Demystifying China's Defence Spending: Less Mysterious in the Aggregate*

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Abstract

China's limited transparency concerning its defence spending harms strategic trust, but foreign analysts often lose sight of important realities. Specific details remain unclear, but China's defence spending overall is no mystery – it supports PLA modernization and personnel development as well as its announced objectives of securing China's homeland and asserting control over contested territorial and maritime claims, with a focus on the Near Seas (the Yellow, East, and South China seas). This article offers greater context and perspective for Chinese and Western discussions of China's rise and concomitant military build-up through a nuanced and comprehensive assessment of its defence spending and military transparency.

Keywords: China; defence spending; military budget; rising powers; People's Liberation Army; PLA

Whatever the exact size of the People's Republic of China's (PRC) actual defence spending, it is now the world's second largest. Its rapid increase over the past two decades is a development of considerable significance to the world, yet it remains poorly understood. Many analysts have a tendency to focus on the most unsettling aspects of both China's military strategic and budgetary opacity while overlooking the context in which relevant policy choices are made. The result is often an over-simplistic narrative about China's rise and long-term strategic intentions. A salient example of the problematic, decontextualized discourse about China's defence spending is then-US secretary of defence Donald Rumsfeld's charge at the June 2005 Shangri-La Dialogue: "Since no nation threatens China, one

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must wonder: Why this growing investment [in defence]? Why these continuing large and expanded arms purchases? Why these continued deployments?"[1]

As this article will demonstrate, however undesirable to foreign observers the PRC's military build-up may be, the trajectory of the People's Liberation Army (PLA) is increasingly amenable to external analysis: it is focused primarily on explicitly identified contingencies and is not particularly surprising. To be clear: to say that China's military trajectory is not as mysterious as is commonly believed is *not* to say that the PLA's growing capabilities should not be an issue of concern to other states or that China's military has achieved a sufficient level of transparency; nor is it to deny that some of China's recent rhetoric and behaviour toward its neighbours in East Asia has had a deleterious effect on regional stability. Nevertheless, inferences about China's strategic intentions and judgments about the appropriate policy response should be based on a full consideration of the available data, rather than focused only on the concerns raised by what some might term the "known unknowns" about China's military trajectory.[2]

To be sure, remaining uncertainties are significant. The lack of reliable open-source data, and infeasibility of confirming the veracity of those data that are available, hinders efforts to determine total military spending figures and intra-PLA spending priorities and capabilities. Given this reality, such figures are best estimated deductively from doctrine and inductively via an examination of procurement patterns of specific platforms and weapons systems. Specific estimation is extraordinarily complex and depends on data typically unavailable to scholars.[3] For these reasons, linkage of funding estimates to specific capabilities is beyond the scope of the present study.[4]

Although many of these and other specific criticisms raised about China's defence spending are valid, conclusions about the broader strategic uncertainty surrounding China's near-term military development that many observers reach based on those criticisms are often over-wrought. While China's official defence budget does not capture all defence-relevant spending, it is not exceptional in this regard: estimates of any country's total defence-related spending, to the extent that they are possible at all using open sources, are contingent on a subjective judgment about what constitutes "defence-related spending." Despite perennial limitations in China's budgetary transparency, the information currently available about China's priorities and investment is sufficient to develop a good sense of its broader military trajectory. A more complete understanding of the drivers of and trends in China's military development and defence spending and the international context in which China's rise is occurring, as well

1 Rumsfeld 2005.
2 This article synthesizes and builds on previous scholarship on China's defence spending, including: Blasko 2012a; Chen and Feffer 2009; Blasko et al., n.d.; Wang 2006; Crane et al. 2005; Bitzinger 2003; Shambaugh 2004, 184-224; Wang 1996.
3 Moreover, from the perspective of an advanced economy, China might be able to afford significantly more capabilities for a given amount of resources – particularly when applied to specific contingencies.
4 For examples of the most specific unclassified analysis feasible, see Pugh 1986.

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as a forecast of likely developments in the future, are necessary to ensure appropriate policy responses from the international community.

This article argues that what open-source data reveal *in aggregate* about broader trends in China's defence spending is significant. The growth in spending over the past two decades is driven primarily by a desire to modernize and professionalize the PLA after decades of neglect and military backwardness. Throughout much of the post-1978 reform era the real-world effects of China's nominal defence spending have been mitigated heavily by rampant inflation. Even during recent periods of relatively low inflation, rapid defence budget increases have been roughly consistent with overall GDP growth and outpaced by the growth in total state financial expenditures. Beijing's official defence budget increasingly captures actual PLA funding and the PLA's widely criticized opacity is improving gradually and is not as exceptional among countries at its stage of development as is widely believed. Defence spending growth over the past two decades has led to significantly improved military capabilities, the most significant of which are designed primarily to address contingencies in the Near Seas and their immediate approaches as opposed to further afield. Recent defence spending increases are sustainable, at least in the near-term, and could be augmented considerably and directed to support selected overseas contingencies. However, in the medium- to long-term, worsening economic and demographic pressures may impel China's leaders to shift budget resources elsewhere and thereby limit further military spending growth.

This article is divided into six sections. We begin with an overview of recent trends in China's defence spending. Second, we summarize remaining extrabudgetary funding and common Western criticisms of China's defence spending. We delineate several salutary trends resulting from recent budget reforms, the inclusion of several frequently overlooked spending categories, and gradual improvements in budgetary transparency. Third, we briefly summarize Chinese responses to Western criticisms about China's military transparency and defence spending in order to help elucidate the manifold drivers of China's rapidly increasing defence budget. Fourth, we highlight the problems inherent in oversimplified analyses of China's military development that view budget increases in isolation and mystify China's current and likely future military trajectory. We argue that China's military development targets conspicuous objectives, and that a more comparative and nuanced approach offers a more complete understanding of trends in China's defence spending. Fifth, we discuss several important implications of China's improving military capabilities and assess the prospects for the future growth of its defence budget. A final section concludes.

Defence Spending Trends

Beijing announces a single overall figure for its official defence budget for the year during the annual March session of the National People's Congress. This

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figure is usually revised at a later date to reflect routine adjustments to actual spending during the course of the year.

