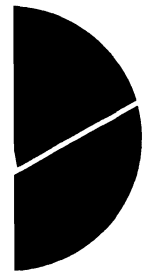Statistics Norway
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Military expenditure in Norway's main partner countries for development assistance

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Abstract: In recent years military expenditure in developing countries has been the subject of increased attention on the aid policy agenda, both in individual donor countries and in multilateral organizations. This highlights the need for exact information on the allocation of resources to the defence sector in developing countries. Based on the desire to gain insight into existing problems with regard to military expenditure in general and the situation in Norway's main partner countries in particular, a study of military expenditure in developing countries was carried out by the author in the spring of 1994. This study is a follow-up of the empirical section of the report. It contains a review of the seven most widely used international sources with information concerning the military sector of developing countries. In keeping with the new guidelines for Norwegian development assistance, the country survey has been expanded to include fifteen countries that are part of the high-priority regions. The figures show that military expenditure as a percentage of GDP has risen lately in three of the countries surveyed. For the majority of Norway's main partner countries for development assistance the defense sector is, however, using an increasingly smaller share of the countries' resources.

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1. Introduction[*]

In recent years military expenditure in developing countries has been the subject of increased attention on the aid policy agenda, both in individual donor countries and in multilateral organizations. The subject has particularly been discussed in connection with the debate on good governance, i.e. transparent, efficient, accountable and democratic government management of the resources available, based on general principles of the rule of law and respect for human rights.[1]

Both public and private resources are very limited in most developing countries, a fact which will most likely be the case into the next century. It is therefore important to analyze the use of resources in all parts of the economy, and to reduce expenditure which contributes least to economic development and higher living standards for the population.

The effect of military spending on economic growth has been the subject of many studies in recent years. The results of simple econometric models have often been contradictory. However, the message of more complex models seems to be clear: higher military expenditure results in lower economic growth[2]. Arms purchases often drain scarce foreign exchange earnings which could have been used to import productive capital equipment, thereby enhancing the possibilities for sustainable growth. High military expenditure in one country may also increase regional tensions and result in rearmament in neighbouring countries, with negative developments for the entire region.

One general conclusion also appears to be that social indicators such as life expectancy, infant mortality, illiteracy and nutrition are better in countries which use a relatively small share of resources for the military establishment. In addition to lower physical living standards, resources for the miliary sector might be used to violate human rights in those countries where the armed forces have an oppressive role.

It is difficult to weigh and evaluate what may be considered unnecessarily high military expenditure. Countries have a legitimate need for security and must be able to defend themselves against external threats. On the other hand, we may consider an expanded security concept in which the country's citizens in addition to security against traditional military threats have a right to security against poverty and environmental degradation.[3] It may thus be argued that resources used to combat poverty and protect the environment safeguard the security of the people just as much and perhaps more than high military expenditure. In many cases a transfer of resources from the military sector to social sectors will probably result in increased security for the country's inhabitants when the expanded concept of security is applied. The inclusion of this element makes it simpler to compare the use of resources for defence with other uses of public sector funds.

If greater attention is to be devoted to military expenditure in the aid policy dialogue, we must first have data on how much resources the defence sector actually uses. All empirical and econometric results are based on statistical material. Moreover, the data used as a basis and the analytical technique applied to draw conclusions must be of such a quality that the results are valid. This is particularly a problem with regard to studies covering military expenditure. No other sector is shrouded with so much secrecy and attempts to manipulate the figures. One of the conclusions of the "Tokyo Workshop on Military Expenditure and Aid" in November 1992 was that there was also a considerable need for greater transparency of military expenditure and that better data collection is required.

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[*] This document was first published in Norwegian in the series Notater 96/33, and has been translated by Janet Aagenæs.
[1] The definition of good governance was obtained from the Ministry of Foreign Affairs in Denmark (1994).
[2] See Deger (1992) and Knight et al. (1996).
[3] The expanded concept of security was raised in the OECD (1993).

Based on the desire to gain insight into existing problems with regard to military expenditure in general and the situation in our main partner countries in particular, I carried out a study of military expenditure in developing countries in the spring of 1994 (Rolland 1994). The study was divided into three parts. I first examined problems of methodology linked to military expenditure and the difficulties of obtaining consistent numerical series both as time series and cross-section data.

In addition to the discussion of the general reasons why various expert groups specify different figures for military expenditure, the study contained a review of the most widely used international sources with information concerning the military sector of developing countries. In this connection I looked at publications from the following institutions:

- U.S. Arms Control and Disarmament Agency (ACDA)
- International Monetary Fund (IMF)
- International Institute for Strategic Studies (IISS)
- Stockholm International Peace Research Institute (SIPRI)
- United Nations (UN)

The aim of the third part of the study was to concretize the general discussion by starting with the available data on military expenditure for Norway's main partner countries for development assistance. If the use of resources for military purposes is to be discussed bilaterally, it is necessary to know how much is actually allocated to the defence sector. It is also of interest to see the attitudes that are manifested in terms of publication of data on military expenditure and the existing capacity for data collection.

Norway looks upon transparency as desirable so that as many people as possible have some knowledge of national/government economic issues, as this is considered an important basis for democracy in a country.[4] I therefore calculated various indicators for the degree of militarization in our main partner countries for development assistance and compared these with indicators for the country's social standards. Here I wanted to reveal any pattern as it is often assumed that high military expenditure provides little scope for resources for important public social sectors.

This study is a follow-up of the empirical section of the report from 1994. In addition to evaluating new information in the sources for military expenditure that were discussed in Rolland (1994), two new sources have been added to the discussion:

- World Bank
- Central Intelligence Agency (CIA)

In keeping with the new guidelines for Norwegian development assistance, the country survey has also been expanded to include new countries that are now part of the high-priority regions. Time series have also been revised and extended when possible. There are many indications that the data situation for military expenditure in Norway's main partner countries for development assistance has, with few exceptions, improved over the past two years. The defence sector also uses increasingly fewer resources in relative terms.

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[4] This has been asserted by the Ministry of Foreign Affairs (1992).

2. International sources for military expenditure in developing countries

In this section I will evaluate the publications of the most widely used international sources for military expenditure in developing countries. In Rolland (1994), the focus was on the reasons for disparities in the estimates from various sources, both with regard to absolute size and indicators. The most important factors are described briefly below, while reference is made to the 1994 report for a more comprehensive discussion.

