political system. From the moment of seizure of power, this was one of the salient features of Soviet self-definition with regard to the outside world. It gave rise to a particular form of linkage between foreign and domestic policy; the primacy of the USSR's national interest, especially defense,

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[6]Cf. Posen, 1979: "the only way to be certain of one's security is to know all there is to know about the most important military technology, and to exploit this knowledge in a way that minimizes the possibility of being surprised by the adversary. Nuclear arms racing is simultaneous, mutual balancing behavior in a sovereignless, bipolar system where high costs accrue to wrong guesses. States have an incentive to be conservative in their military force planning."

[7]Lambeth (1980, p. 5) suggests that the Soviet military's views on the role of strategic power are "reinforced by a pervasive fear that the denial of the possibility of victory would entail a fundamental rejection of the legitimacy of military institutions, with eventual defeatism and moral decay the inevitable results."

over its foreign and international revolutionary involvement.[8] Whatever else Stalin's "socialism in one country" signified, it also meant ruthless priority for Soviet national over communist international needs. Thirty years later the Chinese communists would denounce Khrushchev for selling out the interests of world revolution in pursuit of Soviet national economic growth.

This structuring of Soviet policy priorities reflected Soviet weakness. Several generations of Soviet leadership attempted to use foreign policy as a vehicle for the concealment, protection and liquidation of Soviet vulnerabilities. As Alexander Dallin once remarked, from Stalin to Khrushchev foreign policy was directed at securing "a maximal gain of time," which would be used to build up economic, political, and military strength. And from Brest Litovsk to Nixon's Moscow visit in 1972, after the mining of Haiphong harbor and the bombing of Hanoi, Moscow made internally wrenching foreign accommodations in the consciousness of the weakness of Soviet posture.[9]

With the rise of the USSR's strategic nuclear power, there was evidence of growing self-confidence in its military strength. The last half of the 1970s also saw an increasing Soviet activism in third areas, which has been interpreted as arising from that enhanced self-confidence. However, it may be that in the popular mind and even in that of the leadership the confidence is shadowed by fear of the potential inherent in a billion Chinese joined to western technology. Now, too, as over centuries past, geography and history condition inhabitants of the Russian land mass to suspect the ambitions of their neighbors or their neighbors' allies. But the expansion of the Russian state frontiers simultaneously created the space that constituted the foundation of Russia's defense and the enduring hostility of the nations on the fringes. When he upbraided the Czech leaders for the actions that precipitated the Warsaw Pact invasion in the summer of 1968, Brezhnev reminded them that Soviet blood had been spilled to free Czechs from Hitler's yoke (Mlynar, 1978, pp. 297-301).[10] A similar theme is being sounded in the current Polish crisis. Thus, defense and offense may be inextricably linked in Soviet perceptions as they were in those of Imperial households.

In addition to this defensive-offensive security orientation, the

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[8]Article 28 of the present (1977) Soviet constitution lists "insuring international conditions for the building of communism in the USSR" first in the list of Soviet foreign policy goals.

[9]The decision to hold the Summit may have reflected the Politburo's self-control and adherence to a scale of priorities, but it may also have been associated with a leadership crisis, the purging of Piotr Shelest (Smith, 1976, p. 349; Medvedev, 1979; Dallin, 1981, p. 367).

[10]I am grateful to Jiri Valenta for identifying this source.

"world view" of many Tsarist Russian leaders incorporated impulses to perfect the more accessible parts of the world. The pure Leninist ideology of foreign policy is globally evangelical and, of course, far more engaged with an explicit philosophy of history. Its perception of international affairs is based on a belief in systemic conflict regulated by historical forces that find in the Soviet Union a willing tool and helpmate. Through the fog of events and the complexity of institutions, the catechism maintains, the party of scientific socialism perceives the underlying reality. There is a capitalist system and a socialist system and the struggle between the two is historically inevitable, because the objectives of the two are opposite and irreconcilable.[11] Systemic hostility—the fact of imperialism—proves that a potential for aggressive attack against the socialist commonwealth will always remain.[12] The intersystem tension simultaneously legitimates the defense of the socialist world and its outward thrusts. Therefore, the constant improvement of Soviet defense capability is an objective necessity. At the same time, the Soviet Union cannot be a bystander in the historic drama that must end with the world victory of socialism, the more so that imperialism, in its panic, seeks to ward off the inevitable by attempting to crush the revolutionary impulse as it appears in the weaker developing nations.

One suspects that few Soviet leaders subscribe in full to all parts of this catechism;[13] not many actions of Soviet foreign policy can be explained in this framework alone. The apparent turn to greater economic interdependence with the West seems to presuppose, in

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[11]Party propaganda warned that detente should never be understood as promising eventual reconciliation between the two systems. "Communists would cease to be communists if they did this" (Stepanov, 1974, cited in Schwartz, 1978, p. 150).

[12]Even the chief Americanist, Georgii Arbatov, found it necessary to say that "in analyzing imperialist policy, its assessment as 'friendly' or 'hostile' cannot be used as a point of departure. This policy will always be intrinsically anti-socialist" (Arbatov, 1970, p. 269). Elsewhere, he also stated: "One cannot doubt that any change in the correlation of forces in favor of imperialism would have led not to a relaxation but an increase in tension, whipping up the aggressive aspirations of reactionary circles" (Arbatov, 1972, p. 9). Both quotations are cited in Schwartz, 1978, pp. 149 and 141, respectively.

[13]Although its operative significance need not necessarily be diminished by cynical exploitation. Adomeit (1979, pp. 19-20) suggested the analogy of a tribal medicine man: Even if he were a complete cynic about the rituals he practiced, he would have an interest in maintaining unquestioning belief in the myth among the members of his tribe and, indeed, of spreading the myth to other tribes. Penkovskiy (1965, pp. 55, 318-321) accused the higher officers as a group of cynicism, money-grubbing, personal corruption and immorality. Yet, he maintained, a Soviet general was bound to arrive at different conclusions from the objective data of contemporary war than would his American or English counterpart, "because, first of all, he [the Soviet] begins from a completely different set of basic premises and preconceived ideas, namely the Marxian concepts of the structure of society and the course of history." (Penkovskiy, 1965, p. 252. Other reasons were Soviet use of Marxist dialectic logic, differences in moral laws and differences in objectives between the societies.)

Dallin's view, "implicit elements of mutual benefit, symbiosis and recognition that the Soviet Union stands to gain from closer ties with the presumably contagious and dangerous opponent." (Dallin, 1981, p. 352.) There is considerable evidence of ferment in the views of the outside world held by Soviet academics and policy intellectuals—that is, those whose studies of the non-Soviet world are published in the Soviet specialized journals or in scholarly monographs and books.[14] Moreover, it has been argued that the growing sophistication of view observed among Soviet academics extends to high ranks of the Party central apparatus:

> Many of the most fundamental propositions about the evolution of the outside world and about the way the outside world *should* evolve have become the subject of heated debate in the Soviet Union; only a part of this debate has been permitted to surface in print. It extends deep into the Central Committee apparatus (italics in original). (Hough, 1980, p. 529.)

Nevertheless, the prevailing view in the Soviet leadership seems to be as Bialer (unpublished) puts it: The advancement of socialism is a historical process; peaceful coexistence is a political strategy.[15] The core of the set of perceptions described above probably still shapes the operative images of Soviet top-level decisionmakers as a group.

This description of the Soviet security concept suggests that military power is a more basic element of the Soviet self-perception than is the case in western states. Military images have dominated the lexicon of Soviet politics from the inception of Bolshevism, linked to concepts of society in turmoil and the world-wide life and death struggle of two social orders. The change in the Soviet Union's place in the world that is so common a feature of Soviet discussions of international relations in the last decade is attributed to the change in the "correlation of forces." This term incorporates economic, social, and political elements too, but there is little question that the military element is primary. Military competition is the arena in which the USSR seems to have been the most successful in recent years—indeed, perhaps the only arena of unambiguous success. Whether or not this is related to the ideological considerations suggested above, the "fact" (assuming the Soviet perception is the same) may reinforce the importance of military power in the Soviet self-image.

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[14]For Western appraisals of this ferment, see, for example, Schwartz (1978), and Hough (1980).

[15]To David Holloway (1975, p. 72), the conclusion emerging from a survey of "Foreign and Defense Policy," was: "*detente* as a continuation of the East-West conflict by other means."

These considerations support the belief that the continued modernization and expansion of Soviet forces, resulting in a steadily growing level of military outlays, were rooted in leadership convictions that basic national interests were at issue.[16] But the questions of Soviet military power were not the only national interests being weighed in the Kremlin. The Politburo was clearly aware of the deceleration of Soviet economic growth that had been taking place since the late 1950s. How long could the leadership tolerate this "scissors" pattern—upward thrust of military expenditure, downward slide of economic growth?

Western perceptions of the Soviet approach to detente encouraged the hope that Soviet economic problems would restrain the expansionist impulses in Soviet foreign policy, and thus slow the pace of military buildup. One strand of thinking suggested that economic difficulties alone would lead to unilateral cuts in Soviet military spending. The more common argument, however, was that Soviet leaders had come to recognize the difficulty or even impossibility of resolving the USSR's economic difficulties unaided. Their desire to secure Western technology as a means of boosting Soviet industrial productivity would, it was presumed, counsel prudence in foreign policy so as not to endanger the continuity of this valued contact. Soviet domestic weakness was seen as having led to a conscious Soviet decision to accept dependence on technology transfer from the West; this was then presumed to imply a constraint on Soviet foreign involvement and on Soviet military spending. Garthoff (1975, p. 26) was convinced that

> the Soviet military leaders realistically recognize the constraints which competing economic needs have always placed on military programs in the Soviet Union. The economic situation of the USSR contributed to the initial Soviet decision to enter SALT and growing economic pressures probably played an important role in leading to Soviet agreement to the SALT accords.

Perhaps Soviet fears of the economic (as well as military and political) consequences of an open arms race were one motivation for agreement to the SALT accords. However, SALT I certainly did not result in a

[16]This is not to deny that Soviet force structure is the outcome of a process that involves bargaining, maneuvering, and conflict among elements of the military. (See, for example, Warner, 1977.) However, (a) it would be inaccurate to place all emphasis on political and ignore bureaucratic processes of decisionmaking; (b) to the extent that decisions are explicitly made on how much to spend on defense in aggregate, rather than on what weapons to buy in particular, the more ideological considerations outlined here must come into play more fully; but (c) these considerations probably also form a common denominator of the mindsets of most of the important actors in the complex of bureaucratic-political processes of decisionmaking in this sphere.

reduction of the level of Soviet military spending, not even in its rate of growth or in the proportion of total output allocated to the military.