Although it is common knowledge that China's official defence budget has increased in nominal terms at an average annual rate above 10 per cent since 1990, our analysis of a wide spectrum of the publicly available data reveals that several less-known, but important, qualifications should be included in any discussion of the topic. First, throughout much of the post-1978 "reform and opening up" period, rampant inflation has mitigated the real-world impact of nominally large budget increases (see Table 1). Calculations of China's defence budget at constant prices (which account for the effect of inflation) show that in many years the effective growth rate of China's defence spending is much lower than the widely cited current price ("nominal") figures suggest. The differences between the nominal (current price) and real (constant price) average annual growth rates are remarkable: 1.6 per cent vs. –3.2 per cent (1980–1989); 15.7 per cent vs. 7.8 per cent (1990–1999); 16.5 per cent vs. 12.5 per cent (2000–2009); and 10.4 per cent vs. 3.1 per cent over the 2010–2011 period. In other words, when calculated in real terms the average annual increases in the budget exceeded 10 per cent during only one of the ten-year periods in Table 1: 2000–2009. This all suggests that unqualified statements along the lines of "China's official defence budget has increased by double-digits since year 19XX," while

Table 1: **PRC Defense Spending-related Comparative Statistics, 1980–2011**

	1980–1989 (annual average)	1990–1999 (annual average)	2000–2009 (annual average)	2010–2011 (annual average)
Defense budget growth rate				
at current prices	1.6%	15.7%	16.5%	10.4%
at constant prices (base year = 1980)	-3.2%	7.8%	12.5%	3.1%
GDP growth rate	9.8%	10.0%	10.3%	9.8%
State financial expenditures (guojia caizheng zhichu) growth rate				
Aggregate (central and local)				
at current prices	8.6%	16.8%	19.3%	19.5%
at constant prices (base year = 1980)	3.5%	8.8%	15.1%	11.6%

Note:
Data compiled from *Zhongguo tongji zhaiyao 2012* (*China Statistical Abstract 2012*), 23, 73–74, 199; *Zhongguo tongji nianjian* (*China Statistical Yearbook*) 2011, 44; *Zhongguo wushiwu nian tongji ziliao huibian* (*China Compendium of statistics 1949–2004*) 2005, 22; *Zhongguo caizheng nianjian* (*Finance Yearbook of China*) 1996–2011. All statistics are based on RMB-denominated data. Constant price calculations based on GDP Deflator from International Monetary Fund 2012, with the exception of the deflators for 1980 and 1981 to correct errors in the IMF current price figures for those two years.

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in most cases technically true in nominal terms, may exaggerate the real-world effects of these budget increases.[5]

Second, throughout most of the post-1978 period the rapid growth in China's official defence budget has been outpaced consistently by *even faster* increases in overall state financial expenditures, both of which, it should be emphasized, coincide with China's surging GDP (see Table 1). And in all periods, the rate of increase in aggregate state financial expenditures (which includes both central and local spending) has exceeded that of the defence budget. For example, the official defence budget has decreased (near-monotonically) from 9.5 per cent of total state financial expenditures in 1994 to 5.5 per cent in 2011.[6] To the extent that these official figures reflect trends in actual spending, these data suggest a very important point: with each passing year China's military forces receive – on average – a *declining* percentage of the government's largesse. In other words, China's investment in its military development, while increasing at a rapid clip, has been outpaced by the government's overall spending, and does not come close to dominating national priorities – in stark contrast to that of, say, the former Soviet Union. Official data are thus consistent with official government statements that defence modernization (i.e. spending) is subordinate to, but coordinated with, China's principal national objective: economic development.

Nevertheless, there is no denying that the recent surge in China's defence spending is remarkable, no matter how it is calculated and despite the fact that it began from a very low base (see Table 2). Over the past decade (2002–2011), China's defence budget increased at a *rate* far exceeding that of any other major power, albeit roughly consistent with GDP growth. At 11.2 per cent, the expected annual increase in the nominal 2012 official defence budget to RMB670.2 billion (approximately US$106.4 billion)[7] makes China's official defence budget almost thrice that of similarly sized India and second only to that of the United States.

Extrabudgetary Sources, Western Criticisms, Budget Reforms, Omitted Inclusions, and Transparency Trends

Extrabudgetary sources and Western criticisms

After Beijing announces its annual defence budget each March, copious Western analysis criticizes China's low transparency and the exclusion of major

5 To be sure, the same is true of many other nations' budgetary figures. But rampant inflation may make the gap especially pronounced in China's case, especially when compared to other countries (most of which are advanced economies) whose annual spending on defence numbers in the tens of billions of US dollars.

6 Information Office of the State Council (PRC) 2006, Section IX; Xinhua 2012a.

7 2012 figures are from Xinhua 2012a. Jane's predicts that spending will double between 2009 and 2016 by increasing at an average of 18.5 percent (see Janes.com 2012). But official 2012 growth is 60% lower than this prediction (Xinhua 2012b).

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Table 2: **PRC Official Defense Budget Annual Data, 2002–2012***

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012*
GDP growth rate											
at current prices	9.1%	10.0%	10.1%	11.3%	12.7%	14.2%	9.6%	9.2%	10.4%	9.2%	N/A
Defense budget (RMB billions)											
at current prices	170.8	190.8	220.0	247.5	297.9	355.5	417.9	495.1	533.3	602.7	670.0
at 2002 constant prices	170.8	186.0	200.6	217.1	251.8	279.1	304.4	362.9	366.6	385.3	N/A
as % of GDP	1.42%	1.40%	1.38%	1.34%	1.38%	1.34%	1.33%	1.45%	1.33%	1.28%	N/A
Defense budget growth rate											
at current prices	18.4%	11.7%	15.3%	12.5%	20.4%	19.3%	17.6%	18.5%	7.7%	13.0%	11.2%
at 2002 constant prices	18.4%	11.4%	14.0%	11.0%	17.2%	15.2%	12.8%	13.6%	5.3%	8.3%	N/A
GDP deflator											
	1.00	1.03	1.10	1.14	1.18	1.27	1.37	1.36	1.45	1.56	N/A

Note:

Data compiled from *Zhongguo tongji nianjian* (*China Statistical Yearbook*) 2011, 44; *Zhongguo tongji zhaiyao* (*China Statistical Abstract*) 2012, 11, 19, 23; *Zhongguo wushiwu nian tongji ziliao huibian* (*China Compendium of Statistics 1949–2004*) 2005; misc. sources from China Statistical Yearbooks Database (tongji.cnki.net/kns55/index.aspx). All statistics are based on RMB-denominated data. Constant price calculations based on GDP Deflator from International Monetary Fund 2012.

