IV. Military and social expenditure*

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The opportunity costs represented by high levels of world military expenditure are frequently a source of controversy.[1] Comparisons are often made between the amount spent on the military worldwide and the amounts that would be needed to tackle major global problems such as hunger, preventable disease, lack of education or climate change.

For more than 20 years, from 1974 to 1996, the US economist Ruth Leger Sivard (1915–2015) produced the publication *World Military and Social Expenditures*, which set out detailed information on global military affairs, including military spending, arms transfers and nuclear weapons, alongside data and analysis on world poverty and related social issues, and set out the comparisons between the resources devoted to each. The publication was highly valued by both academia and civil society.

This short section cannot hope to replicate the vast body of material that went into each edition of *World Military and Social Expenditures*. Instead, it focuses on two key issues: trends in world military, health and education spending since 1995; and a discussion of the costs of meeting the Sustainable Development Goals (SDGs), which were officially adopted by the United Nations in 2015, in relation to world military spending.

Trends in military, health and education expenditure, 1995–2015

In government budget decisions, different areas of spending always compete for limited resources. Sometimes a growing economy, an expanding tax base and/or new revenues from natural resources can allow increases in all areas, but the trade-offs between different areas of spending remain. The military is often a major spending item, and thus an important competitor for resources with expenditures that more directly meet basic human needs.

Health and education are among the most important, and are frequently the largest, areas of social expenditure. They are also among the best covered by international data. In Western countries, health and education are typically among the largest items in the government budget after spending on social welfare (pensions, benefits and other transfer payments). Defence is also in many cases one of the larger budget items. Fairly comprehensive data on public expenditure on health as a share of gross domestic product (GDP)

[1] In economic theory, the 'opportunity cost' of any choice is defined as the value of the best option foregone by that choice. In the case of any given spending choice, the opportunity cost is what could be obtained with the best alternative use of that spending.

**This section in memoriam Ruth Leger Sivard*

from 1995 to 2013 is provided by the World Health Organization, while data on public expenditure on education as a share of GDP up to 2014 is available from the UN Educational, Scientific and Cultural Organization (UNESCO), although this is less comprehensive in its coverage (see box 13.4 on page 528).[2] In each case, the figures relate to general government expenditure, that is, spending by all levels of government, including central, provincial, municipal and others.

This subsection discusses the trends in military, health and education expenditure as a share of GDP since 1995 to present a picture of how relative priorities between these areas have shifted over the past 20 years.

Trends in military expenditure as a share of GDP since 1995

Figures 13.3 and 13.4 present the share of GDP devoted to military expenditure (the 'military burden'), by region and by income group, between 1995 and 2015. While it should be noted that the data for Africa after 2006 is subject to considerable uncertainty, the broad trends in the military burden can be assumed to be reasonably reliable. Data for the low-income group, however, is more uncertain and harder to interpret.[3]

The figures show that the global military burden has barely changed since 1995, and has generally been stable from year to year at around 2.3 per cent. At the regional level, some trends are clear: the steady decline in the military burden in Western and Central Europe, the large increase followed by a substantial decrease in North America and the very rapid increase in Eastern Europe and the Middle East in recent years. At the level of income groups, a clear decline can be seen among lower-middle income countries, and a rapid rise in recent years among high-income countries that are not part of the Organisation for Economic Co-operation and Development (OECD), which include Russia and the Arab states of the Gulf.

While the data shows no particular global trend at an aggregate level, it can be strongly affected by large individual countries. A clearer long-term trend emerges when the data is examined on a country-by-country basis. A comparison of the average military burden for each country in 1995–97 with the average for 2013–15 reveals that a large majority of countries for which data is available reduced their military burden between the two time periods: 107, compared with 31 where it increased. Of these, 26 increased their military burden by at least 0.2 per cent of GDP, while 89 reduced it by at least

[2] Both sets of data were obtained from the World Bank World Development Indicators, <http://data.worldbank.org>.

[3] The uncertainty for Africa is due to the absence of data for 2 significant countries: Eritrea and Sudan. The data for the low-income group is problematic due to the absence of data for Eritrea since 2003, and the fact that the state in the group with by far the highest military spending, South Sudan, only became independent in 2011. South Sudan's military spending figures are included, as the Government of South Sudan, from 2008, when both gross domestic product and military spending figures became available. Thus, the low-income group shows a substantial increase in 2008.