It is, indeed, difficult to show that anything like the hypothetical linkage of domestic economic need and military restraint was manifested in Soviet policy in the 1970s. Apart from maintaining the Soviet military buildup, Soviet leaders continued to insist that detente dealt only with the central area of East-West relations. At the 25th Party Congress, Brezhnev set out the basic propositions:

> It is quite clear that detente and peaceful coexistence are concerned with interstate relations. This means primarily that quarrels and conflicts between countries should not be decided by means of war, use of force or the threats of force. Detente does not in the slightest way abolish, and cannot abolish the laws of the class struggle. No one can count, in conditions of detente, on communists becoming reconciled to capitalist exploitation or of monopolists becoming partisans of revolution. But the strict observance of the principle of non-interference in the affairs of other states, respect for their independence and sovereignty, is one of the immutable conditions for detente.
>
> We do not conceal the fact that we see detente as a way toward the the creation of more favorable conditions for peaceful socialist and communist construction. This merely confirms that peace and socialism are indivisible. (*Pravda,* February 25, 1976.)

Marshal Grechko, then Soviet Defense Minister and a member of the Politburo, was even more explicit:

> At the present stage, the historical destination of the Soviet Armed Forces is not restricted merely to their functions in defending our fatherland and the other socialist countries. In its foreign policy activity, the Soviet government actively and purposefully opposes the export of counter-revolution and the policy of oppression, supports the national liberation struggle, and resolutely resists imperialist aggression in whatever distant region of the planet it may appear. The party and the Soviet Government rely on the country's economic and defense might in fulfilling these tasks. The working people of the whole world and all progressive mankind see in the economic and defense might of the USSR and the other socialist countries a reliable bulwark in the struggle for freedom and independence, the peoples' security, and social progress.
>
> As a result, the external function of the Soviet state and its armed forces and of the other socialist countries and their armies have now been enriched with new content. By their combat might the socialist armies objectively hold back the

> reactionary forces of imperialism from unleashing a new world war. It may be said that the army, as an armed force which, during the entire history of antagonistic societies, has been a tool of destruction and an instrument of violence and hostility, has under socialism become an instrument of creation and one of the main factors of the preservation of peace in the world. (Grechko, 1974, p. 39.)

The record of actual Soviet involvement in third world conflict in the last half of the 1970s, starting with Angola and ending with the Christmas 1979 invasion of Afghanistan, is too familiar to require recapitulation. In these years, too, the West came to recognize that Soviet outlays for military purposes have been increasing year after year for two decades.

Thus, the logical chain of much Western thinking in the 1970s was apparently faulty. The connection between Soviet economic development problems and the reaching out for Western aid through technology transfer is clear enough. But the next set of links has proved to be imaginary. Perhaps military spending might have been even higher if the Soviet economy had been able to maintain the growth pace of the 1950s. Be that as it may, continued retardation in the 1970s did not lead to cutbacks in the military budget. There was little or no evidence of the political constraints that economic weakness and dependence were supposed to create. If there was a Soviet vulnerability on this account, the West was unable or unwilling to exploit it.

INTEREST GROUP CONFLICT AND CONCORD[17]

The preceding sketch of Soviet perceptions of national interest has been drawn on the single plane of a unitary-actor national leadership. Were the USSR a rigidly controlled totalitarian society, perhaps such a depiction of national interest might suffice to explain the record of military buildup, but however one may wish to describe Stalin's rule, the totalitarian model provides a poor fit for the Brezhnev regime in the 1960s and 1970s.

In any polity, resource allocation at the macro level is not just a subject of economic analysis but an issue of power: Changes in the status quo have the potential for major influence on the balance of political forces in the society. Even under Stalin, personal and factional

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[17]The existence and nature of interest groups in the USSR has been the subject of some controversy. The classical work is Skilling and Griffiths, 1971. The major critic is Odom, 1976a. For a skeptical review of the literature, but focusing on Hough (1977) and Solomon (1978), see Powell, 1979.

conflict could be discerned that in some cases related to resource allocation (the case of N. A. Voznesenskii). With Stalin's demise, resource allocation, centering on the appropriate weight to be accorded to military preparedness, became an important generator of leadership conflict—e.g., between Malenkov and Khrushchev in 1954-1955, between Khrushchev and much of the military around 1960, within the post-Khrushchev oligarchy in the mid-1960s. The evident Soviet hesitation in deciding whether to enter SALT talks with the United States and the long delay in making public the Ninth Five Year Plan (1971-1975) have also been linked to "guns vs. butter" discussions. The involvement of top leadership in conflict generated by resource allocation is the more likely because of the direct links, operating in either direction, between domestic and foreign policy. Struggle for control over resources is, however, no longer limited to individuals or factions. The progressive differentiation of post-Stalin Soviet society has meant multiplication and increasing complexity of ethnic-national, regional, and social-economic group conflict in the USSR; at the same time, the conflicts are more visible to the external observer. Yet military spending has grown uninterruptedly and substantially during the Brezhnev regime. Evidently, other interest groups have not been able to rein in military demands effectively. But why?

It is surely necessary to begin a discussion of the relevance of interest groups to the military budget with the Party. Has it been among the ineffective opposed interest groups or has it been a powerful supporter of the military? What has been the Party's conception of the role of the military in a socialist society? With their unique awareness of the history of European revolutions, Bolshevik leaders were sensitive to the latent danger of Bonapartism in Soviet politics. Khrushchev (1974, p. 14) cited this as the basic reason for the removal of Marshal Zhukov from power in 1957,[18] although the validity of the charge is in serious doubt (Colton, 1977).[19] Nevertheless, such concerns have not led to a political ideology of separatism between military and civil spheres. According to the Polish sociologist J. J. Wiatr, speaking about socialist societies, "in place of the formal legal subordination by the civil power of an army which is a distinct, isolated environment, we have to do with the conscious striving for organic union of the civil and military spheres of life" (cited in Holloway, 1971, p. 1). The impulse to

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[18]He expressed similar suspicions about Admiral Kuznetsov (Khrushchev, 1974, pp. 25-27).

[19]It may be such fears of Bonapartism that Roman Kolkowicz (1971, p. 133) has in mind when he declares it a basic assumption "that the political leaders and the basic political values and the ideology are inherently anti-military, i.e., there is a profound distrust of the professional military men who possess the weapons and technology of war, the 'experts in violence.'"

union is fundamentally political rather than professional-military; it seeks a politicization of the armed forces, rather than complete militarization of the society.[20] Perhaps this may be associated in part with the values of mobilization, discipline, and sacrifice that are the salient features of the Party's most memorable experiences—1917, the Civil War, industrialization and collectivization, World War II, and postwar reconstruction. In part, too, the impulse to union should be understood as flowing out of the Marxist-Leninist concepts of war.

A significant feature of Soviet discussions of war is the emphasis on the integral links of war and society. Far from being an isolated feature of social organization and policy, war is seen by Soviet "military science" as rooted in politics. The aspect of this concept familiar to western public discussions is the adaptation of Clausewitz's dictum that "war is an extension of politics by other means." Less well known is the belief that war is a test of the viability of a society in all its aspects—economic, technological, ideological, social and political (Jones, 1975, pp. 45-46). The transformations in contemporary warfare brought about by nuclear-missile technology intensify this linkage, making war "a decisive armed encounter of two opposite social systems" (Savkin, 1974, p. 109). These notions are linked to the anti-capitalist ideology of the USSR and to its outlook of hostility to and fear of major antagonists, thus providing the conceptual (and emotional) framework within which the subordination of purely civil to military interests becomes institutionalized.[21]

The harmonization of party and military interests has become more apparent with the growing conservatism of the former in the Brezhnev period. In his conflict with some military leaders, Khrushchev seemed to be engaged in a liberalizing, reformist struggle, in a direct line of connection to the subordination of the secret police to the party after Stalin's death. In the 1970s, however, the party appeared a bastion of conservatism—concerned with order, against the seditious influence of alien ideas, and idealizing the past (collectivization, World War II) (Cohen, 1980, p. 18)—and therefore a natural ally of the armed forces. From the latter's viewpoint, an increasingly conservative party guarantees the military an honored place in the society.

Rigby (1978, p. 23) has suggested that there are several pillars of patronage relationships in political or bureaucratic systems, in addition to the act of appointment itself: shared loyalties and attitudes based on common background, ties based on prior joint service, and

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[20]However, even the latter strand is not absent in Soviet thinking. Its most vocal and overt proponent was M. V. Frunze, who urged "the militarization of the entire population." See Odom, 1976b, pp. 34-35.

[21]This is not the same thing as subordination of *political* to military interests, which seems most unlikely to occur.

shared ideas. The foundation for the alliance of military and civilian spheres in the USSR is the common perceptions of the Party and military leaders, the sharing of a particular mind set partly described earlier. From such premises, it is possible to draw militant conclusions, and "martial preferences are not limited to Soviet marshals" (Myers and Simes, 1974, p. 107).

A second factor for mutual understanding among political and military elites is common background and prior joint service.[22] Several members of the present political leadership, including Brezhnev, had extensive military experience as political officers during World War II. Brezhnev extended his contacts with the military after the war in service with the Ministry of Defense and as a secretary of the Central Committee. Among the others, Suslov was a political officer in the North Caucasus during the war and the head of the Stavropol partisans; Kirilenko was trained in an aviation institute and was the State Defense Committee's representative at an aviation plant during the war as well as a member of an army political council. Solomentsev was an executive in a Chelyabinsk armaments plant during the war; and after the war, Romanov worked briefly as a designer in the shipbuilding industry after graduating from the Leningrad Shipbuilding Institute (Hough and Fainsod, 1979, pp. 241-247; McDonnell, 1975, p. 103).[23]

The organizational interconnectedness between the Party and the military begins with military unit Party membership. Almost 90 percent of the armed forces are enrolled in the Party or the Komsomol, and in the upper levels of the officer corps, Party membership is universal (Hough and Fainsod, 1979, p. 393). At lower levels, many officers have influential positions in regional and local party organizations, while regional party leaders are also coopted into the administration of the military district.[24] At least five military district commanders serve on

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[22]This does not rule out personal and factional conflict, nor even diversity of views, among those with common experience. However, that factor should contribute to shaping more compatible mind sets on major issues.

[23]It is no accident, of course, that several members of the Politburo had important connections with Brezhnev in party-government service after the war. For example, Kirilenko played second secretary to Brezhnev's first in the Zaporozhe *obkom* and N. A. Tikhonov was an important figure in the Zaporozhe economy at that time (Rigby, 1980, p. 62). Chernenko's career has been most closely tied to that of Brezhnev since the early 1950s, when the former headed the propaganda and agitation department of the Moldavian Republic Party committee of which Brezhnev was first secretary.