The first problem often encountered when determining the size of military expenditure is that there are several different definitions of the concept. The question of what is relevant to include in "military expenditure" may be debated. The answer will depend somewhat on the subject of the study. If the study is to attempt to comment on military force, expenditure is perhaps not the best measure to start with - and in any case the amount used, for example, for pensions for military personnel is uninteresting. If, on the other hand, the study is to focus on how much it actually costs a society to maintain its military establishment, it is natural to start with "opportunity costs", i.e. the value of the goods and services the civilian sector of the population is deprived of because the appropriating authorities allocate resources to military purposes. In this type of analysis it is important to be aware that expenditure on pensions for former military personnel - which can be substantial in many countries in which military personnel have higher pensions than civilians - is paid for by the public sector and in this way uses resources that could have been allocated to other purposes. Pension expenditure should therefore be included in the total amount for military expenditure. Another example is countries which have compulsory military service (as e.g. in Norway) and where wages paid to conscripts are considerably lower than the alternative pay of conscripts. This results in artificially low figures for military expenditure. For developing countries with high unemployment, however, the opportunity cost of conscripts may be minimal. The fact that conscript wages in these countries seem to exceed the opportunity cost contributes to pushing up military expenditure in many developing countries.

One problem closely related to different definitions is to what extent the existing statistical material is mutually consistent. Many analyses contain an element of cross-section surveys. If one source presents total military expenditure for several countries, and this concept does not comprise the same expenditure items for all the countries, the basis for comparison becomes distorted and the validity of the analysis is reduced.

Differences in updating routines in the various sources give rise to considerable variations in the statistical material. The figures presented are in many cases budgeted expenditure and not actual expenditure. Several years may elapse between the publication of the first estimates and the actual amount, and there are often very substantial differences between budgeted and actual expenditure.

Many of the international sources that publish data on military expenditure obtain their figures from national sources - particularly government budgets and national accounts. One problem in this connection is that the fiscal year often does not coincide with the calendar year, and that the beginning and end of the fiscal year vary from one country to another. Attempts at standardization may give rise to inconsistent data.

In cross-section analyses where countries are entities it is difficult to compare expenditure that is measured in different currencies. There are several methods for making the data comparable. The most frequently used method is to convert all figures to a common currency - usually the US dollar - with the help of the countries' exchange rates. The method does not always produce a satisfactory basis for comparison because the exchange rates have a tendency to be overvalued or undervalued, particularly in developing countries. Considerable efforts have therefore been made to construct

purchasing power parities, i.e. the valuation of goods and services is based on common set of prices instead of using the various national prices. In this way the conclusions of cross-section analyses which include military expenditure are drawn against the background of a more correct basis for comparison. Another possibility is to calculate rates, i.e. military expenditure as a percentage of e.g. gross domestic product.

If a time-series analysis is to be carried out, it is necessary to deflate military expenditure for various years to separate the inflation component from the real changes. Depending on the problem to be analyzed and the aim of the study, various price deflators are often used, a factor which may produce different results.

Precisely because a country's real military expenditure is such a sensitive subject, many methods have been devised to camouflage expenditure on both personnel and equipment in government budgets. The situation is rendered even more difficult in that a number of countries are prohibited by law from publishing data on military expenditure since this is assumed to constitute a threat to the country's security.

The published figures are examined here in the light of how the institutions have chosen to tackle the difficulties described above. It is obvious that it is difficult in terms of data compilation to guard against deliberate data manipulation, but it is possible to check the other factors I have looked at. In some cases, however, this would require enormous efforts. Publications from the following institutions will be evaluated:

- International Institute of Strategic Studies (IISS)
- United States Arms Control Disarmament Agency (ACDA)
- Stockholm International Peace Research Institute (SIPRI)
- International Monetary Fund (IMF)
- United Nations (UN)
- World Bank
- Central Intelligence Agency (CIA)

One common perception, also among researchers, is that data published by these recognized institutions are more reliable than figures provided by different governments in their budgets. Before drawing this conclusion, however, it is necessary to be aware of two things. First, data on military expenditure that are published by the authorities in various countries are the primary source for all international sources. Second, particularly with regard to developing countries, very few adjustments are made to the figure specified in the budgets under such items as "Defence", "Armed forces" or "Ministry of Defence" before these are published internationally. One of the reasons for this is presumably access to data. It is difficult and requires considerable resources to collect all the documents that are necessary to compute figures for military expenditure based on one common definition for all the countries for which data are published.

2.1. International Institute of Strategic Studies

The IISS provides information on countries' military expenditure in its annual publication *The Military Balance*. The institute bases its figures on data obtained from national budgets and makes few adjustments to the original data. This is probably because it is difficult to track down figures on military spending, particularly on a disaggregated level (i.e. divided into sub-groups), but also because it is a time-consuming process and staff resources are limited. For several years the IISS only had one person in a half-time position who worked on collecting data on government military expenditure.[5]

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[5] Information concerning the various institutions' staffing situation was obtained from Ball (1988).

In the technical description of the data processing it appears that for NATO countries a standard definition is used when calculating military expenditure. Data from most developing countries are largely accepted as they are reported, and it is thus very likely that the various countries do not use the same definition. It is noted that, when possible, capital expenditure is added to current military expenditure. However, in the tables for each country no information is provided as to what is included in the caption "defence". I would therefore maintain that there are considerable possibilities that the data presented are inconsistent as a result of varying definitions of military expenditure from one country to another.

The Military Balance presents military expenditure in two different types of table. There is a section with a relatively detailed economic and military description of each country covered. Here, military expenditure is presented in national currency at current prices. In addition, there are tables showing military expenditure in US dollars at constant prices and as a percentage of GDP. This table is omitted in some editions, but is included in the latest edition to which I had access (1995/96). However, only figures for the last two years were published. (For the constant-price tables, one extra year is shown, probably the base year, but this is somewhat unclear in some editions.) With regard to updating routines, it is stated that the published figures are the latest estimates in the budgets, but that there may be divergences between the various editions as a result of changes in the figures - as a rule by the government itself. The latest figures are therefore assumed to be the most reliable. A review of Norway's main partner countries, however, shows that there is little updating of previously published figures. A large number of editions are required to prepare consistent and sufficiently long time series.

One problem which arises when using budgets as the primary source is that there are often differences between the fiscal year and the calendar year. A review of figures published for Zimbabwe shows that the editions for the 1980s present military expenditure in national currency for the fiscal year, and the data are in accord with the figures I received from the embassy in Harare. It is noted, however, that the fiscal year is from 1 July to 30 June. The calendar year is used for constant-price figures. No information is provided in the technical comments on the method used to convert expenditure from the fiscal year to the calendar year. In the 1992-93 edition, however, figures in national currency are also presented for the 1990 and 1991 calendar years. These deviate from the budget figures in my possession and must be calculated, but thus far I have been unsuccessful in ascertaining how this is accomplished.

As mentioned, the figures on military expenditure at constant prices are shown in US dollars. Exchange rates obtained from the IMF's International Finance Statistics were used. This method is shrouded with the uncertainty associated with the problem that exchange rates, particularly in developing countries, are often overvalued or undervalued, and it must be assumed that these figures, particularly for African countries, contain substantial sources of error. (See Rolland (1994) for a further discussion of the problems arising when comparing figures measured in different currencies.)