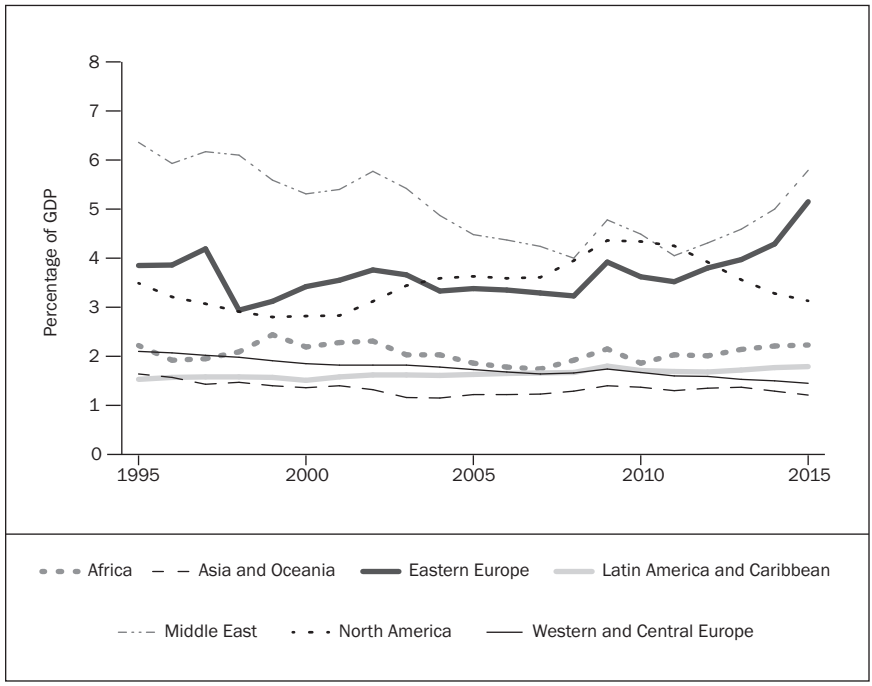

Figure 13.3. Military expenditure as a share of GDP, by region, 1995–2015

0.2 per cent. Median military spending declined from 1.9 per cent to 1.5 per cent of GDP between the two time periods. It is a matter of concern, however, that a number of countries in Africa increased their military burden during this time—15 out of 40 for which data is available, a higher proportion than in any other major region. At the subregional level, four of the seven countries in Eastern European increased their military burden.

Trends in health and education expenditure as a share of GDP, 1995–2013

Figures 13.5 and 13.6 show government expenditure on health as a share of GDP between 1995 and 2013, by region and by income group. At the regional level, Africa and Latin America and the Caribbean stand out as displaying a steady rise in health spending over the period.[4] Among the other developing regions, there was modest growth in the Middle East, but virtually no change in Asia and Oceania, despite an overall increase in South East Asia. There was a large drop in health spending in Eastern Europe. It appears that 2009 was a turning point, after which the impact of the global economic crisis led to falling shares or slower increases in most regions. At the level of

[4] The regions defined by the World Bank for this purpose do not coincide with SIPRI's regions for military expenditure.

