The military expenditure of China, 1989–98

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I. Introduction

It is an open secret that the official defence budget is just a part of the resources used to support the military establishment of China. Most analysts believe that China’s published budget substantially understates its total expenditure on national defence, although there is no consensus as to where its ‘hidden sources’ of military financing lie and how large its actual defence spending really is. Estimates of China’s total military expenditure vary widely, ranging from $20 billion to $140 billion.\(^2\)

A major problem with any analysis of China’s military expenditure is the veil of secrecy shrouding military allocations. Of course, the difficulty of gathering statistical data of sufficient reliability in this area is not peculiar to the case of China,\(^3\) but the traditional preoccupation of Chinese leaders with secrecy makes them extremely reluctant to publish details of the country’s military expenditure even in the crudest aggregated form. Until China published its first defence White Paper in 1995, the outside world had only known a single-line entry for defence in the annual state budget.\(^4\) Neither the 1995 nor 1998 White Paper reveals much about the country’s total military expenditure.\(^5\) For instance, defence expenditure outside the official defence budget was not mentioned at all.

The absence of systematic data on defence spending, however, does not mean that it is impossible to improve the accuracy of estimates. It is only necessary to look a little further to find a surprisingly large amount of material published in China on defence economics. Examples include professional newspapers, journals, books, and national and provincial statistical publications of various kinds.\(^6\) Since they are prepared for domestic audience and some of them classified as “internally circulated only,” it is reasonable to assume that those sources are relatively reliable. Although it is often necessary to search through dozens of such publications in order to find a few useful references, these sources nevertheless represent a gold mine from which some missing pieces of China’s military expenditure puzzle can be found.

This appendix attempts to tap these Chinese sources in the hope of clarifying certain key issues about Chinese military expenditure and, wherever possible, using concrete

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1 I am grateful for comments and suggestions received from Elisabeth Sköns, Björn Hagelin, Eve Johansson, Bates Gill, David Shambaugh, Michel Oksenberg, and others.


4 The White Paper only provides a breakdown into three categories: salaries and living expenses; maintenance, construction and training; and R&D; procurement and transport.


6 Examples are Zhongguo Jungong Bao [Chinese defence industry tribune], Zhongguo Junzhuo Bao [Chinese defence conversion tribune], Junshi Jingji Yanjiu [Research in defence economics], Jundui Caiwu [Military finance], and dozens of books on defence economics published since 1985.
figures to replace guesstimates. The following three sections examine in turn items in each of the three major components of Chinese military expenditure. Section II considers the officially published defence budget; section III looks at defence-related items that are imputed to other government ministries; and section IV examines the various extra-budgetary earnings of the People’s Liberation Army (PLA). Section V uses the findings of these three sections to construct estimates of China’s total military expenditure for the 10 years 1989–98.

II. China’s official military budget

Before making any estimate, military expenditure must first be clearly defined. Without a uniform accounting structure for military expenditure, different analysts would come up with very divergent estimates. In this appendix, military expenditure is defined as the total amount spent for national defence purposes regardless of the source of funding. The categorization of military expenditure suggested by the Stockholm International Peace Research Institute (SIPRI) is adopted:7 (a) pay and

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7 There are of course other ways of defining military expenditure, such as those proposed by the International Monetary Fund (IMF), NATO, the United Nations and the US Department of Defense (DOD). For more information, see Sen, S., ‘Military expenditure data for developing countries: methods and measurement’, ed. G. Lamb, Military Expenditure and Economic Development: A Symposium on Research Issues (World Bank: Washington, DC, 1992); and Deger, S., Military Expenditure in Third World Countries: The Economic Effects (Routledge & Kegan Paul: London, 1986). The SIPRI definition
allowances of military personnel; (b) pensions of retired military personnel; (c) operations and maintenance (O&M); (d) procurement; (e) research and development (R&D); (f) construction; (g) military aid provided; (h) paramilitary forces; and (i) military space activities.

Using the SIPRI classification as a framework of reference, the sources of each group of expenditure can be identified, starting with the categories in the official military budget and then adding the components of military expenditure that are not included in the official figures.

The ‘China public finance yearbook’ (Zhongguo Caizheng Nianjian) divides the official defence budget into two parts, central and local (table 7D.1). The local portion apparently covers the costs of maintaining the militia, because it is also referred to as ‘militia operation funds’ (minbing shiyefei). The central portion covers the 13 major categories of spending for the PLA, which are listed in table 7D.2.

‘Personnel’ covers all those serving in the PLA, including all its defence forces, military service mobilization organs, administrative organs of military-run agriculture and sideline production, civilian employees of the PLA and active-service personnel in the reserve forces.