No direct information is provided concerning the method used for converting the figures to constant prices (deflator) in the editions to which I have had access, but it is stated that "inflation" is measured with the help of the consumer price index, and it is therefore assumed that this is used to convert to constant prices.

There are thus several factors which may entail that data from the IISS are inaccurate. Ball (1988) also maintains that among the most widely used sources for military expenditure many researchers consider the IISS to be the least reliable. This particularly applies to developing countries which have never been the institute's strongest area.

Brzoska (1981) has carried out econometric tests of figures presented for military expenditure in the sources I describe here. The aim of his study was to investigate whether there were significant

divergences between them. He found that the IISS deviates substantially and systematically from the other sources, and their published figures also have the largest standard deviations. I have not carried out a similar econometric test of data from later periods, but sporadic tests of data for Norway's main partner countries do not show systematic deviation. Data from the IISS in many cases are very close to the data published by other sources.

2.2. United States Arms Control Disarmament Agency

The ACDA publishes figures on military expenditure in its publication *World Military Expenditure and Arms Transfers (WMEAT)*. Unfortunately, it has thus far only been possible to track down five editions: 1985, 1988, 1991-1992, 1993-1994 as well as a publication covering the period 1968-77. WMEAT has an extensive statistical description. Previously, the ACDA's primary source of data for developing countries was particularly the archives of the US Agency for International Development. However, after the USAID assigned lower priority to the task of data collection and compilation, the archives and publications of other US departments, as well as the IMF, have been used.

NATO's definition for member countries in the defence alliance is used as the definition of military expenditure. In general the figure presented under the Ministry of Defence is used for other non-Communist countries. In those cases where it is known that this expenditure contains amounts used for internal security forces, attempts are made to eliminate them. However, it is noted explicitly that data on military expenditure are lacking and at times inaccurate. As an example it is pointed out that a number of countries only specify current expenditure and do not include capital costs, including arms purchases. In order to adjust for this, the ACDA has published figures for which expenditure on arms imports is added to the reported figure for total military expenditure. This is an uncertain method, which the agency is aware of. The agency particularly emphasizes the difficulties which arise when the payment for arms does not always coincide with the delivery date. Moreover, there are cases in which arms purchases are financed by other countries. In accordance with the most widely used definition of military expenditure, such arms purchases shall be recorded under the donor countries. The figure is incorrectly inflated if it is added to the recipient country's military expenditure.

The ACDA itself maintains that it always publishes figures from the accounts and not budget estimates. Since all the figures are only presented in US dollars, it is difficult to test this assertion. This is particularly true for the period prior to 1985 when it was extremely difficult to gain access to all the information possessed by the USAID. Ball (1988) maintains that the updating routines are perhaps not as satisfactory as indicated. Because there are few editions I have not been able to test this assertion. There are, however, considerable revisions in the 1993-1994 edition of figures presented in the 1991-1992 edition, so at least some updating is made.

For those countries where the fiscal year does not coincide with the calendar year, the ACDA uses slightly different methods of calculation. Brzoska (1981) has found that if the fiscal year extends from July to June, series with military expenditure are divided into twelve equal parts, and are then added up to a calendar year. Otherwise the ACDA allocates the amount to the year containing the greatest number of budget months.

The ACDA publishes five series for military expenditure: in US dollars at current prices, in US dollars at constant prices, military expenditure as a percentage of GDP, military expenditure as a percentage of central government expenditure and military expenditure per capita in US dollars at constant prices. All the series cover eleven years. The conversion method is described in detail. First, the data in national currency at current prices are deflated with the help of the GDP deflator so that all figures in national currency are shown in base-year prices. The figures are then converted to US dollars by using the official exchange rate between the national currency and the US dollar for the base year. To obtain series at current prices, the constant-price series are "reinflated" with the help of the US GDP deflator. However, for some countries, including the former Warsaw Pact countries

(excluding the former Soviet Union) and China, purchasing power parities for GDP obtained from the UN's International Comparisons Project are used. It is explicitly noted that the method has the drawback that official exchange rates do not always reflect purchasing power parities. Moreover, another difficulty, which is not discussed, is that it is problematic to use the GDP deflator for military expenditure since gross domestic product is a measure of income rather than a measure of costs. Both exports and imports are included in GDP and the GDP deflator therefore contains a terms of trade component. A change in the composition of gross domestic product measured in volume, or different price changes for the various components over time, may result in changes in the GDP deflator which do not reflect changes in real costs.

Some authors maintain that the ACDA's practice of changing the base year in its constant-price series in each edition of WMEAT makes it difficult to prepare series longer than ten years. The problem was exacerbated inasmuch as it is only in recent years that the ACDA has provided any indication of how it calculates its constant-price series. It is also difficult to obtain a good result for long series at current prices. The problems arise because when the base year for exchange rates is changed, the exchange rate will as a rule be different in the new and old base year. The figure for military expenditure in US dollars will thus be different even if there has been no change in the national currency.

2.3. Stockholm International Peace Research Institute

The SIPRI publishes its annual publication *SIPRI Yearbook* which contains tables with information about military expenditure in a great number of countries. However, there is a break with former routines in the editions for 1993 and 1994 since the tables containing detailed information on various countries' military expenditure are omitted. The SIPRI states that the tables showing military expenditure were omitted from the 1993 and 1994 yearbooks as a result of a shortage of staff. In the latest edition of the SIPRI yearbook (1995), publication of the tables was resumed. Figures are presented for a ten-year period so there does not appear to have been a break in the series in spite of the pause. It must be considered an advantage that the SIPRI has resumed its publication routines since the institute is a recognised and widely used source for military expenditure.

The SIPRI also uses NATO's definition of military expenditure. But at the same time it is noted that the main sources are the various countries' budgets and statistics from central banks. Other open sources such as publications from the institutions described here, newspapers and periodicals, are also specified. It is thus likely that some of the figures are not based on the same definition since various governments have differing practices. Ball (1988) maintains that the SIPRI does not make sufficient use of the primary material in its possession. This is primarily ascribable to limited staffing, with only one to two people, often working on a part-time basis, who process the source material.

The SIPRI publishes its figures as time series for ten years in each edition. In the description of methodology the institute notes that caution should be exercised in interpreting the latest figures, which are provisional. There appears to be a functioning updating routine since the data are revised as figures from accounts gradually become available. In the 1992 yearbook the institute states that special care should be taken when using the figures for 1991. It has been very problematic to distribute expenditure in connection with the Gulf War. Moreover, as a result of price distortions and high inflation in many of the reported countries, the budgetary data are often irrelevant. It must nevertheless be added that the SIPRI is aware of the difficulties and attempts to make the data as reliable as possible.

The SIPRI only publishes series which follow the calendar year. In those cases where the calender year does not coincide with the fiscal year, the institute distributes expenditure equally in each month of the fiscal year and then uses its time series to make estimates for the calendar year. This is not

entirely without problems. It would have been an advantage if it had also published data as presented in the original sources.