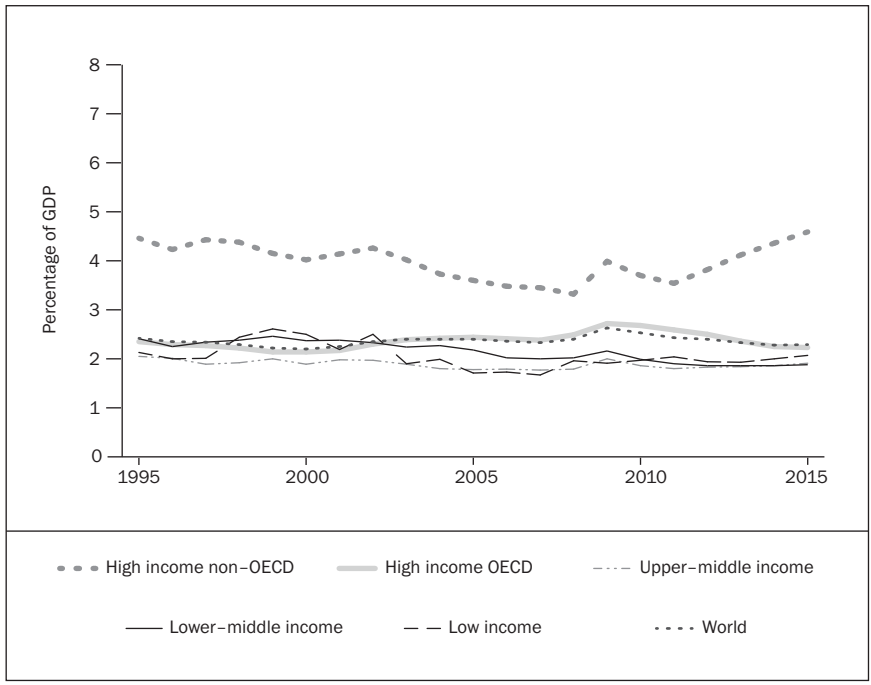

Figure 13.4. Military expenditure as a share of GDP, by income group, 1995–2015

income groups, low- and upper-middle income countries show clear growth, reflecting increases in Africa and Latin America and the Caribbean. Only one income group, the high-income non-OECD countries, shows a decline in the priority given to health expenditure. The regions with most developed countries, North America, and Western and Central Europe, not surprisingly show the highest shares, as it is in these regions that public healthcare provision tends to be most developed.[5]

The trend in rising health expenditure is more apparent at the level of individual countries. Of the 159 countries for which data is available in both periods, the average health share of GDP in 2011–13 was higher than in 1995–97 in 114 countries, or 73 per cent.[6] The median share for all 159 countries rose from 2.6 per cent of GDP in 1995–97 to 3.5 per cent in 2011–13. Eastern Europe and the Middle East and stand out as the regions where the highest proportion of countries have reduced health spending, while a strong majority in other regions have increased spending. Thus, it is clear that, in general,

[5] However, the rapid increase in North America during the 2000s may relate more to increasing health care costs in the privately run US system than to an improvement in provision.

[6] The analysis was conducted only for those countries also covered by the SIPRI Military Expenditure Database.

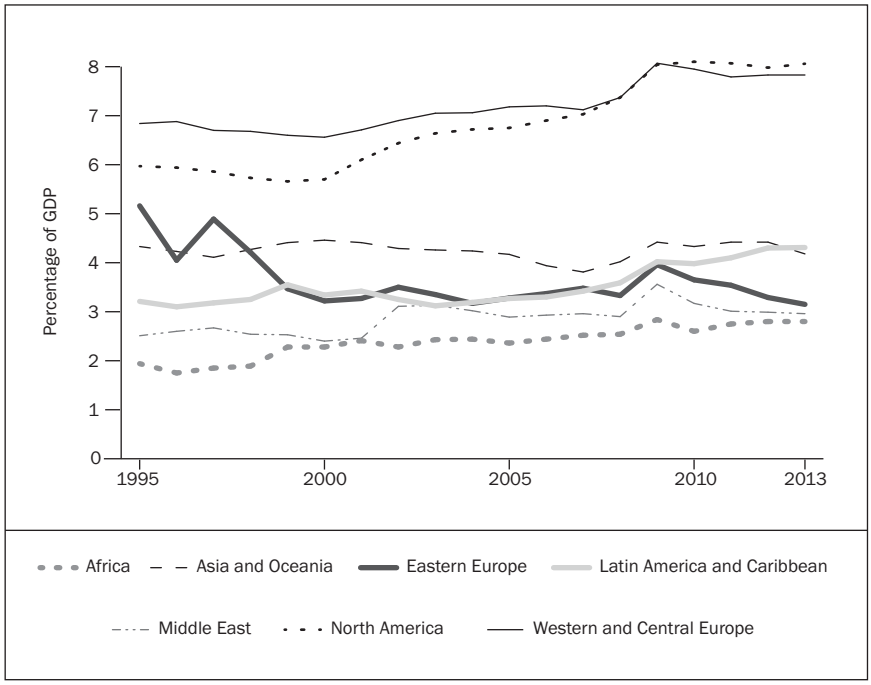

Figure 13.5. Government health expenditure as a share of GDP, by region, 1995–2013

the priority given to health expenditure in both developed and developing countries has risen over the past 15–20 years.

It is harder to assess overall trends in education expenditure, as there are many more gaps in the data. Thirty-six countries, for example, have no data from 2009 onwards, including some developed countries. As a result, no regional or income group aggregates are provided in the dataset, and nor can they be meaningfully calculated.

At the individual country level, however, the same trends can be observed as in health expenditure, with a clear majority of countries—80 of the 114 for which data is available—increasing their average share of GDP devoted to education between the period 1995–99 and the period 2009–13.[7] The median GDP shares of these countries rose from 4.2 per cent to 4.8 per cent between these two periods. A strong majority of countries in almost all regions show an increase, the exception being the Middle East where there is data for only 5 of 14 countries, of which 3 cut the share of GDP devoted to education. The trend in rising education spending is particularly striking in Latin America

[7] Due to gaps in the data, SIPRI used 5-year averages for this part of the analysis as this allowed for the collection of relevant data for a larger number of countries.