*2002-2011 budget data are actual figures; 2012 defense budget is an estimated figure reported in Xinhua 2012a

defence-related spending from its official defence budget. Many analysts claim (implicitly or explicitly) that China intentionally underreports actual military spending. As described in the following paragraphs, major items not included in the official defence budget that become targets of Western censure include: the budget of the 660,000-strong People's Armed Police (PAP); some domestic procurement and research and development (R&D) expenses; overseas purchases of major weapons and platforms; contributions from regional and local governments and extrabudgetary revenues and resources from a limited number of military commercial enterprises (e.g. hotels, hospitals, and strategic infrastructure); and militarily relevant portions of China's space program budget. Other extrabudgetary resources, some of which have attracted less scrutiny, include central and local government defence mobilization funds, one-time entrance bonuses for college students, authorized sales of land or excess food produced by some units, providing personnel for motion pictures, and donations of goods, services, and money by local governments and enterprises to units and demobilized personnel.[8]

Perhaps the largest alleged exclusion from the official defence budget is the budget of the PAP. Distinct from the PLA, however, the PAP's primary focus is domestic; its responsibilities include routine guard duties, fire fighting, public emergency response (e.g. natural disaster relief), counterterrorism and border security. In peacetime, the PLA does not routinely support PAP domestic stability operations. In the event of war, the PAP's secondary mission is to support the PLA in local defence. Because of these disparate roles, the PRC government categorizes the PAP budget under expenditures for public security, while the PLA budget is under expenditures for national defence – separate line items in publicly available government statistical yearbooks.

The PRC does not release any information publicly about the specific costs of procuring weapons and equipment built by the domestic defence industry; nor does it publicize how defence-related R&D funds are allocated to PLA armament research institutes and civilian defence contractors. Defence-related R&D funding may come from several parts of the government (e.g. the State Administration for Science, Technology and Industry for National Defense and the Ministry of Science and Technology) or defence firms.

Although most PLA procurement is domestically sourced, a significant percentage (by cost) of its most advanced weapons technology and some weapons platforms are acquired overseas. In addition to purchases of completed systems (e.g. *Kilo*-class submarines and *Sovremenny*-class destroyers), many of China's most advanced defence technologies originate from foreign-assisted development (officially authorized or otherwise) and/or licensed production and reverse-engineering of existing foreign platforms. These include the PLA Air Force (PLAAF) *Jian*-11B fighter, based on Russia's Su-27, and the *Jian*-15

8 Blasko 2012a, 12, 43, 56, 212.

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fighter, based on Russia's Su-33. The money spent on these imports is believed to come from special accounts controlled by the State Council (not the PLA) that are not included in the official defence budget.[9] Although arms imports have declined as China's domestic defence industry has become more capable, continued difficulties developing key technologies, such as mass-producing modern high-performance aero engines, suggest that China will continue to rely on imports from Russia for at least several more years. Meanwhile, the volume of Chinese weapon exports remains relatively small, but is growing rapidly; exports increased a total of 95 per cent between the 2002–2006 period and the 2007–2011 period. China is now the sixth-largest arms exporter by volume.[10]

China's defence budget is frequently criticized for not including provincial defence-related spending, such as the cost of operating military bases and demobilization and resettlement funds resulting from major force reductions since 1997. These are thought to come from the Ministry of Civil Affairs and local governments.[11] Local governments also contribute to reserve and militia expenses, including personnel costs for local civilian cadre working in grassroots People's Armed Forces departments. According to 2010 government statistics, only 2.94 per cent of defence expenditures were covered by local governments.[12]

China's general lack of transparency about how its official defence budget is calculated makes judging the validity of these Western criticisms very difficult. However, the potential significance of the above exclusions for assessing the size of China's actual defence budget is suggested in three important studies conducted by the International Institute for Strategic Studies (IISS). In 2006, IISS estimated that including the costs of foreign weapons purchases, subsidies, R&D spending, new product expenditures, arms exports and PAP funding revealed a 72 per cent gap (in RMB terms) between China's FY2005 official defence budget and "actual" (i.e. IISS-estimated) defence spending.[13] In 2010, IISS estimated a roughly 39 per cent difference between the FY2008 official defence budget and "actual" (i.e. IISS-estimated) defence spending.[14] In 2012, the estimated gap for the FY2010 budget was 41 per cent.[15] It should be noted that, although large, the disparity between the official budget and IISS's estimates declined significantly over the initial three-year period before stabilizing. As argued in the next section, this shrinking gap, which is consistent with similar trends in estimates by the US Department of Defense, suggests that in recent years an increasing percentage of "actual" PLA funding has been placed "on the books"; that is, officially reported figures increasingly reflect actual spending.

9 Blasko, et al. n.d., 30.
10 SIPRI 2012.
11 Blasko, et al. n.d., 25.
12 *Zhongguo tongji nianjian* 2011, 280.
13 IISS 2006, 253.
14 IISS 2010, 392.
15 IISS 2012, 215.

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The impact of reforms on budget assessments

Longitudinal comparisons of China's defence spending are complicated by a number of factors: (1) prior to 1998 the only information publicly released about China's official defence budget was the single aggregate figure of total spending announced in an annual yearbook; and (2) since 1998 the content of the official defence budget has changed because of various budget reforms. This section focuses on the latter.

One important consequence of defence budget reforms since the mid-1990s has been a substantial reduction in the gap between the PLA's official government-distributed budget and the amount of aggregate funding it actually receives. Major reforms include: (1) divestiture of the PLA's commercial assets, and reimbursement to the PLA (for a few years) of some of the funds that used to come from the businesses; (2) regularization of accounting and auditing; (3) marketization of defence procurement; and (4) the creation of the general armaments department in 1998 to oversee a new procurement bidding system and implement a zero-based budgeting initiative.[16] For example, with regard to the first reform, before 1998 various commercial enterprises, in-kind subsidies, and revenue-sharing practices were significant sources of income for PLA entities. However, in the late-1990s the president at the time, Jiang Zemin, ordered the PLA to exit most of its commercial businesses and to "eat imperial grain" (i.e. increasingly rely on state funding). Because of this commercial divestiture, over the past 15 years an increasing percentage of the PLA's total funding has come directly from the central government and is therefore "on the books." One implication of this development is that a sizable percentage of defence budget increases since 1998 may be attributable to more accurate, systematic and transparent government accounting practices, together with reduced corruption, rather than actual increases in the PLA's funding stream.[17] Perhaps the best evidence that recent defence budgets more accurately reflect actual PLA funding is to compare estimates by the US Department of Defense in 2002 (~3.25–4 times China's official defence budget for 2002)[18] and 2010 (~2.14 times the announced 2009 budget).[19] While in recent years the Pentagon has not itemized publicly what it includes in its calculations, these data show that the department now estimates China's "actual" defence spending to be much closer to the officially announced figure.