In China, former officers and soldiers normally receive no money from the government after being demobilized except a one-off demobilization allowance. While former officers do maintain their salaries, such money comes from their new employers rather than from the government budget, as do their health and hospital expenses. Only a very small percentage of senior officers who have already passed retirement age when demobilized receive pensions, housing allowances and perhaps other kinds of benefit. The official defence budget bears these expenses as well as the demobilization allowances.

Of disaggregation is preferable for 3 reasons. First, it is in line with the general definition given above. Second, while it is fairly close to the IMF, NATO, UN and DOD categorizations, it is more comprehensive. Third, the SIPRI Yearbook provides more detailed statistics on national defence for more countries than any of the above organizations.

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‘Procurement’ is an important category in the official defence budget. According to Chinese sources, the defence budget covers the following three broad categories of weapons and equipment: (a) space equipment, aircraft, missiles, nuclear warheads and bombs, ships and boats, tanks, and armoured vehicles; (b) artillery, other ordnance and ground force arms; and (c) ammunition, electronics and communications, transport vehicles, reconnaissance equipment and logistic support.\(^\text{12}\) This list

includes all the items under the ‘procurement’ heading of the UN definition of military expenditure.\textsuperscript{13}

Whereas there is little doubt that the official defence budget pays for ordnance procurement from domestic suppliers, it is not clear how the Chinese military accounts for purchases from foreign suppliers. According to China’s ‘Ordinance on Military Budget Categorization,’ funding for arms imports is already included in the official defence budget,\textsuperscript{14} but Western analysts generally suspect that major foreign weapon purchases may be funded, at least partially, through special appropriations outside the defence budget. The matter of fact is that very little is known about this.

‘Construction’ covers ground force bases, naval bases, air bases, infrastructure for missile projects (\textit{erpao gongcheng}), communication centres, scientific research centres, warehouses and depots, training bases, barracks, quarters for families of military personnel, and shelters.\textsuperscript{15}

The official defence budget does not cover the costs of R&D on new weapons and equipment. There is a distinction in Chinese usage between ‘military research’ (\textit{junshi kexue yanjiu}) and ‘defence research’ (\textit{guofang kexue yanjiu}). The former means primarily research in military science, but also includes medical research for military purposes, the testing and evaluation of weapons and equipment, and research for minor improvements to weapons and equipment currently used by the PLA. In any case, ‘military research’ is done exclusively by PLA research institutes. ‘Defence research’ refers to all kinds of defence-related research carried out by research institutes supervised by the Commission on Science, Technology, and Industry for National Defence (COSTIND) or other government agencies. The official defence budget funds only the former.\textsuperscript{16} Section III discusses the latter.

\section*{III. Military expenditure in other budget categories}

It is clear from the above that, except for a small portion spent on maintenance of the militia, the published defence budget is essentially the budget for the PLA.\textsuperscript{17} Some important defence-related outlays are actually excluded from it and instead listed under other headings in the central and local government budgets. According to a recent internal publication, key defence-related items funded from other national and local government sources include the paramilitary People’s Armed Police (PAP); some research, development, testing and evaluation (RDT&E) costs; and capital construction of defence projects.\textsuperscript{18} To this list should be added some demobilization and military pension costs and subsidies to defence industries that help lower the cost of indigenous arms procurement for the armed forces. In addition, arms acquisitions from abroad are probably also financed by funds listed under other budget categories.

\textsuperscript{14} The Editorial Board (note 9), pp. 312-13; and Lu Zhuhao (note 9), p. 486.
\textsuperscript{16} The Editorial Board (note 9), pp. 360-67 and Lu Zhuhao (note 9), pp. 529-37.
\textsuperscript{17} It is often referred to as the ‘expenses of the military’ (\textit{junfei}) in China.
\textsuperscript{18} Li Yingcheng and Shi Xuzhong, ‘Lun guofang jianshe hongguan xiaoyi pingjia di keguan jichu’ [The basis for cost–benefit analysis of a defence build-up], \textit{Jingji yanjiu cankao}, no. 1147 (21 Mar. 1998).
People’s Armed Police

Established in 1983, the PAP’s main functions are to maintain domestic order and protect the country’s frontier. It has a separate budget that is published in the ‘China public finance yearbook’. The PAP is financed by both central and provincial governments. However, as shown in Table 7D.1, ‘China public finance yearbook’ did not provide the central-provincial breakdown until 1996.

Defence RDT&E

For much of the 1980s, government funding for defence RDT&E was declining. By 1990, government spending in this category was equivalent to less than one-tenth of the official defence budget. The falling trend was probably reversed after the 1991 Persian Gulf War. The high-technology weapons used in the war served as a wake-up call to the Chinese military leadership, reminding them how far China was behind in its armaments. Military technology may have received more attention since the Gulf War than before. However, analysts cannot agree on how much China is devoting to this sector.

