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9. The military sector in a changing context

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I. Introduction

Why do nations arm and how? What are the actual or possible consequences of their acquiring different types of armament? What are the most cost-effective ways of providing security? What is the economic impact of maintaining different levels of military expenditure? These are examples of important classic questions for students as well as practitioners in the fields of international relations and defence and peace economics.

The provision and analysis of quantitative indicators have an important role to play in supporting the analysis of broad security issues. Quantitative data clearly cannot provide a measure of either security or threats to security, but quantitative indicators can—on the basis of the methodology for producing them—facilitate specific explanations of security policies and their implications.

The projects reporting in the second part of the Yearbook produce data on military expenditure, arms production and international arms transfers. The military expenditure and arms transfers projects were launched primarily for reasons of transparency because in the 1960s, when they were initiated, there was a great lack of data on the military sector. The arms industry databases was added in 1989 to study the impact on the industry of the end of the cold war. Over time, the availability and quality of data have improved in many respects, but there is still a lack of reliable, detailed and standardized government and private-sector data on military expenditure, arms production and arms transfers. The purpose of these three SIPRI databases is to produce the most reliable and consistent global data on military matters that is possible to collect, based on official and other open information.[1]

A fundamental question for all producers and users of quantitative indicators is how useful the data are. Section II of this chapter, on military expenditure, discusses the utility and limitations of these data in the area of security analysis and policy, and the impact of the changes in the security environment on this utility. It argues that there are serious limitations to the use of data on military expenditure, not only because of the limitations of reliability and international comparability but, more importantly, because military expenditure is an input measure—of the budgetary economic resources devoted to

military activities. The section explores the extent to which the utility of data on military expenditure is being challenged by contemporary changes in the security environment and by new thinking on security, both of which call for changes in the very notion of security, moving from a *narrow* definition of military, state-centric security towards *broader* and *deeper* security concepts. The section concludes with a discussion of various options for improving quantitative approaches to the study of security-related issues. It does not, however, take a position on which options should be pursued by SIPRI, as this would require further investigation.

Data on arms production and arms sales, including exports, are also measures of inputs into the military establishment, in this case the input of military hardware. As such, they have a direct relevance for the analysis of security in its more narrow definition as *military, state-centric* security. The size, and often also the potential, of a nation's indigenous military production capacity may be described and measured by the number and size of specialized arms-producing companies, by the categories of weapons or military technologies they produce, and by their share of acquisitions from abroad (imports) in these weapon categories or technologies. Military production may also be measured by industrial output (sales), while international arms transfers may be measured by a trend indicator (as is done by SIPRI) or by the monetary value of national arms exports (as provided by national authorities). Data on international arms transfers illustrate the importance of exports for arms-producing companies and countries as well as the import dependence of recipient countries. On the international level, military expenditure and arms transfers data, respectively, show the global pattern of spending on the military and the flows of military technology between countries from a small number of arms-producing countries. None of these indicators can be taken at face value as a reflection of military strength, threat or security; they require proper interpretation and contextualization

Section III of this chapter, on arms production, transfers and control, discusses the interrelationship between arms production and arms exports and provides background to the political dilemma of the contradictions between arms production and transfers, on the one hand, and arms control, on the other hand. It argues that, in parallel with the increasing internationalization of arms production and acquisition, this dilemma has become more pronounced and is a more critical issue to resolve in the interests of international security.

II. Military expenditure

The traditional concept of military security is increasingly being challenged, and so therefore are the adequacy and relevance of military expenditure as a measure of the cost of military establishments and military activities. The challenge is to adapt the indicators and/or supplement them in the light of changes in the security environment. Broad trends are altering the traditional concept of security, such as contemporary forms of globalization, the end of

the cold war and the events of 11 September 2001. More concretely, three major changes give rise to this challenge, although they differ in strength and relevance between countries and regions.

The first recent trend is in the global pattern of armed conflict—the decline of the incidence of interstate armed conflict and the predominance of complex patterns of intra-state armed conflict. The second is the increased focus on the threat of transnational terrorism. The third is the trend for a stronger link to be made between two strands in external policy—military security and economic development—reflected in the new concept of 'human security'.

The question posed in this section is: To what extent are data on military expenditure useful for the analysis of security issues in the contemporary security environment? In order to address this question, the section begins with a discussion of the utility of military expenditure data for the analysis of security in its traditional, state-centric, military sense. It then outlines the new challenges posed by changes in the security environment and in the discourse of security studies.

In particular, the question is raised whether the military sector, and thus quantitative indicators of that sector such as military expenditure, can be regarded as central elements in the analysis of security policies and practices.

The military expenditure measure

Military expenditure is by definition a measure of the monetary cost to a country of its military activity. As such, it is an input measure and is not useful for assessments of security or military strength, which are outputs of the military sector. Its utility is low not only because there is sometimes waste, corruption or other types of malfunction in the military sector but also because military strength is a fluid output that is highly dependent on the nature of what the money is spent on as well as on the environment in which it operates.

Military output depends, first, on the balance between different spending categories within the defence budget, such as personnel, arms procurement, operations and maintenance, and military construction. Second, military output depends on cost factors, that is, value for money, which is influenced by a range of factors, including method of recruitment (salaried professional soldiers or paid conscripts) and method of arms acquisitions (national production or imports). Third, military output depends on the level of technology and training. Fourth, and perhaps most important, actual military output depends on the thinking behind it—the relevance of defence policy, military doctrine and strategies—and the extent to which it is put into practice. As a result, the same overall defence budget may result in different levels of security or threat, depending on how and on what the money is spent. Consequently, the comparison of military expenditure between two countries is an inadequate measure of the military balance between them or the threat that one constitutes to the other—although such comparisons are made by military intelligence communities throughout the world and are used domestically to support requests

for higher levels of military spending. This is not to say that military expenditure data cannot be used for strategic and military assessments, but their significant limitations must be taken into consideration and supplemented by other types of information and judgement. For the same reasons, it is important to be aware of the misuse of military expenditure data for portraying military threats or, conversely, indicating that disarmament is taking place.

