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8 July 1974

Mr. Edward W. Proctor  
Deputy Director for Intelligence  
Central Intelligence Agency  
Washington, D.C. 20505

Dear Ed:

Here is a first report from the Military Economic Advisory Panel. It is based on our survey of numerous papers provided by CIA and DIA; detailed briefings by both Agencies; and a substantial amount of discussion among Panel members and between the Panel and staff people. The report incorporates the reactions of members to a draft version, but they have not had a chance to review my revised text. I hope that in major respects it will meet with their approval. Full unanimity is not necessary, but I feel strongly that the Panel should meet together to provide an opportunity for supplemental observations and further suggestions. Perhaps we could all meet together for a day later this summer and then meet with you as a group, so all could make sure that special concerns were properly aired.

It has been an honor and a pleasure to be involved in this exercise. If you decide that we've done what we can for the moment, I thank you for calling us in. If you see a continuing role for us, I feel sure that all who are able to will cheerfully continue to serve.

Sincerely,



Chairman  
Military-Economic Advisory Panel

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FIRST REPORT--MILITARY ECONOMIC ADVISORY PANEL

Chairman

1 July 1974

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FIRST REPORT--MILITARY ECONOMIC REVIEW PANEL

Chairman

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I. Introduction

A. The Panel's Purposes

1. The establishment of a CIA Military-Economic Advisory Panel was approved by the Director of Central Intelligence to advise the Deputy Director for Intelligence on the present adequacy, validity, and usefulness of CIA's military-economic work, and on possible ways to improve it.

2. The US national interest requires careful evaluation of Communist military and economic activity. Its dimensions and details are complex and very incompletely revealed by the countries involved. Serious differences of opinion face US policymakers in evaluating available evidence. The problem is to minimize uncertainty and inconsistency, and to marshall the evidence persuasively in forms directly applicable to decisionmaking.

3. The Panel was asked to make suggestions for improvements in:

- a) the formulation of intelligence questions,
- b) research tasks to undertake,
- c) research methods to employ,
- d) ways to organize the research effort, and
- e) the form and scope for disseminating research findings.

B. Progress To Date

1. The Panel has met as follows:

Dates

Members Present

6-9 April 1973  
23-26 July 1973  
13-15 December 1973  
14-15 March 1974

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In addition, the chairman has spent several days in preliminary and interim meetings, and other members have made individual visits. All members have read relevant documents at secured locations near their homes.

2. The people of OSR and OER have been open, generous, and straightforward in describing, explaining, and illustrating their work to the Panel. Limitations of Panel members' time have been the main constraint on the extent of our review.

3. A detailed audit of all activities of OSR and OER by the Panel is not practicable. Some useful suggestions for methodology and organization can, we hope, rest on the degree of examination we have so far found feasible. As the Panel's work continues, more detailed analyses can be accomplished.

4. This is an interim report, transmitting a few initial reactions and preliminary judgments. The Panel's reciprocal discussions with the Office of Strategic Research and the Office of Economic Research staff seem already to have been useful in providing a forum where procedures can be examined and ideas weighed. Our present suggestions may serve to stimulate a few further changes, launch some new studies, and provoke creative responses from the people concerned.

#### C. Possible Next Steps

1. Assemble views from customers who use CIA military and economic studies. Who, for example, wants estimates of defense size and burden? How are such estimates used? How can they be designed to meet these needs most effectively?

2. Discuss research procedures and approaches with other groups engaged in analyzing this set of problems.

#### II. Some Present Difficulties

##### A. The Military-Economic Intelligence Quandary

1. Judgments concerning a large, many-faceted defense effort and its relation to a surrounding economy

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are necessarily extremely complex. Major issues in measuring costs and effectiveness have arisen around the United States defense effort, in spite of the fact that responsible officials have access to all available data. Judgments concerning the Soviet defense effort, based on oblique and fragmentary Soviet evidence, are bound to involve a much wider degree of uncertainty.

2. Analysts in the intelligence community are familiar with the paradoxes that arise in comparing the defense efforts of different countries, with different monetary units, while technological change is rapid. Many users of these estimates find them deeply confusing. Some respond by being highly skeptical of the Agency's spending estimates. Alternative measures are proposed. Some suggest abandoning altogether any effort to construct detailed estimates. Others feel that estimates should be made, but that the results should not be circulated, except in the most summary form.