To arrive at a sensible estimate, it is necessary to know where defence RDT&E funds come from. According to well-informed Chinese military economists, defence RDT&E is financed from two sources listed in state budget: the general R&D fund and the ‘new product promotion fund’. The former is defined as ‘all actual expenditure made for R&D (including basic research, applied research and experimental development)’. It pays for both direct and indirect expenditure on R&D (including management expenses, administrative expenses and capital construction relating to R&D). The latter refers to ‘the expenses appropriated from the government budget for scientific and technological expenditure, including new product development expenditure, expenditure for intermediate trial and subsidies for important scientific researches’. Both include allocations for defence purposes, but the bulk of them are devoted to civilian programmes. The defence portion of the general R&D fund is called ‘expenditure on research’ (yanzhi jingfei) and its

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counterpart in the new product development fund 'expenditure on test, evaluation and prototypes' (shizhi jingfei).26 Since 1980, national defence has always been ranked the lowest in China’s ‘four modernization programme’ (industry, agriculture, science and defence). The Gulf War may have heightened China’s interest in modern weaponry, but economic modernization is still China’s top priority. For this reason, it is assumed here that 10 per cent of the general R&D fund was spent on national defence for the three-year period 1989–91 and 15 per cent for the seven-year period 1992–98 (taking deliberately high estimates).27 Column 2 of table 7D.3 calculates China’s defence-related R&D expenditure from 1989 to 1998. The defence-related T&E figures shown in column 3 are estimated by a similar method, although it is assumed that the defence portion of the new product development fund was higher (30 and 35 per cent for the periods before and after the Gulf War, respectively, again taking high estimates). This assumption is made because, ranging from two-thirds to three-quarters, the central share in this government expenditure is much higher than in almost all budget categories except national defence, the PAP and a few others, and there is no reason for the central government to monopolize the development of new ‘products’ unless a significant proportion of the products to be developed are defence-related. In particular, China’s space and nuclear research projects are probably covered under this ‘new products’ category.28 The figures in table 7D.3 seem to confirm the estimates made by Arnett and Gill and Kim: China’s expenditure on defence-related RDT&E is in the vicinity of $1–$1.5 billion.29 It is not likely for actual spending to be higher than this level.

**Construction**

As pointed out in the preceding section, the official defence budget covers most, if not all, construction costs of military facilities directly controlled by the PLA. However, expenditure on other types of defence projects, including research facilities and military production lines operated by civilian institutions, is listed under the budget category 'capital construction'. In the first 30 years of the People’s Republic (1949-1979), the defence-related share of capital construction averaged around 5 per cent.30 After 1980, the government substantially reduced its budget allocations to defence projects.31 Thus, it is

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26 Li and Shi (note 18), pp. 19–20. Also see the Editorial Board (note 9), pp. 454-75 and Lu Zhuhao (note 9), pp. 315-20.

27 Several PLA sources complained that the ratio of the general R&D fund devoted to defence-related projects had been far lower than 10 percent. For example, see Jiang Baoqi and Zhang Shengwang (note 23), p. 50.


reasonable to assume that the portion of capital construction expenditure allocated to
defence projects fell below 4 per cent for the period 1989–91. Even though China
certainly has not attached as much importance to national defence as it did before
1979. Therefore, it is unlikely for the defence-related share of capital construction to
be higher than 5 per cent. Column 4 of table 7D.3 reports the author’s estimates of
China’s spending on defence construction projects.

Subsidies to demobilized military personnel and their dependents

The official defence budget pays for part of pensions to retired military personnel and
demobilization allowances, but not all. The Ministry of Civil Affairs (MCA) also
bears some responsibility of supporting former servicemen and their dependents.
Within the MCA’s budget, there is an item called ‘compensation expenditure’ (fixu

Table 7D.3. Estimated off-budget military expenditure of China, 1989–98
Figures are in b. current yuan.

<table>
<thead>
<tr>
<th>Year</th>
<th>R&amp;D(a)</th>
<th>T&amp;E(b)</th>
<th>Construction(c)</th>
<th>Subsidies to demobilized personnel(d)</th>
<th>Subsidies to military production(e)</th>
<th>Commercial earnings(f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1989</td>
<td>1.000</td>
<td>1.740</td>
<td>1.927</td>
<td>1.443</td>
<td>4.990</td>
<td>2.515</td>
</tr>
<tr>
<td>1990</td>
<td>1.254</td>
<td>1.904</td>
<td>2.190</td>
<td>1.661</td>
<td>4.824</td>
<td>2.903</td>
</tr>
<tr>
<td>1991</td>
<td>1.423</td>
<td>2.200</td>
<td>2.238</td>
<td>1.721</td>
<td>4.253</td>
<td>3.303</td>
</tr>
<tr>
<td>1992</td>
<td>2.535</td>
<td>3.129</td>
<td>2.780</td>
<td>1.845</td>
<td>3.698</td>
<td>5.668</td>
</tr>
<tr>
<td>1993</td>
<td>2.940</td>
<td>3.730</td>
<td>2.960</td>
<td>2.078</td>
<td>3.481</td>
<td>6.387</td>
</tr>
<tr>
<td>1997</td>
<td>5.827</td>
<td>5.814</td>
<td>5.240</td>
<td>3.400</td>
<td>3.740</td>
<td>9.751</td>
</tr>
</tbody>
</table>

