

IV. The backdating of SIPRI military expenditure data

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Extending SIPRI's military expenditure database backwards through the cold war era

In 2016 the SIPRI military expenditure project fulfilled a long-held ambition by publishing an expanded military expenditure data set, going back in some cases as far as 1949.¹ Due to both limited transparency in military expenditure in many countries and resource limitations in the backdating exercise, which essentially restricted the data collection to materials in the SIPRI library and archives, a complete data series extending back to 1949 (or a country's independence) was not usually available. Nonetheless, substantial extensions of the data were possible in most cases. Data in constant United States dollars was extended back to at least 1957 for half of the countries that were independent at that time.

The extended data set offers major opportunities for new research and insights into the dynamics of military spending, and has already been the subject of numerous research papers.² The data also enables the exploration of long-term trends in military expenditure in different regions and countries, covering both the cold war and post-cold war periods. Trends for selected regions and individual countries are discussed below. The period covered for each region varies depending on the availability of data and thus the feasibility of making regional estimates.³

¹ SIPRI's previous published data set only provided data from 1988 onwards. The newly extended data set is the result of the efforts of guest researchers and interns (Jennifer Brauner, Mehmet Uye, Lidwina Gündacker, Elena Deola, Giulia Tamagni and Julius Heß) between 2010 and 2015, working with the then head of the military expenditure project, Sam Perlo-Freeman. For more information on SIPRI's methodologies see the SIPRI website, <<https://www.sipri.org/databases/milex/sources-and-methods>>. For a fuller account of the history of SIPRI's military expenditure data and the process of extending the database see Perlo-Freeman, S. and Sköns, E. 'Snakes and ladders: the development and multiple reconstructions of the Stockholm International Peace Research Institute's military expenditure data', *Economics of Peace and Security Journal*, vol. 11, no. 2 (2016). For a more in-depth discussion of the issues involved see Perlo-Freeman, S., 'SIPRI's new long data-set on military expenditure: the successes and methodological pitfalls', *Defence and Peace Economics*, forthcoming in print, published online 3 Feb. 2017.

² A number of such papers were presented at a special workshop at SIPRI in Jan. 2016. Some of these papers are published in *Economics of Peace and Security Journal*, vol. 11 no. 2, 2016, <<https://www.epsjournal.org.uk/index.php/EPSJ/issue/view/22>>, while others are forthcoming in *Defence and Peace Economics*.

³ Throughout this section, changes in military expenditure over time by region and country are measured in constant (2015) US dollars, while comparisons between countries in a specific year are based on figures in current US dollars (i.e. converted from local currency to US dollars at the exchange rates of the year in question).

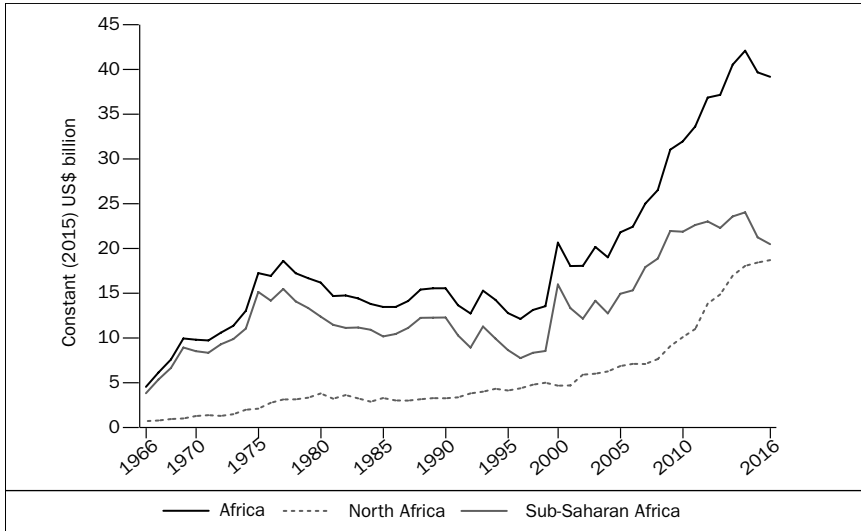


Figure 9.3. Military expenditure in Africa, 1966–2016

Long-term trends in military expenditure

Africa

The data for Africa reveals three clear periods in military spending trends (see figure 9.3). First, from 1966 to 1977, a sharp increase, with military expenditure more than quadrupling in real terms, from \$4.5 billion to \$18.6 billion. This partly reflects the development of national defence establishments in many countries following independence, but the overall trend is dominated by the increase in one country—Nigeria. Second, a period of generally decreasing spending, albeit with some years of increase, from 1977 to 1996, with the total falling by just over a third to \$12.8 billion. Third, another period of rapid increase, from 1997 to 2014, with spending again more than trebling in real terms, to \$43.5 billion, although the total decreased in 2015–16 due to falling oil prices.