The time series are presented in national currency at current prices. This is a considerable advantage since each user of the material can make the conversions deemed appropriate for the analysis. Series in constant prices are also published, but it is important to be aware that here emphasis has been placed on obtaining consistent series over time for each country in order to show a correct trend. No adjustments are made for different definitions between countries from one year to the next. This can produce inconsistency in a cross-section analysis which covers many different countries.

Consumer prices are used as the deflator in the constant-price series. This implies that in studies which are looking at the opportunity cost it will implicitly be private consumption which military expenditure is being measured against. The consumer price deflator is nevertheless probably better than the GDP deflator, as I noted in the description of the ACDA's methods of calculation (section 2.2).

2.4. International Monetary Fund

The IMF publishes data on military expenditure for its member countries in its annual publication *Government Finance Statistics Yearbook*. The data are based on the figures reported by each member country. The IMF has its own definition (see Rolland (1994) section 2.1 for more detailed information) and assumes that the amounts reported are based on the IMF's guidelines. The data are checked to some extent, but it is assumed that governments would be more reluctant to provide information if they know that the IMF critically examines the figures. It must therefore be assumed that there are no substantial differences between the figures provided by national sources and the published figures.

The IMF updates its data. The figures are published as ten-year series for each country's fiscal year. No attempts are made to convert the figures to the calendar year. This must be seen as a plus since it is advantageous for independent analysts to have access to data that have been processed as little as possible.

The IMF publishes all of its figures in national currency. This is also an advantage since, as I noted earlier, it is no easy task to make data internationally comparable, and the methods will depend on the purpose of the study.

No attempt is made to prepare constant-price series so the problems of choosing a deflator are thus left to each user of the material.

One drawback of the Government Finance Statistics Yearbook is that it lacks information for many countries, particularly for developing countries. This must be viewed in the light of the IMF's dependence on obtaining figures from its member countries. For those countries for which the IMF publishes data, however, it seems to be one of the sources that is easiest for independent analysts to use. It is nevertheless not inconceivable that some data are inconsistent, partly as a result of deliberate manipulation of information by the reporting authorities.

Another problem is that only central government expenditure is reported, i.e. state/provincial expenditure is not included. This can result in substantial under-reporting, but probably has a greater effect on social sectors such as health and education than on defence.

Another drawback is that military pension expenditure is not included in the IMF's definition and is thus probably not included when total military expenditure is reported.

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2.5. United Nations

Figures on military expenditure may be found in two annual publications from the UN:

Up to 1988/89 the *UN Statistical Yearbook* published time series of five years for member countries' military expenditure. These figures were obtained directly from the IMF's statistics, and do not deviate in the presentation described above. After the 1988/89 edition the institutions changed their publication routines and eliminated information on military expenditure from this publication.

National Accounts: Main Aggregates and Detailed Tables presents tables with time series of eleven years for military expenditure. The figures are presented in national currency at current prices. For some countries, information on a disaggregated level, i.e. divided into sub-groups, is provided in addition to total expenditure for each sector. In these tables military expenditure is divided into two main categories: current costs and capital costs, and the two main categories have in turn some sub-groups. All the series are based on figures supplied by the various governments which report their data in accordance with the UN's System of National Accounts. The source suffers from the same shortcomings as the IMF; it is unknown whether the governments are reporting correctly, but it is virtually impossible to guard against this. The disadvantage of using the UN's statistics is that it takes a very long time before the data are published. The latest edition to which I have had access is from 1992, and for many developing countries the series end in 1988. Moreover, information on military expenditure is lacking for many countries, particularly among developing countries.

2.6. World Bank

The World Bank publishes data on military expenditure in its annual publication *World Development Report*. Data are obtained from the IMF's Government Finance Statistics Yearbook, and methodology is dealt with in section 2.4. The World Bank only publishes expenditure for one year as well as the base year in each edition of the yearbook.

All the information is found in one table, but the content varies from one year to the next. In the period 1981-1983 defence expenditure was shown in per cent of both GDP and total central government expenditure. Defence expenditure per capita in 1975-dollars (computed with the help of official exchange rates) was also included. Beginning in 1984 the tables were revised and now only contain military expenditure as a percentage of total government expenditure.

One drawback of the World Development Report is that information on military expenditure is provided for so few countries, particularly in the case of developing countries. (This naturally reflects the lack of access to data from the IMF.) Another problem is that data on military expenditure are shown in per cent of central government expenditure as this may make it difficult to make inter-country comparisons. There are considerable variations between countries in the degree of local autonomy. A country which has decentralized many government functions will have considerably higher military expenditure as a percentage of central government expenditure than a country that has a high degree of centralization. This is the case even if the decentralized country in reality may use fewer resources on defence than the centrally governed country. The problems are amplified in that there are also disparities in what is included in "total central government expenditure". Some countries provide budgetary data while others use consolidated figures, and there are often differences between these two concepts. The World Bank is aware of the problems and cautions against interpreting the figures too literally - they are intended to give an indication of developments from one year to the next in the various countries.

Because only one year is published in each edition, no revisions are made to the data. If the analyst wishes to make a time-series study, the World Development Report is also cumbersome to use since a great number of editions are required to obtain sufficiently long time series.

2.7. Central Intelligence Agency[6]

Data on military expenditure from the Central Intelligence Agency (CIA) in the US can be found on the CIA's Internet pages under the following address:

http://www.odci.gov/cia/publications/95/fact/index.html#r86

The CIA's Internet pages contain a Factbook with extensive information about a great many countries, including developing countries. Each page only contains information for one year, but it is possible to find some historical figures by examining various editions of the CIA Factbook. The series, however, are very short (two-three years) since this type of publication is relatively new. It is also uncertain how long the older editions will be available on the net.

Data on military expenditure are provided for the fiscal year in US dollars at current prices. The figures are based on official exchange rates, and users are cautioned against interpreting the method of calculation too literally since considerable divergences may exist between real and official exchange rates. (See Rolland (1994) for a discussion of problems when using exchange rates for international comparisons.) Military spending as a percentage of GDP is also included.

No information is provided as to whether the figures are final or budgeted figures. However, the information in the 1995 CIA Factbook, the latest available edition, is from the 1994/95 fiscal year for a number of countries. It must therefore be assumed that this refers to budgetary data since final figures are usually not available until a later date. Of all the sources examined here, the CIA's Internet pages contain the "freshest" figures. Because only one year is published in each edition, the series are not updated as final figures become available. This is a drawback since the budgeted figures have often been revised substantially when the final accounts are available.

Publication through the CIA's Internet pages is interesting particularly because this form of communication is ahead of all other publications with regard to new information. It is not possible to use the CIA's Internet pages, however, in a time-series study as a result of the short series, and the figures must also be used with caution and be checked against other sources that revise the figures when final accounts are available.