Notes:
\(a\) (General R&D) x 0.1 for 1989–91; (General R&D) x 0.15 for 1992–98.
\(b\) New product test x 0.3 for 1989–91; (New product test) x 0.35 for 1992–98. T&E = test and evaluation.
\(c\) Capital investment x 0.04 for 1989–91; (Capital investment) x 0.05 for 1992–98.
\(d\) ‘Compensation expenditure’ in the budget of the Ministry of Civil Affairs.
\(e\) (Subsidies to loss-making productive state-owned enterprises) x \(\frac{1}{3}\) x \(\frac{1}{2}\) for 1989–98. I have made some adjustments to this series of estimates according to your suggestions.
\(f\) (Defence budget) x 0.1 for 1989–91; (Defence budget) x 0.15 for 1992–93; (Defence budget) x 0.12 for 1994–98.

Figures in italics are estimates for 1997 and 1998 derived from data on the previous years,
assuming the same average growth rates as in the previous 3 years. For ‘subsidies’ (col. 4),
however, the growth rate from 1995 to 1996 is used to estimate figures for 1997 and 1998.
Source: Chinese Ministry of Finance, Zhongguo Caizheng Nianjian [China public finance
yearbook], various years.
zhichu), which is designated to help mainly, but not exclusively, veterans and their families. In 1998, for instance, 490 000 ‘revolutionary martyrs’ dependents, 890 000 disabled army men and 2.54 million veterans living in the countryside received regular subsidies from the MCA. A small part of this MCA budget is also used to assist demobilized servicemen to resettle. Column 5 of table 7D.3 shows compensation expenditure for the period 1989–98, assuming that it is spent entirely on former military personnel and their families.

**Subsidies to military production**

It is essential to distinguish two distinct categories of enterprise: (a) **jungong** enterprises, or those managed by ministries and corporations under the State Council; and (b) **jundui** enterprises, or those run by the PLA. While jungong enterprises are frequently portrayed as being controlled by the PLA, this is in fact not the case. Each system has its own budget. The focus here is on jungong enterprises. Jundui enterprises are discussed in detail in the next section.

In the early 1980s, China’s defence industry (aerospace, aeronautics, electronics, ordnance, nuclear and shipbuilding) comprised roughly 1000 large and medium-sized firms and over 200 research institutes, which altogether employed nearly 3 million staff and workers, including about 300 000 scientists, engineers and technicians. Since then, because of a substantial fall in PLA procurement, this part of the state sector has been in serious decline. China’s defence sector is now at best a small player in the national economy. Its asset value accounts for only about 4 per cent of the state industrial total. In terms of output value and employment, its shares are even smaller.

To cope with the difficulties arising from declining procurement orders, China’s defence industry has been undergoing conversion since the early 1980s. By the early-1990s, civilian production had constituted 80 per cent of total output value of the defence industries. In some sectors such as electronics, the civilian share of total production is nearly 100 per cent. Overall, more than 40 per cent of defence pro-

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34 Fan Gonggao (note 15), pp. 163–64.
36 It accounted for only 1.38% of the total state asset. Zhongguo Caizheng Nianjian 1997 (note 8), pp. 583–85.
39 Li Yintao, ‘Guofang keji gongye junzhuangming fazhan jieduan yanjiu’ [A Research on the Phases of Conversion in Defence Science and Technology Industry], *Junshe jingji yanjiu* [Military Economic Research], No. 2 (1996), pp. 20-22. See also Gurtov, M., ‘Swords into market shares: China’s conversion of military industry to civilian production’, *China Quarterly* (June 1993), p. 214. See also
ducers had converted completely to civilian production, no longer producing any defence goods, and another 40 per cent were engaged in both military and civilian production. Only around 10 per cent produced solely for the military market.\textsuperscript{40} Conversion, however, was a very painful process. Currently, only a handful of defence enterprises are profitable. Most are in trouble.\textsuperscript{41} Overall, profits generated from civilian production by China’s defence industries fall far short of covering losses from their military operations.\textsuperscript{42} Thus, government subsidies are necessary to keep the defence sector afloat.

