

Draft; comments welcome

WHERE DID THE SPUTNIK COME FROM?

Western Study of the Soviet Economy and the National Interest

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ABSTRACT

Recent literature routinely describes the Soviet economy as a “war economy”. Such statements represent a revolution in the characterization of the subject. While Sovietology (Western academic study of the Soviet economy) grew as a response to the perceived national security threat, its publications largely neglected the military aspects of the Soviet economy. This paper, drawn from a larger study, documents the near-absence of the military sector from the published output of Sovietology. It considers whether Soviet secrecy on military matters prevented Sovietologists from giving this sector its due and rejects this explanation. Alternative explanations for the literature’s neglect of the economy’s most important sector are briefly reviewed.

1 Introduction

1.1 *Unacknowledged revolution in the understanding of the Soviet economy*

In the Western scholarly literature of the last 15 years, the Soviet economy is often characterized as a war economy, one designed primarily for military production rather than consumer welfare.¹ Other authors, while stopping short of identifying the Soviet economy with its military sector, acknowledge that the latter was vast, important, and particularly effective. Production of large quantities of military goods was that economy's strongest suit and the only area in which it caught up with the United States economy. It strongly influenced how the other sectors operated, as central planning afforded the highest priority to arms production.² The common argument in many explanations of the system's demise is that excessive military spending depleted the civilian economy and promoted stagnation.³ No other sector of the economy has earned the distinction of being held responsible for paving the way for system collapse.

Many of the authors quoted above describe the militaristic nature of the Soviet economy in a matter-of-fact way, without citing any supporting sources, as if conveying common knowledge. Yet their views represent a sharp break with the massive body of writings on the Soviet economy produced by Western economists from the 1940s to the

¹ Aslund (2002, pp. 31, 38); Blank (1995, p. 691); Earle and Komarov (1998, p. 6); Haynes and Husan (2003, p. 119); Skidelsky (1996, pp. 103, 109, 111).

² Cooper (1993, p. 1); Dallin (1995, p. 252); Goldman (2003, p. 52); Hanson (2003, p. 31); Lockwood (2000, p. 83); Pomfret (2002, p. 18); Spulber (2003, pp. 231-2).

³ Layard and Parker (1996, p. 4); Reddaway and Glinski (2001, p. 260). Hanson (2003, pp. 247-8) hypothesizes a different, though equally prominent role for arms production in the collapse.

1980s. This paper shows that the discipline created to help fight the Cold War neglected the adversary's armory, and considers several explanations for this strange omission.⁴

1.2 *Why bother with the writings on a defunct economy by authors now at best retired?*

Western study of the Soviet economy, called here Sovietology, was a part of a conflict with the highest imaginable stakes for mankind. It took a massive expenditure of resources, serious loss of life, and great moral and political strain for free societies to stand their ground during the half century of the Cold War. While the Soviet challenge to the West had many dimensions - propaganda, diplomacy, subversion - it was military at its core. The imprint it left in the American history includes the Berlin blockade, Korean War, the Sputnik panic, the missile gap, the Caribbean Crisis, Vietnam War, President Reagan's rearmament program, and Governor Dukakis in the tank. The Sputnik, the alleged intercontinental missiles of the 1960 presidential campaign, the real missiles of 1962, and those to be parried by President Reagan's SDI all had to be planned, financed, designed and produced before becoming factors in the military and political game.

Traditionally, it was the responsibility of spies to find out about an adversary's military industry and of generals to evaluate that industry's output. Beginning in World War II, social scientists, too, came to play a role in informing national security policy. Today, across university campuses, people with PhDs and reading knowledge of a difficult language are analyzing the strange societies from which current and future threats to our security may spring. Assessing how well their predecessors did in the nearly half-century-

⁴ I started documenting the lack of attention to the military sector in the literature on the Soviet economy in Kontorovich (1996, Section 3). This omission has also been noted by Odom (1998, pp. 55, 430), Hanson (2003,

long effort to study the Soviet economy can suggest what to expect from current national security applications of social sciences.

1.3 The object of study: academic Sovietology

Practically all the students of the Soviet economy worked either in academia or for the government, which in the US meant mostly the CIA. The performance of the latter was subjected to serious scrutiny when the unexpected endgame of the Cold War bolstered the credibility of its long-standing critics. Congress responded by instituting a series of inquiries into the Agency's work on the size and growth of the Soviet economy and on its estimates of Soviet military expenditures.⁵ While the reports were generally positive, the debate continued through the 1990s, with the defenders of the CIA's record responding to its erstwhile "unduly harsh criticism" (Maddison, 1998, p. 307).⁶

No comparable scrutiny has been applied to academic Sovietology, even though it was both larger and more influential than the government wing of the discipline. Economics departments of American colleges and universities employed the majority of the PhDs in the Soviet economy (Millar, 1980, pp. 323).⁷ The division of labor between them and the government economists was similar to that between the government and university economists studying the US economy. Ideas and methods in the study of the Soviet flowed from the academy to the CIA. Thus, the GNP estimates prepared by the CIA were

p. 31), and Rosefielde (2005).

⁵ US Senate (1991), US General Accounting Office (1992), Alexeev and Walker (1991), Berkowitz, et al., 1993.

⁶ See Becker (1994), Berkowitz and Richelson (1995), MacEachin (1996), and Firth and Noren (1998).

⁷ Apparently, at the CIA, people with other degrees also worked on the Soviet economy, so the total number of government researchers was greater than Millar's (1980) PhD employment data indicate.

based on the Adjusted Factor Cost Standard originated by Abram Bergson, a professor at Columbia and later at Harvard (US Congress, 1982, p.11). The large-scale econometric model used for forecasting the Soviet economy (CIA, 1979) was also originally developed in the academy (Green and Higgins, 1977).