Nevertheless, an unwieldy defence economy and budgeting process continues to inhibit both insiders' and outsiders' ability to determine China's actual military spending. As the Department of Defence assesses, "What little public information China releases about defence spending is further clouded by a multitude

16 This obligated all PLA units to calculate annual budget requests from zero rather than simply adding a percentage increase to the amount received the previous year.
17 Sun 2011; Zhu and Shen 2011.
18 Office of the Secretary of Defense 2002, 1–2.
19 Office of the Secretary of Defense 2010, 42.

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of funding sources, subsidies, and cut-outs at all levels of government and in multiple ministries. Real spending on the military, therefore, is so disaggregated that even the Chinese leadership may not know the actual top line."[20] Even the PLA recognizes problems concerning inefficiencies and coordination stemming from a lack of centralized administration of various funding streams, lack of oversight, lack of competitive bidding, and the absence of departments tasked with analysis of procurement demands.[21]

Overlooked inclusions

Although the exclusion of major items from China's official defence budget is undoubtedly an issue of concern, less widely known is that the budget also *includes* some items that are *not* included in those of its Western counterparts. For example, the PLA still engages in some infrastructure construction projects, although many are designed to be dual-use and paid for from local and national non-defence funds. It provides some medical help to civilians in remote areas and provides some support to domestic security operations (e.g. during the 2008 Olympics). The PLA also engages in disaster relief, such as the dispatch of over 200,000 personnel in response to the 2008 Wenchuan earthquake – the largest deployment of Chinese armed forces since the 1979 war with Vietnam.[22] There are legal provisions for it to be reimbursed for these operations, but the processes, delays and extent of such reimbursements remain unclear.[23] In Western countries, such tasks are assigned primarily to non-military organizations. The PLA also provides perquisites for retired senior officers (offices, assistants, cars, drivers, cooks, caregivers, and special hospital facilities) that their better-salaried Western counterparts do not receive.

What official documents reveal about China's defence spending

Salutary developments of direct relevance to China's military transparency include China's publication of biannual national defence white papers since 1998 and its annual submission of a "Simplified Reporting Form" to the United Nations (UN) since 2008. This sub-section presents a brief overview of budget-related information included in each of these two types of documents.

China's national defence white papers separate the PLA's official budget into three main categories: personnel, training and maintenance, and equipment; each of these has reportedly been consistently allotted roughly 33 per cent of the defence budget. The first category, *personnel expenses*, covers salaries, allowances, food, clothing and bedding, insurance, welfare benefits and pensions for officers, non-ranking cadres, enlisted personnel and contracted civilians. It also

20 Office of the Secretary of Defense 2006, 20.
21 Zhang, Qu, and Bai 2011; Gu and Chen 2006.
22 For more details, see Blasko 2012b, 90, 93; Fravel 2011.
23 Authors' discussion and email with Dennis Blasko, 21 and 25 October 2012.

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apparently includes family housing. The second category, *training and maintenance expenses*, covers troop training, institutional education and the running and development of "daily work and activities." In contrast to the US budget's operations and maintenance category, the category of "training and maintenance expenses" in China's defence budget includes only the maintenance of facilities; it does not include maintenance, transportation and storage of equipment. Rather, the latter item falls into the Chinese defence budget's final category, *equipment*, which covers R&D, procurement, maintenance, transportation and storage of weaponry and other hardware. According to one group of US experts who have queried Chinese government officials extensively about China's defence-related spending, China is most transparent about the first category of defence spending and least transparent about the third. For example, very little is known about the costs of weapons and equipment produced by the Chinese defence industry or the amount of money allocated to weapons research and development.[24]

Since 2008, China has submitted the Simplified Reporting Form on military expenditures annually to the UN Secretary General. This form contains previously unreleased information about the relative shares of China's defence budget allocated to its active forces, reserve forces and militia. Although China's submission of this form is a step toward greater transparency, it is important to note that the "Simplified" form contains much less information than the "Standardized Reporting Form" submitted by most advanced industrial democracies.[25] For example, neither the Simplified Reporting Form nor any other publicly available official document includes a breakdown – even top-line figures – of China's defence budget by branches and services.[26]

In sum, trends in China's defence budget transparency, when examined holistically, are mixed. Recent major budget reforms suggest that more spending is accounted for: the official budget therefore increasingly reflects *actual* PLA funding. Furthermore, although excluding various major items from China's defence budget limits transparency, and instances of over-reporting do not compare to underreporting in terms of magnitude or importance, China's official budget does include several categories of spending that are *not* included in Western

24 Source for information in this paragraph: Blasko et al. n.d., 10-11, 18, 28.

25 Office of the Secretary of Defense 2010, 43.

26 Although at least one Western report includes estimates of each PLA service's relative share of the total budget, how these figures are derived is unclear. Accordingly, these figures should be viewed with a high degree of scepticism. For example, Jane's estimates that the PLA ground forces, PLAN, and PLAAF receive 34%, 28% and 33%, respectively, of a defence budget of US$128.72 billion for 2012. Jane's projects a similar breakdown through 2016. But for these figures to be accurate, China's air force would have to receive almost as much funding as its ground forces, which is highly unlikely. Moreover, Jane's provides no sources or other justifications for these estimates. Nor does it provide estimates for the second artillery or the headquarters departments. Subtracting from 100% leads to an implied combined estimate for these latter two items of only US$6.435 billion, or a mere 5% of the total defence budget. See Janes.com 2012. This omission raises questions about the veracity of the other estimates; a textbook for PLA financial professionals compiled by the PLA General Logistics Department's Finance Department categorizes these organizations as constituting two of the six major categories of the defence budget (which thus probably account for significantly more than 5% of spending). Chen 1997, 29.

defence budgets. At the same time, more informative defence white papers and the submission of defence budget data to the UN manifest a gradual, if slow, shift toward greater military transparency; albeit with major gaps, the most basic being lack of information for each service.

Chinese Responses to Criticism

In the interest of providing a holistic picture of the current and likely future drivers of China's military trajectory, in this section we provide an overview of Chinese responses to Western criticism based on our survey of Chinese- and English-language open sources. We enumerate and discuss the reasons given by Chinese officials for the surge in China's defence spending over the past two decades. While we acknowledge that some of the Chinese justifications delineated below may be motivated partially by political expediency, our assessment is that most represent ongoing efforts on the part of the PRC to explain – albeit usually in general terms – the actual major drivers of its rapidly rising defence budget.