[24]The military district is "essentially an interlocking military-party-administrative directorate disposing of military and civilian resources alike: the Military Council (*Voennyi Sovet*) presided over by the District commander, includes the chief of staff, area and service commanders together with the First Secretary of the local Republic or *oblast* party organizations—all collectively charged with insuring that Party, government and Defense Ministry instructions are strictly carried out. The Military Council is, therefore, an important body responsible for coordinating the work of the military command and regional Party leadership." (Erickson, 1979, p. 257.)

the bureaus of republic central committees (the republic counterparts of the Politburo), in Uzbekistan, Latvia, Kazakhstan, Georgia, and Belorussia. Currently, 24 military representatives, most of the key people in the defense ministry and armed forces, are full members of the Party Central Committee; an additional 13 are candidate members (Kruzhin, 1981). With respect to the early 1970s, it was found that "Central Committee rank and military rank are interlinked; all Marshals of the Soviet Union, almost all generals of the Army, and a few Colonel-generals are full members of the Central Committee; candidate members and members of the [Central Auditing Commission] are with few exceptions Colonel-Generals or the equivalent" (Daniels, 1976, p. 89).

The organizational links between the Party and the military extend to the government apparatus. Thus, every military district commander is also a member of the Supreme Soviet (as are commanders of the four Groups of Forces in Eastern Europe); every military member of the Party Central Committee or its Central Auditing Commission is also a member of the Supreme Soviet (Nolan, 1977, p. 21). This is particularly true if the scope of the term military is broadened to include military industrial activities.[25] An observer concludes that "it is a common occurrence among the top military and defense industry leadership for the same individual to fill a functional role in the military, hold a seat in the more ceremonial Supreme Soviet, and also fill an important Party position in the Central Committee, the Secretariat, or the Politburo."[26] In view of the foregoing, it is hardly surprising that Party organs within the armed forces behave, in Colton's (1977, p. 213) words, "as an integral part of the Soviet military establishment, sharing its aspirations and faults."

Brzezinski (1976, p. 351) has pointed to the "enhance[ment of] the domestic importance of the military. The military is thus increasingly becoming the major repository of the state tradition and an alternative unifying symbol." The military apparatus is not only larger and more

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[25]The interlocking membership and activities of local Party organs, military district and military industry are depicted in Jones, 1979a.

The armed forces and the leadership of military industry get to know each other well because administrators in defense industry have had a remarkable record of long tenure in office and in the profession. See Spielmann, 1978, pp. 107-168.

[26]Nolan, 1977. Although not nearly as prevalent as during the war, there is a widespread practice of military ranks and designations for leading civilian cadres, particularly, of course, in military industry and R&D. For example, academician A. N. Shchukin and P. S. Pleshakov, Deputy and then Minister of the Radio Industry, both of whom served on the Soviet SALT delegation, were reserve general officers in the Engineering-Technical Services (Garthoff, 1975, p. 29). The uniforms and titles arethe symbols of the interdependency between Party, military, and significant parts of the industrial-scientific elite.

splendidly equipped now than when Khrushchev was removed, it is more firmly rooted in the policymaking structure. Holloway (1975, pp. 73-74) notes that "a greater role is now given to military advice and recommendations in making defense policy and in deciding on the use of military power in support of foreign policy." Aspaturian (1972, p. 22) sums it up: "What ties the major components of the Soviet military-industrial complex together is their understanding of the interdependency that exists between security, heavy industry, and ideological orthodoxy."

Yet there *has* been conflict between Party and military in the past. The major chronicler of that conflict, Kolkowicz (1967; also 1971 and 1978), has stressed the military's defense of (a) its "traditional values, self-images, and beliefs of the profession" against the Party's effort to politicize (i.e., Communize) the officer corps, and (b) its aspirations to professional autonomy and institutional independence in planning, management and policy implementation, against the Party's insistence on intrusion into their spheres (Kolkowicz, 1971, pp. 138-145). This perspective has had its critics, particularly Odom (1975 and 1978) and Colton, who objected to the "dichotomous way in which Soviet military politics have been interpreted in the West, in terms of Army and Party locked in implacable conflict"; consensus was "often as important in this relationship as . . . conflict" (Colton, 1977, p. 212; see also Colton, 1978 and 1979). In any case, the evidence of Party-military conflict tends to disappear after the ouster of Khrushchev, and relations between the two groups seem to have stabilized under Brezhnev. Some Western discussion of military-Party conflict may have succumbed in part to simplistic identification of particular institutions with apparently associated views. More likely, as interests develop on given issues they cut across institutions; interest groups may be trans-institutional coalitions rather than bureaucratically homogeneous factions.[27]

A major factor accounting for the attenuation of the conflict, however, is that in matters of strategic conception, self-image, or style of operation, Brezhnev is a sharp contrast to his predecessor. On each of these planes Brezhnev found a basis for understanding with the military elite, whereas Khrushchev found only conflict. Obsessed by the "time factor," intent on "reaching and surpassing" the United States in

[27]"The conflicts of interests and opinions which comprise the decisionmaking process in national security affairs mirror not only differences between party, governmental, and military institutions, but more often reflect differences between inter-institutional coalitions formed on the basis of a community of interests. It would constitute a major analytical error to perceive conflicts of interests along institutional lines exclusively." Myers and Simes, 1974, p. 22. Cf. also Colton (1977, p. 212): "When conflict does occur, it rarely divides Army and Party into neatly juxtaposed categories. Issues and loyalties cut across formal occupational and institutional boundaries."

production and consumption, Khrushchev was prepared at first to substitute the semblance of military power ("rocket rattling") for its reality. His search for shortcuts, reinforced by whatever genuine convictions he had on the obsolescence of many conventional military instruments in the era of nuclear rockets, led him to conflict with the military on the plane of general strategy. This conflict was simultaneously one over the size of the military budget, the roles and missions of services, and the share of the aggregate military budget to which they would be entitled. Also, Khrushchev's battle with the military was only one aspect of his general struggle for power, in which his chief weapon was anti-Stalinism, a device that was certain to enlist much of the military in the ranks of his opponents. Finally, his "cavalier" and "humiliating" dismissal of thousands of officers in 1960 was bound to earn Khrushchev lasting enmity in the officer corps.

In all these respects, the Brezhnev regime has provided a sharp contrast. Military preparedness has not been sacrificed to "harebrained" attempts to achieve "goulash communism" on the cheap. Military preparedness now seems to mean what the bulk of the military leadership wanted it to mean—balanced forces within the strategic nuclear realm and across the spectrum of possible conflicts. Anti-Stalinism, with its overtones (to military ears, at least) of pacifism, has vanished entirely. Khrushchev's insensitivity in 1960 to military notions of honorable behavior has been replaced by apparently smooth working relations between Party and military organs.[28]

According to Brzezinski (1976, p. 351), "today, the military are in a more symbiotic relationship with the ruling party, and are thus more directly influential on policy matters, than at any point in Soviet political history." In short, the conflict of the late 1950s and early 1960s seems to have been followed by an institutionalized confluence of perceptions and interests. Agursky and Adomeit note: "There is a core of truth in the aphorism that 'the USA *has* a military-industrial complex, the USSR *is* a military industrial complex," (italics in original).[29]

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[28]One indication of the political reliability of the officer corps from the Party's current viewpoint is the long tenure of holders of key military posts, a fact that is reflected in their equally long tenure of seats in the Party Central Committee (Nolan, pp. 15-16). The institutional reflections of Party watchfulness still exist, of course—for example, in the separation of the functions of political indoctrination and verification in the armed forces, through the Main Political Administration of the Ministry of Defense (which has the rights of a Central Committee department), from the control over appointments vested in the Administrative Organs Department of the Central Committee. See CIA, 1980a; also Deane, 1977. Deane's examination of the MPA indicates little conflict between that body and the professional military but considerable evidence of differences between the MPA and the military on one side and civilian Party leaders on the other, on such issues as detente. However, other observers view the MPA as little more than the Party's watchdogs in the armed forces.

[29]In the United States, the complex is formed by action of interests outside of govern-

An appropriate amendment would be: The USSR is a "Party-military-industrial complex."

After the military, what other interest groups play a significant role in macro-level resource allocation decisions? This question is not easy to answer for proponents of interest group analysis. The Skilling and Griffiths collection, the basic work in the field, deals with industrial managers, economists, writers, and jurists, in addition to the Party and the military (with which we might include the security police, separated out by Skilling and Griffiths). But whether economists and writers, or even managers, can be viewed on the same plane with Party *apparatchiki* is highly doubtful. The problem is that the application of the concept to the USSR involves the danger of mirror-imaging:

> Soviet "interest groups" are not the kind of independent private pressure groups of a pluralist society originally subjected to this particular analysis, but correspond more to the competing functional interests discernible within the governmental bureaucracy of a non-Communist country. The difference is that the whole social system in the USSR is organized under such bureaucratic structures, all of which are subsumed and integrated through the central and local committees of the Communist Party. (Daniels, 1976, pp. 94-95.)

Skilling (1971, p. 395) himself acknowledged that national policy divisons cut across interest groups: "As a matter of fact, the evidence of this book demonstrates that every occupational group is divided into opinion groups and that 'reformists' and 'conservatives' are to be found in all of them, except perhaps the security police."

Whatever conceptual similarities between Western and Soviet-style politics may be found in terms of the parallel existence and common functions of organizational process or bureaucratic politics, there are inherent limitations in group-centered constructs developed in relation to the United States and then applied to the USSR. There are fundamental differences between the two societies, Barghoorn (1979, p. 212) stressed, in the "availability of political resources, institutions and opportunities for effective—as distinguished from mobilized—political participation." Some forms of political conflict have been present in Soviet public life at all times, but as Dallin (1981, p. 342) acknowledges, the bureaucratic-politics approach

> requires some redefinition or adaptation. Unlike the virtual free-for-all of U.S. politics, its Soviet analog—while real—is

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ment and exerted on it; in the USSR, the complex is within the political structure. Agursky and Adomeit, 1979, pp. 107-108.

bound to reserve greater authority to the ultimate decision-making body, to limit the scope of political discourse, and to deny almost all institutionalization of subsystem groups.

These limitations are true *a fortiori* with respect to national security decisionmaking in general and decisions on the size of the military budget in particular.

This does not mean that the military, alone or in close alliance with Party and military industry, have necessarily always had their way. The fact that defense spending has risen monotonically for 20 years should not be taken to mean that all military demands were fully met, only that Soviet politics has not provided the structure and opportunities for institutional pressures that could more effectively constrain the military buildup.