The data on state subsidies for loss-making productive enterprises in general are available. Given the fact that the defence sector constitutes only a very small part of China’s industry, it is highly unlikely for more than one-third of such subsidies to go to this sector alone. Even if one-third does go to the defence sector, a large portion of these funds (say 50 per cent) must have been allocated to facilitating military conversion, the sector’s central task since the early 1980s. Such costs of demilitarization should not be considered as defence-related expenditure. On the basis of these two assumptions, column 6 of table 7D.3 provides the estimates of state subsidies used to underwrite the production of weaponry. It is assumed that the share of state subsidies to military production did not increase after the Gulf War in 1991 because since the early 1980s China has adopted a guideline for its domestic arms production, ‘more research and development but less production’ (\textit{duokaitaifa, shaoshengchan}).\textsuperscript{43} In other words, even if spending on RDT&E has increased, new weapon systems are not necessarily built and deployed. ‘Very little evidence exists that the Chinese government will invest heavily in modernizing the defence industrial plant.’\textsuperscript{44}

\section*{Special appropriations for arms acquisitions from abroad}

China meets most of its weapon requirements from domestic production. ‘Dependence on foreign arms suppliers is considered a political handicap’ because the

\begin{footnotesize}
\begin{itemize}
\item Frankenstein, J., ‘Perspectives on China’s defense industries’, Asia Research Center, Copenhagen Business School, 1998. Unpublished. It was reported in 1994 that the ordnance industry was the biggest money-loser, while the situation in the aeronautics and astronautics industry was only slightly better. For instance, over 80% of the plants under the China Ordnance Industry Corporation (COIC), the conglomerate that oversees the country’s tank, artillery, munitions and small-arms factories, were losing money. China News Agency, 1 Dec. 1994.
\item Zhang Yanzhong, ‘Guofang gongye zouxiang shichang jingji ruogan wenti de sikao’ [Thoughts on issues concerning how to integrate defence industries into the market economy], \textit{Zhongguo jungong bao}, 5 July 1994, p. 3.
\end{itemize}
\end{footnotesize}
Chinese have learned from their experience in dealing with the former Soviet Union (in the 1950s) and the USA (in the 1980s) that ‘in the eventuality of a crisis, China could become subject to foreign political influence or embargo’.\textsuperscript{45} Despite its desire for self-reliance, however, China is clearly aware of the necessity of importing arms from abroad. Otherwise, it would not be possible to accelerate the pace of military modernization. Since the mid-1970s, China has shown great interest in purchasing weapons and weapon technologies from the advanced countries but before the 1990s, while it did a good deal of ‘window shopping’, its actual arms imports were modest even compared with those of some of its much smaller neighbours.\textsuperscript{46} This could probably be attributed to cutbacks in China’s overall defence spending during this period. After the Gulf War, China speeded up its arms acquisitions from Russia.\textsuperscript{47} The total costs of its purchases of Russian weapons and equipment since 1990 are estimated to be equivalent to $10 billion.\textsuperscript{48} However, according to some analysts, ‘the actual cash outlay is perhaps one-third to one-half less as early purchases were covered in part by barter, and some deals have not been completed’. \textsuperscript{49}

Where does the PLA get funds to pay for arms imports? Chinese sources claim that the money is already included in the procurement element of the official defence budget,\textsuperscript{50} while Western analysts generally suspect that China’s foreign weapon procurement is funded through special appropriations. Assuming that most spending on foreign purchases lies outside the defence budget, it is possible that additional allocations come from the budget category ‘other expenditures’.\textsuperscript{51} Because details of this category are not specified, however, it is impossible to speculate how much of it is devoted to arms imports. For this reason, rather than relying on Chinese sources, the estimated values of China’s arms acquisitions from abroad in this study are derived from the time-series data provided by the US Arms Control and Disarmament Agency (ACDA), which are shown in table 7D.4.\textsuperscript{52}

\textsuperscript{45} Chinese Country Study Group (note 42), p. 33.
\textsuperscript{46} Gill and Kim (note 28), pp. 34–47.
\textsuperscript{47} Gill and Kim (note 28), pp. 48–70.
\textsuperscript{49} Ibid.
\textsuperscript{50} The Editorial Board (note 9), pp. 312-13; and Lu Zhuhao (note 9), p. 486. Also see Fan Gonggao (note 15), pp. 296–98.
\textsuperscript{51} It may not be a coincidence that the size of the ‘others’ category in the central budget almost quadrupled between 1992 and 1996. Chinese Ministry of Finance, \textit{Zhongguo Caizheng Nianjian}, various years.
IV. Military expenditure deriving from extra-budgetary sources

‘The overriding financial fact in the development of the PLA throughout the Deng period has been inadequate funding.’\textsuperscript{53} Most of the expenditures discussed in the above section, however, are beyond the direct control of the PLA. To compensate for the PLA’s budget shortfalls, beginning from 1985, the central leadership gave the PLA the go-ahead to engage in various kinds of business activities, ranging from hotel to pager services. Revenues generated by such activities are generally referred to in China as extra-budgetary earnings of the PLA, which do not appear in the state budget at all.\textsuperscript{54} Some of such revenues are used for defence purposes. The PLA has two main sources of extra-budgetary revenue.