Transparency Concerns

Chinese commentators respond to Western criticisms of China's relatively low military transparency in one of three ways: (1) emphasize that there is no universal standard for military transparency; (2) compare the current level of transparency favourably to even greater opacity previously; or (3) contend that "the most fundamental and most important form of transparency" is the transparency of China's strategic *intentions*, as opposed to the transparency of military capabilities or doctrine.[27]

The first claim is largely accurate – particularly in the case of states with developing economies.[28] Comparative surveys published in the US and elsewhere make it abundantly clear that the one thing that different countries' defence budgets have in common is the non-uniformity in what governments define as "defence spending." There are, however, emerging norms among advanced industrial democracies about what should be included in a country's official defence budget; for the most part China's defence budget does not conform to these norms. The second response is also accurate, although as was argued earlier, the gradual improvements to China's military transparency in recent years build off a very low base. The third claim is much more controversial. While theoretically true, the fact remains that, as many scholars and policymakers argue, intentions are notoriously difficult to define and, perhaps more importantly, can change overnight – particularly in the event of a domestic or international crisis.

27 Wen 2010.
28 See analysis in "Debates on Military Transparency" section below.

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Concerns about the pace and scale of budget increases

Chinese justifications for the pace and scale of China's military build-up and concomitant defence budget increases appear frequently in official statements, government documents and state-run media. They can be divided into six notional categories.

The first category of justifications – *catch-up arguments* – contend that major investments in military modernization are necessary to compensate for Beijing's relative neglect of the PLA during the first two decades of China's post-1978 "reform and opening up" period. In the late 1970s, Deng Xiaoping, China's paramount leader, called for the nation to prioritize economic reforms and economic growth. Consequently, military modernization was treated as the least urgent of the famous "four modernizations" and, manifest in Deng's request for the PLA to "stay patient," investment in the military was deemphasized throughout the 1980s. Indeed, as seen in Table 1, defence spending *declined* in real terms during the 1980s. Chinese officials contend – justifiably – that it was not until rampant inflation was tamed around 1997 that large nominal budget increases began to yield significantly enhanced buying power.[29]

Compensating for the limited investment in the military during the first two decades of the reform period and modernizing the PLA are important objectives of today's leadership. As the vice chairman of the Central Military Commission (CMC) declared in 2009, "China's defense and military development starts from a fairly poor foundation. We are only making early steps in 'informationization' of the force, while our plan for mechanization is yet to be accomplished" [sic].[30] A researcher at the PLA's Academy of Military Science argued similarly in 2010: "The double-digit budget growth in the past years was mainly aimed to make up for the inadequacy of the country's defense development" [sic].[31] China's central government has invested in the comprehensive transformation of the PLA through "leap-frog development" and the pursuit of "an RMA (Revolution in Military Affairs) with Chinese characteristics."[32] Achieving leaders' publicly declared goal of catching up militarily with the other major powers by the middle of this century requires cutting-edge technological capabilities whose costs – in the form of continued investments in R&D, manufacturing and weapons procurement – Chinese leaders have "bid up" to extremely high levels through strategic competition. Advanced weapons are much more expensive than previous generations; they also use much more fuel, fire more expensive rounds and cost more to maintain and repair. Modernization also necessitates huge investments, firstly in structural and organizational reform of the PLA, including demobilizing

29 Information Office of the State Council (PRC) 2009, Section XII. China's problems with inflation during the 1980s and 1990s are manifest in the following figures (percentage change in average consumer prices): 18.7 (1988), 18.0 (1989), 14.7 (1993), 24.1 (1994), and 17.1 (1995) (IMF 2012).
30 Xu 2009.
31 Xinhua 2010.
32 Chinanews.com 2010.

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and resettling thousands of (relatively) uneducated servicemen, and second in cultivating a smaller force of "high-calibre" (well-educated and professional) personnel capable of developing and effectively employing these advanced technologies.

A second category of justification consists of *inflation-adjustment arguments*, which cite surging fuel, water, commodity, electricity and personnel costs (e.g. education, training, social security and salaries), as well as inflation, interest rates and exchange rates, as major drivers of recent defence budget increases.[33] For example, the PLA doubled most personnel salaries in 2006[34] and regularly augments other perquisites in order to improve the quality of life for PLA personnel (from a very low base) and keep pace with salaries in the civilian sector, where wage increases – particularly for well-educated individuals – far outpace official inflation.[35] Another example is military education, which has been a major target of increased investment in the post-Persian Gulf era of warfare "under high-tech conditions;" this addresses previous leadership concerns that PLA officers' education levels compared unfavourably with key foreign counterparts.[36]

Justifications for China's rapidly increasing budget that fall into the third notional category – the *economic-growth-as-priority* argument – attempt to mitigate concerns of overseas observers by arguing that China's defence budget is increasing at roughly the same rate as China's GDP and, recently, more slowly than central government expenditures (see our analysis above).[37] In yet another potential indication that economic development remains a higher priority than military development for China's leadership, military Keynesianism is cited as a justification for increased spending.[38]

The fourth category of justifications – the *palliative comparison approach* – claims that China's defence spending is still low relative to that of other militaries by some metrics. For example, the 2008 white paper states that "both the total amount and per-service-person share of China's defence expenditure remain lower than those of some major powers."[39] Other commentators compare China's official defence spending as a percentage of GDP (~1.4) to that of other states, e.g. the US (~4.5), UK (~2.7), and France (~1.9).[40]

Justifications for China's rapidly growing defence expenditures that fall under the fifth category of *strategic insecurity* arguments contend that China's territorial size, geopolitical environment and international status necessitate greater defence spending than that of many other nations. For example, a common

33 Sun 2009
34 Blasko et al. n.d., 22-23.
35 In contrast, the advanced democracies have provided relatively high quality of life to military personnel for decades.
36 *Renmin ribao*, "Peiyang xinxing junshi rencai de yi tiao biyouzhilu" (The only way to cultivate new-model military talent). 27 June 2000.
37 Zhu and Xie 2011; Guo 2010; Wen 2010.
38 Huang and Zhang 2008, 6.
39 Wen 2010.
40 Information Office of the State Council (PRC) 2009, Section XII.

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position is that despite double-digit increases for most of the past two decades, China's defence budget is still "comparatively low" when one considers its land borders with 14 nations, including four states with nuclear weapons; its population of 1.3 billion people; its landmass of 9.6 million square kilometres; a maritime territory of more than 3 million square kilometres; a long coastline; and numerous islands and borders.[41] (We address this further in the section "China's strategic environment" below.)