THE DECISIONMAKING APPARATUS

To understand how the Party-military-industrial complex sustains itself, and also manages to resist external encroachment, it is useful to outline what we know about the decisionmaking apparatus in this area.[30] One should begin with the chief feature of Soviet decision-making, its centralized hierarchical structure. Hierarchy is, of course, characteristic of the entire Soviet bureaucracy, and that of other countries as well. Much of the civilian side of government in the USSR is strongly centralized, too. Centralization and the command principle implicit in hierarchy are, however, particularly marked in the military sphere and are powerfully reinforced by the extreme secrecy that attaches to military matters in the USSR.

1. The base of the hierarchy is the ministerial bureaucracies—the Ministry of Defense and the military-industry ministries. The scope for policy forming inputs from other ministries seems small.

2. The materials from which military program choice decisions are made—requirements analyses, supporting data, policy recommendations, and the like—originate in interrelations largely among the Ministry of Defense, the State Planning Committee (Gosplan), the military-industry ministries, the department for military industry of the Party Central Committee, and the Military Industrial Commission. The last is also the major coordinating, trouble-shooting body overseeing the defense industrial establishment. Although formally responsi-

[30]Information on this subject is still scanty but the western literature is becoming substantial. See Alexander, 1978; Wolfe, 1979, Chapter 3; Checinski, 1981; McDonnell, 1975, 1979, and 1980; Jones, 1979b; Warner, 1975 and 1977.

ble to the Council of Ministers, the Commission in fact has been overseen by the Party Central Committee secretary for military industry.[31] He also supervises the operations of the military section of Gosplan, an actor in the procurement process that has been neglected in the western literature. The military sector of Gosplan is physically and administratively insulated from the rest of the organization and functions to translate General Staff requirements into concrete economic planning directives, but it also tempers these requirements by conveying the facts of economic reality (Checinski, 1981, p. 57).

3. The general size of the military program for any planning period is surely reviewed and confirmed at the highest political level, the Politburo. Some have speculated that, except in unusual circumstances, where the issue is contentious, Politburo action may only ratify decisions taken within the framework of the Defense Council. The latter organ is still shrouded in mystery, although officially acknowledged since the mid-1970s. The 1977 constitution provides for its appointment by the Presidium of the Supreme Soviet, which suggests that the Council includes at least some government representatives. Garthoff named Grechko, Kosygin, Podgorny, and Ustinov (then the Central Committee secretary in charge of military matters), in addition to the acknowledged chairman, Brezhnev, as members in the early or mid-1970s. Hough cited an unidentified Soviet scholar's claim that two First Deputy Ministers of Defense are also members (Garthoff, 1975, p. 29; Hough and Fainsod, 1979, p. 384). The Defense Council may be the critical intersection of the military-political, military-economic, and military-technological decisionmaking systems—hence also the critical node for consideration of civil-military tradeoffs.

The foregoing is a severely abbreviated description of the main levels of the military decisionmaking hierarchy and the important links between them. Much more can be and has been said on the subject. This brief sketch is intended simply to indicate how self-contained military decisionmaking is.[32] Particularly noteworthy is the apparent insulation of military economic policy from control by the government (as contrasted with the Party) "cabinet," the Presidium of the Council of Ministers, despite the Prime Minister's probable membership in the

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[31]This applies to the period when Dmitrii Ustinov held that post. It was believed that Y. P. Ryabov replaced him when Ustinov became Defense Minister and member of the Politburo. Since Ryabov's removal as Party secretary and appointment to Gosplan, it is not clear whether the Secretaryship for military industry has been filled. The Central Committee department for military industry was headed by I. D. Serbin until his death in February 1981.

[32]Although not nearly as much as under Stalin, who "refused to discuss military matters with us [the Party leadership]; he gave us no training in the management of the army. Defense was his exclusive concern, and he guarded it fiercely." Khrushchev, 1974, p. 11.

Defense Council. Wolfe (1975, p. 15) aptly summarizes: "the internal environment in which major Soviet military policy decisions are made can best be described as a closed system of *defense* decisionmaking within a slightly larger but also closed system of *political* decisionmaking" (italics in original).

In its present form, the high level coordinating and policy forming layer was probably fashioned in the middle or late 1960s, part of a general effort under Brezhnev leadership to increase military efficiency that included restoration of the ministerial framework of defense industry (replacing the state committees pushed through by Khrushchev), the reform in military prices in 1966-1967, and the appointment of Ustinov, first as Central Committee secretary, then as member of the Politburo and finally as Minister of Defense (Holloway, 1971, p. 6). This process of concentration and centralization of management and policymaking functions in the military sphere was probably in part a reaction to Khrushchev's free-wheeling decisionmaking. It may also have been a response to the growing recognition of the severe requirements for command and control in the nuclear era. A Soviet military theorist declared that "the probability of using enormously powerful weapons over great distances and within a short period of time requires high mobility and exceptionally centralized strategic leadership" (Lomov, 1973, p. 138). In the mid-1960s, a number of Soviet military writers expressed the need for the creation of a military-political leadership system along the lines of the World War II apparatus that would enable rapid transition to wartime organization (Spielmann, 1976, pp. 89-90; also, Jones, 1979b, p. 5). However, military requirements for simplicity and clarity, which tend to maximize centralization, conflict with political fears of granting excessive power to one man or one institution. If the Defense Council, supported by the Ministry of Defense and General Staff on one side and the Military-Industrial Commission on the other, is a response to the felt needs of the military, it is apparently also designed to insure ultimate party control.

The picture of the military decisionmaking system presented here is admittedly sketchy, but if its outlines are correct, it provides a basis for evaluation of one of the chief Western hypotheses explaining the Soviet military buildup, what may be called "technological automatism." The notion harks back to Robert McNamara (*New York Times,* September 19, 1967): "There is a kind of mad momentum intrinsic to the development of all nuclear weaponry. If a weapon system works—and works well—there is strong pressure from many directions to proceed and deploy the weapons all out of proportion to the prudent level required." McNamara's nightmare of "mad momentum" is then seen to apply particularly well to the Soviet system of weapons acquisition because of the organizational and funding stability of the network of

design-development institutions and the insulation of the system from pressures by competing claimants for resources.

Western writings on the operation of the Soviet military design bureaus have indeed portrayed a protected environment of weapons development in which generation succeeds generation in orderly and generally uninterrupted progress (Alexander, 1978). Nothing in this process, however, necessarily implies passivity on the part of the top level decisionmakers. Designers surely press for realization of their favored projects, but there is no evidence that weapons programs and procurement levels are determined by designers rather than requirements planners in the Ministry of Defense and the ultimate policymakers in the Defense Council and Politburo. Moreover, the institutions of central policy formation, control, and overseeing described above provide the means for imposition of leadership preferences on the lower levels of the weapon acquisition system. The operation of this central direction is generally concealed from view, but occasionally, as in the SALT negotiations or in the evidence of canceled programs, the curtains part to reveal a glimpse of the existence and functioning of top-level control.[33]

It would be a mistake to picture the military decisionmaking process as one in which major budget priorities and development alternatives are being constantly weighed and decided at the highest levels.

> It is probable that the great bulk of [political-military consultations at the top level] is concerned with incremental decisions—that is with the management of ongoing enterprises. . . . We suffer from a professional penchant for thinking of military policy in terms of large-scale programs and global strategies. (Gallagher, 1975, p. 53.)

The likelihood that policymaking, even at the apex, most often focuses on marginal changes—except for the periodic long-term decisions required in the five-year plan cycle—may keep alive programs that would not survive a general higher-order review.

The military decisionmaking system also has the significant characteristic of sharply limiting access by other groups in the society. Military strategy, force requirements, and force development are exclusively the province of military professionals, perhaps under the general

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[33]Central control does not mean absence of conflict. The level and structure of the Soviet military budget are the result of a number of influences (see note 16 of this section) including the clash of rival military-bureaucratic claims. For example, in the mid-1950s, the Navy (or at least Admiral Kuznetsov) proposed an ambitious and costly expansion of the surface fleet, which the political leadership, probably aided by the other services, rejected. The Navy was given a sop in the form of additional cruisers. Khrushchev, 1974, pp. 25, 32-33.

political supervision of the Politburo subgroup that provides the core of the Defense Council. There is no parallel to the U.S. practice of placing civilians, with their ties to other groups in the society, in key military development and policy positions.[34] A striking feature of the Soviet system is the absence of any competence on Soviet military policy outside the professional military. The very few analysts in the Academy of Sciences—in the Institute on the USA and Canada or the Institute of World Economics and International Relations—concerned with military matters are in fact dealing with the policies of other countries, not their own.[35] Nothing remotely resembling the American military analysis and arms control communities has been allowed to develop in the Soviet Union. Soviet writings in this area are almost entirely by military professionals or by uniformed political officers. Individual initiative by civilian scholars and analysts in the form of contributions to central policy discussions is frowned upon. Even invited papers by civilian specialists are handicapped by denial of access to classified information on existing or future weapons (Glagolev, 1978, pp. 769-770). Of course, questions of national security policy are not subject to even the restricted forms of debate that may appear in the Soviet press on economic issues.

We obviously know little about how the military share of the national budget is determined. It seems reasonable to suppose that the ultimate decisions are taken in the Defense Council and the Politburo. But it seems probable, too, that the decisionmaking process effectively constrains the access of nonmilitary groups with an interest in enlarging their share of scarce resources. The apparent insulation of military requirements planning in the General Staff and Ministry of Defense, with little involvement of other civilian components, along with the pivotal role of the party Central Committee secretary in charge of military industry, makes it difficult for the case for civilian needs and requirements to be fully heard. There seems to be no evidence of such discussions in the only other high level forum, the Presidium of the

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[34]To the best of our knowledge, there is no department in the Central Committee charged with overseeing military policy and military operations, as distinct from military industry or military appointments (the Administrative Organs department). The autonomy of the armed forces in this sphere is limited in principle, to the degree that grand strategy, what the Soviets call "military doctrine," is the prerogative of the political authority; the province of the military is "military art."

[35]The *instituchiki,* a few of whom are former officers, may advise the political leadership directly on issues connected with their areas of research. However, according to a senior staff member of the group, they have been allowed no direct connection to the General Staff and the Ministry of Defense. A Soviet writer claims that scientists and "economic specialists" are often invited to attend Politburo meetings: "they take an active part in discussion of issues under review and express competent judgments" (Vodolazskii, 1979, p. 35). The context suggests that the "issues under review" relate to civil not military policy.

Council of Ministers, where civil economic interests might be more forcefully presented. The only possible exception to this pattern lies in the role of heads of Central Committee departments, and the secretaries to whom they report, dealing with the civilian branches of the economy. Hough argues that these departments are also advocates for "their" ministries and that the Central Committee secretariat is, thus, far from a monolithic apparatus. Numerous questions bearing on resource allocation are settled in bargaining between departments (Hough and Fainsod, 1979, pp. 445-446).