A more appropriate use of military expenditure data is for assessments of costs, since they reflect the budgetary resources allocated for military activities. Assuming that one of the main overall objectives of military activities is to provide security against threats from external actors to a defined set of objects (sovereignty, territory, population and assets), military expenditure data can be perceived as a measure of the cost of providing security in its traditional, interstate, military sense. In reality, however, military forces are sometimes designed and used for other purposes than providing security, although this should be their main objective.

Even disregarding this complication, there are also limitations to this use of military expenditure data. The most important limitation is the unreliability of official military expenditure data. Military budgets do not always reflect the full cost of military activity. Furthermore, it is difficult even to assess the reliability of the data because of the significant lack of transparency in the military sector of many countries, including some of those with advanced budget accounting systems.

The reliability factors that complicate the use of military expenditure data as an indicator of the actual cost of the provision of security include: (*a*) off-budget expenditure for military purposes—outside the military budget or even outside the public expenditure framework, as is sometimes the case for arms imports; (*b*) the shifting of costs forward in time by various types of financial technique, including credits; (*c*) the costs of the external impact of military activities that are not paid from the military budget; and (*d*) the non-monetary costs of military activities. For all these reasons, caution should be exercised in using military expenditure data for the purpose of assessing the cost of military activities, and thus of the provision of military security.

With these reservations, and in countries for which there is adequately reliable data, military expenditure data have been useful in providing at least an approximate measure of the economic burden of the military sector and of its opportunity cost in terms of alternatives forgone. Thus, data on military spending have served as a rough, although deficient, measure of the monetary costs to governments for providing military security. These costs can be weighed against the cost of providing other public goods and therefore indicate the priorities of governments in their supply of different types of public good.

The concept of security

Security can be seen from different perspectives: from the perspective of the threats to security, and from the perspective of what should be protected from these threats. The main types of threat are, first, the threat of *military attack*;

second, the threat of *criminal activity*; and third, *threats to human survival and well-being* such as starvation, deadly disease and environmental degradation, which in the long term threaten human survival. The threat of *terrorist activity* can be seen either as a criminal activity or, as is increasingly the case, as a category of its own.

The classic objective of security provision is the security of the *state*—its territory, population, assets and broader national security interests. Another objective is *public order and safety*—usually called internal security. Third, there is the evolving concept of human security, with its focus on the security of *people and of the globe*, going beyond the basic classic national security and internal security objectives.

The means of security provision are also basically of three types: first, *military means;* second, the *internal system for law and order;* and third, other means, such as *economic, political and diplomatic measures*.

Finally, approaches to the provision of security can be categorized by the geographical location of security provision: *territorial*—classic defence of state borders and state sovereignty against external attack; *extraterritorial*—intervention or support on the territory of other countries; and *intraterritorial*—the provision of security from threats within the domestic territory. A fourth dimension could be added, corresponding to *non-territorial* threats, such as dramatic climate change.

New security thinking resulting from recent changes in the security environment can be seen as moving along one of three axes: (*a*) attempts to *broaden* the narrow, orthodox conception of state security, primarily in military terms, to include a wider range of potential threats, including economic and environmental; (*b*) attempts to *deepen* the conception of security beyond its state-centric focus by moving either down to the level of individual or human security or up to the level of global security; or (*c*) attempts within the state-centric approach to assess different *multilateral forms of interstate security cooperation* (collective, common, comprehensive or cooperative security).[2]

These changes are likely to generate an increasing need for different sets of data than those traditionally presented in the SIPRI Yearbook.

Changes in the security environment

Several developments in the security environment and in security thinking and policy exacerbate the limitations of military expenditure as an indicator of the cost of security provision. The political environment for providing military security has been changing as a result of the end of the cold war and with the new forms of globalization, in particular in areas of political and economic transformation and in areas of armed conflict.[3] The end of the superpower confrontation has also opened up an opportunity, and in many countries also a

[2] Krause, K., 'Theorizing security, state formation and the "Third World" in the post-cold war world', *Review of International Studies*, vol. 24 (1998), pp. 125–36.

[3] Sköns, E., 'Trends in military expenditure and arms transfers', eds R. Thakur and E. Newman, *New Millennium and New Perspectives* (United Nations University Press: Tokyo, New York and Paris, 2000).

political will, to rely increasingly on non-military means for meeting security objectives. Furthermore, the increasing concern regarding terrorist threats to security has posed the question of the effectiveness of military means for providing security against this threat.

In a comprehensive review of the development of thinking on international politics, David Baldwin finds three common themes in the literature of the first half of the 1990s concerning the implications of the end of the cold war for the role of military power in international politics: (*a*) that military power has declined in importance in international politics; (*b*) that there is a need to re-examine the way international relations and national security are perceived; and (*c*) that there is a need for a broader view of national security—where some argue for the inclusion of domestic problems on the national security agenda and others for the need to treat non-military external threats to national well-being as security issues.[4]

Baldwin identifies a return to the thinking of the 1950s, when military security was viewed as one of several values. There was a perception of *trade-offs* between military security and other values, such as economic welfare, economic stability and individual freedom. In the theories developed during the cold war, military security was elevated to the primary goal of all states. The end of the cold war has led many to question the importance of military security in comparison with other, non-military goals of public policy. Attention has again shifted from military threats to such non-military threats as domestic poverty, educational crises, industrial competitiveness, drug trafficking, crime, international migration, environmental hazards, resource shortages and global poverty.[5] This also involves an increased focus on the relationship between national security and domestic affairs, such as the economy, civil liberties and democratic political processes, while the security studies discourse that was dominant during the height of the cold war by and large neglected the domestic aspects of security.