This flow of ideas and methods was all the easier because all the specialists in the field were trained in academia, and because academics consulted extensively for the government. Tenured Sovietologists were the discipline's public face. Like their civil service colleagues, they testified in Congress. Unlike them, academics taught generations of college students, published popular books and opinion pieces, appeared on TV when lucky, were consulted by journalists and businessmen, and supplied economic expertise to researchers of Soviet domestic and foreign policy and society. At least in the 1970s and 1980s, academic Sovietologists enjoyed greater public credibility than CIA analysts. The former even accused the latter of political bias in their work (e. g., Moskoff, 1981) in ways that would be unprecedented in relations between the academic students of the American economy and the US Department of Commerce staff.

This paper investigates how academic Sovietology dealt with the militarized nature of the Soviet economy back when it still mattered.

2 National security origins of the study of the Soviet economy

The Soviet economy was the greatest economic experiment in history. In 1917, a party which pledged to uproot the entire economic order and replace it with one based on diametrically opposite principles seized power in a giant country and introduced unprecedented changes - workers councils to manage factories, abolition of money, summary executions for private sale of bread, and nationalization of most of the non-agricultural

economy. In the late 1920s, comprehensive central planning of the economy, collectivization of agriculture, and the policy of rapid industrialization generated record high reported rates of economic growth with full employment, a stark contrast to the Great Depression experience of the rest of the world (Nove, 1992, chapters 3-9). The choice between capitalism and socialism, plan and market, for the Western countries themselves was actively debated in the interwar period.

Yet all the novelty and apparent success of the Soviet experiment was not enough to inspire its systematic professional study in the west. Only three economists with American doctorates devoted themselves full time to the study of the USSR between 1930 and 1949, a period in which more than 2,400 such degrees were granted (Millar, 1980, p. 319; Bowen, 1953, p. 212). Most of the publications on the Soviet economy through the 1940s were later described as “impressionistic and journalistic, many of them rabidly partisan”, “naïve both politically and economically”, and marred by the “absence of measurement”.⁸ The great debate about the comparative virtues of socialism and capitalism in which von Mises (1922), Lange, Taylor (Lippincott, 1938), Hayek (1935), and Schumpeter (1942) engaged proceeded practically without reference to the Soviet experience.⁹

The systematic study of the Soviet economy emerged in the United States only in the late 1940s, three decades after the Bolshevik revolution and two decades after central planning started working its miracles. After World War II, the European powers and Japan lay devastated, unable to withstand the Soviet military pressure, as large parts of Eurasia fell under the sway of the USSR. New weapons put North America itself within

⁸ Campbell (1961, p. 130); also Gerschenkron (1968, p. 525) and Wiles (1964, p. 70).

the reach of possible military strikes (Pollak, 1996, p. 40; Friedberg, 2000, pp. 35-39). The United States prepared to face this unprecedented challenge by building new and thoroughly revamping old institutions – the military, intelligence agencies, research and development system, and military industry - for Cold War purposes (Friedberg, 2000). A small part of this effort was creating and strengthening a number of scholarly disciplines with the goal of generating knowledge relevant for conduct of the conflict. The study of the Soviet economy was one of those disciplines.

The motivation for the field was clearly understood by its early practitioners. “Because the Soviet system is engaged in a deadly race with the market-oriented economies ... it [sic] has prompted systematic study by a number of economic researchers ...” (Spulber, 1961, p. vii). Campbell (1961, pp. 130-31), reviewing the progress in the field, noted that “The justification for all this research has been the “need to know” from the national interest point of view.” Millar (1980, p. 326) spoke of earlier generations of Sovietologists relying on the national security significance of their field to obtain tenure, a strategy that had been losing effectiveness in economics departments in the 1970s. Pollack (1996, pp. 40-1) described early analysts for RAND, the birthplace of Sovietology, as being “spurred by the singular challenges of containment and nuclear deterrence.” The Harvard Russian Research Center, another institution critical to the development of the new discipline, explains the motivation for its founding: “The sense of urgency that sparked its creation derived largely from the postwar international situation. The Center's founders believed not only that Russia and Soviet Communism were of great intellectual

⁹ Hayek in his foreword to Brutzkus (1935) notes the lack of information on the Soviet economy.

interest, but also that the training of specialists in this field was vital to deal with the challenge of the Soviet superpower.”¹⁰

3 The near-absence of the military sector in Sovietological work

3.1 *Methodology*

Sovietological literature is the work of hundreds of individuals over almost half a century. Each contribution is tinged with the idiosyncrasy of its author’s approach and the economic and political fashions of its time. Establishing the place of the military sector in the study of the Soviet economy is therefore an exercise in summarizing a large amount of information. For such a summary to be persuasive it needs to rest on a sample of work that is representative of the field of academic Sovietology; it must use simple, replicable measures of attention afforded to the military sector by each publication; and apply explicit standards by which these measures can be judged to be high or low.

This paper assures representativeness by including in its assessment all Sovietological books addressing areas of the economy for which the military sector is relevant and all the articles published in the leading general economics and Sovietology journals (see Appendix 1). The highest level of attention an author can afford to a subtopic of his book is to gather all the relevant material in one place, make it a distinct part of the whole with its own title, and announce it in the table of contents.¹¹ The number of chapters or index en-

¹⁰ http://daviscenter.fas.harvard.edu/about_us/history.html, visited 11/11/2004.