What prevents this process from impinging on defense resource allocation, as Hough acknowledges, is the obedience to the rule of military priority. This begins with the structure of top-level decision-making: there are no civil economic counterparts to the Defense Council and the Military-Industrial Commission, which institutionalizes and legitimizes the overall priority of military over civilian needs. Top-level structure is anchored in a system-wide process, whose reflection can often be seen in conflict over resource allocation. For example, much of the difficulty that both Khrushchev and Brezhnev experienced in carrying out decisions to direct more resources to agriculture or agroindustry (Gustafson, 1981a) may have been due to the inertial power of military priority built into all levels of the hierarchy. We do not know whether the rule is formalized in any fashion—through decree, for example—but both the evidence of available literature and the testimony of knowledgeable emigres confirm its presence throughout the economy. As Yanov picturesquely summed up the situation: in the event of shortages, "it goes without saying that the military possesses the *jus primae noctis,* so to speak" (Yanov, 1977, p. 24).

LEADERSHIP PERCEPTIONS OF BURDEN

This does not mean that human welfare can be or is ignored. Even in wartime there are irreducible consumption and investment needs: "There is a limit below which civilian production and consumption cannot be decreased without imperiling the whole economy" (Sokolov, 1974, p. 86). Even Stalin recognized the guns and butter tradeoff.[36] To his successors, the issue was clearly of paramount importance, although they attempted to conceal their debates on the subject. It was

[36]On the eve of the Second World War, expensive machine tools for the manufacture of large propeller shafts and heavy artillery were ordered abroad. The Commissariat of Trade complained to Stalin that the cost of each of the machines ordered would purchase enough grain to fill the hold of a large freighter. Stalin is reported to have been shaken by this information. "Grain is gold," he said. "We had better think it over." (The tools were ordered anyhow.) Vannikov, 1969, p. 131.

the focus of the struggle between Malenkov and Khrushchev in the mid-1950s, figured in the strategic discussions a few years later, and rose to the surface again in the mid-1960s after Khrushchev's departure. In his memoirs, Khrushchev insists that he was acutely aware of the problem, whether he was cutting (in the mid-1950s)[37] or enlarging (in the late 1950s, early 1960s?)[38] the military budget.

The consumer's interest, as we know, reached a much higher rung on the ladder of state priorities after Stalin's death. Stalin exported grain in 1947 despite conditions of famine; under far more favorable conditions, Khrushchev and his successors imported grain. Nevertheless, Soviet consumers remained conscious of having substantial unsatisfied material needs and desires: Even in the good times during the past 30 years, various consumer goods and services were in short supply; retail prices generally failed to clear the market, resulting in queues and gray markets. At the same time, consumers were aware that the military siphoned off a large share of the national income. To judge by some of the estimates circulating in *samizdat,* popular impressions of the defense burden ran exceedingly high (Bush, 1972). Even those Soviet leaders who believed that the reality of Soviet patriotism was identical with *agitprop* rhetoric probably did not doubt the primacy of consumption for the individual citizen. The latter surely regarded military outlays as instrumental; for this reason, even the military must have recognized that the defense burden had major political content.[39]

We do not know how the Kremlin has perceived the size and trend of the burden. Soviet leaders attempt to keep their discussions of the subject, as of the general area of military activities, screened from the public eye, domestic and foreign. The subject is taboo for the ordinary channels of communication—the scholarly journals and the mass media—visible to the outside world. Whatever glimpses we obtain of debates on military matters are veiled in the esoteric language used for

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[37]"Because we didn't want to give our adversary an opportunity to exhaust us economically without war by forcing us to compete with them in a never ending arms race." Khrushchev, 1974, p. 220.

[38]

> When I was the leader of the Party and the government, I, too, realized that we had to economize drastically in the buildup of homes, the construction of communal services, and the development of agriculture in order to build up our defenses. I went so far as to suspend the construction of subways in Kiev, Baku and Tbilisi so that we could redirect these funds into strengthening our defense and counterattack forces. We also built fewer athletic stadiums, swimming pools, and cultural facilities (Khrushchev, 1974, p. 535).

[39]The Soviet "aristocracy despises the people; but it also fears them. . . . It has to pay the people for its privileges in a fundamentally different way: by feeding and clothing them, putting an end to their age-old poverty, and providing them—for the first time in centuries—with at least a minimum European standard of living." Yanov, 1977, p. 13.

discussion of sensitive matters. Moreover, the picture presented to even high Soviet leaders may be different from that forming in the West.[40] As noted in Section III, concepts of national accounting are different, basic production time series are computed with different weights, and the Soviet price system has known and suspected deficiencies that could distort comparisons and analysis based on prevailing prices. However, it is impossible to believe that Soviet leaders in the know failed to recognize that the USSR's military effort absorbed a large share of national output by contemporary world standards and that the resources allocated to the military sector had valuable alternative uses in the civil economy.

At the same time, at least until the last few years, the military could have been conscious of having made substantial contributions to the state without ignoring consumer interests. In World War II, the armed forces met and overcame the greatest challenge to Russia since the Mongol invasion. As nuclear parity with the United States was attained, the Soviet armed forces probably credited themselves with having made possible real security for the Soviet state for the first time since the Bolshevik Revolution. Military weakness, the uniformed officer might argue, made possible the humiliation of the 1962 Cuban missile crisis; growing military capability enabled the USSR to protect the revolutions in Angola, Ethiopia, and Afghanistan, and to refuse to submit to the United States in Cuba in 1979. The increasing armed might of the USSR forced the developed capitalist world to recognize the change in the real balance of forces with the socialist camp. This not only opened up a number of political opportunities, but even economic ones; the change in the correlation of forces brought capitalist representatives to Moscow eager to deal on favorable terms and kept the West Europeans and Japanese from fully joining in American measures of economic warfare in the wake of the Soviet incursion into Afghanistan.

As for the costs to the economy, the generals might point out that more than one-third of all gross fixed investment was being allocated to agriculture and agricultural-related industry. For 25 years after the death of Stalin agricultural output increased annually at a rate of about 3½ percent, while population was growing at barely 1.4 percent per year (Diamond and Davis, 1979, pp. 28-30, 40, 49; Carey and Havelka, 1979, pp. 61-64).[41] Per capita consumption rose even more rapidly than per capita agricultural output, closer to 4 percent (Schroeder and

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[40]"Need to know" seems to be tightly enforced in the Communist world. On defense costs, see Loebl, 1971, p. 20, and his letter to *Business Week*, March 28, 1977; on strategic forces, see Newhouse, 1973, pp. 55-56.

[41]For population growth, see Feshbach and Rapawy, 1976, p. 115.

Denton, forthcoming). Defense was the first priority, but it had left enough in the resource allocation pot to secure an uninterruptedly rising standard of living.

At least this was true until the mid- and late 1970s. Then the problems of continuing the advance in living standards were sharply aggravated. The very maintenance of existing levels came into question, with acute food shortages and even scattered ad hoc rationing. The daily search for food supplies seems to have become a powerful, mass preoccupation (Feifer, 1981). For the first time in this generation, the middle class was losing hope for an improvement in its living conditions (Bushnell, 1980). The overall rate of economic growth turned down sharply. The USSR seemed to be entering a time of troubles that would require reconsideration of basic assumptions and future policy options.

V. PROSPECTS

DILEMMAS AND OPTIONS

The 1980s confront the Soviet policymakers with several clear, unavoidable challenges, originating in both foreign and domestic contexts. Externally, the single most important factor relevant to the defense budget is the impending buildup of the U.S. armed forces, accompanied by a more militant American foreign policy around the world. Internally, two characteristics of the policy environment are likely to be dominant—leadership change and economic downturn. The future of the Soviet military buildup and of the burden of Soviet defense must be considered in these frameworks.

Undoubtedly, the 1980s will see new opportunities for Soviet exploitation arising from the instabilities of the Third World. Even in Europe, Moscow can manipulate inter-allied differences on trade and security policies for its advantage. However, the Kremlin must recognize by now that a formidable external challenge is in the making. A crisis of detente was brewing considerably before the invasion of Afghanistan and even before the battle over U.S. ratification of the SALT II treaty, perhaps since the 1973 Middle East war. The monotonic downturn in real U.S. defense spending ended in 1976 and the trend has been moderately up since then. Now a new American administration is intent on sharply accelerating that upturn. Around the globe, the Kremlin sees an American hand everywhere in rising threats to Soviet security. The renewed American effort to contain—if not, indeed, to reverse—further Soviet expansion in the Third World involves setting up a chain of bases in the Middle East, from Egypt to the Indian Ocean. In Moscow's perception, the first steps in the forging of a Sino-American military alliance have been taken, while Japan is being pressured to step up its military spending and the nations of Southeast Asia are incited against communist Vietnam. The Polish crisis raises major questions about the stability and reliability of the Warsaw Pact, the guardian of the USSR's western flank, at a time when the Reagan administration is pushing hard for the modernization of NATO's (European) theater nuclear forces. American strategic nuclear arms are also to be strengthened, but the SALT II treaty gathers dust and Washington appears to have little interest in renewing SALT negotiations. As the 1970s drew to a close, the United States seemed increasingly less likely to behave in the 1980s as Moscow had expected in the halcyon days of SALT I and the Declaration on Basic Principles of Relations Between the Union of Soviet Socialist Republics and the United States.

The first few months of the Reagan administration make that unlikelihood a near certainty.[1]

On the domestic side, perhaps the greatest potential influence on the policy environment will be leadership change. Because of Brezhnev's age and poor health, the question of the "succession" to the top leadership has been a subject of considerable interest in the West for the better part of the past decade.[2] But it is not only Brezhnev who is showing his years: The USSR is ruled by a gerontocracy. The retirement, then death, of Kosygin in the fall of 1980 and his replacement by a man one year younger make vivid the likelihood of a wholesale change of leaders at the top within the next few years. The average age of the second and third echelons of the leadership is only somewhat lower, and a number of observers (for example, Bialer, 1978) have forecast a generational change in the system's directors during the 1980s.

The forthcoming succession appears unique in Soviet history because the longevity of the post-Khrushchev regime, the advanced age of a large part of its leadership, and the stability of elites under the top level that has been a deliberate policy of the Brezhnev oligarchy all point to considerable turnover in important policy and administrative positions even in the first half of the 1980s. Bialer (1978, p. 197) speaks of the "massive replacement at the levels of the top leadership and central elite, which will certainly accompany if not the first then the second stage of the upcoming succession."