**Commercial earnings from domestic business activities**

The PLA has a long tradition of participation in non-for-profit economic activities, but it was not until 1985 that the PLA was given permission to conduct for-profit commercial activities. The military’s expanded involvement in economic activities soon bore fruit. By 1987, the total turnover and profits of PLA-affiliated enterprises had reached 9.59 billion and 2.41 billion yuan (equivalent to 11.5 per cent of the published defence budget), respectively.\textsuperscript{55} While such extra-budgetary incomes certainly helped improve the army’s financial situation, the negative effects of being involved in commerce also became evident before long. In 1989, the central government was compelled to take measures curtailing the military’s business activities. The PLA then began to withdraw from the commercial front. However, the process of retreat was disrupted by Deng Xiaoping’s visit to southern China at the beginning of 1992, which was followed by two years of ‘high-speed, free-wheeling growth for the military–business complex’.\textsuperscript{56} Total profits from military business operations reportedly reached 5 billion yuan (equivalent to 13.3 per cent of the published defence budget) in 1992\textsuperscript{57} and 6 billion yuan (equivalent to 14.2 per cent of the published defence budget) in 1993.\textsuperscript{58} The military’s enthusiasm for money making again quickly gave rise to serious problems, including smuggling, rising corruption, worsening civil–military relations, lax discipline, ebbing morale, falling levels of professionalism, widening gaps between coastal and inland units and so on. Alarmed by these dangerous trends, the central leadership launched another rectification campaign at the end of 1993. Combat units beneath the Group Army


\textsuperscript{55} Fu and Li (note 36), p. 54.


\textsuperscript{57} Ibid, p. 194.

\textsuperscript{58} Tai Ming Cheung reported 6 billion yuan. Tai Ming Cheung (note 55), p. 195. However, Ka Po Ng suggested that the annual profit of 1993 was 5 billion yuan. Ka Po Ng, ‘China defense budgeting: structure and dynamics’, eds Lo Chi-kin, S. Pepper and Tsai Kai-yuen, *China Review 1995* (Chinese University Press: Hong Kong, 1995), p. 9.18.
level were banned from running businesses except farming and sideline production. Their enterprises were supposed to be either closed, or transferred to higher-level military units, or handed over to local governments. This time, the order was more rigorously enforced. By the beginning of 1995, according to a Chinese report, 40 per cent of PLA business entities had already been closed down, leading to a leveling off of the PLA’s commercial earnings. The PLA’s profits from economic activities in 1997, for instance, were reportedly around 4–6 billion yuan (at most equivalent to 7.4 per cent of the published defence budget).

In July 1998, President Jiang Zemin issued an order to remove the PLA and the PAP from business altogether. It was reported that, by early December 1998, the PLA and PAP units in seven provinces (Beijing, Shanghai, Jiangsu, Guangdong, Guangxi, Hainan and Jiangxi) had completely withdrawn from the commercial world. A total of 580 enterprises with the gross asset value of 8–9 billion yuan were handed over to local governments. Except for Jiangxi, these were the provinces where military enterprises had been most flourishing. The total value of military business assets in the country was estimated at around 50 billion yuan, or around 1–1.5 per cent of the total assets of state-owned enterprises. The central government has promised to compensate the military in the defence budget for its lost business revenues.

On the basis of the above discussion it is assumed that total profits from the PLA’s domestic commercial activities were equivalent to 10 per cent of the country’s published defence budget from 1989 to 1991, 15 per cent for the two years 1992–93, and 12 per cent in the five years 1994–98. These assumptions allow us to derive the figures in column 7 of table 7D.3. It is highly unlikely that such incomes have contributed to the PLA’s coffers by anything more than 15 per cent of official budget allocations to the PLA. In fact, internal PLA publications insist that it has rarely exceeded 10 per cent.

Where did the money go? The bulk of it was used to make up the PLA’s budget shortfalls, particularly to subsidize soldiers’ living expenses. However, a large portion was either used to reinvest in new commercial ventures or wasted in luxury and extravagance by those who were directly involved in business dealings. Worse still, some of the income was simply siphoned off by corrupt officers.

Where did the money go?