Another development in the thinking on security is the notion of 'societal risk', developed by Ulrich Beck.[6] This approach focuses on risks, defined as 'a systematic way of dealing with hazards and insecurities induced and introduced by modernization itself'.[7] In the same modernization process that produces wealth, 'destructive forces are also being unleashed, forces before which the human imagination stands in awe'.[8] This perspective provides a relevant analytical interpretation to the dramatic increase of societal vulnerability even to minor macroeconomic disturbances. For example, the concentration of populations in mega-cities has resulted in an extreme vulnerability to even minor

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[4] Baldwin, D. A., 'Security studies and the end of the cold war', *World Politics*, vol. 48 (Oct. 1995), pp. 117–41. This is a review of 4 major pieces of literature in the field of international relations, covering the work of *c.* 50 authors publishing in the period from the 1920s onwards.

[5] Baldwin (note 4), pp. 126–28.

[6] Beck, U., *Risk Society: Towards a New Modernity* (Sage: London, 1992); and Adam, B., Beck, U. and Van Loon, J. (eds), *The Risk Society and Beyond: Critical Issues for Social Theory* (Sage: London, 2000).

[7] Beck (note 6), p. 21.

[8] Beck (note 6), p. 20.

acts of targeted violence. Few societies can sustain classic warfare today because of their loss of autonomous physical survivability and the vulnerability of their infrastructures. In a context where minor disturbances can cause major damages, it may be more meaningful to focus on societal risks than on specific external and internal threats.

Such recent developments in the thinking on security issues and the role of the military sector have implications for the utility of military expenditure data. Additional or different indicators may be required in order to capture and empirically test these new developments. For this purpose, there is a need for three types of conceptualization: (*a*) of the approaches to state-centric security; (*b*) of the interrelationship between state security and internal security; and (*c*) of how to expand the concept of security to incorporate other important security dimensions in addition to state and internal security.

First, the transformation of international relations, and consequently of security and defence policies, that has taken place since the end of the cold war involves a *shift of focus in the approaches to state-centric security* from a narrow approach, focusing on external threats that are primarily military in nature, to a broader approach that includes such dimensions as economic, environmental and human rights. Second, the reduction in the incidence of interstate armed conflict—and thus external threats—and the continued high incidence of internal, often very violent armed conflicts, has resulted in an *increasing overlap between state security and internal security*. This second tendency has been reinforced by the increased focus on the threat of terrorism since 11 September 2001. Third, the end of the superpower military confrontation has provided the opportunity *to deepen the scope of the security concept* because there are other threats that are perceived as being at least as important as the threats to national security.

State-centric security

State-centric security is provided primarily by military means. In most countries there is a civil defence force, and in some countries with a broader defence concept, such as Sweden's concept of Total Defence, state security also includes economic and psychological defence.

State security encompasses both the territorial and the extraterritorial approach to the provision of security. The territorial approach is largely based on cold war perceptions of threats and the risk of interstate armed conflict and is losing its relevance for many countries. The extraterritorial approach represents a mix of widely divergent objectives and types of activity, from classic national security objectives with varying degrees of offensiveness (extended self-defence, pre-emption and power projection) to elements that have more in common with a new security agenda (peace support operations and military intervention for humanitarian purposes). These activities are in many ways very different in nature, but it is nonetheless difficult to draw a clear dividing line between them.

At the same time, the range of possibilities for meeting at least some of a territory's security needs through external contributions has widened to include multilateral security arrangements, practical assistance, and bilateral or international interventions—by no means limited to the purely military sphere. It is increasingly argued that threats of a transnational nature in particular—such as terrorism or international crime—can only be met by international measures. In consequence, the identifiable cost of security provision may not be borne entirely, or even mainly, by the territory where the security is provided.

A return to broader security policies can be seen today in some Western powers and organizations. They include various policies of military assistance and cooperation, and a greater emphasis on diplomacy, as tools for building confidence and improving political relations with potential adversaries. This is part of US and British security policy and a central element of the NATO Partnership for Peace (PFP) programme.

In civil war, state security takes on an intra-territorial dimension. In peacetime, it has not traditionally been the domain of state security and military security forces. However, with the increasing focus on the threat from non-state actors, including the threat of terrorism, there is a tendency to expand the scope of state military security into a domain that has traditionally been reserved for internal security forces. Since the end of the cold war there has also been an expansion of private security in a variety of forms. Private agents play a greater role in the provision of security at many different levels, often substituting activities which have hitherto been the exclusive domain of governments.[9]

Each of these approaches to the provision of security may consist of different elements and thus incur different costs; any assessment of their affordability thus requires some identification and costing of these elements. The relative priorities assigned to them should ideally be based not only on their effectiveness in terms of security provision but also on solid assessments of their cost implications and sustainability in terms of long-term financing. The challenge for both producers and users of military expenditure data is therefore to address the need for disaggregation of such data to make it possible to distinguish between different types of state security provision.

Internal security

Internal security is the domain of internal security forces whose purpose is to establish and maintain public order and safety, basically to protect people from criminal activity. In principle there is a clear distinction between internal and external security functions—those of the police and the military—where the objective of the latter is primarily to protect the state from external threats. In practice, however, the distinction is not so clear and in some countries it is

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[9] See, e.g., Lilly, D. and von Tangen Page, M. (eds), *Security Sector Reform: The Challenges and Opportunities of the Privatisation of Security* (International Alert: London, Sep. 2002).

diminishing. In many developing countries, there has never been an institutional distinction between the police and the military. Since the end of the cold war, in particular since 11 September 2001, the borderline between internal and external security is also becoming less clear in Western countries, as a result of the threats posed by non-state actors.