Retardation of economic growth has been a fact of Soviet life for about as long as the military buildup, but the last two or three years have seen particularly meager results. After Khrushchev's ouster, the new regime at first succeeded in sustaining or even slightly raising the growth rate of GNP, compared with the level of the last years under Khrushchev—in CIA estimates, from 4.9 percent per year in 1961-65 to 5.3 percent in 1966-70. However, the aggregate growth rate dropped below 4 percent in 1971-75 and below 3 percent in the last five years. GNP increased only 1.2 percent per year on the average in the last two years. At that rate of increase, an average "defense burden" of 13 percent, with the military budget growing at 4 percent per year, means that more than half the increment in total output is being reserved for

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[1]For further discussion of the problems of Soviet-American relations seen from Moscow, see Gelman, 1981.

[2]Ten years ago, for example, Myron Rush (1971) wrote about "Brezhnev and the Succession Issue." Even the more serious articles and papers since then would be too numerous to list. The *Journal of International Affairs* devoted a special issue to "Leadership Succession in Communist States" (Fall/Winter, 1978), of which three articles concerned the Soviet Union. See also Simes and Associates, 1978.

military purposes. From both political and economic perspectives, such a development seems dangerous for the Soviet leadership.

As is by now well known, prospects for the 1980s are bleak, because of a demographic crimp (the second-wave reflection of World War II population losses plus diminishing postwar birth rates) (Feshbach and Rapawy, 1976),[3] the peaking and (possibly rapid) decline of Soviet oil production,[4] increasing costs of other raw material production, periodic crop failures, continually rising capital output ratios, and generally declining factor productivity. In view of the problem areas mentioned, the economy is unlikely to perform more effectively in the 1980s than in the 1970s. The Eleventh Five-Year Plan directives approved at the 26th Party Congress in February 1981 call for a growth rate of about 3½ percent per year for national income (net material product utilized), based on an almost equal rate of improvement in labor productivity. However, such a five-year average has not been attained in the USSR since the early 1960s.[5] Failing an unusual run of good harvests or other natural stroke of fortune, and unless the implied target for growth of employment in material product sectors of about 0.5 percent per year can be significantly exceeded (which seems quite unlikely),[6] aggregate output is likely to grow no more rapidly and perhaps even more slowly than in the last half of the 1970s.

What options will the new post-Brezhnev leadership have to cope with the apparently worsening prospects of the Soviet economy? Unfortunately for that leadership, the answer seems to be: the same options their predecessors faced. The new team will probably find the choices even less palatable than the Brezhnev regime did.

The Soviet economy may be viewed as confronting a growth dilemma arising from the simultaneous retardation in the growth of inputs

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[3]Moreover, the able-bodied population increases will take place in the "wrong" areas, Central Asia and the Caucasus.

[4]The initial CIA pronouncements in this vein were published in CIA, 1977a and 1977b. For a newspaper account of the Agency's recent views, see "CIA Alters Its Soviet Oil Forecast," *Wall Street Journal,* May 18, 1981, p. 31. Gas production has been buoyant but the coal industry will probably lag behind. See CIA, 1980b; also Dienes and Shabad, 1979.

[5]The comparison is actually with figures of (Western-concept) GNP per man hour of input from the total civilian labor force, as estimated by CIA, 1980c, p. 59, and 1978b, p. 46. Over longer periods of time, this series should not behave very differently from that of net material product utilized per employee in the "productive" sector, the Soviet labor productivity concept, if there is no significant change in average number of hours worked per employee per year and output per employee in the service sector moves approximately with that in the material product sector.

[6]Feshbach (1981) has projected an increase in the total civilian labor force (excluding private sector agriculture) of only 0.44 percent per year in the 1980s. Because the net increments to the population of working age will be smaller in the second half of the decade than in the first half, the rate of growth of the labor force may be expected to be somewhat higher in the Eleventh Five-Year Plan period than in the succeeding Plan period.

and in the productivity of use of inputs. Productivity was never a major factor in Soviet growth, but in the good old days it could be slighted because labor and capital flows were expanding rapidly. According to CIA estimates, rates of increase of total inputs have been falling almost steadily since the middle 1960s, from about 4½ percent per year then to about 3½ percent now. At the same time, growth of total factor productivity (output per unit of combined inputs) has been low even in good years—a modest 1 percent per year average in the 1960s; it has been negative in every year but one since 1973 (CIA, 1980c, p. 59).

Acceleration of Soviet economic growth in the traditional fashion would require a higher rate of input increase. However, demographic constraints on growth of the labor force are increasingly severe; raising the rate of investment to intensify the substitution of capital for labor would mean sacrificing the interests of either the military or the consumers. Moreover, high and growing capital-output ratios reflect diminishing yields for increases in the rate of investment, requiring even larger sacrifices on the part of consumption or defense.

The problem of high capital-output ratios points to the other horn of the dilemma, involving faltering productivity growth. Instead of attempting to continue the policy of feeding ever larger capital and labor inputs into the "growth machine," the regime could concentrate on improving the efficiency with which inputs are combined. However, the changes in trade policy or internal economic organization required to significantly improve productivity are probably unacceptable to the Kremlin on political-ideological grounds.

To augment the volume of resources allocated annually to civil economic growth and consumption, the Brezhnev regime could have cut back on military spending. That approach was never taken—possibly, not even considered. Perhaps the arms control agreements to which the USSR was a party, from the Limited Nuclear Test Ban treaty through SALT I and the SALT II negotiations, helped prevent the military budget from growing still more rapidly, although that is probably not demonstrable. But there was no apparent easing in the pace of the Soviet military buildup in the heyday of detente. Marginal cutbacks, as is indicated below, would not have contributed much to civil growth. Major reductions would surely have been opposed, for the reasons set out in the previous section. Reallocation of resources away from the military would have damaged the interests of the most powerful coalition in the society. As long as the economic problem seemed manageable, it is hardly surprising that the military budget remained intact.

Instead, in the first decade of its rule, the Brezhnev regime pursued, successively, two different routes to higher productivity. The leadership first chose the path of economic reform. However, the much-heralded 1965 reform proved restricted in scope even at its inception.

hostile or indifferent implementation drained it of much of its limited significance.[7] A new reform program was announced in July 1979. So far, most observers in the West have been skeptical of the reform's prospects or usefulness. One of the few who does see merit in it is cautious in setting forth its presumed benefits (Nimitz, 1981).

In the early and mid 1970s, an attempt was made to import the solution from the West. Because Soviet industry seemed incapable of generating and sustaining a rate of innovation that would raise the faltering rate of productivity growth, it appeared that the Soviet Union would have to import the augmentation in productivity in the form of Western advanced technology. Scholars are still at odds about how much stimulus to Soviet economic growth actually resulted (Hanson, 1978b; Weitzman and others, 1979). It is clear that the same structural deficiencies of organization and incentive that help account for the slow pace of technical progress, at least as measured in productivity calculations, also constitute a major barrier to diffusion of the imported technological innovation (Gustafson, 1981b).

If radical economic reform is politically unacceptable and technology imports are inadequate, the only other policy for coping with the sharp decline in productivity appears to be neo-Stalinism, which is used here to designate any of several forms of reactionary impulse, whatever their ideology and political coloration (Cohen, 1980; Spechler, 1979; Yanov, 1978). The justification for lumping these various tendencies together, despite their different socio-political character, is a common orientation in political economy. The common denominator is indeed reaction—against markets, the actual ones of the "second economy" and the theoretical ones of the market socialist reformers, against corruption and bribery, against "speculators" and "parasites," and back to the purer forms of a bygone Golden Age. To neo-Stalinists, the essence of the national economic problem is indiscipline, and the key to national economic regeneration is restoration of discipline. Its adherents may offer neo-Stalinism as the only way to meet the increasingly serious external threat compounded by the internal danger of economic degeneration and collapse of morale.

It is clear that "back to Stalinism" has some, perhaps even widespread, appeal under present conditions. Many observers have noted that as popular frustrations rise, the memory of Stalin is refurbished. One reason why this alternative has not seemed feasible until now was that a real *Vozhd* ("boss"), an iron hand at the helm, was a precondi-

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[7]Schroeder, 1979; also CIA, 1977c. Nimitz (1981) apparently believes that the 1965 reform was a net loss and asserts that "by the end of 1969, disillusion with the 1965 reform was total, and party opinion was divided on whether to move forward or backward."

tion. Without it, an attempt to reverse course could backfire, leading to disruption of the present elements of growth-sustaining initiative and to Schweikian implementation of central directives. According to Yanov (1977), prominent individuals, institutions, and groups have developed vested interests in "detente" in both its foreign and domestic aspects. Although the power of these forces is difficult to assess, the Brezhnev consensus could have been threatened from this flank as well as the other. Apparently, the conservative forces were not sufficiently strong to crush the opposition.

The Brezhnev regime has often been described as one in which authority derives not from terror and charisma but from a balance of (potentially shifting) coalitions based on consensus. Radical policy change, whether to the right or the left, constitutes a threat to the survival of a regime whose

> dominant political tendency . . . is defence of the *status quo*—a desire for predictability, stability, and security of tenure, and the avoidance of fundamental political change either in a radical reformist direction or in a Stalinist direction. (Brown, 1975, p. 232.)

Accordingly, the Brezhnev leadership has found refuge so far in the economics and politics of "muddling through." Economically, such a policy is anchored in the acceptance of lower growth rates, a factor that has often been overlooked by western observers.[8] A major element has been small-scale reform—frequent tinkering with organizational mechanisms, planning indicators, or incentive systems. It is not clear whether this effort to reform without really reforming has helped slow down the deceleration of productivity or has been dysfunctional on balance. In any case, it has been a significant feature of recent Soviet economic history. Another has been considerably greater dependence on foreign trade—grain and technology imports paid for by exports of gold and fuel, to simplify the complex reality—than most Western observers ever considered likely. "Muddling through" also relies heavily on exhortation, witness the extraordinary "Letter to the Soviet People" issued by the CPSU Central Committee, the USSR Council of

[8]The common western view of the Soviet growth dilemma probably errs with respect to a major assumption—that Soviet policymakers aim at restoring growth rates to the level of the 1950s, or even the 1960s. Two decades of lower economic growth have now been experienced and one may doubt whether the pre-1970 record continues to be viewed as the norm. If the trend to be extrapolated is based on a more recent period embodying less utopian assumptions, the gap between aspiration and reality, and hence also the acuteness of the growth problems, may be less than is commonly perceived in the West. Moreover, a poorer Western record of late means less of a challenge to the Soviet self-image, as noted below.

Ministers, the Trade Union Central Committee and the Central Committee of the Komosomol in *Pravda,* January 14, 1978.[9] It may also have included an effort to hold down the *growth* of military expenditure,[10] because Soviet leaders are certainly conscious of the burgeoning costs of new military technology.