A sixth justification – the "*new historic missions*" argument – highlights the PLA's growing contribution to disaster relief – particularly given China's disproportionate, rising incidence of extreme weather – and other non-traditional security missions, as well as international joint military exercises. Recent (and unprecedented) related PLA missions include on-going counter-piracy operations in the Gulf of Aden and the rescue of PRC nationals from Libya. These missions have imposed new resource demands on the PLA.[42]

Understanding the Defence Budget in Context

Analyses of China's budget that view recent spending trends in isolation – such as those which focus *exclusively* on quantitative estimates of China's defence expenditures to divine Beijing's strategic intentions – are over-simplified. This section aims to introduce greater nuance and context in order to contribute to a more complete understanding of China's defence spending and to partially mitigate uncertainty concerning its strategic intentions.

The importance of caveats: an estimate is an estimate

Several experts and organizations have attempted to overcome China's relative lack of transparency about its defence budget by estimating independently China's "actual" spending. Although the relative paucity of open-source data makes it difficult to assess the *accuracy* of specific estimates, it is import to understand some of the reasons why they are inconsistent.

For example, in 2009, the US Department of Defense estimated China's "actual" FY2008 defence budget at US$105–150 billion: 1.8–2.6 times the official figure of US$57.2 billion (RMB417.8 billion) and 2.5–3.6 per cent of GDP.[43] Meanwhile, the Stockholm International Peace Research Institute (SIPRI)'s estimate that year was much lower: US$84.9 billion – 1.48 times the officially released figure.[44] The difference between SIPRI's estimate and the upper bound of the Department of Defense's estimate was US$65.1 billion, a difference larger than China's entire official defence budget that year.

41 Jiang and Wang 2012.
42 Zhu and Yuan 2011, 22.
43 Office of the Secretary of Defense 2009, 31.
44 SIPRI 2009, 196.

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While significant defence-related spending is undoubtedly excluded from China's official defence budget, some of the items included in foreign estimates of the "actual" figure are controversial. For example, some Western institutions include expenditures for the (domestically focused) PAP in their calculations, labelling it one of the largest extra-budgetary sources of defence spending. But they do so without offering explicit justification.[45] This single line-item can inflate estimates of the budget by as much as one-fifth above the official figure. Take the 2010 figures as an example: adding *only* official PAP expenditures (RMB93.4 billion) to the official budget (RMB533.4 billion) results in an estimate of "actual" Chinese defence spending 18 per cent higher.[46]

It is also important to recognize the challenges inherent in attempting to accurately estimate "actual" spending without reliable data. There are at least three reasons why estimating China's actual defence spending is difficult and, consequently, why wide disparities among estimates persist.

First, and perhaps most importantly, defining "defence spending" is inherently a subjective exercise. Even the definitions used by the US Department of Defense, NATO and SIPRI differ significantly. Consequently, much of the disparity among these organizations' estimates stems from the inclusion of very different categories of spending.[47] One important implication of these differing definitions is that China's exclusion of certain items from its defence budget is at least to some extent an artefact of different metrics.

Second, efforts to estimate China's actual spending power accurately are hampered by the process of converting China's RMB-denominated defence budget into US dollars. First, because of widespread allegations that China is intentionally weakening its currency, some Western organizations do not use official exchange rates in their conversions. What a given organization identifies as the "appropriate" RMB:US dollar exchange rate will have a significant impact on the magnitude of the resulting dollar-denominated estimate. Second, no consensus exists about whether it is appropriate to apply a straightforward purchasing power parity (PPP) rate when converting China's aggregated defence budget figure into US dollars; and, if so, what rate(s) to use for which subcomponent (s).[48] The fact that the spending power in China of a given US dollar will vary depending on what that dollar is used to purchase frustrates attempts to calculate China's defence budget in US dollars accurately. For example, although a direct PPP rate may make sense when converting the cost of personnel and services, e.g. meals in a PLA mess hall – considerably cheaper in China than in the US – it is not appropriate to apply that same conversion rate to the costs of programs involved in developing cutting-edge technology (e.g. China's anti-ship ballistic

45 For example, see IISS 2012, 215.
46 Roughly 45% of the gap between IISS' estimation of China's "actual" 2010 defence spending and the officially announced budget is due to its decision to categorize the PAP budget as extra-budgetary defence spending. See *ibid*.
47 Blasko, et al. n.d., 6–8.
48 IISS 2010, 393.

missile and indigenous new-generation low-observable fighter prototype(s)); or, still more, to weapons and platforms procured from overseas – such as *Kilo*-class submarines from Russia – which typically must be purchased using hard foreign currency (often US dollars).[49] Third, inflation (discussed above) and the gradual strengthening of the RMB since it was unpegged from the US dollar in 2005 mean that straightforward conversions of the official defence budget into US dollars based *only* on contemporaneous exchange rates make recent budget increases appear significantly larger than they actually are. For example, a nominal *four*-fold increase between 2002 and 2012 in the RMB-denominated official budget (from roughly RMB170.8 billion to RMB670.2 billion) appears as more than a *five*-fold increase (from US$21 billion to US$106 billion) when reported in US dollars instead of RMB. This roughly 25 per cent magnification of the budget increase during the 2002–2012 period (i.e. four-fold vs. five-fold) is due exclusively to the changing RMB–USD exchange rate.

Finally, as the Department of Defense's 2010 report on China's military notes, accurate and consistent estimates of actual PLA military expenditures are complicated by "the lack of accounting transparency and China's still incomplete transition from a command economy."[50] Accordingly, estimating China's aggregate defence spending necessarily involves guesswork about both the actual costs of individual items and what specific categories of spending are already captured by the official figure.

In sum, because of differing definitions of defence spending, problems with conversion into foreign currency and limited knowledge of actual costs of items due to lack of accounting transparency, estimating China's "actual" defence budget typically results in estimates based at least partially on assumptions rather than hard data. Given the paucity of reliable open-source data, this outcome is unavoidable to some extent. But the accuracy of these estimates should not be assumed; and the conclusions drawn from these data should be qualified accordingly.

Debates on "military transparency"

Western discussion of China's military transparency often suggests that China consistently violates well-established, widespread global norms. Yet it is important to note four conclusions from a recent study on China's military transparency by researchers at the US National Defense University: first, there is very little international consensus on an explicit definition of what the term "transparency" means, even among Western organizations.[51] Second, China's limited military transparency relative to advanced industrial democracies such as the United

49 Accordingly, a prominent Chinese scholar with whom one of the authors spoke argues that spending should be calculated in each sub-category using the relative degree of PPP. Interview with Chinese scholar, Beijing, November 2011. See also Crane et al. 2005; IISS 2006, 250–51; IISS 2010, 392–93.