¹¹ For brevity, I will call any entry in a book’s table of contents a chapter.

tries on military economy in a book and the number of articles with military economy titles serve as indicators of attention given to the military sector.

Similar measures of attention given to other sectors, e. g., agriculture, serve as a standard for comparison. The presence of a chapter on the military sector is more likely, and its omission more telling, in books that have chapters devoted to particular sectors. One can write of the military sector both as a sector of origin of the national income, like agriculture and transport, and as a category of expenditures, like consumption and investment.¹² Accordingly, I note the presence of chapters devoted to both types of sectors in the books surveyed. For periodicals, I compare the number of articles about the military sector to that of all articles on the Soviet economy and articles on its specific sectors in a journal.

While some analysis of the substance of the surveyed texts is used to supplement the bibliometric approach and helps to interpret its results, the stress is on the formal indicators described above. This approach is based on the well known theory of credible signaling. To be credible, a signal needs to be costly to the sender. A sentence announcing the supreme importance of the military sector in the middle of the text that deals exclusively with the civilian economy carries no weight in this investigation (though it will be noted), because talk is cheap. That is, such a sentence is likely to be discounted by the reader. On the other hand, a chapter or a section with a military related title counts in this analysis independent of its content.

¹² Military might may be the economy's objective, as considered in Kontorovich and Wein (2007).

3.2 *Textbooks*

Textbooks and readers on the Soviet (or socialist, or planned) economy were the most frequently written books in the discipline, with 47 separate editions (see Table 1).¹³ Textbooks are supposed to survey all the aspects of the economy deemed important by their authors. The extent of coverage of a sector or an issue may therefore be taken as an indicator of its perceived importance in the “big picture”. Comprehensive coverage also means that much of a textbook’s subject matter lies outside the author’s immediate area of competence and thus reflects the author’s reading of the state of knowledge in the discipline.

All but one out of 47 textbooks had chapters on at least one civilian sector, for the total of 136 chapters (see Table 1). These included 41 chapters on agriculture, a generally unsuccessful sector; 27 chapters on foreign trade, which made up a much smaller share of national product than military expenditures,¹⁴ and nine chapters on finance, a secondary sector in the economy built on planning and allocation *in natura*. By contrast, only six out of 47 textbooks published in 1948-92, or 13%, contained chapters on the military sector.

Texts with military chapters appeared only in the last 13 years of the system’s existence (see Table 2). Textbooks published in 1948-78 had chapters on such low- and medium-priority sectors as retail, services, housing, distribution, light industry, transport and communications, and banking, but no chapters on the top-priority military sector. Of the

¹³ Two or three titles included here may arguably be classified as popular books, rather than textbooks.

six chapters that appeared after 1978, two deal with the military sector in a tangential way in the context of international relations. A reader (Bornstein, 1981) reprinted a paper by two CIA analysts on Soviet economic and military aid to foreign countries. It deals with the foreign policy effects of military deliveries, rather than the sector that supplied them. Holzman (1982) has a three pages long “Military expenditures” chapter, half of which is devoted to arguing that the CIA exaggerated the burden of defense, and the rest of which deals with international relations topics.

The first textbook to include a chapter on the military sector (Krylov, 1979) was written by an outsider who lectured at the US Army Institute in Germany and had neither Western nor Soviet economics training (Birman, 1980). The first and only Sovietological textbook to incorporate a military chapter was Gregory & Stuart (1981), the second edition of a text that was also issued in 1986 and 1990. A four-and-a-half page section - “Soviet military power” - was located in the second of two chapters discussing the economy’s performance. The first of these dealt with growth, efficiency, equity, consumer welfare, and stability, while the second, in addition to military power, discussed technology and environment.

Textbooks without a military sector chapter still may be saying something on the subject. I count the number of pages on which, according to the books’ indexes, military-

¹⁴ Pryor (1985, p. 217) estimated the arithmetic average of import and export at 4.1% of GDP in 1970; OECD (1993, pp. 68, 71) implied 7.6% in 1988 using different valuation. The share of military expenditures in the GDP was estimated by various sources to be in the double digits (see, e.g., Harrison, 2003).

economic terms can be found.¹⁵ Out of 41 books with an index, six do not have a single entry on military subjects. Half of the books have four or fewer pages with military entries, while a few books with many such pages pull the average number of pages up to seven (Table 1). To get a sense of what these numbers mean, I turn to the actual text of three books with the typical (three - four) number of pages and two books with the largest number of military index entries.

Nove (1986) has three references to the military in the index in an almost 400-page long book, the same number of references as afforded to the subject of “planning in ton-kilometers”. At the end of a 27-page chapter on investment and technical progress there are two paragraphs on why military hardware is more technically advanced than civilian goods. In a 26-page long chapter on public finance, there is a less than a page-long inconclusive discussion of the official Soviet military expenditures data.

Dyker (1985) has references to four pages in the index, the same number as that for “forestry” or “construction materials”. One is a single sentence about the benefits of central planning to the military industrial complex, in a discussion of the prospects for the adoption of Hungarian-type reforms by the USSR. In the last three pages of the book, a discussion of the politics of economic reform brings up the interests of the military. In this context, it is mentioned that that the burden of defense retards economic growth and depresses consumption, and that military industry output appears to possess superior quality and effectiveness.

¹⁵ If more than one military term occurs on the page (e.g., both defense industry and defense spending), the page is still counted only once. I tried to exclude uses of military terms in discussion of foreign or defense policies, World War II, and western economies.