#### B. Inadequacies of the Agency's Response

1. Confronted with this quandary, the Agency has sought to provide convincing analyses, but experience demonstrates that efforts to explain the methods employed in direct costing, together with the associated procedures that underlie the spending volumes, have been insufficient. The personnel involved, both in making the estimates and in receiving them, have changed over the years, but the need for renewed education has not been met. The quality of the evidence has improved, yet skeptics may not be sufficiently aware of this. Those now working on SCAM share an unwritten understanding of the model, though there are non-negligible differences of interpretation among them concerning its meanings. What is lacking, evidently, is a full and up-to-date description of the whole procedure.

2. On the conceptual level, brief, lucid essays have been made available from time to time over the last fifteen years, but again there is no comprehensive, detailed analysis of the theoretic and analytic intricacies involved in measuring and comparing heterogeneous composites and their changes over time.

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3. The Agency's strong tradition of secrecy hampers its efforts to persuade skeptics even within the intelligence community. Furthermore, a stress on providing summary results for the attention of busy officials truncates the painstaking presentation of underlying procedure and evidence. Concerned professionals in the Services and elsewhere have therefore been puzzled, confused, and suspicious.

### III. Four Suggested General Responses

#### A. Continue the Focus on Aggregate Money Values

1. Money aggregates serve several purposes. From year to year, the components of a defense effort change in varying degrees; summing up the combined significance of the changes requires a common denominator. Comparing the overall size of two defense efforts requires some kind of unifying measuring rod. Analysis of the internal structure of a defense effort, and tradeoffs among its subdivisions, necessarily involves value weights of one kind or another. Money values are the least unsatisfactory units to use. The physical quantities of manpower, equipment, supplies, installations, and structures that make up a flow of "national defense" cannot be added together in physical terms. Even within one of the subdivisions of a defense aggregate, say the naval forces, a meaningful subtotal will have to combine ships, their crews, their gear, port installations, etc. (each in turn made up of diverse elements), by means of some form of price or value weights. Actual prices may not be very good weights, but experiments with alternative adjusted prices are more informative than implicit, intuitive means of judging composites.

2. Other measures of defense effort and burden can be very informative as supplementary indicators. Analyses of the labor force, unskilled and skilled, and of scientific manpower, key raw materials, and other specific inputs into the defense sector, are well worth making, but they cannot take the place of a comprehensive computation in value terms.

#### B. Continue Direct Costing and SCAM

1. The Panel is persuaded that the building block

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method of estimating Soviet defense spending is basically sound and should be continued. It is far preferable to chasing residuals in Soviet budget data. Perhaps comparisons between Soviet budget data and independently-compiled estimates via direct costing can sometimes suggest puzzles worth investigating, but the building block method, with all its gaps and uncertainties, is nevertheless far more reliable and informative than unspecified residuals, by their very nature, can ever be.

2. We commend CIA's painstaking analysis of the design and performance characteristics of Soviet weapons. It may be useful to obtain a technological audit of the parts of this effort that are most uncertain and subject to dispute.

3. The study of ruble costs is central to an analysis of the defense burden and an appreciation of Soviet policy alternatives. Ruble costs give the firmest handle on spending trends. Division of the annual spending study into two separate volumes produces a substantial gain in clarity.

4. The dollar costs of Soviet defense are very hard to interpret and can easily mislead. This is equally true of the ruble costs of US defense; neither has greater validity as an indication of relative size of the two aggregates. As leader of the intelligence community, the Agency has the onerous responsibility of raising the level of understanding in these matters. The Panel feels that further work is needed to clarify the analytic issues involved. This need is illustrated, indeed, by the variety of views within the Panel on interpretation of dollar and ruble weights. To meet the need, we make several specific suggestions in section IV below.

#### C. Continue Annual GNP Estimation

1. Estimation of detailed national accounts for Soviet income and product meets a basic intelligence need. OER's work has provided a foundation and framework for most other analyses of the Soviet economy. In particular, analysis of the share of Soviet GNP devoted to defense requires meticulous attention to the whole economy. These annual estimates continue, therefore, to have very high priority.