2.8. Summary

It is no simple task to evaluate and compare the various sources since all of them have both advantages and disadvantages. There are nevertheless many indications that the IISS is the least satisfactory with regard to data on developing countries, at least for the period prior to 1980. The method of calculation is also relatively poorly documented so that it is difficult to check the figures and make the necessary corrections. It is also problematic that the time series in each edition are so short since a satisfactory analysis requires many years. The advantage of the source is that it contains information about a great many countries, particularly in the latest editions, and the figures are presented in national currency at current prices.

The ACDA's publications have extensive documentation of the methods used for computing the data. The greatest drawback of this source is that all figures are shown in US dollars computed with the help of official exchange rates. As noted earlier, this is problematic - particularly for developing countries with overvalued or undervalued exchange rates. The source also has the drawback that it is difficult to find. Anecdotal evidence suggests that the agency's budgets have been cut to such an extent that annual publication has virtually become impossible! Editions have been published, however, for 1991-1992 and 1993-1994. Moreover, the ACDA's publications have the advantage that each edition contains time series of eleven years and they also cover a great many countries. This makes it possible to carry out an extensive cross-section analysis with the help of data from one source.

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[6] I am grateful to Kristian Lønø for bringing the CIA's Internet pages to my attention.

The UN's statistics are published at a late date, but have the positive feature that they contain some disaggregated data (divided into sub-groups by sector) for some countries. In some cases expenditure at the state/provincial level is also included, but this is not always noted in the text to the tables. One drawback is that only few countries are covered.

The World Bank obtains its figures from the IMF so the quality of the data is the same for both sources. It is, however, a problem that military expenditure is only specified as a percentage of central government expenditure since this can result in considerable distortions in the material. As a result of the routines in publishing data only for the latest available year, it is necessary to have access to many annual editions in order to carry out a time-series analysis. A cross-section analysis is also hampered by very low coverage, particularly of developing countries.

The CIA's Internet pages are interesting because they are the first to provide information and are very comprehensive with regard to number of countries. This type of publication, however, has limitations as a result of little documentation for the method used. The time series are too short to make an analysis, and there are no updating routines.

The conclusion of the study indicates that the SIPRI and IMF are the best sources even though they also have some shortcomings. Statistical documentation is good, the figures are updated and they are presented in national currency at current prices. The figures in the two sources have been in greater accord in the latest editions. The SIPRI also has an additional advantage in that it usually provides information at an earlier date than the IMF and it also covers a far greater number of countries.

3. Data on military expenditure in Norway's main partner countries for development assistance

In this section of the study I will provide an evaluation of available data on military expenditure in Norway's main partner countries for development assistance. The discussion will be based on general observations dealt with in the first part of Rolland (1994). Each country is discussed individually, and I look at the sources containing information on defence expenditure. Based on the number of sources and the accord between the figures, I will attempt to comment on the quality of data and openness in the country with regard to the publication of military expenditure.

In general, the available data are of such a quality that it is primarily *trends* in military expenditure relative to other variables in the economy that are most reliable. Shedding light on these trends is important from a development assistance standpoint. It is of interest to determine whether military spending is rising or declining over time. Since there are deflation problems associated with time series of absolute figures, I have chosen to look at the change in relative figures (rates) over time. I am of the view that the use of rates as an indicator of the degree of militarization provides a more interesting picture than changes in total figures. Even though military spending growth in itself is of significance, from a development point of view it is more important to see the relative importance of the defence sector in relation to the rest of the economy. A country with high economic growth and a high level of income is in a better position to sustain high military expenditure than is the case for a poor country with declining output. The use of rates allows us to look at both the economic burden of defence and the ranking of priorities between the military and civilian sector.

The SIPRI has estimated that for developing countries combined military expenditure in per cent of GDP was about 5 per cent in 1985, while the rate had fallen to 3.8 per cent in 1991. It is obvious that there are considerable individual differences underlying these figures. I have calculated the rate for Norway's main partner countries for the following years: 1975, 1980 as well as the period from 1985 up to the latest published data. (The last year in the series varies as a result of different reporting of data from the various countries.) In this way I am able to indicate the pattern which has been manifested in the last fifteen to

twenty years. In order to obtain as consistent results as possible, the IMF has been used as a source for all my calculations when this has been possible. The IMF presents expenditure for the fiscal year, and has also converted GDP to the fiscal year (but without indicating the method used). This provides consistency in the rates, but the period of calculation will deviate slightly from that of the SIPRI, which converts military expenditure specified in the budgets to the calendar year. The alternative source of my calculations has been the UN. The UN also presents government expenditure per fiscal year, while GDP refers to the calendar year, a factor which can result in inaccuracies. In the strictest sense, calculations of the military burden (military expenditure/GDP) made on the basis of UN data are therefore not entirely consistent. This does not apply to the other rates which are calculated with the help of data from the same period. No indicators are calculated using figures from different sources, with the exception of *Zambia* where there was no alternative. For all countries, the SIPRI's rate for military expenditure/GDP is presented as the basis for comparison. This enables us to determine whether the country in question is above or below the average for developing countries calculated by the SIPRI and whether a change in status has taken place in recent years.

In addition, I have calculated two other indicators: military expenditure as a percentage of government expenditure and military expenditure in relation to social expenditure. Social expenditure is defined as the sum of that part of total government expenditure used for education and health. I have then listed two indicators of the society's social standard[7]. I selected infant mortality (number of deaths of infants under one year per thousand live births, converted to per cent) and primary education (the number of pupils enrolled in primary schools, irrespective of age, divided by the number of persons in the age group for which the grade level is intended, converted to per cent). The last indicator may exceed 100 per cent if older pupils are enrolled in schools at a lower level than their age would imply. It is assumed that active efforts to improve the primary health service and primary education will benefit the poorer segment of the population and lay the basis for economic growth and higher social standards for all members of society.

3.1. Africa

3.1.1. Botswana

Sources:
The IMF has time series for military expenditure from 1976 through 1991 in its publication Government Finance Statistics Yearbook. The figures are presented in national currency (pula) at current prices for the fiscal year, which begins on 1 April. There has been no updating of the time series for military expenditure from the next to last edition (1993) to the latest available yearbook for 1994. The two editions present identical series from 1982 to 1991, indicating a deterioration in reporting routines.

The UN's National Accounts Statistics has no figures for military expenditure.