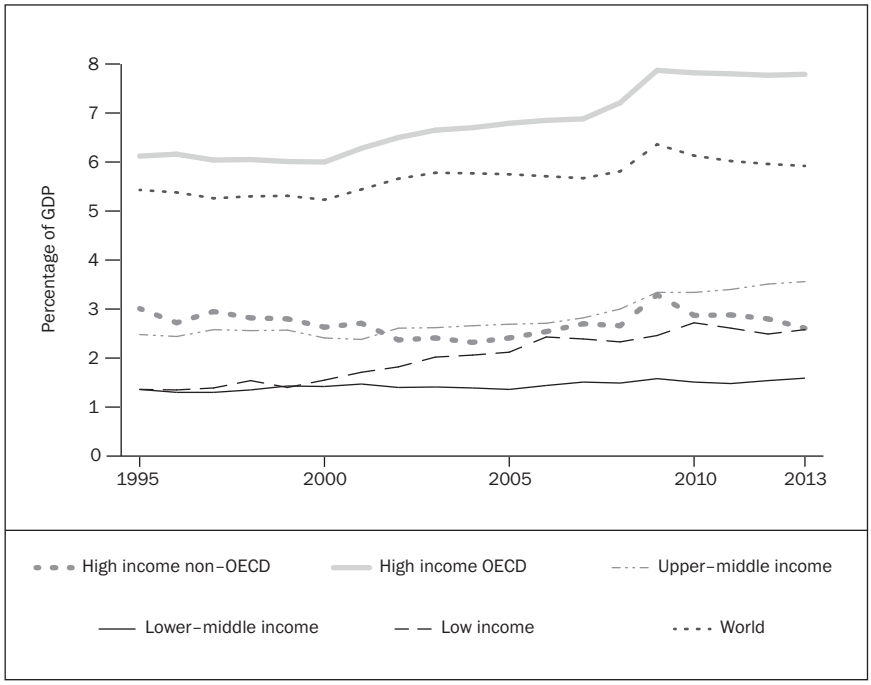

Figure 13.6. Government health expenditure as a share of GDP, by income group, 1995–2013

and the Caribbean, where 17 of 20 countries increased the spending share. Some caution must be exercised here, however, due to the amount of missing data.

Comparing military and health spending levels

The question of what are 'appropriate' levels of military, health and education expenditure is almost impossible to answer. The level of military expenditure, especially, is highly dependent on a country's security situation, as well as the role (both perceived and actual) of military means in protecting its security and interests. Desirable levels of health and education expenditure also depend partly on the particular health and education challenges a country faces and, as is the case with military expenditure, the financial *inputs* into the health and education systems do not always correlate with the *outputs*, in terms of health and education outcomes.

Having said that, differences in levels of military, health and education spending over time are interesting as they indicate a relative prioritization of resources. For example, the data shows that developed, high-income countries that provide high-quality universal public health care at or near the most advanced levels of treatment, almost all spend at least 6 per cent of

Table 13.6. Military and health spending by share of GDP, 1995 and 2013

Region	Health share (%)		Military share (%)	
	1995	2013	1995	2013
World	*5.4*	*5.9*	*2.4*	*2.3*
Africa	*1.9*	*2.8*	*2.2*	*2.2*
North America	*6.0*	*8.1*	*3.5*	*3.6*
Latin America and Caribbean	*3.2*	*4.3*	*1.6*	*1.4*
Asia and Oceania	*4.3*	*4.2*	*1.5*	*1.8*
Eastern Europe	*5.2*	*3.2*	*3.9*	*4.0*
Western and Central Europe	*6.8*	*7.8*	*2.1*	*1.5*
Middle East	*2.5*	*3.0*	*6.4*	*4.6*

Source: SIPRI Military Expenditure Database and World Bank World Development Indicators, <http://data.worldbank.org>.

GDP on publicly funded healthcare, and often considerably more. Very few countries spend more than this on the military. The North Atlantic Treaty Organization's military spending target for its member states, which most do not meet, is a minimum of 2 per cent of GDP. In 2006 UNESCO's High-Level Group on education called for governments to spend at least 4–6 per cent of GDP on education.[8]

Unsurprisingly, therefore, a comparison of individual countries finds that most spend more on health than the military. (The same is generally true for education, but the data is too sparse to make systematic recent comparisons.) More interesting is the fact that, in keeping with the trends identified for both health and military expenditure, this spending pattern has becoming increasingly prevalent over time. In the period 1995–97, of the 146 countries where data was available for both categories of expenditure, health spending was higher in 89 countries (61 per cent), whereas military spending was higher in 57. Looking at the period 2011–13, however, 121 out of 152 countries (80 per cent) had higher health expenditure. During the two time periods, the median ratio of health to military expenditure increased from 1.5 to 2.6.