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2. Improvements in the accounts were discussed at a November 1973 conference and are now being implemented. Further detail in end-use categories will be especially welcome.

#### D. Move Toward Greater Openness

1. Military economic analysis gains in persuasiveness as its basis becomes more explicit. Within obvious constraints, we feel that descriptive detail on both research methodology and underlying substance should be made available wherever it will contribute to informed judgments and reduce the range of unnecessary speculation. The Panel recognizes that disclosure can cause problems and that each specific topic deserves careful review. Nevertheless, we urge that doubters are most likely to be persuaded through painstaking disclosure of reasoning and evidence.

#### IV. Recommendations

##### A. For Rapid Implementation

1. The Panel suggests that once a month there be a conference at which OSR and OER people can discuss new findings and perspectives with each other. The problem is not coordination of research efforts when studies overlap; we are impressed with how well joint projects are pursued. During the seven years since ORR was divided into two offices, old friendships and mutual respect have served well to facilitate joint efforts. We note that differences of mission justify the continued separation of the two offices, and that two perspectives can be useful. Nevertheless, the two groups of analysts can benefit greatly from pooling their insights and sharing relevant evidence as it comes to light, rather than waiting for occasional specific joint projects.

2. The Panel suggests that a conference with knowledgeable representatives of all parts of the intelligence community be called to discuss the next pair of annual spending volumes when they appear. Authors could explain their findings and alternative judgments could be debated.

3. The Panel suggests that [redacted] be commissioned to prepare an analytic paper discussing the conceptual issues involved in mea-

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asuring and comparing defense efforts and defense burdens. Both have strong professional backgrounds and familiarity with the issues. What do US relative input costs, applied to Soviet defense components, tell about the efficiency of Soviet resource use? Should we use US prices or Soviet prices in trying to measure the outlay that would hypothetically be required in the US to acquire the Soviet defense package? Can we advance beyond identifying paradoxes to demonstrating unambiguous results?

Such a paper would serve several major purposes. A restatement of [ ] fundamental theoretic paper of 1961, specifically applied to relative defense efforts, might yield a fairly definitive identification of the best alternative approach to use in tackling each one of the several distinct comparisons we are wrestling with. It would provide a clear conceptual framework for Agency personnel, especially those newly assigned to SCAM work. And it would provide a detached, rigorous evaluation of SCAM methodology to use with customers and skeptical critics of SCAM results.

4. The Panel suggests preparation by OSR of a methodological manual to underlie SCAM II, in general terms that would apply to any country's defense effort. This methodological paper should focus on the complexities involved in filling data gaps and making extensions from fragmentary evidence to broad spending categories. It should also have a programming section describing in general terms the programming model itself, stressing the options for varying price weights, introducing deflators, and recombining portions of the spending package. Such a manual would be very useful for a number of consumers: (1) analysts in other agencies, (2) new professional Agency staff, (3) skeptics all around town, and (if it were decided to extend the distribution), (4) interested economists outside government, and (5) fellow-researchers in other countries.

5. The Panel commends the attention increasingly being given to equipment inventories as well as procurement for each major weapons system. This involves relating annual investment in weapons procurement to the total stocks being built up, system by system, along the following lines:

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	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
Acquired	5	20	50	50	20	20	0	0
Retired	0	1	2	4	5	5	5	5
Year-end stock	5	24	72	118	133	148	143	138

Note how a rapid increase in investment leads to a rapid buildup of stocks. When investment levels off in 1964, stocks continue to grow rapidly, and when investment drops off sharply in 1965, stocks continue to grow! One sees also how completion of a major program makes room for investment in some other weapons system without a new additional claim on resources. This kind of presentation can reduce the misunderstandings that have occurred--on Capitol Hill and with other customers--in relation to the growth of large weapons stocks under a constrained share of GNP devoted to defense. Attention to weapons inventories should be extended to cover all fixed assets, leading to aggregate estimates of the ruble value of capital stocks for the Soviet defense establishment. Estimates in comparable coverage might be very instructive if they were compiled for the United States (see our final suggestion in section VI).