The SIPRI has figures from 1977 through 1994. The figures for the period 1992-1994 are the institute's own estimates. In the SIPRI yearbook for 1992 the figures for the period up to 1986 are largely in accord with the figures from the IMF, but the IMF's figures for subsequent years are considerably higher. As an example it may be mentioned that in 1991 the SIPRI puts military expenditure at 118 million pula, while the IMF indicates 359.1 million pula. This difference cannot solely be ascribed to the fact that the fiscal year does not coincide with the calendar year since the divergence is also substantial for the preceding four years. However, Botswana constructed a military airport in the period 1990-1992. There is some uncertainty as to who financed the construction. The US was involved in the project, and there are many indications that financing was shared. It is thus possible that the IMF's figures include infrastructure expenditure for the airport which was probably covered by the government in Botswana, whereas the SIPRI excluded this expenditure. In the SIPRI yearbook for 1995, however, considerable revisions were made to the figures for

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[7] With few exceptions the indicators were obtained from the World Bank (1981-1995).

Botswana, entailing that they are now generally in accord with the series from the IMF. The SIPRI's figures are slightly lower than those presented by the IMF for the entire period. The estimates of the military burden (military expenditure/GDP) for 1992 and 1993 are 4.1 and 3.6 per cent, respectively.

The ACDA has figures from 1977 through 1993, with the last year an estimate. Expenditure is only shown in US dollars, but the estimated rate for the military burden (military expenditure/GDP) for 1991 is 4.8 per cent, i.e. very close to the indicators from the SIPRI and the calculations made with the help of figures from the IMF, see table 3.1.1. For 1992 and 1993, the figures from the ACDA deviate from those of the SIPRI with military expenditure as a share of GDP estimated at 5.3 and 5.9 per cent, respectively - i.e. a sharp rise in the relative share for military expenditure compared with the SIPRI's estimated decline.

The IISS publishes data from 1977 through 1994, but only for the last two years in each edition. Military expenditure is shown in national currency, US dollars (converted using the official exchange rate) and as a per cent of GDP. The military burden for 1993 is put at 4.9 per cent, i.e. more in accord with the ACDA than the SIPRI even though the estimate is slightly lower than the ACDA's figure. The IISS estimates the rate at 4.6 per cent in 1994.

The CIA's Internet pages contain information on military expenditure, but the time series are very short and refer to the fiscal year (1 April to 31 March). Data are presented in US dollars (converted using the official exchange rate) and as a per cent of GDP. Expenditure is estimated at US $198 million for the 1993/94 fiscal year, whereas the SIPRI's estimate is about US $130 million. The military burden is estimated at 5.2 per cent, and is thus closer to the ACDA's estimate than that of the SIPRI.

My conclusion is that it is relatively easy to find statistics on total military expenditure in Botswana, but thus far it has not been possible to obtain disaggregated data (divided into sub-groups), thereby making it impossible to check for consistency over time. It is nevertheless possible to make a time-series analysis, but the same source should then be used. The substantial divergences between various sources must be considered a problem, and it is difficult to judge the quality of the data. I tend to believe, however, that the information reported to the IMF is relatively correct. If this is the case, the trend is worrisome. As seen in table 3.1.1, military expenditure as a percentage of government expenditure is now higher than ever before. The trend is also negative in relation to social expenditure. It must be added, however, that Botswana has low military expenditure relative to social expenditure if we compare the figures with Norway's other main partner countries. This is also reflected in relatively favourable social indicators.

Table 3.1.1. **Indicators of the degree of militarization and social indicators. All figures in per cent**

Year	1976	1980	1985	1986	1987	1988	1989	1990	1991
Militarization									
Mil. exp./GDP SIPRI	2.0[1]	3.7	1.9	2.5	3.8	3.7	3.6	4.4	4.7
Mil. exp./GDP[2]	..	3.3	1.8	2.7	4.0	3.6	3.6	4.7	4.7
Mil. exp./Gov.exp.[2]	0.2	9.8	6.4	7.9	12.1	12.4	11.7	13.3	16.0
Mil. exp./Soc. exp.[2]	0.6	35.5	28.4	32.7	47.2	48.5	46.6	52.1	51.9
Social indicators									
Infant mortality	9.5[3]	..	7.1	6.9	6.7	4.1	3.9	3.8	3.6
Primary education	65[3]	..	104	105	114	116	111	110	119

1) Figure is for 1977.
2) The indicators were calculated with the help of data from the IMF. No GDP figures for 1976 were found in IMF data.
3) Figure is for 1970.

3.1.2. Ethiopia

Sources:
The IMF has time series for military expenditure from 1985 through 1990 in its publication Government Finance Statistics Yearbook 1994. It is, however, possible to find information from 1972 in earlier editions, but in the period 1975-1984 data on military expenditure are only presented in a combined category "General public services and Defense". The data are shown in national currency (birr) at current prices for the fiscal year, which begins on 8 July. In the next to last edition of the yearbook (1993) there is only one observation: from 1989. In the latest version from 1994 the time series for military expenditure have thus been expanded, indicating easier access to data. No revision was made to expenditure in 1989, however, entailing that the amounts specified are identical in both editions.

The UN's National Accounts Statistics contains no data on military expenditure.

The SIPRI has figures from 1975 through 1993 in available editions of its yearbook. In the comparable period, expenditure in national currency is slightly higher than that presented by the IMF. According to the SIPRI, military expenditure peaked in 1990 and has subsequently declined sharply. This must be viewed in the light of political developments in the country after the end of the civil war. Whereas military expenditure in 1990 amounted to about 15 per cent of GDP, it is estimated to have fallen to 4.5 per cent in 1992. (The rate for 1993 was not calculated, probably as a result of the lack of information on GDP.)

The ACDA has published data series for military expenditure in Ethiopia from 1968 through 1993 in US dollars at current and constant prices and as a percentage of GDP. There are, however, several breaks and rough estimates in the time series for the 1980s, and this must be viewed in conjunction with the civil war. The pattern of development is the same as described by the SIPRI, but the level is higher: military expenditure as a share of GDP is estimated at 21.9 per cent in the peak year 1990. The ACDA has no estimate for 1992, but indicates a rate for military expenditure/GDP of 4.4 per cent in 1993, i.e. approximately on a par with the figures from the SIPRI and the CIA's Internet pages.

The IISS has figures for Ethiopia through 1994, with the latest year showing budgeted figures. The rates for military expenditure/GDP the last few years differ from the other international sources in that they are considerably lower. The IISS indicates a military burden of 2.9 per cent in 1993 and 2.6 per cent in 1994.

The CIA's Internet pages present a short time series for military expenditure in Ethiopia in US dollars (converted with the help of the official exchange rate) and as a percentage of GDP. The latest figures are from the 1994/95 fiscal year, with military expenditure at 4.1 per cent of GDP.

Access to information on military expenditure in Ethiopia seems to have improved substantially the last few years. There are many indications that during the 1990s the defence sector has laid claim to increasingly fewer resources, even though the rate for military expenditure in relation to GDP is probably not as low as indicated by the IISS. At the moment the time series are too short to provide a consistent time-series analysis. As a result of the war which has ravaged the country for such a long period, military expenditure in relation to government expenditure on health and education is among the highest in Norway's main partner countries for development assistance. Ethiopia's social indicators are also among the least favourable compared with other main partner countries. Infant mortality, however, has been declining the last few years. The primary education rate in 1991 was 25 per cent and is also very low compared with other poor countries.