It is also interesting to look at which countries tend to have higher or lower levels of military expenditure relative to health spending. Of the 31 that spent more on the military in 2011–13, 9 were in the Middle East and 4 were in Eastern Europe (out of 14 and 7 countries respectively in these regions). A total of 9 were in Africa, of which 5 are major oil producers: Algeria, Angola, Chad, Libya and South Sudan.

There is a clear positive trend among the low-income countries. While in 1995–97 13 out of the 23 countries for which data exists had higher health than military spending, by 2011–13 this had risen to 20 out of 25 countries—a

[8] United Nations Educational, Scientific and Cultural Organization (UNESCO), Global Education Monitoring Report, *Education for all 2000–2015: Achievements and Challenges* (UNESCO: Paris, 2015).

similar proportion to the global sample. The exceptions were Cambodia, Chad, Guinea, Guinea-Bissau and South Sudan. In the latter, military spending was over seven times that on health.

Democracies in particular have a strong tendency to spend more on health than the military. To compare spending trends between countries with democratic and autocratic political regimes SIPRI used the classifications set out by the Center for Systemic Peace's Polity IV database on democracy and autocracy.[9] Of the 92 countries in the SIPRI Military Expenditure Database where data was available that were identified as 'democracies' in 2013 by the Polity IV database, 86 spent more on health than the military on average over 2011–13. Even excluding the rich, Western countries (i.e. OECD members and smaller Western European states), the figure was 54 out of 60, a considerably higher proportion than the overall total. The exceptions were Georgia, India, Israel, Lebanon, Pakistan and Timor Leste. By contrast, among the 20 countries classified as 'autocracies', and using the most recent available data where data for 2011–13 was not available, 10 spent more on health, whereas 9 spent more on the military; no data was available for North Korea.

Looking at the regional level and comparing spending levels in 1995 and 2013, health expenditure was clearly higher than military expenditure in most regions at both points in time (see table 13.6). The main exception is the Middle East, which spent more on the military in both of the years under comparison. Africa moved from spending more on the military in 1995 to clearly spending more on health by 2013. Eastern Europe, however, moved in the opposite direction.

Comparing the spending patterns of income groups over similar time frames (1995–2013 for health spending and 1995–2015 for military spending) shows that for the high-income OECD and upper-middle-income groups, health expenditure has been clearly higher than military expenditure, while for high-income non-OECD and lower-middle-income groups, the reverse is true, although the gap has closed considerably in the latter group (figures 13.4 and 13.6). For low-income countries, health expenditure has gone from being markedly below military spending to noticeably above it, a trend that is fairly clear cut despite the uncertainties in the military expenditure data.

Overall, the positive trend in relative spending on social versus military expenditure is most apparent in Latin America and the Caribbean, a region where democratic transitions have become more solidly embedded over the past 20 years. The Middle East and Eastern Europe, however, where many

[9] The Center for Systemic Peace's Polity IV database gives ratings to each country and jurisdiction on a variety of measures, which are combined to give scores from 0 to 10 for 'democracy' and 'autocracy'. The difference between the 2 is the net democracy score, and countries with a democracy–autocracy score of 6 or higher are classed as 'democracies', <http://www.systemicpeace.org/polityproject.html>.

Box 13.4. Methodology for comparison of military and health expenditure

Gross domestic product

The World Health Organization (WHO) provides statistics on general government expenditure as a share of gross domestic product (GDP), with comprehensive data from 1995–2013, which can be obtained through the World Bank World Development Indicators (WDI) database (<http://data.worldbank.org/data-catalog/world-development-indicators/>). However, because the WDI figures calculate percentages of GDP based on the GDP figures from the same WDI dataset, whereas SIPRI uses GDP data taken primarily from the International Monetary Fund (IMF) International Finance Statistics (IFS) (<http://www.imf.org/en/Data>), the figures for health spending as a share of GDP have been slightly adjusted so as to be based on the same GDP figures as SIPRI uses for calculating military spending as a share of GDP.

Regional and country comparison

Comparisons between military and health expenditure and between time periods are made based only on those countries for which data is available for all the concepts and time periods being compared. The average share of military or health expenditure in GDP for a three-year period (e.g. 2011 to 2013) is calculated provided that data is available for at least one of the three years. There are 159 countries for which health expenditure data is available in both 1995–97 and 2011–13; 137 countries for which military expenditure data is available in both periods; 147 countries in which both military and health data is available in 1995–97; and 153 countries in which both military and health data is available in 2011–13.