6. The Panel recommends attention to the intertemporal aspects of relations between research and development outlays and the weapons systems that result from them. The topic is discussed in the August 1973 Annual Spending Review, Vol I., pp. 24-26, and it deserves more extended analysis. Slender evidence suggests that one should distinguish a number of stages, running from initial basic research or assembly or foreign technical literature to the later stages of design and product development leading to construction of prototype models. Systematic study of Soviet practice, which evidently differs noticeably from US practice, may well involve the Office of Weapons Intelligence and the Office of Scientific Intelligence, or perhaps the Foreign Technology Division of the Air Force, as well as OSR and OER. Ultimately, one might hope to have a tabulation for each major weapons system that would look something like the following (in millions of rubles):

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	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Initial research	10	15				
Detailed designing			12			
Prototype construction				40	15	
Product testing						5

Crude estimates of ruble costs and time periods required might make Soviet experience tell us something about Soviet prospects.

7. We suggest that it would be informative to compare the annual time series for defense spending in successive Agency reports over the last five or ten years to compile a series of summary tables taking the following form (figures in billions of rubles, adjusted to a constant price level):

<u>Date of Report</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
1965 (lines omitted)	15	16	17					
1969 (lines omitted)	16	18	18	19	20	20	23	
1973	16	18	18	17	19	22	24	26

Many complex factors account for the changes that will come to light in such a comparison, and they need not reflect on the analysts involved. Economists like   have found that confidence in their estimates is increased through careful postmortems that serve to pinpoint the factors at work. Here the revisions will reflect primarily improvements in the evidence, but they may also suggest points where sensitivity analysis of SCAM parameters would be fruitful.

A review along these lines would impress skeptical customers with the extent of continuity in detailed SCAM results, the welter of forces at work (some up, some down), and the forthrightness of the Agency in exposing its revisions when new evidence permits improvements. The changes discussed in E. H. Knoche's memorandum of 27 June 1974 on "New Estimates of Soviet Military Spending" illustrate what we feel could usefully be an appendix to the spending volumes.

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8. A related point, applicable in several contexts, concerns margins of error surrounding estimates. We recognize that customers want single-valued findings and that upper and lower limits quickly become confusing. Nevertheless we wonder whether on balance there wouldn't be a net gain in persuasiveness if--in footnotes or appendices--the degree of accuracy surrounding each estimate were indicated. Skeptics who doubt the feasibility of complete precision may find it harder to reject a cautious presentation of a "solid approximation."

B. Longer Term Projects

1. The Panel suggests that annual defense outlays can be better understood in a context that includes a period of several years, associated with developing, procuring, and fielding a major weapon system. OSR evidently has ample evidence on the gestation period required to build, for example, major items of military equipment. Careful analysis of actual Soviet experience to date would provide an added dimension of understanding in considering the implications for the near future of current Soviet efforts.

2. A similar research effort in OER could develop estimates for each major sector of the economy concerning capital-in-process annually for the whole period from 1950 to date. Since we know that, under Soviet conditions, rapid non-military construction has long proved extremely difficult, one could establish upper limits on additions to output capacity that could be made operational one or two or three years hence. Sectoral estimates for capital gestation periods, combined with the reconstructed 1966 input-output table, would help to identify intersectoral bottlenecks to Soviet output expansion. Overall, the result would be a kind of DEW-line in economic space, enabling us to examine the implications, for the whole economy and its defense sector in particular, of such advance clues as are discernible through long-lived capital construction activities.

3. Study the interindustry impact of the Soviet defense effort.

Detailed analysis of particular sectors of the Soviet economy, like electronics, transport equipment, and machine

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tools, can usefully be placed in an interindustry context to examine their direct and indirect relations with the whole economy and its factor supplies. The reconstructed 1966 Soviet input-output table provides a general framework and competent specialists are available in OER and OSR. Earlier Agency research employing input-output was hampered by crude and skimpy data, and there is still no reason to expect precise results. Nevertheless we feel a systematic effort to construct a column vector of final demand deliveries to national defense, and to subdivide some of the sectoral rows for categories of output going to defense, would clarify and sharpen up the judgments associated with burden and impact analysis.