In its most straightforward form, the argument concerning the relationship between military and internal security in developing countries is that in many of these countries the security environment does not conform to Western perceptions and that there is in fact no clear dividing line between military and internal security. Since the 1960s and 1970s, when these countries gained independence, their armed forces have had a considerable internal security role. The security predicament of developing countries—in this school of thought called the 'Third World' to denote their continued position at the bottom of the international hierarchy—has resulted in similar objectives for military and internal security forces, namely, the maintenance of internal control. Thus, expenditure on military security and internal security is undertaken for basically the same purpose.[10]

The source of the difference between developing and Western countries lies in the fact that the former are at a very early stage of state making. The consolidation of the modern state and citizens' loyalty in the West meant that the internal dimension of security was effectively resolved and its external orientation was politically and conceptually unquestioned. This is not the case in the Third World where, in principle at least, the internal dimension of state security is just as important as the military dimension. This is a long-established fact, given that most of these countries won their independence 30–40 years ago. The new element is that, with the removal of the cold war overlay, 'borders [are] no longer sacrosanct and secession [is] an option'. This has opened up the possibilities for both territorial adjustment and armed conflict.[11]

In some Western countries, the broadening perceptions of security threats, and thus also security objectives and the means of security provision, are also bringing internal and external security functions and agendas closer to each other, as demonstrated by the creation of a Homeland Security Department in the USA.[12] The institutional division of security functions is no longer obvious.

The interesting questions for which data are used are mostly functional. Thus, for analytical and comparative purposes, it is often useful to look at the grand total of military and internal security expenditure, not only in the case of developing countries[13] but increasingly also for Western countries. A breakdown according to customary budgeting rules—by ministry of defence or

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[10] Ayoob, M., *The Third World Security Predicament: State Making, Regional Conflict and the International System* (Lynne Rienner: Boulder, Colo., 1995), cited in Krause (note 2).

[11] Ayoob, M., 'The new–old disorder in the Third World', ed. T. G. Weiss, *United Nations and Civil Wars* (Lynne Rienner: Boulder, Colo., 1995), chapter 2.

[12] See chapter 1 in this volume.

[13] This is demonstrated in some detail in Ball, N., *Security and Economy in the Third World* (Princeton University Press: Princeton, N.J., 1988).

ministry of internal affairs—may still be useful. The objectives, means and organization of these two security functions are, and should be, different from each other. This applies, for example, to the division between military and police responsibilities in anti-terrorism programmes. It also applies to the extra-territorial use of security forces, that is, the division between peace support operations by military forces and policing for the upholding of law and order. It is important to be able to monitor the functions and costs of military security and internal security separately from each other.

Deepening the concept of security: human security

The deepening of the scope of the security concept during the post-cold war period is the most challenging change for the utility of military expenditure data as an indicator of the cost of security provision. If a broader security concept is adopted and integrated more broadly in government policies, it will also have long-term consequences for security and defence policies, since it would involve supplementing traditional means of providing security with a range of non-military means.

One clear demand for a deeper concept of security was formulated in 1995 by the Commission on Global Governance: 'The security of people recognizes that global security extends beyond the protection of borders, ruling elites, and exclusive state interests to include the protection of people. It does not exclude military threats from the security agenda. Instead, it proposes a deeper definition of threats in light of pressing post-cold war humanitarian concerns'.[14] The UN Millennium Development Goals for the 21st century formulated basic security in terms of 'freedom from fear' and 'freedom from want'.[15] These approaches can be grouped in two main categories, roughly corresponding to the two main UN Millennium Development Goals: a broader, 'freedom from want' approach, pursued by the United Nations Development Programme (UNDP) and the Japanese Commission on Human Security;[16] and a narrower, 'freedom from fear' approach, as developed by Canada.[17]

The concept of human security is still under development: there is still no general agreement on its specific coverage, that is, what type of economic, political, environmental and epidemiological problems are to be included. Its overall principle is to supplement the traditional notion of security threats with other types of threat that have a severe adverse impact on the security of the

[14] Commission on Global Governance, *Our Global Neighbourhood: Report of the Commission on Global Governance* (Oxford University Press: Oxford and New York, 1995), p. 81.

[15] On the UN Millennium Development Goals see URL <http://www.un.org/millenniumgoals/index.html>.

[16] UN Development Programme (UNDP), *Human Development Report* (United Nations: New York, annual); and Ogata, S., 'From state security to human security', Ogden Lecture at Brown University, Providence, R.I., 26 May 2002, URL <http://www.humansecurity-chs.org/activities/outreach/ogata_ogden.html>. See also Sen, A., 'Why human security?', Paper presented at the International Symposium on Human Security, Tokyo, 28 July 2000, URL<http://www.humansecurity-chs.org/activities/outreach/Sen2000.html>.

[17] See the Internet site on human security of the Canadian Department of Foreign Affairs and International Trade, at URL <http://www.securitehumaine.gc.ca/>.

individual and on global security. Thus, the concept of human security makes a strong link between the individual and global society, thus bypassing the nation state. It also has a bearing on sovereignty and has been interpreted as having inherently interventionist implications.

Four basic, although slightly overlapping, approaches to human security have been identified:[18] (*a*) the 'basic needs' approach;[19] (*b*) the assertive/ interventionist approach; (*c*) the 'developmentalist' approach, with an emphasis on local ownership of development;[20] and (*d*) the 'new security' approach, which identifies a series of new threats—drugs, small arms, terrorism and the trafficking in people—resulting from the opportunities that malignant forces have been able to exploit in the process of globalization.

The concept of human security has the potential, if it is developed into a clearly delineated concept, to contribute to a fruitful broadening of the security agenda.[21] It would entail limiting the concept only to conditions that are associated with the risk to people's lives, whether directly today or indirectly as a consequence of, for example, severe environmental degradation. One of the more interesting efforts in this regard is the Program on Human Security at Harvard University.[22] In order to develop an indicator of human security that focuses on developing countries, this project has developed a measurable definition of human security: 'the number of years of future life spent outside a state of generalized poverty', where 'generalized poverty' occurs when an individual falls below the threshold of any key domain of human well-being.[23] In an attempt to avoid the risk of arriving at a definition that is too broad, and therefore meaningless, the concept of security has been limited to 'those domains of well-being that have been important enough for human beings to fight over or to put their lives or property at great risk'.[24]

Interlinkages between the deeper and broader security agendas

While human security threats primarily affect populations in the South,[25] at least directly, they also affect the security of the Western world. Although this

[18] Newman, E., 'Human security and constructivism', *International Studies Perspectives*, vol. 2 (2001), pp. 239–51.