For further details of SIPRI's regional coverage see <http://www.sipri.org/research/armaments/milex/milex_database/regional_coverage>.

countries are heavily oil dependent, lack certain democratic processes or have seen reverses of democratic trends in recent years, are the regions where social spending has tended to fall back. Oil producers in these regions, as in Africa, often have high levels of military spending relative to social spending. This is consistent with aspects of the theory of the 'rentier state'. According to this theory, governments of countries where natural resources rather than taxation are the main source of revenue are less accountable to the population, have fewer incentives to provide public goods, and are more likely to try to ensure their continued control of natural resources through high military spending.[10]

While there is a general tendency for most countries to reduce their military burdens while increasing health and education expenditures as a share of GDP, there is no obvious association between these trends. Countries that increased military spending were as likely to increase health spending as those that reduced military spending. Simple correlation analysis found essentially no correlation between the change in health spending as a share of GDP and the change in military expenditure as a share of GDP between

[10] See e.g. Beblawi, H. and Luciani, G. (eds), *The Rentier State* (Croom Helm: London and New York, 1987).

1995–97 and 2011–13.[11] While further analysis would be needed to explore this more thoroughly, this suggests that, where countries have boosted military spending, it has come from other areas of the budget, or from increased government revenue or borrowing as a share of GDP, rather than from the health budget, and vice versa. Nor is it possible to say that the tendency for health care spending to increase and military expenditure to decrease has, in general, been the result of a deliberate 'peace dividend' where resources have been transferred from the military to health spending, although this may have been the case in some countries.

Military expenditure and the Sustainable Development Goals

Campaigners for global development often point to high levels of military expenditure as a key area where scarce resources that might otherwise be used for development are being wasted. This view is also frequently reflected in language used by the UN. The resolution establishing the UN reporting instrument on military expenditure in 1980 (see section V) saw an exchange of information on military spending as a first step towards reducing such spending, in order to achieve the 'least diversion' of resources away from social purposes.[12] The concept of a peace dividend through a reallocation of resources from military spending to civilian purposes, and the potential beneficial economic and social impacts of this, were widely discussed during the 1990s in the wake of the end of the cold war.[13]

How much could be achieved by a reduction in world military spending if the resources released were devoted to development—in particular to achieving the SDGs? The following subsections consider available estimates on the cost of achieving some of the SDGs, and how these sums relate to world military spending.

One benchmark for a potential reduction of military spending is the call by the Global Campaign on Military Spending (GCOMS) for a global reduction of 10 per cent.[14] This is much less than the one-third real-terms fall that occurred between 1988–97 after the end of the cold war; or even the 12.5 per cent fall in 1992–97, after the break-up of the Soviet Union. Ten per cent of world military spending would amount to $167.6 billion, in 2015 prices. By comparison, total official development assistance provided by the OECD's

[11] The correlation coefficient was +0.08, where a coefficient of +1 indicates a perfect positive relationship, –1 indicates a perfect negative relationship and 0 indicates no linear relationship.

[12] UN General Assembly Resolution 35/142 B, 12 Dec. 1980.

[13] See e.g. Gleditsch, N. P. et al. (eds), *The Peace Dividend* (Elsevier: North Holland, 1996).

[14] See e.g. the International Peace Bureau's website on the Global Campaign on Military Spending, <http://www.ipb.org/web/index.php>.

Development Assistance Committee members stood at $137.2 billion in 2014.[15]

The Sustainable Development Goals

The 17 SDGs were formally adopted in 2015 as a successor to the Millennium Development Goals (MDGs), as human, social, economic and environmental goals for all countries to work towards and achieve by 2030. Among others, they include goals on eliminating poverty (SDG 1) and hunger (SDG 2), providing better standards of healthcare (SDG 3) and universal access to education (SDG 4), promoting gender equality (SDG 5), improving sanitation (SDG 6), reducing inequality in and between countries (SDG 10), tackling climate change (SDG 13), and encouraging peace, security and good governance (SDG 16).[16] Achieving the SDGs will require extensive mobilization of resources both at the domestic level by each country, and in terms of increased aid flows from richer countries to low- and lower-middle-income countries in particular.

While some of the SDGs, such as those on gender equality, equality in and between countries, climate change, and peace, security and good governance, cannot easily be assessed in purely financial terms, for others it is possible to at least estimate the additional resources that would be needed to achieve them—although this still assumes that resources can be effectively distributed and programmes implemented in the context of sometimes difficult political and security environments.