4. Make some detailed studies of standby capacity and joint use of vertically-integrated manufacturing capacity for both defense equipment and civilian goods.

Recent evidence indicates that slack is present in certain lines of production, while in other cases there is flexibility in shifting capacity between civilian and military output. The subject deserves intensive analysis.

5. Commission an updated study of the potentials for economy and precision in research using sampling rather than full coverage.

Some kinds of technical intelligence and economic data now pile up, or will soon be coming available, on a scale that threatens to swamp the evaluation effort and generate prohibitive costs. Intelligence analysts whose goal has always been exhaustive coverage, obtained through piecing fragments together, can perhaps be joined by others who apply probability statistics to sample evidence and who design procedures for obtaining maximum confidence results for a given outlay of money and personnel on analysis.

6. Commission a technological and procedural think piece on joint use of technical intelligence and economic evidence.

The Agency may be the first institution in the United States in a position to relate technical evidence to broad economic stocks and flows. Early crop reporting is only

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one example of the way a physical-unit base can be linked with aggregate money values in the surrounding economic flows. Construction of plant and equipment, sector by sector, and levels of freight traffic activity, region by region, would be other examples.

V. Larger Aspects of Military Economic Research

A. The Agency Should Maintain an Overview of the Whole Field

1. In the intelligence community, the Agency has a statutory responsibility to fit the work of many groups into a composite final evaluation.

2. Beyond this, we feel that the Agency should watch for opportunities to increase our understanding through, for example, drawing on the knowledge brought out by emigres. The universities are hard pressed these days, and need nudging to be alerted to scholarly opportunities that may serve the national interest.

3. Similarly, the Agency should watch for gaps that may open up in the basic research previously under way at various research centers. In the past our understanding of the USSR has been decisively improved through this kind of basic scholarly research, and the Agency has a strong interest in seeing that it continues.

4. In this connection we view with concern what appears to be a disposition to reduce the effort devoted to study of the USSR in the Office of Economic Research. This office is an important national resource whose work makes a major contribution to Western appreciation of Soviet reality; its work should have vigorous support.

B. Protect the Basic Research Function

1. The Panel recognizes the practical needs that put current intelligence at the top of each day's docket. We also admire the volume and quality of long range basic research that the Agency has produced.

2. For both reasons, however, we stress the need to make administrative arrangements to preserve and foster

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the basic research efforts that have enabled the Agency to provide thoughtful, in-depth judgments on current issues.

3. In this connection the Panel recommends experimentation with a procedure under which a first rate analyst would use a year's sabbatic leave to carry out a research project, in association with others, at a strong university or think tank. A longer-term research project might draw on a succession of one-year assignees in a reciprocally reinforcing way.

C. Use Outside Expertise to Supplement Agency Work

1. The research staff or OSR and OER makes up a solid core of experience and judgment. All major work should be entrusted to it. But specialized knowledge can be used to augment Agency staff in dealing with specific questions, especially in matters not requiring extensive security clearance.

2. The Panel understands that contracting out technical studies has worked well for many years and suggests that strong efforts be made to use this approach even more extensively from now on.

3. In similar fashion we suggest that efforts be made to invite people like [redacted] from the [redacted] to spend a year at the Agency working on a specific piece of basic research.

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4. We suggest, finally, that thought be given to funding a research project at a center like the Russian Institute of Columbia University under which emigre Soviet economists would have an opportunity to write up their professional experiences and comment on the functioning of the Soviet economy.

5. We noted earlier that a country's defense effort has an asset or stock dimension as well as a flow dimension. We suggest that a group drawn from DIA and the individual Services be designated by the Office of the Secretary of Defense to work with CIA on development of coverage definitions and measurement procedures required for comparative estimates of stocks as well as flows in the two defense establishments.

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7	DDO			17			
8	D/DCI/IC		✓	18			
9	D/DCI/NIO		✓	19			
10	GC			20			

SUSPENSE

Date

Remarks:

- ① Excellent
- ② The idea of a non-classified explanation of methodology sounds good (+ hard!)
- ③ Should you share this report with

PFIAB - Leo Cherne  
Andy Marshall -  
USIB - esp Treasury

- ④ Hurrah for rotations

DCI/DDCI

8/12/74

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