The top spenders have varied during these three periods. South Africa has been one of the leading spenders throughout, with rapidly increasing spending over most of the apartheid era up to 1988, followed by a substantial ‘peace dividend’ (when funding previously allocated to the military was diverted to social spending) up to 1999, after which spending started to rise again.

South Africa’s high level of military spending in the first two periods was partly related to its role in the war in Angola from 1975 to 1988. However, while South Africa was Africa’s top military spender up to 1968, it was overtaken by Nigeria from 1969 to 1980. Nigeria’s soaring military expenditure during that time was first due to the Biafra War (1967–70) and was then funded by rising oil revenues. The frequent military coups in that period

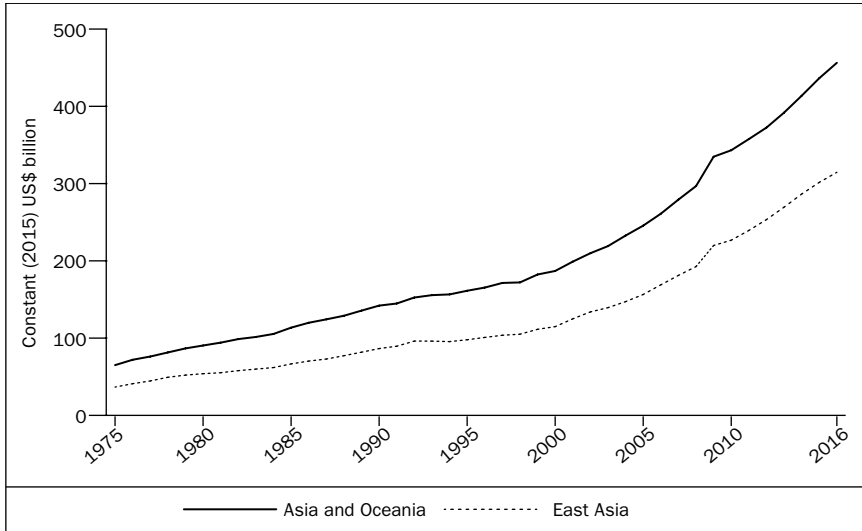


Figure 9.4. Military expenditure in Asia and Oceania, 1975–2016

also gave the military enormous power within the state. Nigeria's military spending peaked in 1975, having grown by 143 per cent in real terms since 1966, and then fell almost as rapidly. South Africa resumed its position of top spender from 1981 until 2007, when it was overtaken by Algeria, which increased its military spending on the back of growing oil revenues.

South America

The trend in South America is somewhat sensitive to the choice of base year for conversion of figures into constant dollars. This is due to the extreme rates of inflation in key South American countries in the late 1980s and early 1990s, especially Argentina and Brazil, and the very high rates of inflation in Argentina from 2007. Nonetheless, some broad patterns are discernible. Military spending in South America increased rapidly between 1968 and 1977 due to the high frequency of military coups in the region at that time. This was followed by a period of oscillating military spending up until around 1992; numerous factors affected military spending in this period, including (a) the near war between Argentina and Chile in 1978; (b) the Falklands/Malvinas war between Argentina and the United Kingdom in 1982; (c) economic crises; and (d) the return of democracy in several countries. Between 1992 and 2013 military spending in the region generally increased. There was a marked acceleration in growth after 2003 as many countries in the region grew economically, with several benefiting from rising oil revenues. Since 2013 the growing economic difficulties in the region (partly resulting from the sharp drop in the price of oil), combined with South America's increasingly benign security environment, have caused the regional total to fall.

While Brazil has been by far the largest regional spender since 1987, this has not always been the case. Argentina's military spending was previously much closer to Brazil's level, and its spending actually surpassed that of Brazil from 1978 to 1981.

Military burdens (i.e. military spending as a percentage of the gross domestic product, GDP) for many countries in the region have fallen dramatically since the 1970s and 1980s. Argentina's peaked at 4.7 per cent of GDP in 1978–79, but has fallen to around 1 per cent over the past few years. Chile's was over 6 per cent for most of the 1970s and 1980s, peaking at 8.9 per cent in 1982, but had fallen to 1.9 per cent by 2016. Peru's military burden peaked at 8.2 per cent in 1977, but has remained under 2 per cent since 1999. Brazil's military burden has fluctuated much more, although recently the trend has been downwards, reaching 1.3 per cent in 2016.

Asia and Oceania

Trends in the regional total for Asia and Oceania before 1989 are uncertain due to the lack of data for China.⁴ However, based on the figures that are available, the trend in the region is clear and simple: a continuous rise in military expenditure throughout the period 1975–2016, reflected in all sub-regions (see figure 9.4). This has been facilitated to a large extent by strong economic growth throughout most of the region.