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Table 3.1.2 Indicators of the degree of militarization and social indicators. All figures in per cent

Year	1975	1980	1985	1986	1987	1988	1989	1990	1991
Militarization									
Mil.exp./GDP SIPRI	4.5	8.5	8.9	8.7	10.1	12.4	14.2	14.8	9.1
Mil.exp./GDP[1]	[2.6]	[4.4]	9.3	8.5	8.9	11.4	13.5	15.1	..
Mil.exp./Gov.exp.[1]	[14.6]	[17.4]	29.4	26.3	28.1	32.5	35.0	38.7	..
Mil.exp./Soc. exp.[1]	[71.2]	[136.6]	193.4	184.7	182.8	232.7	269.9	294.1	..
Social indicators									
Infant mortality	..	14.6	16.8	15.5	15.4	13.5	13.3	13.2	13.0
Primary education	23	43	36	36	37	36	38	38	25

[ ] denotes that the indicators are shrouded with considerable uncertainty.

1) The indicators were calculated with the help of data from the IMF. Data on military expenditure in the period 1975-1984 are only provided in a combined category "General public services and Defense". Based on earlier years, defence expenditure is estimated to account for a little more than 41 per cent of the total amount, and the indicators for 1975 and 1980 were calculated based on this assumption.

3.1.3. Mozambique

The SIPRI has time series for military expenditure in national currency from 1975 (the first year of independence) through 1993. The first rate for the military burden (military expenditure/GDP), however, is from 1980, probably as a result of problems in determining GDP. In the next to last edition of the yearbook with tables for military expenditure in different countries (1992), the series for the military burden only extend to 1985. The yearbook for 1995, however, contains information on military expenditure as a percentage of GDP up to and including 1993. It thus appears that access to data on Mozambique has improved the last two years, a development which must be viewed in conjunction with the political situation in southern Africa in the first half of the 1990s.

The ACDA has published data on military expenditure from 1975 through 1993, but several years are lacking in the 1980s. In the latest edition (1993-1994), military expenditure as a percentage of GDP is 7.6 per cent in 1993, i.e. considerably lower than the rate calculated by the SIPRI. There have, however, been variations between the two sources over the last few decades. The divergences are not systematic and the sources alternate in specifying the highest rate.

The IISS has series from 1975 through 1994 with some interruptions. The last year refers to budgeted figures.

The CIA's Internet pages indicate that military expenditure in Mozambique came to US $110 million in 1993, or 7.3 per cent of GDP. This is close to the rate indicated by the ACDA and considerably lower than the rate calculated by the SIPRI.

In December 1994, Ådne Cappelen, Statistics Norway, was involved in a project for the Norwegian Directorate for Development Cooperation in Mozambique and in Maputo had access to the national budgets. Based on the statistical annex in his report (Cappelen (1994)), I was able to gain access to consistent time series for military expenditure in the period 1986 through 1994, with the last year an estimate. The rates I have calculated with the help of data from the national budgets are in accord with the SIPRI's rates with the exception of the latter part of the period for which my rates are considerably lower. However, my calculations are very close to those provided by both the ACDA and the CIA's Internet pages. Moreover, I have had access to a report from the Ministry of Foreign Affairs in Denmark (1995) which shows military expenditure as a percentage of government expenditure for the period 1990 to 1995, with the last two years presented as estimates. These calculations are considerably higher than the rates I have computed, but it is uncertain what is included in government expenditure.

Access to data on military expenditure in Mozambique has improved substantially over the past two years even though there are some shortcomings. The time series are short, only eight years, but there is now greater accord between the sources. When I carried out my earlier analysis of military expenditure in 1994, the situation was extremely unsatisfactory. The figures provided by the three sources that had information on military expenditure in Mozambique showed considerable variations, a factor which made it difficult to judge the credibility of the material. Information was lacking for long periods. The indicator for military expenditure/GDP varied considerably in 1985, the only year for which all sources had information: 7.4 (SIPRI), 9.4 (IISS) and 10.4 (ACDA). The fact that the SIPRI presented the figure for military expenditure in escudos, the IISS in meticais and the ACDA only in US dollars further exacerbated the problems. Taking into account that the country was ravaged by war since the end of the 1970s, it is not surprising that the data situation is poor and military expenditure high. It is therefore encouraging to see progress in the area of data availability. As shown

in table 3.1.3, it has now been possible to compute the indicator for military expenditure in relation to social expenditure. This rate is very high, but has exhibited a downward trend in the 1990s. Infant mortality is among the highest in our main partner countries for development assistance, and the primary education rate has not picked up again to any extent following the sharp fall at the beginning of the 1980s. With the onset of peace, it is possible to transfer more resources from defence to the social sectors. However, there is still a need for better statistical material in order to determine how much is actually allocated to each sector.

Table 3.1.3. **Indicators of the degree of militarization and social indicators. All figures in per cent**

Year	1975	1980	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Militarization												
Mil.exp./GDP SIPRI			7.5	7.4	9.9	8.9	10.2	9.9	9.0	9.4	10.4	..
Mil.exp./GDP[1]		..	..	7.4	10.7	9.2	10.3	10.1	8.7	8.3	7.6	[6.3]
Mil.exp./Gov.exp.[1]				24.0	26.1	20.1	21.6	19.6	18.6	17.3	18.1	[16.3]
Mil.exp./Soc. exp.[1]	..	..		172.2	285.7	208.6	210.7	191.3	160.4	137.0	159.8	[147.4]
Social indicators												
Infant mortality	9.3	11.5	12.3	12.0	14.1	13.9	13.7	13.7	14.9	[16.2]	14.6	..
Primary education	52	93	84	82	68	..	..	58	63	60	..	..

[ ] denotes that the indicator is shrouded with considerable uncertainty.
1) The indicators were calculated with the help of figures from Cappelen (1994) which he bases on information from the Statistical Yearbook for Mozambique.

3.1.4. Namibia

Sources:

The IMF presents time series for military expenditure in national currency (rand) at current prices for the fiscal year, which begins on 1 April. The series only start in 1990 in connection with liberation. In the last available edition of Government Finance Statistics Yearbook (1994), the IMF has removed the relevant table "Table B. Expenditure by function. Consolidated Central Government" in its survey of Namibia. The only figure on expenditure by function is thus found in the yearbook for 1993, and only preliminary figures for 1990 and estimates for 1991 are provided.

The UN has no data on military expenditure in Namibia in the last available edition of National Accounts Statistics (1992).

In its latest yearbook (1995), the SIPRI has figures on military expenditure in Namibia for the period 1985 through 1993 in national currency at current prices, in US dollars at constant prices and as a percentage of GDP. The figures deviate somewhat from the IMF's figures on military expenditure, with higher amounts in 1990 and lower amounts in 1991.