Kornai (1992) is a 600-page overview of the Soviet-type economies with bibliography 45 pages long. It indicates five pages with military subjects. One of those mentions military industry as number seven among 11 priorities in the allocation of investment. The rest are passing references to military expenditures and to political control over armed forces.

Kaser (1970) mentions military economy terms in 11 pages of his textbook, putting it in the top 20% of textbooks in this regard. Still, this is far less than the 26 pages on which agricultural references occur in his book (and this not counting references to collective farms). Most of the military entries refer in passing to one of the items of budgetary outlays. There are a few sentences noting the economy's success in establishing defense industry according to the rulers' wishes, and the build-up of heavy industry as a foundation for military parity with richer countries.

Hutchings (1982) has the second largest number of references among the textbooks, 24 pages, almost as many as foreign trade, with 26. Of these, 14 appear in a long and inconclusive analysis of the official state budget data, with defense mentioned as one element of the outlays. There are also passing references to the increase in military expenditures during Korean War and secrecy surrounding military sector; three sentences about efficiency and quality in military industry; several sentences here and there noting that military burden slows down growth; and a footnote debating the existence of a military-industrial complex in the USSR.

In conclusion, an index entry usually does not refer to a full page worth of discussion of the subject, just to a sentence or two, at most a paragraph, where military sector is mentioned. Many, if not most, of these mentions are casual uses of military sector terms,

to the official budget items, or to domestic and international policy considerations. Even a large number of those do not add up to a coherent picture of the sector and its role in the economy.

3.3 Research volumes

Work on planning, enterprise management, growth, and national accounting formed the core areas of research into the Soviet economy. Military production and spending were directly relevant to each of the four research areas. The top priority afforded the military sector meant that it was at the center of the planning process. Military industry was a large component of industry with distinct and apparently effective managerial practices. Some of the prominent innovations in planning and management, such as “automated management systems”, the subject of Cave (1980), were transfers from the military (Masliukov and Glubokov, 1999, p. 89). The relationship between the growth of aggregate income and that of its uses for consumption, investment, and military expenditures has been a longstanding concern of the economists. National income and product accounting (NIPA) had to cover military expenditures as one of the largest items of aggregate spending, alongside consumption and investment.

There is not a single chapter on the military sector in 36 volumes on planning, management, and growth (Table 1). However, 15 out of 18 books on planning and seven out of ten books on growth have a total of 31 chapters on particular civilian sectors and end-use aggregates, including 12 chapters on agriculture, nine on foreign economic relations, seven on investment, and a chapter each on services, healthcare, and banking.

Three quarters of the books on planning which have an index do not even mention the military sector. Kushnirsky (1982) has seven references, all extremely brief; one of them

noting the top priority afforded the military needs in the process of planning. The other two books have one and two references respectively. As far as the literature on planning was concerned, the military sector did not exist. No mention of the military sector is to be found in five out of eight books on management. The book with the most index entries (12) is by the sole non-economist among the authors of management volumes (Beissinger, 1988).

Growth literature was more cognizant of the existence of the military sector, with only a third of the books failing to mention it in the index (Table 1). Books on national income accounting and statistics stand out from the core literature, in that four out of 11 have chapters on the military sector, and only one fails to mention it in the index. The unusually high degree of attention to the military sector in this line of research is not a matter of the author's choice. The accounting system forces anyone trying to estimate national product or output of industry to address the military sector for the sake of consistency.¹⁶

Books in four additional fields may be expected to address the military sector. The works taking a general view of the Soviet economy are more likely to mention its most important sector. This includes economic histories dealing with the whole economy or industry after 1928 and general books on Soviet/socialist economics.¹⁷ The other two categories are books on Gorbachev's reforms and those on research and development.¹⁸ The reforms were arguably motivated in part by the international strategic rivalry and the

¹⁶ Similarly, the budgetary system forces the consideration of military expenditures in books on finance.

¹⁷ These are mostly books with a general-sounding title which are composed of chapters on disparate subjects.

heavy burden it imposed on the economy, and led to radical shifts in military-economic policy. The R&D sector predominantly served the military industry.¹⁹

Only one out of 16 books on Gorbachev's reforms has a military chapter, while seven books have 14 chapters on various civilian sectors, with agriculture and foreign trade in the lead (Table 1). Three out of 28 general books have military chapters, though there is a total of 32 chapters on civilian sectors, including 10 on agriculture. History books have three military chapters, though 20 chapters on civilian sectors (6 on agriculture). All military chapters in the volumes surveyed appeared after 1988: three in 1989 and another four in 1991-92 (Table 2). By that time, open discussion of the military sector inside the USSR was already underway, conversion of military industry being one of the major policy directions, and debate raged over the true level of defense burden.

Seven books from the general category don't mention the military sector in their indexes, but this may be due to my overgenerous interpretation of how general some of these books are. More tellingly, two out of 13 economic history books make mention of the military sector, as do two books on Gorbachev's reforms.

Books on R&D stand out among the literature surveyed. They have the largest proportion of books with military chapters (one half), and the largest absolute number of such chapters, of all the books' categories. And unlike in the latter, military chapters do

¹⁸ Books on research and development and the related activities of innovation and technology transfer from abroad are called here R&D books for brevity.

¹⁹ Unlike in the core areas, many books in these categories were authored by non-economists. I surveyed books with an economic focus irrespective of the author's affiliation, but not to go too far into the writings of the adjacent social sciences. Since the disciplinary borders are hazy, the notion of complete coverage of the relevant literature is shakier for these categories of books than for the earlier ones.

not all date from the final decade of the subject's life, but rather start in 1965 and continue appearing through the 1970s and 1980s (Table 2).²⁰

3.4 *Journal articles on the military sector*

I surveyed three types of periodicals: ten general economics journals that existed at the time of the birth of Sovietology and which are now among the most prestigious in the profession (Laband and Piette, 1994); two leading journals devoted to centrally planned economies; and two leading area studies journals. For each, I identified articles on the Soviet economy and noted if any were related to the military sector by examining their titles. The results are presented in Table 3.