North America and Western Europe

Military spending in the Euro-Atlantic area was strongly driven by the cold war and its associated conflicts (see figure 9.5). North American military spending—of which the vast majority is by the USA—has seen four major peaks since 1951: (a) the 1950–53 Korean War, peaking in 1953; (b) the direct participation by US forces in the Viet Nam War (1965–73), peaking in 1968; (c) the military build-up under President Ronald Reagan of the 1980s, peaking in 1986; and (d) the 'global war on terrorism' following the terrorist attacks on the USA of 11 September 2001, peaking in 2010. Each of these peaks has been followed by significant reductions in military spending as wars—and the cold war—have ended. It should be noted that each down cycle brought US military spending to a level that was, to very different degrees, higher than that of the year that could be considered as the starting point of the preceding up cycle. Thus, the USA's lowest spending figure after the Korean War was in 1955, which was still significantly higher than its spending figure in 1949, while the post-cold war reductions reached their lowest point at a level that was slightly higher than the lowest point after the Viet Nam War.

⁴ SIPRI's estimates for China are based on a detailed methodology originally developed for SIPRI by Professor Wang Shaoguang in 1999, which cannot be directly applied to earlier years. Wang, S., 'Appendix 7D. The military expenditure of China, 1989–98', *SIPRI Yearbook 1999*, pp. 334–49.

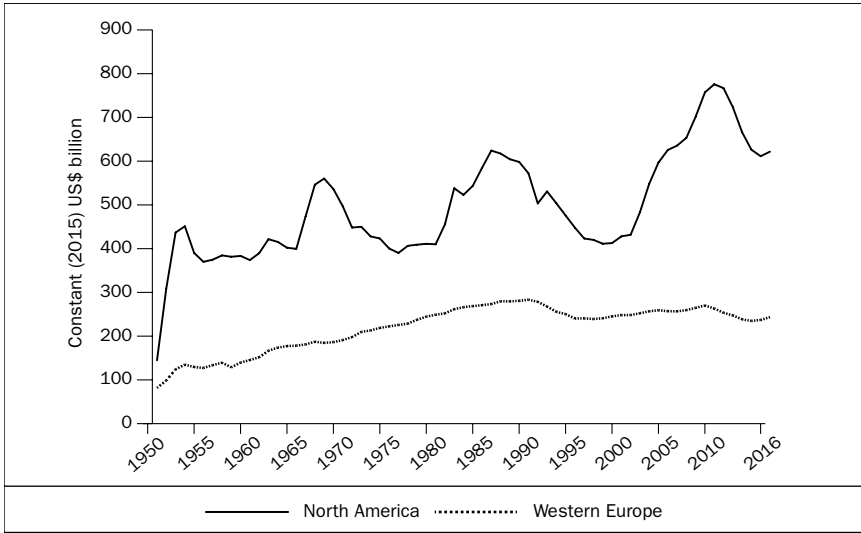


Figure 9.5. Military expenditure in North America and Western Europe, 1950–2016

The fall in US military spending since 2010 (which marked the highest point in US spending covered by SIPRI data), due to the withdrawal of combat troops from Afghanistan and Iraq and efforts to cut the budget deficit (see section II), has been far shorter and shallower than previous down cycles, leaving military spending at a far higher level than in previous troughs—around the same level as the 1986 peak in real terms. So far, the reduction of US military spending after the wars in Afghanistan and Iraq has led to a decrease of 21 per cent in military spending between 2010 and 2015. In 2016 US military spending saw its first annual increase (1.7 per cent) since 2010 but, as shown by the data, one-year variations have happened in the past. However, if the upward trend were to persist, the rise in US military spending would start from a very high level compared with previous down cycles.

Military expenditure in Western Europe has not been as affected by war-driven fluctuations as US spending. Spending rose significantly during the Korean War but then remained largely flat until the late 1950s. After this, spending grew continuously through the cold war period, as economies in the region grew strongly most of the time, allowing military burdens generally to fall. The increase in US spending during the Reagan build-up was not obviously reflected in the spending patterns of countries in Western Europe—with the exception of the UK. The post-cold war fall in spending was much less pronounced than in the USA. This period was followed by only gradually rising spending due to the ‘global war on terror’ and then