[19] UN Development Programme (UNDP), *Human Development Report 1994* (United Nations: New York, 1994).

[20] Sen (note 16).

[21] The Canadian Consortium on Human Security, based at the University of British Columbia, Canada, also conducts policy-relevant research on human security, in particular at the Centre for Human Security. See URL <http://www.ligi.ubc.ca/chs.htm>.

[22] The Internet site of the Program on Human Security, at the Center for Basic Research in the Social Sciences, Harvard University is URL<http://www.cbrss.harvard.edu/programs/hsecurity.htm>.

[23] King, G. and Murray, C. J. L., 'Rethinking human security', *Political Science Quarterly*, winter 2002, available at URL <http://www.cbrss.harvard.edu/programs/hsecurity/measuring.htm>. The Program on Human Security at Harvard University uses this definition for measuring human security.

[24] King and Murray (note 23), p. 593.

[25] For literature covering some broader aspects of the relevance of the concept for the South see, e.g., the issue on 'Human Security in Latin America' in *Disarmament Forum,* no. 2 (2002), in particular, Rojas Aravena, F., 'Human security: emerging concept of security in the twenty-first century', pp. 5–14; and 'The UN, peacekeeping and collective human security: from An Agenda for Peace to the Brahimi Report', *International Peacekeeping*, vol. 9, no. 2 (2002), pp. 51–68.

is not reflected to any great extent in Western security policies, it is widely acknowledged by academic observers. For example, the assessments of the US National Intelligence Council (NIC) survey of the security threats to the United States over the period 2000–15,[26] reported that, while the forces of globalization are leading to overall economic growth and political stability,

regions, countries and groups feeling left behind will face deepening economic stagnation, political instability, and cultural alienation. They will foster political, ethnic, ideological, and religious extremism, along with the violence that often accompanies it. They will force the United States and other developed countries to remain focused on 'old-world' challenges while concentrating on the implications of 'new-world' technologies at the same time.[27]

One of these challenges is the threat of transnational terrorism. While this threat is a multifaceted phenomenon with diverse and complex causes, many of the grievances on which terrorism is based are in fact the same type that constitutes threats to human security. As the NIC expert group formulated it, 'States with poor governance, ethnic, cultural, or religious tensions, weak economies, and porous borders will be prime breeding grounds for terrorism'.[28] This is the main reason why terrorism cannot be fought primarily with military means.[29]

Thus, human security threats need to be addressed because of concern for not only the individuals affected but also the protection of affluent countries in the West.[30] It is a shared concern, and the 'coincidence' could provide an incentive to encourage cooperation between North and South to alleviate the most pressing human security concerns in the South.[31]

Some Western countries have already incorporated elements of human security thinking into their foreign policies. Canada, Japan, Norway and Switzerland were the first to take this path, and additional members of the Human Security Network have to some extent followed their example.[32] Still other countries have incorporated security elements into their development assistance policies. The increasing shift in the development goals of the World Bank and the International Monetary Fund (IMF), from increased growth to poverty alleviation, can be seen as a move towards a human security perspec-

[26] US Central Intelligence Agency (CIA) and National Intelligence Council (NIC), 'Global trends 2015: a dialogue about the future with nongovernment experts', NIC-2000-02, Dec. 2000, URL <http://www.odci.gov/cia/publications/globaltrends2015/index.html>.

[27] CIA (note 26), section on 'Global economy and globalization', in 'The Drivers and trends'.

[28] CIA (note 26), section on 'Transnational terrorism'.

[29] Wulf, H., 'Frieden ist mehr als Terrorbekämpfung' [Peace is more than combating terror], *Friedensgutachtung 2002* (LIT Verlag: Münster, Hamburg and London, 2002), pp. 149–57.

[30] For another perspective that leads to the same conclusion, see Pieterse, J. N., 'Global inequality: bringing politics back in', *Third World Quarterly*, vol. 23 (2002), no. 6, pp. 1023–46. This article argues that the risks posed by global inequality cannot be contained in the soceities in the margins of the international system because of the cross-border effects of environmental degradation, migration, transnational crime and terrorism.

[31] See section III of the Introduction to this volume.

[32] The member countries of the Human Security Network are Austria, Canada, Chile, Greece, Ireland, Jordan, Mali, the Netherlands, Norway, Slovenia, South Africa (as an observer), Switzerland and Thailand. See URL<http://www.humansecuritynetwork.org>.

tive. Western development assistance policies are also increasingly used to support military security objectives in aid-recipient countries.[33] The British concept of security sector reform is the best known example.[34]

A broader security perspective is also reflected in the missions led by the United Nations. The trend is for an integrated UN presence in conflict situations in order to achieve the objectives of peace. The UN increasingly deploys 'multifunctional' operations which combine military forces, civil administration (including election and human rights monitoring and police support[35]) and humanitarian expertise with political negotiations and mediation. Of all the UN operations from 1948 to the end of the cold war, only 2 of 13 missions could be categorized as having a significant multifunctional character, while 11 of the 19 missions since 1988 can be so characterized.[36]

Implications for the utility of military expenditure data

As a result of the changing security environment and the associated changes in the nature of concepts such as threat, security and defence, military expenditure data (as provided by SIPRI and other organizations) are becoming increasingly inadequate to measure the cost of providing security. While military expenditure data can be used to assess the cost of providing military security, a much broader range of indicators is needed to assess the cost of providing other types of security. These challenges can be divided into the problems involved in measuring the cost of providing *state security*, *internal security* and *human security*.