In 1948-1991, nine leading general economics journals published 207 articles on the Soviet economy. Of these, only one (Okamura, 1991) was devoted to the military sector, and then only indirectly. Over the period of 1948-72 I identified 43 papers on the Soviet/Socialist economies in *Papers and Proceedings* of the American Economic Association's annual meetings, of which one was devoted to the military sector (Kershaw, 1951). Most specialized periodicals did little better. The older area studies journal, *Slavic Review* and its predecessor published 126 articles on the Soviet economy over more than 40 years, none of them about the military sector.²¹ The leading periodical on centrally planned economies, *Journal of Comparative Economics*, published one article on the military sector in East European countries, Crane (1988), in 1977-1991.²² *Comparative*

²⁰ Most such chapters were written by non-economists or non-Sovietologists (Antony Sutton).

²¹ *Russian Review* also occasionally published economics articles. My examination of its table of contents failed to identify a single one devoted to the military sector through 1966.

²² There was an earlier piece on military spending in the OECD countries (Smith, 1980).

Economic Studies started publication in 1985, and until 1991 had two military sector pieces, Kontorovich (1988) and Kushnirsky (1991).

Soviet Studies, the most specialized outlet for research on the Soviet economy until the appearance of *Journal of Comparative Economics*, stands out among the periodicals. It published a record 15 articles on the military sector in 1949-91, out of 582 total economic articles. While none appeared before 1972, they are not concentrated exclusively in the last years of the Soviet Union's existence.

It could be that the absence of military sector articles is due to the authors' disinclination to deal with any specific sectors. To check this possibility, I counted the number of articles devoted to particular sectors in the two area studies journals and comparative economics journals (Table 4). It serves to show that these journals were quite receptive to publishing articles on particular sectors or components of aggregate spending, such articles making 40% of all *Slavic Review* publications and 34% of *Soviet Studies*. As with book chapters, agriculture and foreign economic relations attracted by far the most attention, with a variety of other sectors being represented as well.

3.5 Summary

In mature sciences, textbooks are the carriers of the reigning paradigm (Kuhn, 1970, pp. 10, 136-7). To the degree that Sovietology fits the bill, its reigning paradigm treated the military sector as peripheral at best. While textbooks on the Soviet economy devoted chapters to a variety of economic sectors, including many of low importance, only a few of them had chapters on the military sector, and that only in the last decade of their subject's existence. About one seventh of the textbooks with index do not mention military sector there, and most of those that do, do so in passing.

There are no chapters on military sector in the books on three core research areas, planning, management, and growth, though these books have numerous chapters on other sectors. From one third to three quarters of books in these categories fail to even mention military sector in their indexes. Books on economic history, Gorbachev reforms, and general Soviet economy volumes include a few chapters on the military sector, but their number is small compared to that of chapters devoted to other sectors, and they mostly appear in the final years of the USSR, when the subject started to be openly discussed there.

Books on national income accounting have a higher incidence of military sector chapters. They are the only ones to have such chapters in the 1950s and 1960s. The accounting framework leaves their authors no choice and forces them to cover all substantial sectors. Another and more interesting case is books on R&D, fully half of which have chapters on military sector, with their first appearance in the 1960s.

Journal articles have become the main vehicle of scholarly communication in economics (Leibowitz & Palmer, 1984, p. 77). This vehicle has in essence bypassed military sector of the Soviet economy. There are practically no articles about it among the two hundred pieces on the Soviet economy published in general economic journals. Specialized area studies and comparative economics journals do little better, with a few articles appearing only towards the end of the 1980s. As with books, there is also an outlier, *Soviet Studies*, which has been publishing articles on military sector since mid-1970s, and totaled 15 out of more than half a thousand articles on the Soviet economy in 1949-1991. This is still a small number compared with that devoted by the journal to other, less important sectors.

Current literature, as summarized in Section 1.1, proclaims the centrality of the military sector for the Soviet economy. It was the fear of the capabilities of this sector that motivated the founding of the Western study of Soviet economy (Section 2). Yet, as I have just demonstrated, the new discipline paid little attention to the sector that was its *raison d'être*. Given the strategic, political, and existential stakes involved, this omission appears highly unusual and requires explanation.

4 Conspicuously secret world-famous sector

The first reaction of the veteran Sovietologists, when shown the findings of the previous section, is to explain them by the official secrecy in which the Soviets shrouded their military sector. Indeed, no data on the sector appeared in any published statistical reports, except for the single military expenditures number in the published state budget. And this latter number was given attention in the literature well beyond the point of diminishing returns. In this section, I consider and compare the strategies which Sovietologists adopted in the face of secrecy of the military sector and other parts of the Soviet economy. I then list the sources of information available to Western scholars despite the massive official information blackout.

4.1 *How Sovietologists dealt with secrecy*

Far from being limited to the military sector, secrecy was a pervasive feature of the Soviet society (Shlapentokh, 2001, pp. 57-59).²³ Dealing with secrecy was supposed to be part of Sovietologists' training, at least in the early decades of the discipline's history

(Gerschenkron, 1968, p. 528). With this background, simply invoking the fact of secrecy to explain the absence of military sector from Sovietological writings is like saying that fishermen caught no fish because it was swimming in the water. Fishermen are equipped for exactly such an eventuality, and if their nets come up empty, the explanation must be more specific than that.