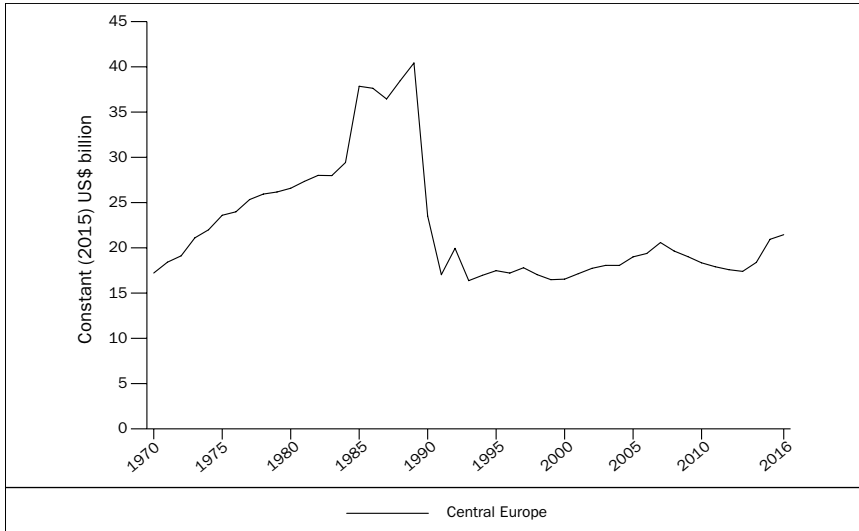


Figure 9.6. Military expenditure in Central Europe, 1970–2016

significant falls after 2009 driven by the austerity measures put in place by many West European countries.

France and the UK have been the leading spenders in Western Europe in recent years, with fairly similar levels of military expenditure. However, France's spending was significantly higher than the UK's spending in current US dollar terms for most of the 1970s and 1980s. West Germany's military expenditure was at a similar level to that of France during that period and West Germany was the largest spender in Western Europe through much of the 1970s.

Central Europe

Military expenditure in Central Europe rose rapidly and steadily throughout the cold war period, from 1970 to 1989 (see figure 9.6). The particularly sharp spike in 1985 was due to a doubling of military spending that year by Romania. The reunification of Germany in 1990 meant that the former East Germany was removed from the total from then on. Thus, the figures for the cold war and post-cold war periods cannot be meaningfully compared. Significant post-cold war reductions were seen in many countries in the region. Combined military spending in Bulgaria, Czechoslovakia and its successor states (the Czech Republic and Slovakia), Hungary, Poland and Romania fell by 49 per cent between 1989 and 1998.⁵ However, Central European military

⁵ Military expenditure data in constant dollars is not available for the former Yugoslavia so cannot be compared to the spending of successor states. Estonia, Latvia and Lithuania, which are also classified as being in Central Europe, were part of the USSR until 1991 and did not have separate military expenditure.

spending increased significantly from 2000 to 2007 during which period most of the countries in the region joined the North Atlantic Treaty Organization (NATO). Spending decreased in 2008–13 as a result of the implementation of austerity measures and then grew in 2014–16 largely due to the perception in many countries of an increased threat from Russia.

Military spending in Eastern Europe in 1992—that is, the combined spending of the former Soviet states of Armenia, Azerbaijan, Belarus, Georgia, Moldova, Russia and Ukraine—is estimated to have been only 22 per cent of the level of Soviet spending in 1990 (no data is available for 1991—the year of the dissolution of the Soviet Union, USSR). The total fell by a further 63 per cent up to 1998, before rising continuously, by 387 per cent, up to 2016. Nevertheless, the 2016 total is still only 39 per cent of the Soviet total in 1990, in real terms. As well as the end of the cold war, the falls in the 1990s were the result of economic collapse, while the subsequent growth in military spending reflects several factors: (a) Russia's desire to re-emerge as a significant power, combined with the spending boost provided by high oil and gas revenues; (b) the arms race between Armenia and Azerbaijan (the latter's spending also boosted by oil revenues); (c) generally strong economic growth in the region; and (d) the conflict in Ukraine (since 2014). Military expenditure data for the USSR (the only country classified as 'Eastern Europe' before 1992) is not available before 1988.⁶

The Middle East

Poor data availability means that a regional estimate for the Middle East could only be extended back to 1980. The estimate is also limited by (a) the exclusion of Iraq from the total due to a complete lack of data for that country from 1982 to 2003; and (b) a lack of economic data for many countries in the region for converting figures to constant US dollars. Among other things, this means that a proper assessment of the impact of the 1981–88 Iran–Iraq war cannot be made. For the countries where data is available, or where an estimate can reasonably be made for missing data, military spending fell over most of the 1980s, before a sharp rise in 1990–91 due to the Iraqi invasion of Kuwait and the subsequent international military action against Iraq. This includes spending by Kuwait and Saudi Arabia to reimburse the USA and other Western powers for some of the costs of the war, which led to Kuwait's military spending exceeding 100 per cent of GDP in 1991. Following the natural fall-off from this spike, military spending in the Middle East has increased steadily since 1995.

⁶ Various Western organizations (including SIPRI) attempted to estimate Soviet military spending, but all of these estimates were based on highly uncertain assumptions and often on dubious or politically motivated methodologies. Indeed, due to such difficulties, SIPRI stopped publishing estimates of Soviet military spending during the 1980s.