In the area of *state security*, the main challenge is to develop measures for alternatives to military activity as means for providing state security. In particular, this would be useful for comparisons of the relative contribution of member countries to collective security organizations, such as NATO. Today, comparisons are made almost exclusively on the basis of the provision of military resources, often resulting in unproductive accusations of failure to raise military spending. If such comparisons also included a number of specific types of non-military contribution to joint international security objectives, such as within NATO, these comparisons would be more relevant to the new security environment. Tentative comparisons of measurable criteria for such non-military contributions have been made by the US General Accounting

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[33] See, e.g., Hendrickson, D., 'Security sector reform and development co-operation: a conceptual framework for enhancing policy coherence', Paper for the Development Assistance Committee (DAC) of the Organisation for Economic Co-operation and Development (OECD), Paris, Apr. 2000.

[34] For the principles of this policy see, e.g., the keynote address by Clare Short, British Secretary of State for International Development, at the Department for International Development (DFID) Security Sector Reform and Military Expenditure Symposium, 17 Feb. 2000, URL <http://www.dfid.gov.uk/News/Speeches/files/sp17feb00.html>.

[35] The consequences of the assumption of executive authority by UN peace operations, based on the experience of the UN peace operations in Kosovo and East Timor, are discussed in Dwan, R. (ed.), *Executive Policing: Enforcing the Law in Peace Operations*, SIPRI Research Report no. 16 (Oxford University Press: Oxford, 2002).

[36] Weiss (note 11), chapter 1.

Office and the Congressional Budget Office,[37] but what is required is a large-scale project that could serve as a basis for consensus among all NATO member states. Such comparisons could also be useful for assessments of the relative contributions of UN member states to peace support operations, involving military forces, policing and other functions.[38]

In this context, an issue that requires further research and relevant indicators is the relationship between the input and the output of the military sector. While the observation has been made that the law of diminishing returns is as applicable to state security as it is to other spheres of social life,[39] it is difficult to make such assessments in practice, even though this would have strong policy relevance. In a world of scarce resources, the goal of military security is always in conflict with other policy goals. A shift of resources is justified when the marginal utility of one type of expenditure exceeds that of expenditure for another purpose, such as military security. Thus, for rational policy decision making on the trade-offs between security and other public goods, it would be useful to know the point at which the marginal return from a dollar spent on an additional increment of security becomes smaller than that from a dollar spent on other goals.

To assess the provision of *internal security*, it is important to have a separate data series for the internal security forces to complement data on military expenditure. This is not easily done, considering the differences in national practices in the division between military and internal security forces, as regards both their ministerial affiliation and their missions.[40] The only existing standardized data on internal security spending, thus allowing for cross-country comparison, are the data on 'public order and safety' in the IMF *Government Finance Statistics Yearbook* (GFSY). These data are an aggregate of expenditure for the entire internal security system, including a broad range of functions in addition to the security forces (police). The category 'public order and safety' in the GFSY covers 'police services, fire protection services, law courts, prisons, R&D on public order and safety, and other public order and safety affairs and services'.[41] While these data could be useful for some purposes, it would be better to have separate data that are comparable to military expenditure, with a focus on the actual internal security forces. In order to develop a feasible method for producing relevant data on total military and internal security expenditure, it would be necessary to conduct a series of country or regional case studies to understand the interplay between the two sectors and also how well the IMF data capture the grand total.

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[37] Sköns, E. *et al.*, 'Military expenditure', *SIPRI Yearbook 2002: Armaments, Disarmament and International Security* (Oxford University Press: Oxford, 2002), pp. 255–56. These alternative measures included contributions to NATO's reaction forces, peacekeeping missions and security-enhancing economic assistance.

[38] McKinley, J., 'Military responses to complex emergencies', ed. Weiss (note 11), chapter 4.

[39] Baldwin (note 4), p. 128.

[40] See, e.g., the differences between the French Gendarmerie, the German Bundesgrenzschutz and the Italian Carabinieri.

[41] International Monetary Fund (IMF), Statistics Department, *Government Finance Statistics Manual 2001* (IMF: Washington, DC, 2001).

One approach for examining broader security measures and developing useful indicators for such measures is the 'threat–risk' nexus. Using Beck's ideas of 'societal risks' would entail thinking of threats in terms of 'risk' against which societies purchase 'insurance'—which does not guarantee against break-ins but, when coupled with a security system, might result in low insurance premiums.

As regards the provision of *human security*, there is no feasible prospect of measuring its cost. Efforts to develop indicators are instead focused on measures of the threats to and degree of human security. A potentially fruitful initiative is the development of an annual Human Security Report by the Centre for Human Security of the Canadian Consortium for Human Security at the University of British Columbia.[42] The Human Security Report will map the annual incidence and severity of global violence—criminal violence as well as armed conflict. It will also review the latest research findings on and policy responses to the causes and consequences of political and criminal violence, including the policy success stories.[43] The core indicators of human security include 'battle-related deaths in armed conflicts, genocides and other forms of world repression, and homicides'. It will also examine the impact of armed conflict and criminal violence on society, on the basis of a new data set being created by the World Health Organization.[44] The Human Security Report will seek to complement the UNDP's *Human Development Report* and its proposed Global Vulnerability Report, which will focus on natural disasters. Together, these three reports would provide a comprehensive annual map of the threats to human well-being—human security in the broad sense of the term.[45]

III. Arms production, transfers and control

Traditionally, arms production has been described as a national undertaking in support of national security. National governments were the major buyers from national production. Apart from the nations with alliances or other strong security relations abroad, countries normally did not plan for international arms transfers.

For many of the major arms-producing countries, this situation has changed. Arms exports have become necessary for sustained domestic arms production. At the same time, however, arms transfers are controlled by governments in an attempt to block transfers that do not support supplier nations' security policies. An increasing number of countries are required to put such policies into effect.