One strategy available to the researchers trying to penetrate the cover of secrecy is using indirect indicators of the phenomenon kept under wraps. Political scientists attempting to discern splits and factions in the Soviet ruling group studied the vocabulary and tone of the top brass' speeches and their career backgrounds. Since such work is rarely conclusive and crucially depends on the somewhat arbitrary assumptions underlying the rules of interpretation, competitive attempts to pierce the veil of secrecy shrouding an important issue can produce a voluminous literature, as the example at hand demonstrates.

Military sector analogy of Kremlinology would be the estimation of various secret magnitudes as residuals obtained by subtracting data for specific civilian sector from the economy wide aggregate. While such work has been feasible since at least the early 1960s, when Soviet statistical yearbooks became hefty enough, it was only undertaken towards the end of the 1980s.²⁴ And the main practitioners of this approach were “free lancers” (William Lee, Steinberg), rather than academic Sovietologists.

²³ See Hutchings (1987) for a catalog of things secret.

²⁴ Steinberg (1990) on military spending, [Kushnirsky?](#) on machinbuidling, and Kontorovich (1988) on prototypes of new products.

Another behavior one would expect to see from the researchers frustrated by secrecy of information on an important subject is being alert to any breakthroughs in the informational blockade. Publications purporting to have things to say on the previously obscure subject would receive careful scrutiny, and their results, if found valid, will be incorporated into the knowledge base, and methods imitated by other researchers. Yet this has not been the case. The rare occasions when military sector was addressed in Western literature went unnoticed.

Sutton (1968) and (1971), based on original research in Western archives, were among the first books to have chapters on military economic subjects. The generally positive reviews by Treml (1972) and Dohan (1970 and 1972) did not mention this fact. A more critical review (Grayson, 1975) only complained that the book defines strategic goods too broadly, to include engines for merchant marine ships and automobiles. Reviewers of Krylov (1979) did not seem to notice that it was the first textbook to include a chapter on the military sector (Birman, 1980, Thornton, 1980). Gay (1980, p. 507) complains about some chapters, such as “Militarization of the Economy”, being very short, as if he had seen chapters of any length on this topic before.

Yet another way of dealing with the insurmountable lack of information on an important subject would be to acknowledge that the official policy is keeping us from finding out more about it. In search of such acknowledgements, I checked index entries of 147 books on the Soviet economy for words “secrecy” and “secret”. Only 11 books, including 2 out of 46 textbooks, had such entries in their indexes (Table 1). Even where the military sector is discussed, secrecy usually is not mentioned.

More generally, there is no evidence that Sovietologists were concerned with the gap in their knowledge caused by the secrecy of military information. Surveys of research fields usually list remaining gaps in knowledge alongside with achievements. Surveys of Sovietology suggested the need for more studies of such topics as steel, coal, and petroleum industries, and construction (Campbell, 1961, p. 140); technology, obsolescence, and collective farm management (Gerschenkron, 1968, p. 532); finance, foreign trade, labor and wages. Grossman (1959, pp. 41-43) noted that research into labor compensation was hampered by secrecy, but a non-quantitative study still could be done. Even water transportation was named as “a big enough activity to justify treatment of itself alone” according to Campbell (1961, p. 140).²⁵ Defense industry is not named as being worthy of such a treatment. Lack of data on the defense industry output is mentioned as barrier for accurate measurement of economic aggregates, but not as a problem in its own right (Wiles 1964, p. 71; Grossman, 1959, p. 38). Later surveys of the field (Clarke, 1983, Millar, 1980) focused on achievements and did not name any areas where knowledge was still deficient.

4.2 Sources of information on the military sector

As we have seen, some authors found enough material for whole chapters on military sector in their books, and references to a variety of aspects of the military sector were scattered through more books. Some of the sources of information on military sector are discussed here to deal with the secrecy excuse.

²⁵ In 1960, internal waterways carried 5.2% freight shipped by common carrier in the USSR, and the share of merchant marine was 1.9% (Goskomstat, 1988, p. 306).

Information on the last quarter century of the Soviet military sector remains secret. The available quantitative assessments of the sector are based on disparate, often contradictory data lacking proper documentation (see Earle and Komarov, 1998 survey of estimates *of what?*). Even many official pre-war documents have not been declassified (Simonov, 1996, pp. 11, 47-8; Ken, 2002, p. 8). *The current knowledge is largely the result of a more thorough look at the sources that existed before 1991.*

The main products of the Soviet military industry were meant to be seen. Soviet military might was at the center of the post-World War II international politics, and the early tests of nuclear and thermonuclear weapons, the Sputnik, and the first manned space flight were on the front pages of newspapers for decades. Soviet rulers themselves bragged of the prowess of their armaments producers (e. g., Khrushchev, on many occasions; Brezhnev, 1981, p. 30). Soviet economy had no other sector with world-class achievements like this. They would seem to deserve a chapter in a textbook on their merits alone, even putting aside the West's non-academic interest in the matter.

The inputs into the military sector were not as broadly advertised as the outputs, but nevertheless discernible in the official Soviet industrial statistics. Temin (1991), not a Sovietologist, compared patterns of economic development of Germany and the USSR in the 1930s. Using Western works based *on the official Soviet data*, he showed that the *(what does he say exactly?)* were very similar. Since we know that Germany was engaged in building a military economy, the same must be true about the USSR.