50 Military and Security Developments Involving the People's Republic of China 2010, 43.

51 Kiselycznyk and Saunders 2010, 6.

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States and Japan does not make it an exceptional violator of international norms. Rather, China's military transparency is roughly comparable to that found in most ASEAN countries (including several US security partners) and India (the world's most populous democracy).[52] Additionally, the study finds that China's biannual defence white papers are published at least as often as those of most states in the region and significantly more frequently than the following states, each of which has published a white paper or its equivalent only once between the year in parentheses and June 2010: Philippines (1998), Singapore (2000), Thailand (2005), and Laos (2005).[53] Third, white papers from the Asia-Pacific region do not follow a standard organizational format. Fourth, China's government releases publicly a significant amount of information about its defence spending and doctrine that does not appear in the defence white paper itself.[54]

China's military transparency is often compared only to the standards of advanced industrial democracies with historically more advanced militaries, rather than many of its Asian neighbours or states at comparable levels of economic development. Although comparing China to states in the former category has become increasingly appropriate because of its rapid military modernization and the fact that its defence budget is now the world's second largest, it is important to recall that just 15 years ago the PLA's weapons inventory, largely composed of obsolete 1950s-era Soviet platforms, was written off by most foreign analysts. Since that time, China's war-fighting capabilities have progressed significantly faster than its diplomacy has opened up. Until very recently, almost all Chinese leaders considered military transparency to be a weapon for strong states to use against weak states. It is only within the past several years that this view has begun to change.[55]

It is also important to note that many, if not most, nations (including the US) also fund military-related goods and services using sources outside their "defence" budgets. For example, the US 051 (Department of Defense) budget excludes a significant amount of defence-related spending. In fact, one analysis of US "total defence-related spending" based on similar metrics to those regularly used by Western organizations to estimate China's "actual" defence budget

52 The report's authors find that ASEAN countries, much like China, "all tend to lack transparency in their descriptions of specific military capabilities." *Ibid.*, 28–29. See also the reports from the Northeast Asia Defense Transparency Project.

53 Kiselycznyk and Saunders 2010, 7.

54 *Ibid.*, 33.

55 According to one analysis, "For militarily strong countries, making their military capabilities transparent produces an effect of strategic deterrence. Weaker countries, however, will become even more vulnerable if their limited military resources are exposed." Therefore, "militarily weak countries can achieve their strategic goals by being opaque. The tactic is crucial for weak countries to protect themselves from the aggression of powerful ones. … it is impossible and unrealistic for China to completely accept the military transparency standards that the West advocates." See Teng 2012. It should be noted, however, that this perspective is losing traction among Chinese strategists as PLA capabilities and confidence increase and, at least in some circles, analysts begin to realize that its fundamental premise may be flawed. See Kardon 2010, 8.

found a US$187 billion gap between the United States' official FY2006 defence budget and what this group of American PLA experts calculated as "actual" US defence-related spending that year.[56] The parallels they draw are intriguing: China is criticized for excluding some funding for officer pensions from its official defence budget, yet the Department of Veterans Affairs' entire budget, retirement costs paid by the Department of Treasury, and veterans' reemployment and training programs paid by the Department of Labor are not included in Department of Defense's budget. China is criticized for excluding funding for its nuclear and strategic rocket programs from its official defence budget, yet atomic energy activities related to defence are funded by the Department of Energy and fall outside the Department of Defense's budget. Finally, China is criticized for excluding the PAP's budget and various defence activities that are paid for by local governments from its official defence budget, yet neither the Department of Homeland Security budget nor state funding for some US National Guard functions is included in the Department of Defense's budget. The above points from Blasko et al.'s seminal analysis are well-taken, although it is important to also stress that while "actual" US defence spending is larger than the official figure, most other relevant spending is relatively transparent, and can be assembled by a knowledgeable analyst.[57] This is significantly less true of China's defence spending.

The analysis in this section is in no way intended to present an "excuse" for China's lack of transparency relative to many countries at a similar level of *military* development. But when placed in an appropriate context, it becomes clear that China's limited military transparency to date may be largely attributable to factors categorically different from any nefarious desire on the part of its leaders to obfuscate its short-, medium-, or long-term strategic intentions. Comparisons to China's neighbours at a similar level of economic development, including similarly sized and rapidly growing India, show that the PRC's level of military transparency may be the norm rather than the exception, both among Asian states and among countries at a similar level of overall economic development. When examined in tandem with the glacial pace of political reform (despite China's rapid economic integration with the outside world), it is unsurprising that the PLA – a Party army and institution two decades older than the PRC itself – might also be slow to adjust to the rapidly changing expectations of China held by the US and its advanced industrial allies. Finally, all countries – even advanced industrial states – exclude large amounts of "defence-related spending" from their official defence budgets. The important question is whether those data are made available elsewhere, and whether they are necessary to determine China's larger strategic direction.

56 Blasko et al. n.d., 13. The 187-billion figure is in addition to extra appropriations for Iraq and Afghanistan.

57 For recent examples, see National Defence Budget Estimates for FY 2013 2012.

China's strategic environment

Criticisms of China's surging military development often fail to mention the strategic context in which it is occurring. Chinese analysts cite China's surrounding environment[58] and military budgets of other countries[59] as major defence spending drivers. First, in Beijing's view China faces numerous internal threats to stability ranging from secessionist movements in Tibet and Xinjiang to widespread – if localized – "mass incidents," i.e. anti-government protests. While there is no open-source evidence of PLA involvement in PAP operations other than the March 2008 suppression in Lhasa, continued domestic security concerns necessarily affect military prioritization. Second, China has land borders with 14 nations – including four nuclear weapons states – and territorial disputes with two of them (primarily India, also Bhutan). Third, China retains maritime boundary or island disputes with *all* its maritime neighbours. Thus, Beijing's political relations with all major military powers in its neighbourhood are, at best, tepid. Combined with Taiwan's unresolved status, this makes the Near Seas and their immediate approaches a critical area of strategic contention and assertion for China. Fourth, for these and other reasons, China has tense, albeit not unstable, political and military relations with the world's sole superpower (the US), whose leaders will probably remain suspicious of China's intentions as long as it retains an authoritarian political system. Despite increasingly global security interests of the kind often used to justify US defence policy (e.g. secure sea lanes of communication for safe passage of the resources and commerce) and sincere concerns about its external environment, China's defence budget increases remain focused on irredentist but regional concerns, however controversial the means and desired ends of that approach may be to other states with interests in the region.