Climate change

While the main international forum for climate change is the UN Framework Convention on Climate Change, where key targets such as limiting carbon dioxide (CO2) emissions are set, SDG 13 on climate change includes a specific financial target.[17] High-income developed countries have committed to mobilizing $100 billion a year by 2020 to address the needs of developing countries in terms of climate change mitigation and adaptation. This is equivalent to 6 per cent of world military spending in 2015, and 8.3 per cent of high-income developed countries' military spending.[18]

[15] Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee statistics, <http://www.oecd.org/dac/stats/data.htm>.

[16] See box 9.1 in chapter 9, section I, of this volume.

[17] See chapter 12 in this volume.

[18] United Nation Framework Convention on Climate Change, Report of the Conference of the Parties on its 16th Session, Cancun, 29 Nov.–10 Dec. 2010, Addendum, Part Two: Action Taken by the Conference of the Parties at its 16th Session (Cancun Agreements), FCCC/CP/2010/7/Add.1, 15 Mar. 2011.

Eliminating poverty and hunger

SDG 1 includes targets to completely eliminate extreme poverty, defined as people living on less than $1.25 a day in Purchasing Power Parity terms, and to halve the proportion of people living in poverty in all dimensions, according to national definitions, by 2030.[19] SDG 2 aims to end hunger and ensure access to safe, nutritious and sufficient food for all by 2030.

A 2015 report by the UN Food and Agriculture Organization (FAO) considers the resources required to eliminate hunger.[20] It assumes, in particular, that a key component of this is subsumed in SDG 1, by ensuring that everyone has at least $1.75 a day to live on—the $1.25 extreme poverty threshold, plus a 40 per cent 'buffer' to allow for bad times. The report proposes two key areas where resources should be directed: social protection to provide a direct income to poor people, and investments in pro-poor development, especially in agriculture and rural infrastructure, to establish more sustainable and reliable food systems and make it easier for poor people to earn a sufficient income for themselves. While social protection spending would be a matter for governments, the report suggests that the pro-poor development investments could come from a mixture of private- and public-sector sources of finance.

The report concludes that an annual average of $67 billion in additional social transfers, plus $198 billion per year in pro-poor investment (at constant 2013 prices) would be required from 2016 to 2030 to achieve these goals. Of this $198 billion investment, $140 billion would be allocated to rural areas, of which around 60 per cent, or $89 billion, would need to come from public funding, with the rest from the private sector. Public funding would be particularly important for infrastructure and research and development. The public share is not calculated for the remaining $58 billion required for urban investments. Thus, a total of $156 billion per year (in constant 2013 prices) in public expenditure would be needed to achieve the goals of eliminating poverty and hunger, plus $58 billion in urban investments from a combination of public and private sources.

[19] Due to a recalculation of relative prices worldwide, and an update of the base year for calculations, as part of the World Bank Global Comparisons Project, and thus of the correct Purchasing Power Parity (PPP) conversion factors between countries, the threshold for poverty has been raised from $1.25 to $1.90 a day in international (PPP) dollars. However, as this is largely the result of price changes over time, the constant dollar cost calculations discussed in the 2015 report by the UN Food and Agriculture Organization should not be significantly affected.

[20] Food and Agriculture Organization (FAO) of the United Nations, World Food Programme (WFP) and International Fund for Agricultural Development (IFAD), *Achieving Zero Hunger: The Critical Role of Investments in Social Protection and Agriculture* (FAO, WFP, IFAD: Rome, 10 July 2015).

Converting these public expenditure totals into 2015 prices gives figures of $159 billion plus up to an additional $59 billion, or between 9.5 and 13 per cent of world military spending in 2015.[21]

Universal education

SDG 4 covers education, and calls for universal completion of primary and secondary school by 2030, access for all children to pre-primary education, equal access to tertiary education and the elimination of gender disparities in education, while also setting a variety of targets related to education quality.

The UNESCO Education For All (EFA) programme has been seeking to promote improved global education access and standards since 2000, including targets related first to the MDGs and now to the SDGs. It produces an annual *Global Monitoring Report* assessing progress towards various EFA targets. The 2015 report assesses the new SDG targets for education, and in particular considers the cost of achieving part of the SDG goals for low- and lower-middle-income countries by 2030: universal pre-primary, primary and lower-secondary education, as well as some quality improvements.[22] The additional costs it calculates relate to higher enrolments, and increased spending per pupil to fund lower pupil-teacher ratios, higher teacher salaries, and spending on non-salary items such as books.