The phenomenon described by Temin – priority development of heavy industry - was much discussed by the students of the Soviet economy. They usually traced it to the writings of Marx and the Soviet growth theoreticians of the 1920s, and considered it an ideo-

logical objective in its own right (Moravcik, 1965, p.). Winiecki (1988, pp. 117-18, 120-2) discusses overgrown heavy industry and overgrown engineering industries, but says nothing? about the military sector. In other works, the military purpose behind the hypertrophied heavy industry receives a one-sentence acknowledgement (e.g., Gregory, 1970; Kaser, 1970 cited above). But the majority view has remained that it was the result of the Soviet rulers' obsession with economic growth (Kontorovich and Wein, 2007).

The military nature of industrialization was announced by the Soviet leaders loud and clear. Stalin: . The most important successes of industrialization were achieved in the war industries (Trotsky, 1937, p. 10). Planning means “a continual mobilization of industry in the hands of the government, and make it possible to focus on the interests of defense even in building and equipping new factories.” (ibid., p. 156). So massive was the flow of declarations, that . Davis (1993, p. ??): Western journalists visiting factories and construction sites in the early 1930s reported that “defence considerations played a major role in industrial planning”. Western diplomats sent reports to the same effect.

A run-of-the-mill Soviet college textbook in economic planning, Berry (1973), contains references to defense on 17 pages. This is more than any western book on planning, and more than 33 out of 41 Soviet economy textbooks with index. The references reiterate the importance of developing military might as an objective of planning. There is nothing comparable about the military might as an economic objective in western college economics textbooks. The official Soviet planning manual, Gosplan (1974), mentions defense in the line six of the first of its 800 pages, as one of the goals of planning, alongside with growth and consumer wellbeing. It is mentioned again on the first page of the part dealing with industrial planning, where the first task of five year plans is described as

the development of heavy industry, which, among other things, forms the foundation of the country's military might (p. 52). Contrast this with the absence of the military sector in the index of three quarters of western books on planning.

Soviet books on the military economy: memoirs, books on pre-WWII and wartime economy started appearing in the 1960s and 1970s (Simonov, 1996, pp. 7, 17; Davies, 1993). *Voennaia entsiklopedia*.

Krylov's (1965): two from *Planovoe Khoziaistvo* (what did they say?) one from an econ text for military colleges. Other early writers' open Soviet sources. The top priority given to military production and activities in supply was spelled out in the journal *Material'no-Tekhnicheskoe Snabzhenie* and another source in 1967-68 (Ericson, 1979, p. 33).

Information about the military sector in the Soviet sources is highly dispersed, as shown here. What we see here are the nuggets dug up by a few people, both in absolute numbers and relative to the size of Sovietology. It is quite likely that more could have been found, if more people cared to search.

NIPA had chapters in 1951 and the 1960s. Where did they get their stuff, and how were they used by the others? Davies (1993) is critical, says used official data.

Memorandum Sakharova, Aganbegian's skandal'noe vystuplenie - 1960s.

If emigrants are a source, then Harvard Project in the 1950s should have brought lots of info. Indeed, the top priority accorded military orders, military industry's heightened requirements for input quality, special system of quality control for output, ample supplies were all communicated to Berliner (1957, pp. 127, 151-2, 204) by his informants in the project. But these are mentioned in passing and not pursued further.

Millar's survey project.

Balzer (1989) is based on émigré research. But: this is based on the material brought in by the 1970s emigration, with practically everyone getting out in 1973-79 (my Jewish data). Why did it take that long to get into print?

Katsenelinboigen (1978) gives a detailed description of mobilization planning, more extensive than Krylov (1979) and as detailed as who??? today. Choice of technology, product mix, durability, and location of production in civilian industry as influenced by potential military uses. **Does he speak of electrical traction on RR, corroborated above?**

What Iaremenko was saying in 1990 is no different from Katsenelinboigen (1978).

Agursky, Checinski. Nevozvrashchentsy: Fedoseev, Polikarpov, kto ieszche? Sources of the *Bulletin* authors were publishing on military economy in the 1950s and 1960s.

Krylov (1979): apparently unsourced stuff which sounds like information picked up from the ex-Soviets. Delphic series of monographs.

There was work on the military sector, if only because Western governments commissioned it. It appeared in the reports of think tanks, government agencies, and congressional hearings. Government-sponsored compendia on the Soviet economy contained chapters on military industry or expenditures (US Congress, earlier? 1976, 1979, 1982, 1987).

CIA estimates of the double-digit military burden, published in mid-1970s, themselves constitute a very important piece of evidence, quite apart from the disputes they ignited. **Who drew the implications of these numbers for the economy? i.e., what if the CIA was correct? Did people even mention it?**

The CIA has been publishing reports on various aspects of the Soviet economy since 1960, and touched on many different aspects, both specific, such as tin, copper, timber,

construction materials, and synthetic rubber industries, irrigation, and general, such as the state budget and manpower prospects. Its first report on military industry was published in 1986 (US CIA, 1986), so the principle of reverse priority worked there, too. Poor guidance for the public. It was preceded in 1978 by a report on the civil defense (US CIA, 1978).

Gregory and Stuart (1986) was based **exclusively?** on government sources (JEC volumes) and western sources disputing government estimates.

Use of the military analysis of the Soviet Union? Leon Goure, *Civil Defence in the Soviet Union*, Berkeley, 1962, and his *War Survival in Soviet Strategy*, Miami, 1976, on industrial dispersal. RAND Corp. reports: Alexander, Becker, what were their sources? other Academic western publications? See if Bibliographies cite western articles and reports on the military sector.