SUCCESSION AND THE OUTLOOK FOR CHANGE

If it is correct to characterize the economic policy of the USSR today as that of "muddling through," what prospects for change are there when Brezhnev and his group leave the scene? The succession process in the Soviet Union, as we know, has not been institutionalized and standardized. Therefore, it carries with it a degree of unpredictability that "opens up the [political] system to initiatives for change in basic policies which would be unthinkable or very difficult to institute in normal times. The succession period is conducive to sudden switches in policy" (Bialer, 1978, p. 188). Simes (1978, p. 218) carries this reasoning further: "There is a growing acceptance among students of Soviet affairs of the idea that a period of innovation and experimentation in the USSR is very likely." Change is needed because tough choices have been avoided for too long; change is possible because the elite has had ample time "to rest from Khrushchev's endless reorganization and . . . from Stalin's purges."[11]

The difficulty with this argument is that it ignores the reasons why policy boldness has been avoided under Brezhnev. It can hardly be said that the regime has been blind to the growing economic problems, to the pervasive indifference and cynicism of large parts of the population, to the ethnic-national frictions, etc. The regime has been well aware of these and other difficulties and has devoted a considerable amount of leadership and expert attention to their study. However, the "solutions," such as they are, have involved unfavorable tradeoffs. There are

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[9]The watchwords of that document are "socialist emulation," organization, and discipline as the means to increasing efficiency. The document concludes with appeals to each segment of the society: to "the heroic working class, to continue to be in the vanguard of nationwide socialist competition"; to "our glorious kolkhoz peasantry, all rural toilers: actively join the movement to achieve the highest yield of agricultural crops and productivity in stockbreeding"; to "the Soviet intelligentsia . . . strive to accelerate scientific-technical progress"; even to "dear Soviet women: Your work in the factory, your maternal concerns for the family and the upbringing of children have won universal gratitude and respect! Participate even more actively in public life and creative work!"

[10]Whatever Soviet savings may be attributed to adherence to the SALT I agreements should be placed in this category.

[11]Apparently, Bialer (1980) believes that the Soviet leadership recognize the necessity of structural reform to prevent economic stagnation and that the Brezhnev successors will have the political will to accomplish the required transformation.

therefore sharp policy dilemmas, particularly with respect to the sacrifice of political controls involved in major economic reform or the cutback in the rate of military buildup and modernization connected with a substantial redirection of resources. In short, such "solutions" have involved the sacrifice of interests of the most powerful groups of the oligarchical system. The forthcoming succession process, no matter how it develops, will not see the sudden submergence of these groups; their influence will probably remain dominant and their interests preeminent. If major change in the pattern of satisfaction of interests is to take place, it will have to come from deliberate self-denial within these groups.

The prospects for such a sharp policy change depend on a perception that "muddling through" has exhausted its potential for contributing to the national welfare and has become instead a clear and present danger. "Muddling through" suggests the absence of sophisticated rationality in policymaking but also a reliance on blind luck.[12] Dilemmas of policy, when options are costly, are the breeding ground for "solutions" by muddle, but if the dilemmas become acute, if luck runs out, temporizing may be perceived as a dangerous luxury. Under the most favorable circumstances, Soviet economic growth prospects through the mid or late 1980s are worse than at any time since World War II. Bad luck—several harvest failures, more rapid than expected depletion of currently exploited oil fields, difficult winters with a resultant extra strain on overburdened transportation facilities, etc.—could turn a difficult problem into a major crisis. Similar pressures on the diminishing increments of output could result from such a magnification of the external threat (in Moscow's perception, of course) that the Soviet leadership was convinced its military efforts must be intensified significantly.

As a policy for the future, "muddling through" in the 1970s manner imposes additional costs that conservatives must take into account. Among them are the threat to future military capabilities and the political costs of a policy relying heavily on trade with the western world.[13] The first set of considerations arises from the severe downturn

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[12]In addition, there may be some expectation on the part of the Soviet leadership that the current and impending troubles are transient, that somewhere in the next decade or perhaps early in the next century, the tunnel will really end. Such a hope would be based on the improvement in the demographic picture that will take place in the mid-1990s and on the abundant natural resources of Siberia that could be exploited when the necessary infrastructure is eventually completed.

[13]Another consideration is the self-image of the regime. Traditionally, Moscow has viewed the rate of economic growth as an indicator of the state of competition between the two systems. Khrushchev made much of this in the 1950s. Little is heard of this theme now, but the rate of expansion of the Soviet economy relative to that of the major capitalist states is still seen as a measure of the progress of the socialist world in its

in the rate of investment. As was noted in Section III, a keystone of Soviet economy policy from Stalin on was that a strong military establishment is built on a foundation of a powerful, broad-based economy. Prolonged restraint on capital formation, even with preference for heavy industry retained and even if such a limitation is partly intended to help weed out unproductive investment, must risk reduced capability to satisfy future military demand, particularly if the need should arise for crash buildups.

Moscow's attempt during the 1970s to enlist the aid of the western world in the solution of the Soviet economic dilemma created a new predicament. Importation of western technology was designed to boost productivity where internal efforts yielded indifferent success. The reason was the persistence of systemic barriers to domestic innovation and diffusion of new technology, whose removal would apparently require thoroughgoing and politically distasteful reform. Thus, conservatives could initially be in favor of seeking wider trade relations, or at least they could recognize the economic attraction of this course.[14] However, tried on a small scale, the policy cannot work miracles, because the known problems of diffusing new technology in the Soviet economy also make it improbable that small injections of foreign know-how, in embodied or disembodied form, will have significant multiplier effects. Pursued on a substantial scale, the policy would create important dependencies on the West, foreshadowed in imports of grain and particular classes of machinery, as well as in the need for Western credits to finance large volumes of technology imports. Despite the loopholes in the Carter administration's embargos after the Soviet invasion of Afghanistan, Soviet leaders in 1980 were painfully reminded of the costs of dependency.[15]

Is the next generation of Soviet leaders more likely to reconsider

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historical conflict with capitalism. More rapid and uninterrupted socialist growth is supposedly both a visible indicator of the inherent superiority of a socialist order and a beacon attracting the new states of the Third World to the socialist side. In the same vein, the economic progress and power of the socialist world is supposed to assure the developing states of the historical correctness of noncapitalist development paths and—through trade, economic aid, and, of course, arms transfer—provides the competing magnetic pole in the international economy protecting the fledgling movements and states from being swallowed by imperialist sharks. Naturally, this self-image has a domestic dimension as well, in which pride in the outstripping growth of the USSR has been a boost to internal political cohesion and popular morale. Fortunately for Moscow, the competition offered by the West in this regard has weakened in recent years. Until western economic growth prospects brighten, Soviet retardation will be somewhat less of an embarrassment—on these grounds, at least—to Kremlin leaders.

[14]It has been argued that Kosygin was skeptical about trade as a policy alternative because he recognized the need for internal reform. Friesen, 1976, pp. 49-53.

[15]The Polish crisis may have similar effects, because the Soviets probably blame Warsaw's industrial modernization drive of the 1970s, financed by heavy borrowing abroad, for the erosion of communist power in Poland.

the 20-year commitment to a sustained rate of military modernization and expansion? As a solution to the growth problem, the option of reallocation of resources from military to civilian uses presupposes that resources now used in the military sector can be converted to civilian use without substantial loss of productivity. In one dimension, this is a question of time. With the best will, reallocation of resources from the military to the civilian sector cannot be significant in the short run.[16] The extended gestation period of military projects, which may have a tendency to lengthen with the increasing sophistication of much contemporary military equipment, means that substantial reallocations can be envisioned only across five-year, or perhaps even longer, plan periods. Given the evidence of large numbers of weapon development programs underway and the increasing cost of new hardware, this is one reason why CIA extrapolates current military expenditure growth rates at least until the mid-1980s.[17] The other dimension is institutional and concerns the possible special environment in which military R&D and production takes place. This issue was discussed in Section II. It is still controversial and much more research will be needed to suggest the resolution.[18]

Assuming the difficulties away, how large a reallocation might be undertaken and to what economic effect? An approximate view of the magnitude of the possible reallocation can be derived as follows: Military expenditure in 1980 at current prices may be conservatively estimated at about 85 billion rubles.[19] The resource savings in billion rubles at 1980 prices resulting from a reduction of the rate of increase from the expected 4 percent per year would be:

Reduction in growth rate to (percent per year)	Savings in			
	1985	1990	1981-85	1986-90
2	10	22	28	85
0	18	41	54	158
-2	27	56	79	221

[16]This has to be qualified. Although facilities and equipment are least fungible in the short run, some basic materials in short supply could help alleviate bottlenecks in the civilian sector if they were reassigned from military production.

[17]"Over the next five years or so, Soviet procurement expenditures will be determined primarily by programs already in train" (CIA, 1979c).

[18]Assuming, however, that the military sector is more efficient than the civil sector, redirection of resources out of the former and to the latter will entail a loss of productivity no matter how the controversy is resolved. If Nimitz is correct that the productivity difference resides in a basic characteristic of economic organization, the resource reallocation will mean a tangible net drop in output. If Ofer is right and the differences are largely due to priority treatment, reallocation unaccompanied by restructured priorities would still result in some output loss.

[19]CIA estimates military spending in 1980 in 1970 prices at 70 billion rubles (this is

Thus, if military expenditures were to increase at 2 percent per year instead of 4 percent, the savings in the first five years would amount to 28 billion rubles. If outlays were instead frozen at the 1980 level, the savings over the same interval would be almost twice as large. Continuation of the reduced rates of growth through the second half of the 1980s would result in sharply increased savings—roughly three times as large in 1986-90 as in 1981-85 for each category of reduction.

More specific assessment of the effect on rates of growth of aggregate output and its components requires a fairly detailed sectoral breakdown of the reallocation from the military sector and use of a disaggregated model of the economy. A CIA simulation with SOVSIM published in 1979 involved a cut in military manpower by more than 10 percent (500,000 men) between 1980 and 1985 and a reduction in the baseline-case growth rate of military expenditure from 4 to 2 percent per year in that period. However, there was a negligible effect on the average annual rate of growth of GNP in 1981-85, largely because the contribution to aggregate input flows was so small—0.1 percentage point increase in the average annual growth rates of both employment and the active capital stock.[20] The effect on consumption was somewhat stronger, and the stimulus to growth in later years was also more significant. The authors conclude that "important sectors of the economy could still benefit from reduced competition with defense for key resources, and this could have greater potential for improving growth beyond 1985" (CIA, 1979b, pp. 10-11).