Overall, the study estimates an annual average cost of $239 billion in constant 2012 prices. However, the report envisages that much of this additional spending will come from countries' domestic resources. The report notes that most countries' incomes have grown in recent decades and that the general trend has been towards rising levels of education spending as a percentage of GDP. The report assumes that these trends will continue. On this basis, it calculates an average annual external financing gap, which must come from donors, of $22 billion between 2015 and 2030. However, if low- and lower-middle-income countries only maintain their current share of education spending in GDP, then this gap more than doubles, to $52.5 billion per year. Even so, (converting this higher figure to 2015 prices to give $54.2 billion), this represents only 3.2 per cent of world military spending in 2015.

Multiple SDGs

A 2015 working paper for the Sustainable Development Solutions Network conducts a meta-study of financing needs for various areas of the SDGs, bringing together needs assessment and costing studies from numerous

[21] Using the US Consumer Price Index for a rough estimate. US Department of Labor, Bureau of Labor Statistics, Consumer Price Index, <http://www.bls.gov/cpi/>.

[22] UNESCO, Global Education Monitoring Report (note 8).

sources relating to the different SDG goals.[23] The author assesses the studies as being of highly varying quality and reliability, and in some areas very few if any studies are available. Thus, a wide range of values for costs is given in some areas, and there is considerable uncertainty about some of the estimates. With this note of caution, the report estimates the total additional development investment necessary to achieve the SDG goals and targets in the areas of: agriculture and food security, health, education, provision of basic water supply and sanitation, access to modern energy, telecommunications and transport infrastructure, ecosystems (including biodiversity), emergency response and humanitarian work, and relevant data collection efforts. The report also takes account of additional amounts of investment for each area with regard to climate change mitigation and adaptation.

The resulting total is a range of $1378–1459 billion per year between 2015 and 2030 (in constant 2013 prices) or roughly 2 per cent of world GDP. Of this total, the report estimates that 39–45 per cent could come from private sources. This would mean that $760–885 billion would have to come from public investment.[24] Converting this to 2015 prices gives a range of $773–900 billion, or 46–54 per cent of world military spending.

The politics of reducing world military expenditure

It must be acknowledged that, even if the political will existed, implementing a 10 per cent cut in military spending at a global level would be a far from simple affair. At the end of the cold war, military spending fell—especially in Europe and North America—as a result of reduced threat perceptions, but such a situation does not apply today. Countries that perceive that they are at a military disadvantage would probably be reluctant to cut spending even if the stronger powers did the same. Would larger relative cuts be expected of stronger powers? There is also the question of the threshold for cuts; for example, if a country has recently reduced military expenditure due to economic difficulties, would it still be expected to make a further 10 per cent cut? On the other hand, a country such as China that has rapidly boosted military spending on the back of strong economic growth over the past few

[23] Schmidt-Traub, G., *Investment Needs to Achieve the Sustainable Development Goals: Understanding the Billions and Trillions*, UN Sustainable Development Solutions Network (SDSN) Working Paper, Version 2 (SDSN: 12 Nov. 2015).

[24] SIPRI author's calculation based on the lowest total investment need and the highest private share for the lower bound, and the highest total investment need and the lowest private share for the upper bound. The report gives a much narrower range of $805–836 billion, which is based on the lowest total combined with the lowest private share, and the highest total combined with the highest private share, which appears to make the unwarranted assumption that the higher the total investment need, the higher the share of private investment is possible.

years could free up the resources equivalent to 10 per cent of military spending simply by not increasing spending for one year; but it is unlikely that such action would be sufficient to convince China's neighbours to make reciprocal reductions. Would states be able to forge agreements about future trends in military spending? Another major obstacle to any international agreement on reduced military expenditure is the lack of transparency in military spending, as agreed reductions could be circumvented by concealing military expenditure in other budget lines—indeed, this is one reason why the UN reporting instrument was introduced, as transparency in military spending was seen as a necessary first step to efforts to reduce it.

Nonetheless, the examples discussed above give some perspective on global priorities in relation to military and social expenditures, and the vast opportunity costs that are represented by current levels of world military spending. Consider, for example, the roughly $800–900 billion per year quoted above from the Sustainable Development Solutions Report. This is clearly more than 10 per cent of world military spending, and does not cover all the SDGs where financial investment is a key element. However, even adding in, for example, the earlier estimate of $67 billion in social transfers as part of the goal of eliminating extreme poverty, and allowing for significant costs in other SDG areas, the suggestion is that most of the SDGs for which additional funding is a key element could be achieved for considerably less than the world spends on the military each year. On a lesser scale, a sum close to the more modest target of 10 per cent of the world's military spending would be enough to achieve major individual goals, such as eliminating extreme poverty and hunger.