The idea that the Soviet economy was in essence a military one is not new. The foundational document of the Cold War, written at its outset and declassified in the 1970s, stated: “Economics in the Soviet world is not an end in itself. The Kremlin’s policy, insofar as it has to do with economics, is to utilize economic processes to contribute to the overall strength, particularly the war-making capacity of the system.” NSC-68 (1950, p. 63).

In the middle of détente, with its widely shared hopes of peaceful economic cooperation between the USSR and west, there appeared a polemic for banning practically all trade with the USSR, which stated that “... Soviet industrialization has been preeminently Soviet militarization” (Sutton, 1973b, p. 17). It was published by Arlington House,

and its author at the time, and for the rest of his life, did not hold any academic position. He went on to publish conspiracy theory books .

Appendix 1. How the literature was surveyed

I consider all the English-language books published in 1948-1992 that deal with the Soviet/socialist/planned economy as a whole or address its aspect (such as planning, growth, or history) for which the military sector played an important role; and all articles on the Soviet/socialist economy published in 1948-1991 in leading economics and Sovietological journals. Books were located by searching Harvard and Princeton library catalogs for keywords “Soviet economy”, “command economy”, and “planned economy”. Books published in 1992 are included because they were almost certainly written before the fall. I count multiple editions of a title as separate books.

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Table 1. Military sector in books on the Soviet/socialist economy by category

<i>Category of books</i>	<i>To- tal</i>	<i>With chapters on:</i>		<i>With index:</i>			
		<i>other sectors</i>	<i>Mili- tary</i>	<i>Pre- sent</i>	<i>w/o military entries</i>	<i>average no. entries/book</i>	<i>With “se- crecy”</i>
Textbooks and readers	47	46	6	41	6	7.1	2
Planning	18	15	0	12	9	0.8	0
Enterprise management	8	1	0	8	5	3.0	1
Growth	10	7	0	9	3	10.4	0
NIPA, statistics	11	7	4	8	1	28.1	1
General Soviet/socialist	28	20	3	25	7	6.0	3
Gorbachev, collapse	16	10	1	15	2	11.7	0
Economic history	15	10	4	14	2		0
R&D, innovation	25	n.a.	12	11	0		4
TOTAL	178	116	30	143	35		11

Source: Tables A1-A9,

<http://www.haverford.edu/economics/Faculty/Kontorovich/TabWAK.pdf>

Table 2. Number of books with chapters on the military sector in the total number of category, over time

<i>Period</i>	<i>Textbooks</i>	<i>NIPA</i>	<i>History</i>	<i>R&D</i>	<i>Other</i>	<i>Total with chapter</i>
1948-60	0/3	1/6	0/0	0/0	0/0	1
1961-70	0/16	3/3	0/4	1/1	0/5	4
1971-80	1/7	0/1	0/3	3/8	0/8	4
1981-90	5/13	0/0	1/2	7/8	2/12	16
1981-85	3/7	0/0	0/1	3/4	0/3	6
1986-90	2/6	0/0	1/1	4/4	2/9	11
1991-92	0/2	0/0	2/3	0/0	1/1	3

Source: Tables A1-A9,

<http://www.haverford.edu/economics/Faculty/Kontorovich/TabWAK.pdf>

Table 3. Number of articles on Soviet/socialist economies and their military sector in general economics and specialized journals, 1948-1991

JOURNAL	Articles on Soviet/ Socialist economy	Articles on Military sector
General economics - American journals	163	1
American Economic Review ¹	49	0
Journal of Political Economy	36	0
Quarterly Journal of Economics	30	0
Review of Economics and Statistics	48	1
General economics – five British & international journals ²	44	0
American Econ. Rev. Papers and Proceed. (1948-1972)	43	1
Slavic Review	126	0
Soviet Studies (1949-1991) ³	582	15
Journal of Comparative Economics (1977-91) ⁴	?????????	1

Sources: For general economics journals, I searched JSTOR database for articles with words in the title or ?????: “Soviet”, “socialist”, “socialism”, “centrally” “planned”, “central planning”, “planned”. This method may miss some relevant articles, compared to direct examination of the tables of contents. For *Papers and Proceedings* and specialized journals, I examined the tables of contents, selecting articles by their titles.

Notes: ¹ Excluding *Papers and Proceedings*. ² *Econometrica*, *Economica*, *Economic Journal*, *Oxford Economic Papers*, *Review of Economic Studies*. ³ articles and notes. ⁴ articles, short communications, discussions.

Table 4. Articles on specific sectors of the Soviet/socialist economies in specialized journals, 1948-1991

	<i>Slavic Review</i>	<i>Soviet Studies</i> ¹	<i>JCE</i> ²	<i>CES</i> ³	<i>Total</i>
Agriculture	31	77	9		117
Foreign economic relations	6	25	14		45
Investment	0	23	7		30
Natural Resources; fuel, energy	3	13	7		23
Consumption, Consumer goods	2	10	4		16
Retail, Wholesale, Credit, Services	2	8	4		14
Housing	3	6	2		11
Engineering, machinebuilding	1	5	3		9
Other industry	4	6	1		11
Transport	0	6	0		6
R&D, Education	0	4	0		4
Military sector	0	15	1 ⁴	2	16
SPECIFIC SECTORS	51	198	52		301
All articles on socialist economies	126	582	?????		

Source: Tables of contents of the journals. Notes: ¹ articles and notes. ² *Journal of Comparative Economics*, 1977 – 1991, articles, short communications, discussions. ³ *Comparative Economic Studies*, 1985-91. ⁴ There is also an article on military expenditures in OECD countries, Smith (1980).