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<tbody>
<tr>
<td>60</td>
<td>Tai Ming Cheung (note 55), p. 184.</td>
</tr>
<tr>
<td>64</td>
<td>Wang Qinming and Wang Wenhua (note 58), p. 58.</td>
</tr>
<tr>
<td>65</td>
<td>The Editorial Board (note 9), pp. 476-86.</td>
</tr>
<tr>
<td>67</td>
<td>Interview with a high-level official, Beijing, June 10, 1994.</td>
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</table>
profits from the PLA’s commercial activities were used for military purposes, it is not appropriate to count them all as such. But in order not to underestimate China’s military expenditure, it is assumed in this study that all estimated profits were spent on defence goods.

**Arms exports**

Earnings from overseas arms sales have been said to be another main source of extra-budgetary revenue for the PLA. However, the role of arms sales as a source of income for the PLA should not be exaggerated, for three reasons. First, China’s total gross revenue from arms export sales has suffered substantial declines since 1988, the peak year of arms exports for China. According to ACDA estimates, the total gross income from arms exports fell from $3.75 billion in 1988 to $0.58 billion in 1996. In 1997, China’s arms exports dipped 75 per cent and 1998 is expected to see another big drop (see column 4 of table 7D.4). Second, it is important to distinguish the PLA’s arms sales from those conducted by defence industrial corporations. Most Chinese arms sales agents are affiliated with

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defence industrial corporations rather than with the PLA. Only arms sales by PLA companies would benefit the PLA. Such sales account for far less than a half of China’s total. 70

Third, the arms sales figures were simply gross income, which did not discount the cost of production. 71 During the period under discussion (1989-1998), most if not all PLA arms exports were supplied by the defence industries, rather than coming from its own inventories. Therefore, a large portion of its gross income must be paid back to producers. It is highly unlikely for PLA’s net earnings to exceed 20 per cent of the income from its arms exports. 72 If this assumption is correct, then the earnings from arms sales added little to the military coffers, so little that they were almost negligible (see columns 5 and 6 of table 7D.4).

How does the PLA spend its profits from arms sales? Some argue that China’s arms imports are largely financed by such earnings. Table 7D.4 makes it abundantly clear that this is not possible, for the values of imports normally are ten times higher than the sum of the PLA’s earnings from arms exports. Since there is no information about the outlets of such earnings, we simply assume that they are used for some unspecified military purposes.

V. China’s total military expenditure

Table 7D.5 provides figures on China’s official defence budget and total military expenditure, the latter being calculated from the data presented in tables 7D.1, 7D3 and 7D.4. Comparing the two time-series, it appears that the total military expenditure has consistently been about 1.7–1.8 times the official defence budget. Measured in current prices, total military expenditure seems to have undergone double-digit increases all along ever since 1989. However, nominal figures could be misleading, and even useless when inflation is high. China experienced relatively high inflation between 1992 and 1995. While total military expenditure rose by 51.8 per cent over these four years, commodity prices went up 66.6 per cent during the same period. China’s total military expenditure actually decreased in real terms.

Table 7D.5. China’s military burden, 1989–98

<table>
<thead>
<tr>
<th>Year</th>
<th>Military expenditure</th>
<th>Military exp/GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Official (b. yuan, current prices)</td>
<td>Official (b. yuan, constant 1989 prices)</td>
</tr>
<tr>
<td>1989</td>
<td>25.147</td>
<td>25.147</td>
</tr>
<tr>
<td>1990</td>
<td>29.031</td>
<td>28.153</td>
</tr>
<tr>
<td>1991</td>
<td>33.031</td>
<td>30.980</td>
</tr>
<tr>
<td>1992</td>
<td>37.786</td>
<td>33.315</td>
</tr>
</tbody>
</table>

70 Interview by the author with a well-informed former employee of NORINCO, Mar. 1995.
72 I am grateful to Bates Gill for drawing my attention to this fact.
Since nominal figures give no proper indication of the real trend, we need to deflate the nominal time-series data by a suitable price index to make them reflect variations in China’s total military expenditure over time in real terms. In principle, the best method for price deflation would be to derive a series of military price deflators which could then be used to show the real change in terms of the expenditure mix of the armed forces. Unfortunately, no such deflator series is available in China. This study, therefore, uses the overall consumer price index as a deflator to convert the nominal military expenditure series into real terms. Measured in 1989 constant prices, China’s total military expenditure increased by 73.1% per cent for the whole period 1989–98. The increases occurred mainly in two sub-periods—1989–92 and 1996–98—while the period 1992–95 witnessed downslides rather than upsurges. This study makes no attempt to provide estimates of Chinese military expenditure in US dollars. The use of market exchange rates for international comparison can lead to enormous distortions in comparing defence efforts, and purchasing power parities (PPPs) are not used for the purposes of this appendix. The construction of a PPP requires detailed military expenditure data at a sufficiently disaggregated level, and in the study of China’s military expenditure it is information that is in short supply. In the absence of an explicit military PPP, ‘short-cut’ methods can be used instead, namely, converting military expenditure by gross domestic product (GDP) parity or government expenditure PPP. However, no time-series on either is available in the case of China. At best there are only some rough estimates of the PPP yuan value for a few specific years and they vary considerably, ranging from 3 to 9 times the exchange-rate conversion. There is no consensus among economists as to which of them is most realistic. Thus, the PPP-adjusted estimates of Chinese military expenditure would be extremely sensitive to the choice of PPP yuan/$ rate. In fact, much of the variance in estimating Chinese military expenditure in the West is attributable precisely to differing PPPs.