Bond and Levine (1981) have performed several experiments with SOVMOD-4 for this purpose. For the period 1981-85, they calculated two variants of a baseline case, in which military expenditures were assumed to grow at 4.5 percent: The growth rate of military outlays was set at 7.5 percent per year in the one variant and at 2.5 percent in the other. The Bond-Levine results also show negligible change in the growth of industry, agriculture, or GNP during these five years and only a slightly more perceptible effect on growth in the second half of the decade. Again, the main reason is the small size of the increment to inputs. However, there is a pronounced effect on consumption per capita. Acceleration of the Soviet defense buildup to 7.5 percent per year, compared with the base case, would lead to a drop in the rate of growth of consumption per capita in 1981-85 from 2 to 1¼ percent per

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the broad definition of Soviet defense spending, as the Soviets themselves might calculate it). *CIA Estimates,* 1980, pp. 6-7. I assume an inflation rate in the 1970s of 2 percent per year, which seems a fairly conservative estimate.

[20]The gross fixed capital stock of the whole economy at the beginning of 1980 totalled 1638 billion rubles at 1973 prices (TsSU, 1980, p. 54). Thus, the cumulated resource savings over the interval 1981-85 from a freezing of military expenditures amount to 3 percent of the 1980 capital stock.

year and to a decline in the next five years from 1.4 to 0.4 percent; slowing down the military buildup to 2.5 percent per year would increase the growth rate of per capita consumption from 2 to 2.3 percent in 1981-85 and from 1.4 to 1.8 percent in the second half of the decade.

In the late 1970s, persistent and at times acute shortages of food and other consumer goods developed across the urban map of the USSR, at a time when consumption per capita, by Western measure, seemed to be increasing at about 1½ to 2 percent per year. These shortages were accompanied by rising dissatisfaction and occasional disorders. Inefficiencies of the distribution network, including leakages into the "second economy," added to the pressures of guaranteed supply to the privileged elites, seem to require at least 2 percent per year growth in per capita consumption to prevent significant shortages. The Bond-Levine baseline projections indicate that it takes a tangible cutback in the rate of the Soviet military buildup in 1981-85 to get above the "minimum" per capita consumption growth level and a still larger sacrifice of military effort to attain the same end in 1986-90.

Because the baseline case presupposes a return to nonagricultural, nonenergy productivity levels of 1968-78, the period before the recent poor performance of many key sectors of industry and transport, failure to improve the record of the last few years would mean a lowering of the projected baseline rates of growth and a further squeeze on consumption. In this situation an attempt to intensify the military buildup would reduce growth of per capita consumption to the vanishing point in 1981-85 and produce a negative rate of growth—absolute decline—in 1986-90.

Because resource allocation policy in the USSR as elsewhere is generally made on the basis of marginal rather than average measures, the indicated changes in the assumed rate of growth of military outlays may have policy importance because they substantially affect the annual proportion of the *increment* in GNP allocated to defense and the corresponding share of the increment in machinebuilding and metalworking (MBMW) output allocated to defense procurement. For example, the latter share is 35 percent on the average in 1981-85 and 54 percent in 1986-90 in the baseline projection but jumps to 45 and 78 percent, respectively, under the accelerated military buildup; the cutback in defense growth reduces the military claim on the MBMW increment to 26 and 34 percent. In the low-productivity variants, acceleration of defense growth increases the defense claim of the MBMW increment to 60 percent in 1981-85 and to 117 percent in 1986-90—i.e., the *absolute* level of civilian MBMW allocations would have to be cut back; the military siphons off 65 percent of the increment to GNP in 1981-85; even at baseline productivity, the claim would be a hefty 44 percent.

The Bond-Levine calculations evidently assume proportional changes in the total profile of military expenditures. However, it would be interesting to test a variant in which the change were exclusively in the investment component of military expenditure—military procurement and construction—because of its closer relation to the critically short civilian fixed capital investment. In the Bond-Levine projections, the difference between military outlay growth rates of 7.5 or 2.5 percent per year is only four-tenths of a percentage point in the growth rate of fixed investment in 1981-85 and no more than eight-tenths in 1981-86. But if military procurement and construction were frozen at the 1980 level through the first half of the 1980s, instead of continuing to grow at an annual rate of, say, 4 percent, the cumulative savings (about 30 billion 1980 rubles)[21] would be equivalent to probably 10 percent or better of all industrial investment slated for the Eleventh Five-Year Plan period and would exceed the planned *increment* of industrial investment in 1981-85 compared with 1976-80.[22] It is, of course, still true that the resource savings are a small proportion, 2 percent, of the total capital stock at the beginning of 1980. However, they are equivalent to about 6 percent of the capital stock of industry alone at that date (TsSU, 1980, p. 54). The rate of growth of the industrial capital stock, which has been falling steadily (by five-year averages) since the 1950s, was down to about 7½ percent in the last half of the 1970s and will probably fall in 1981-85 to 6½ to 7 percent.

Cuts in military spending of the magnitude suggested here would hardly be welcome in the party-military-industrial complex. It is conceivable that reductions at the margin—involving some program stretchouts and postponements—although yielding correspondingly smaller savings, would be undertaken to ease particular civilian bottlenecks and prevent more general deterioration. Perhaps the leadership recognizes that a reduction of procurement growth even to zero

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[21]Previously, total military expenditures in 1980 at current prices were estimated as 85 billion rubles. According to CIA, since 1965, "about half of the estimated Soviet defense spending" has gone to procurement and construction. (*CIA Estimates*, 1980, p. 7).

[22]According to the approved text of the Eleventh Five-Year guidelines (*Pravda*, March 5, 1981), total investment in the national economy is to be increased by 12-15 percent during the Five-Year Plan period, whereas investment in 1976-80 totalled 634 billion rubles. Thus, the Eleventh Plan target is 710-729 billion rubles. Industrial investment accounted for 35 percent of the total in both the Ninth and Tenth Five-Year Plan periods (TsSU, 1980, p. 367). If this proportion were maintained in 1981-85, the Plan goal for industrial investment would be roughly 250-255 billion rubles. Industrial investment in 1976-79 came to 176.8 billion rubles (TsSU, 1980, p. 367) and, as indicated earlier, to about 50 billion rubles in 1980; hence the 1976-80 sum was about 226 billion and the planned 1981-85 increment is 24-29 billion.

would still keep additions to existing hardware stocks flowing at a rate that must, for a number of weapon systems, continue to surpass U.S. levels for several years to come.[23] However, all that we have learned about the political context of Soviet defense decisionmaking suggests that the idea of drastic cuts would be abhorrent to the leadership. It probably does not believe that its military capabilities are adequate to the demands of preparing for the contingency of war across the broad range of conflict possibilities. It is most likely becoming increasingly concerned about the growth of the external threat posed by the American buildup and would be fearful of the signals that would be conveyed to its allies and adversaries by significant cutbacks. All in all, it would probably take an economic crisis and the perceived threat of internal political-social unrest for the Kremlin to weigh so drastic a policy reversal.

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The resolution of these tensions—between the need to stem the economic downslide on one side and the domestic and foreign political-military considerations on the other—will be extraordinarily difficult, for the Brezhnev group or for its successors. The attraction of inertia seems powerful. However, one must also allow for the "concentrating" power of threats to political stability.[24] Breslauer (1978, pp. 17-18) is impressed by the parallel to the Stalin succession:

> The ethos of the Soviet regime today is somewhat similar to what it was in 1953: explicit fear that policy *immobilisme* is fraught with explosive potential ... fear of the masses will buttress potential forces pushing innovative programs.

One can only wait and see, but historic turning points are rare by definition.

AFTERWORD: SOME U.S. POLICY IMPLICATIONS

It may be appropriate to conclude this essay with some thoughts on the implications for U.S. government policy of the foregoing discussion

[23]Just as a change in the rate of growth of civilian investment has a lagged effect on the rate of growth of the capital stock and a still longer-delayed effect on the output yielded by the stock, so a reduction in military expenditure would be reflected in the growth of the military capital stock only after some time and would have a deleterious effect on military capability only after a longer interval.

[24]Samuel Johnson remarked that "when a man knows he is to be hanged in a fortnight, it concentrates his mind wonderfully."

of the prospective Soviet defense burden. If the Reagan administration persists in its present course of rebuilding American forces at an accelerating tempo and of attempting to mount credible challenges to Soviet power around the globe, there will probably be some voices in the Kremlin urging a greater Soviet military effort to counter the increased threat. The point was made in Section III that the Soviet military buildup of the last 20 years cannot be explained simply as a reaction to the spending trends of the USSR's major adversaries. Instead, this essay has looked for the explanation in Soviet leadership perceptions, political structure, and the decisionmaking environment. Of course, this does not mean that Soviet leaders ignore adversary policy and behavior, only that these influences are refracted through a particular set of prisms and that the resultant perceptions are but one element of the decisionmaking equation. Some elements of the leadership are likely to perceive a vigorously pursued U.S. policy of arms racing and foreign policy militancy as unacceptably intensifying the threat to Soviet security.

If these elements persuade the Politburo to step up Soviet military spending, the effect on the economy and society could be severe. The prospects for significant economic reform would certainly be reduced. More likely, the tensions generated by the resource shifts in favor of the military would strengthen the tendencies to neo-Stalinism. Of course, the external face of Soviet policy would become even more hostile.

On economic and social-political grounds alone, therefore, the Kremlin might resist the internal calls for a military effort to match the renewed American challenge. These pressures *might* be resisted even on political-military grounds. The "peace program" of the 24th Party Congress in 1971—the Soviet notion of detente—represented in part a strategy for curbing American activism and restraining the growth of American military power through relaxation of tensions, arms control agreements, and cultural-economic-political interchange. Such a policy reflected a realization of the dangers of unrestricted military competition with the United States. These dangers will certainly continue to be weighed in Moscow, which still respects the medium and long term mobilization capability of the American economy. The Kremlin could, therefore, continue to seek means to restrain the American buildup rather than attempt to match or surpass it. Apart from any direct efforts to persuade the Reagan administration to slow down its military effort and to moderate its global activism, Moscow will probably continue to see opportunities to constrain the growth of the U.S. threat by affecting the perceptions of Washington's NATO allies, who are receptive to evidence that Soviet intentions are moderating. There is already a considerable Soviet effort to convince Europeans of the importance of maintaining detente, negotiating on theater nu-

clear forces, and canceling NATO plans for deployment of cruise and Pershing-II missiles. It would not be at all surprising if in the near future the Politburo launched major new arms control proposals. Given the great dangers and high costs of the alternative policy, the Kremlin will very likely pursue a "peace" campaign to reduce the security threat posed by the policies of the new American administration *as long as that option holds out any hope of success.*

This suggests that U.S. government policy has an important role to play in influencing Soviet policy, to hold the Kremlin to a "peace" campaign rather than impel it in the direction of a military budget response, or even, as some Western analysts have warned, military action to exploit a limited "window of opportunity." If U.S. policy can offer persistence in rebuilding American military power as well as prudence in the enunciation of U.S. political-military objectives and in the use of American military forces, if Washington can make clear its recognition of the necessity of both arms expansion and arms control, then it may be possible to keep Soviet reaction from escalating dangerously.

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