In sum, while they contain insufficient operational and tactical information to determine whether capabilities match intentions, China's official statements clarify near-term strategic intentions in many respects. Before drawing overly broad conclusions about China's strategic intentions based on its (limited) military transparency – especially with regard to defence spending – and the pace and scale of its military build-up, it is important to (1) be explicit about what remains unknown; (2) avoid assuming that what the US and other advanced democracies do constitutes "the international norm" rather than the exception, however desirable normatively; (3) understand the importance of putting China's transparency in an appropriate international context; (4) appreciate that some criticisms could also apply to the US and its allies and friends; and (5) understand Chinese leaders' perceptions of what they see as China's unfavourable strategic environment.

58 Zou 2005.
59 Lu and Ouyang 2006.

Implications of Changing Capabilities and Future Prospects

In recent years, China has procured the weapons and nurtured the manpower necessary to enhance its military capabilities significantly. The PLA is rapidly integrating increasingly capable platforms into its force structure. These systems employ highly cost-effective asymmetric approaches to target vulnerabilities in enemy platforms, thereby potentially placing would-be adversaries on the costly end of a capabilities competition. PLA capabilities are further enhanced by China's geographical proximity to most potential flashpoints. However, the more sophisticated and technology-intensive its systems become, the less benefit the PLA can derive from acquiring and indigenizing foreign technologies, and the less cost-advantage China will have in producing and maintaining them. Moreover, the professionalization effort necessary to ensure effective operation of increasingly sophisticated PLA systems has required major investments: e.g. demobilizing millions of personnel from China's formerly bloated ground forces, greater spending on education, and significant pay increases across the board to attract and retain capable personnel.

In the short term, maintaining domestic stability, preventing Taiwan from declaring independence and asserting China's claims in the contested Near Seas by asymmetric means will probably remain the PLA's primary focus, as it has since the mid-1980s in various incarnations, even as it enhances its ability to engage in lower-intensity missions further afield. China's efforts to develop military and civilian maritime law enforcement capabilities to resolve territorial disputes on its own terms and increase its influence in the region may be highly objectionable to some observers within and outside China – but they are hardly surprising. In recent years Beijing has voiced these objectives with increasing force and specificity, and is offering glimpses of the capabilities necessary to fulfil them with a view to deterring US and allied intervention thereto.

In the medium- to long-term, China's intentions further afield indeed remain unclear. Both the ultimate nature and the likelihood of realizing these intentions must be uncertain even to current Chinese decision-makers. Developing the capabilities necessary to wage high- or even medium-intensity warfare beyond China's immediate vicinity would require significant additional increases in the defence budget and heavy investment in new platforms, weapons and related systems; as well as training, operations and maintenance; not to mention some form of support infrastructure abroad. If China decides to develop significant power-projection capabilities, its investments are likely to be increasingly inefficient and provide significantly less "bang" for a significantly larger "buck."

Achieving more ambitious objectives along these lines would require development and deployment of a wide range of specific, highly visible systems, and hence could be anticipated well before the necessary systems became operational in any militarily effective sense. Because of the complexity and difficulty of developing and effectively operationalizing power-projection capabilities that can support high-intensity military operations reliably in practice, such inductive

monitoring of concrete indicators in hardware is likely to offer a more effective means of forecasting China's future military posture than greater access to specific data on military spending.

For now, China's official defence spending remains relatively constant as a percentage of GDP.[60] Accordingly, economic growth is likely to support continued increases in military expenditures in the near-term: the US National Intelligence Council's assessment that China's GDP will surpass that of the US in PPP terms in 2022 and "sometime near 2030" at market exchange rates[61] suggests that defence spending increases are sustainable, and could even be increased significantly if Beijing chooses to do so.[62]

Further into the future, however, defence budget growth will face increasingly powerful headwinds as motley domestic and social challenges demand the attention of China's leaders. A rapidly aging society will inevitably generate higher economic and social service expectations, which may exacerbate extant domestic instability.[63] *Even if* defence spending continues to grow, internal PLA factors (such as rapidly rising equipment and personnel costs), not to mention corruption, all-but-guarantee diminishing returns and will limit improvements to overall force structure and capabilities.[64] In short, it seems clear that the future pace and scope of China's military development will depend on the health and wealth of the nation. [65]

Conclusion

Former Secretary Rumsfeld's professed bewilderment about the impetus for China's growing investments in the PLA is puzzling. Trends in China's defence spending and military development over the past two decades admittedly remain uncertain in specifics, but are no mystery in aggregate. Increases in the official defence budget are roughly consistent with GDP growth and constitute a declining percentage of central government expenditures. This suggests that, generally speaking, investment in military modernization – aside from specific capabilities considered exigent for Party leadership continuity, national survival and defence of critical national interests – remains a lower priority overall than economic development for Beijing's leadership. While it would of course help foreign analysts to know more specifically *where* and *how much* China is spending to improve its capabilities, especially when it comes to future defence spending priorities, Beijing's leaders have boosted military spending for *precisely* the reasons that they have stated consistently: to compensate for inflation and past neglect,

60 Hu and Liu 2003.
61 National Intelligence Council 2012.
62 The head of the Military Economics Academy's military finance department advocates that spending rise eventually to 2.5% of GDP. Li, Mao, and Yuan 2010.
63 For early recognition of such issues, see Li, Zhou, and Wang 2011.
64 For one English-language report on PLA-acknowledged corruption, see Garnaut 2012.
65 For an argument that excessive military spending undermines economic development, see Yan 1997.

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consolidate funding into a unified budget, and improve capabilities to address outstanding territorial and maritime claims. Many decisions about defence spending and military transparency are driven at least partially by relatively predictable security concerns and evolving interests, as well as a distinctly "non-Western" – though hardly unique – perspective on the value of budgetary transparency. That said, even some PLA experts have called for China to decrease suspicion about its defence budget by releasing more information.[66]

Although much remains unknown, this article's comprehensive examination of the available data reveals a more complete picture of China's military development, including several positive transparency trends. Major budget reforms since the late-1990s suggest that defence-related expenditures are increasingly "on the books." Additionally, at least some defence budget growth stems from measures unrelated to enhanced spending in categories that other countries' defence budgets typically exclude. Finally, gradual improvements to China's military transparency are manifest in Beijing's biannual national defence white papers and its annual submission of basic data on military expenditures to the UN, not to mention a significant (and increasing) amount of information in Chinese-language sources available online and in print. The international community should actively encourage China to accelerate these salutary trends significantly, and analysis should be updated as further data emerge.

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66 Chen 2005.

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