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73 The PPP is defined as ‘the number of units of a country’s currency required to buy the quantity of goods and services that can be bought in the US with one US dollar’. The PPP is believed to be able to provide a better measure for comparing volume indices of output, since it supposedly reflects the relative purchasing power of domestic currency and the dollar. Whyne, D. K., The Economics of Third World Military Expenditure (Macmillan: London, 1979), pp. 49–50. See also appendix 7C in this volume.


75 Sen (note 7), pp. 10–11.

76 Waller (note 70).
Given the difficulty of making a judgment as to which PPP value of the yuan is most appropriate, this study makes no estimate of Chinese military expenditure in dollar terms. Such an estimate can be derived from the basic data provided here if wished. However, if what is at issue is international comparison of the defence burden, no conversion seems to be necessary. The share of military expenditure in GDP can serve as a very good indication of the military burden. Whether converting military expenditure at the GDP-wide PPP, by exchange rates or making no conversion at all, the military expenditure/GDP ratio stays the same.

In the 10-year period 1989–98, China’s economy was booming with GDP growing at an average annual rate of 9.4 per cent. Certainly, the country could have afforded a military expenditure that kept pace with the general economy, had it chosen to do so. That did not happen. Rather, the share of total military expenditure in GDP was falling from 1992 to 1995, while it remained more or less unchanged for the other two sub-periods of 1989–92 and 1995–98. By 1998, the share was 0.6 per cent lower than it had been in 1989. China currently spends less than 2 per cent of GDP on national defence as compared with 3.7 per cent in Taiwan, 2.5 per cent in India, 3.2 per cent in South Korea. 3.7 per cent in Russia, and 3.6 per cent in the United States.

VI. Conclusions

Given Chinese leaders’ obsession with secrecy, analysis of Chinese real military expenditure is not an easy task. To approximate the magnitude of the Chinese defence effort, one has to take three essential steps: clearly defining the concept of military expenditure; ascertaining what items the official defence budget already includeds; and identifying the possible sources of other defence outlets. Based on such an analytic framework, this appendix arrives at the following four general conclusions:

1. China’s total military expenditure has consistently been about 1.7–1.8 times its official defence budget (comparing columns 2 and 4 of table 7D.5).
2. The resources available to the Chinese military have increased by about 75 per cent since 1989 (see column 5 of table 7D.5).
3. As a share of GDP, Chinese military spending has steadily declined (see column 7 of table 7D.5) over the 10-year period 1989–98.
4. China’s defence burden is modest. The military expenditure/GDP ratio is lower than those of all major powers and its neighbouring countries, with the exception of Japan.

Since the late 1980s, there have been voices within the PLA that demand the Chinese government to alter its way of allocating resources for national defence. More specifically, two changes have been proposed. First, all sources of military spending should be incorporated into China’s official defence budget. Second, the overall

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77 It is also a common practice to compare the share of military expenditure to total government expenditure. However, it is not done here because the ratio of total government expenditure to GDP has been unusually small in China. While in most countries, this ratio ranges from 25 to 45 percent, it has fluctuated between 11 to 12 percent in China in recent years. See Shaoguang Wang. ‘China’s 1994 Fiscal Reform: An Initial Assessment,’ Asian Survey, Vol. XXXVII, No. 9 (September 1997), p. 810.

78 See appendix 7A, table 7A.4 in this volume.

79 An early example was Jiang Baoqi and Zhang Shengwang (note 23).
defence budget should be fixed to a certain percentage point of GDP (from 2 to 3 percent).\textsuperscript{80} It is not clear whether and when the government will accept these two proposals. However, recent visitors to Beijing have gotten an impression that the PLA will receive a fixed percent of GDP. Although the figures given to these visitors were not consistent, they were all below 2 percent of GDP.\textsuperscript{81} Given the trend identified by this study, it is not very likely for China’s overall military spending to exceed 2.5 percent of GDP for the foreseeable future.


\textsuperscript{81} I am grateful to Bates Gill and David Shambaugh for sharing such information with me. They visited some top leaders of the newly established General Logistics Department in late 1998.