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[42] The first report is forthcoming in 2003. See note 19.

[43] Mack, A., *Report on the Feasibility of Creating an Annual* Human Security Report (Program on Humanitarian Policy and Conflict Research, Harvard University: Cambridge, Mass., Feb. 2002), p. 1, available at URL <http://www.hsph.harvard.edu/hpcr/human_security.htm>.

[44] Mack (note 43), p. 3.

[45] Mack (note 43), appendix 2, p. 2.

These two policy ambitions do not necessarily support each other, especially if arms and related exports are considered a national security requirement for sustained arms production.[46] It is suggested here that the handling of policy dilemmas arising from the increasingly direct linkage between arms production, arms exports and arms control will be critical for the achievement of security, whether it is seen from the narrow, military definition of security or as a broader concept.[47] There are also methodological aspects of this problem.

Acquiring arms

There are two major ways of acquiring arms—through national research and development (R&D) and production; and through imports. The arms-producing and -exporting countries have traditionally been Western industrialized nations of the northern hemisphere with indigenous military R&D and/or production facilities. The importing countries were developing nations lacking such capacities. The issue of arms transfers was in the 1960s and 1970s a matter of international concern, seen as a 'North–South' issue: arms imports by developing countries meant that their scarce resources were diverted from the satisfaction of more immediate basic human needs. In addition, arms imports risked linking bilateral or regional arms races, instabilities and possibly war to the major East–West conflict.

While many of these concerns about the consequences of arms transfers still remain, the distinction between exporter and importer has become less clear over time. In general, total military self-sufficiency is not cost-effective for any individual arms producer. Most traditional producers have accepted or been forced to accept—for economic, technological or political reasons— more arms imports and more cooperation with friends and allies. The countries of Europe, and several bilateral relationships in other parts of the world, illustrate this trend. In parallel, the traditional arms importers have changed from the developing countries to the newly industrialized countries. This has permitted them to create a limited national defence industrial base through reverse engineering of imported and licence-manufactured equipment or even closer cooperation with a foreign supplier.

Arms exports have become strongly linked to sustained indigenous military production and 'strategic' technological developments because of the reductions in national acquisitions. Sustained national military production (albeit reduced in the West) is still strongly and positively linked to national security. At the same time, there is an increasing political acceptance that the development of future military capabilities require advanced national technological skills. It is not always necessary to have a complete national capacity to produce new major weapons at regular intervals. One arms export control problem may be formulated as how to intervene in this 'internationalization of military acquisition'—involving not only weapon systems but also military

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[46] Illustrations of this dilemma are given in chapter 13 in this volume.
[47] For a scholarly analysis of the many related issues involved see, e.g., Buzan, B. and Herring, E., *The Arms Dynamic in World Politics* (Lynne Rienner: London and Boulder, Colo., 1998).

sub-systems, military and civilian components and technologies, and skills—in order to prevent 'the wrong actors' from benefiting from it.

A complementary problem of arms control is how to decide which countries should be allowed to receive military equipment, as well as when and why. 'Strategic' political agreements between two or more governments may be regarded as a way of forming permanent military and foreign policy relationships, short of alliances. Such cooperation may vary in content and scope but generally includes arms and military technology transfers and support. Arms transfers in support of anti-terrorism are in many cases part of more general military cooperation.[48]

New forms of international defence industry cooperation, both horizontal and vertical; new political (national security) as well as commercial demands for arms exports; and less clear borderlines between certain military and civilian technologies all complicate the use of arms transfers data. There is a need to incorporate 'internationalization' and changing circumstances into the methodology of the study of arms transfers. There is no publicly available indicator that takes all these changes into account. Until one is developed, it will be impossible to describe market changes reliably and to devise and evaluate control measures.

To illustrate these changes, different types of arms market are described below.

Arms markets

First, the most advanced major conventional weapons are developed and exported by a relatively small number of countries.[49] The USA will remain by far the major military R&D investor on this market. The European countries may overcome their major financial and technological limitations through regional cooperation. Russia's long-term position in advanced military production, and therefore as a major competitor in the market for the most advanced weapons, is unclear. Although other countries than only the USA, Russia and those in Europe may be able to acquire such weapons—generally allies or close friends that might receive preferential conditions—this most advanced market will remain limited in size.

Europe and the USA will therefore continue to constitute the larger part of this market. Production of the most advanced major conventional weapons has traditionally been concentrated in a small number of countries. In general, the importance of the USA as a major arms supplier compared to all other suppliers has increased. Despite European ambitions to achieve stronger independent security capabilities, including military R&D and operational capabilities—ambitions that have supported intra-European arms acquisitions—the military technology gap between the USA and Europe in most advanced military technologies is likely to grow.

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[48] See section V of chapter 13 in this volume.
[49] See section II of chapter 13 in this volume.

Intra-European arms acquisition and cooperation is a regional aspect of international arms transfers that will be shaped by common European goals and policies inside as well as outside the NATO framework. The future of European arms acquisition and the use of those weapons—as part of their multilateral state-centric security perception—will be decided by the answers to four questions linking military doctrine, the European Security and Defence Policy (ESDP), and defence industrial policy: what should be produced, for what purpose(s), by which countries, to be used by which countries? Not all European countries will participate in advanced military production. Neither are all countries likely to be involved in military operations at the same time. Military production will over time be a reflection of Europe's perception of its role and responsibilities. For instance, the military aspects of a common European space policy are noted in a recent European Commission study.[50]

Since the European countries, together with the USA and Russia, will remain the world's major investors in military R&D and production, they will also decide future supplier policies for the transfer and control of conventional arms and related goods and technologies.

Second, there is a market for less technologically 'exclusive' weapons, including surplus weapons. They may be more affordable for the economy of a country, and often are more suitable for the military force structures of the majority of arms-importing countries. This second type of market is one in which more suppliers can be involved than in the first type.

Third, and related to the second type, is the market for modernized (or upgraded) older weapons. This market has become important over the past 10–15 years because of many countries' more limited budgets for military acquisitions and the increasing possibilities to make step-by-step weapon system upgrades. This market overlaps with the first two types in that it includes a variety of suppliers, recipients and equipment. Instead of procuring new and expensive major weapons, modern sub-systems and components may be integrated into existing weapon platforms more often and at a lower cost than procuring a new, similar platform.

These markets represent different ways of transferring arms, military goods and/or technologies from one country to another. An important point in this context is that the second and third types of market in particular also include transfers other than 'arms' transfers involving sub-systems, components or technology. SIPRI takes some of these transfers into account when estimating the trend-indicator value of weapon systems or other pieces of military equipment. Nonetheless, it is necessary to develop a methodology for registering, measuring and evaluating each of these types of transfer in order to present a more reliable picture of market changes.

Another important point is that the transfer figure is relevant only if it is relevant for the issue under study. The SIPRI trend-indicator value was created to reflect the military value, not the cost in terms of the monetary value. The

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[50] Commission of the European Communities, *European Space Policy,* Green Paper, COM(2003) 17 final, Brussels, 21 Jan. 2003. See also chapter 11 in this volume. The military use of space is discussed in chapter 12 and essay 3 this volume.

value of a weapon system to the military user may be much higher than its actual acquisition cost, especially for surplus and/or modernized weapons. The military user value may also be used as part—and only as part—of a military 'threat' or security analysis.

Some analyses also include a fourth market, namely, that for small arms and light weapons.[51] Political interest in these types of armament has increased for a variety of reasons, including: (*a*) a reduction in the number of interstate wars; (*b*) the ease with which small arms and light weapons can be acquired and transferred illegally; and (*c*) their potential and actual use. SIPRI research does not cover small-arms transfers in the same way as it covers transfers of major conventional weapons, mainly because of problems related to the availability of reliable information. This is therefore an area where more investigation as well as methodological research are important. However, in order to emphasize the importance of all types of weapons, SIPRI includes both small arms and major conventional weapons when reporting on arms transfers to states and groups in armed conflict and war.[52]

IV. Conclusions

In principle, nations arm to provide state security, and military expenditure is a measure of the monetary cost of doing this. However, military capabilities are not the only means for providing state security. Therefore, there is scope for—and a tendency towards—a broader security agenda in terms of the means for achieving state security. Second, the urgency of the terrorism issue is likely to influence the institutional balance between different security-producing agents/authorities. Third, the security environment and perceptions of security are moving away from the classic view of security in terms of protection of the state and its territory and population against external threats. A deeper security concept is gradually emerging, focusing on the protection of people.

While it will continue to be important to provide data on military expenditure, not least in order to provide an indicator of the relative priorities of military and non-military means of providing security, there is a need to develop alternative measures of the cost of security provision, in particular for non-military activities associated with a broader concept of security. It would also be useful to look at ways of disaggregating government data on military expenditure for various analytical purposes. Another area which needs further investigation is the relationship between military and internal security, and what parts of internal security should be added to the data on military expenditure in order to produce a policy-relevant measure of total security forces. As regards *deeper* concepts of security, such as 'human security', much work is already being done. While few countries have so far fully integrated human

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[51] The issues and developments in the area of small arms are reviewed in Graduate Institute of International Studies (Geneva), *Small Arms Survey* (Oxford University Press: Oxford, annual); see URL <http://www.smallarmssurvey.org/>.
[52] See, e.g., section V of chapter 13 in this volume.

security concepts into their external policies, the work being done on human security indicators may in future also feed into that process for more countries.

The increased focus on non-military means of security provision resulting from broadening and deepening security agendas has in turn resulted in an increased requirement for other indicators of the cost of providing security than military expenditure. If the relevant means of providing security could be properly identified and reasonable indicators found, this would be a useful tool for assessing their relative costs. Such an assessment could provide an improved basis for government policy and intergovernmental defence and security cooperation. It could also help to enlighten the international security debate. The conceptualization of security for the purposes of measurement need not be identical to that needed for theorizing about security in the sense of its explanatory power, but it will have to correspond to the security concepts in use and must be possible to operationalize into measurable indicators. A broad debate is needed for the eventual conception of ideal-type indicators.

The objectives of a broader security agenda also illustrate the shortcomings of data on arms production and international arms transfers. It is impossible to assess whether the internationalization of arms acquisition will enhance security and stability or increase the risk of war, since that will depend on a variety of factors. Security, especially if understood as more than military security, is not a zero-sum game in which more (military) security for one nation is necessarily less security for another nation and its people. The way in which the political dilemma is resolved between the strong national security linkage between arms production and arms transfers, on the one hand, and arms control, on the other hand, will be critical for the achievement of security, whether in a military or a non-military, a broader or a deeper definition.

The resolution of this dilemma is not only political but also has methodological aspects. This chapter distinguishes between markets that represent different ways of transferring arms, military goods and technologies. Until the internationalization of arms acquisition is incorporated into the methodology of studying arms transfers, it will not be possible to reliably describe these markets and changes. Such a methodology could be of great value in the formulation or reformulation of export policy and for the study of whether control measures have been successful or not. This could contribute to a better understanding of the importance of major and small arms transfers in armed conflict and to the study of regional changes in the concept of security.

Any reduction in national and international transparency would be a serious drawback for research that is relevant for a broader perception of security. Enhanced transparency in national reporting on security issues such as military expenditure, arms production, and arms exports and imports is necessary for improving the conditions for estimating the national cost of security. Comparisons between military and non-military means of providing security would also require increased transparency in the components of military and internal security expenditure. While developments in the European Union reflect a willingness to increase public openness in arms transfers, this is not so for most countries or for all aspects of the military sector.