The ACDA has time series from 1990 through 1993, but indicates that the figures for 1991 and 1992 are estimates. The rates for military expenditure as a percentage of GDP are close to the rates calculated by the SIPRI.

The IISS has published figures on military expenditure in Namibia from 1989 through 1994. The rates for military expenditure as a percentage of GDP calculated by the IISS and the ACDA are generally in accord.

The CIA's Internet pages indicate that military expenditure as a share of GDP in the 1993/1994 fiscal year was 2 per cent, i.e. approximately on a par with the other sources.

I have also had access to Namibia's three national budgets from 1991-1993. Here, the data are divided into sub-groups (disaggregated). The classification is in accordance with the UN's recommendations. (See Rolland (1994), section 2.1, for a further discussion of the UN's guidelines.) Current costs and capital costs are shown separately, and there is accord between the categories for different years. The Ministry's payments to the pension fund are specified in accordance with NATO's definition of military expenditure.

After Namibia showed promise of becoming a model country in the area of statistics on military expenditure, a negative trend has taken place the last two years. The country has not reported to the IMF, which has thus not updated or revised the estimates for 1990 and 1991. Nor have I had access to national budgets for the last few years. These are probably available inasmuch as international sources publish figures up through 1994. There is general accord between the various sources which specify military expenditure. Namibia is below the average of developing countries in terms of the military burden (military expenditure/GDP). For the two years for which I have had the opportunity to calculate the rate, military expenditure only amounts to about a fifth of social expenditure, thereby indicating that the country is giving priority to health and education. Infant mortality has been declining since the country became independent, and the primary education rate has risen.

Table 3.1.4. Indicators of the degree of militarization and social indicators. All figures in per cent

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993
Militarization									
Mil. exp./GDP SIPRI	4.4	4.8	5.4	4.9	2.9	2.2	2.7	2.5	2.2
Mil. exp./GDP[1]	..	..	..	..	..	2.1	3.0	2.6	2.3
Mil. exp./Gov. exp.[1]	..	..	..	..	..	5.4	6.6	5.6	5.4
Mil. exp./Soc. exp.[2]	..	..	..	..	..	17.4	20.4	..	..
Social indicators									
Infant mortality	..	..	..	..	10.1	10.0	7.2	5.7	5.9
Primary education	..	..	..	..	..	94	119	124	..

1) The indicators were obtained from the ACDA.
2) The indicator was calculated with the help of data from the IMF.

3.1.5. South Africa

Sources:

The IMF has no figures on total military expenditure. In Government Finance Statistics Yearbook 1988, however, there is only one single observation of capital expenditure for the defence sector in 1984, whereas current expenditure is lacking. The relevant table "Table B. Expenditure by function. Consolidated Central Government" for South Africa is omitted from the yearbook for 1993. In the edition for 1994 this table is included, but only contains information for 1982 and defence expenditure is not specified.

The UN's National Accounts Statistics contains no figures on military expenditure.

The SIPRI has time series from 1975 through 1993 in the editions to which I have had access.

The ACDA has time series for military expenditure in South Africa from 1968 through 1993. The last year is an estimate, and this is also the case for several of the figures from the 1980s. As shown in table 3.1.5, there is some divergence between the rates for military expenditure as a percentage of GDP calculated by the SIPRI and the ACDA, but there are no systematic deviations. Towards the end of the period there seems to be greater accord between the two sources.

The IISS has figures for South Africa up through 1994 in its latest edition, with the last year referring to budgeted figures. The estimates for military expenditure relative to GDP are slightly higher than those indicated by the SIPRI and the ACDA. The rate is estimated at 3.3 per cent for both 1993 and 1994.

The CIA's Internet pages put military expenditure in South Africa at US $3.2 billion in the 1993/1994 fiscal year. This is equivalent to 2.8 per cent of GDP, and does not deviate to any extent from the estimates made by the SIPRI and the ACDA for the 1993 calendar year.

Since South Africa has not reported its military expenditure to either the IMF or the UN, it has not been possible to calculate separate indicators. Nor have I had access to earlier national budgets. The situation, however, is now changing. The budget for 1995/96 is readily available and contains detailed information on expenditure of all ministries, including the Ministry of Defence. In addition to the ordinary budget, a special publication - "A citizen's guide to the 1995/96 budget" - has been prepared. Expenditure in the national budget is divided into capital and current expenditure and seems to be presented in an orderly and satisfactory manner. There are many indications that it will be easy to gain access to statistics on military expenditure in South Africa in the period ahead. As shown in table 3.1.5, data on social indicators are lacking, and only UNESCO has sporadically published primary education figures. It nevertheless appears that the primary education rate is very high. Infant mortality has declined gradually throughout the period of study, but is still high. It must be added, however, that there are probably considerable differences between population groups.

Table 3.1.5. Indicators of the degree of militarization and social indicators. All figures in per cent

Year	1975	1980	1985	1986	1987	1988	1989	1990	1991	1992	1993
Militarization											
Mil. exp./GDP SIPRI	3.4	3.9	3.1	3.1	3.9	4.2	4.1	3.8	3.2	3.0	2.6
Mil. exp./GDP[1]	3.8	3.2	3.8	3.9	4.4	4.3	4.4	4.4	3.7	3.1	2.7
Mil. exp./Gov. exp.[1]	13.1	11.9	11.6	11.5	12.5	12.6	13.4	12.6	11.7	9.2	8.2
Mil. exp./Soc. exp.	..	..	..	..	..	..	..	..	..	..	..
Social indicators											
Infant mortality	..	9.6	7.8	7.4	7.2	7.0	6.8	6.6	5.4	5.3	5.2
Primary education[2]	107	..	..	103	..	..	..	..	111	111	111

1) The indicators were obtained from the ACDA.
2) The only source containing information on primary education in South Africa is the UNESCO Statistical Yearbook 1995, and only for certain years.

3.1.6. Tanzania

Sources:
The IMF publishes no information about Tanzania.

The UN's National Accounts Statistics has time series from 1970 through 1991. The figures are presented in national currency (shilling) at current prices for the fiscal year, which begins on 1 July. The time series have not been updated or extended from the 1991 edition to the 1992 edition.

The SIPRI has time series from 1962 through 1991, but it is noted that the figures are uncertain for some periods. The indicator for military expenditure as a percentage of GDP was revised substantially downwards in the yearbook for 1995 compared with the yearbook for 1992. For example, military expenditure as a percentage of GDP was estimated at 6.9 per cent in 1989 in the 1992 yearbook, while in the 1995 edition it is estimated at 2.2 per cent of GDP. I have not been able to determine the reason for the downward revisions but, as table 3.1.6 shows, the SIPRI's estimates are now very close to my own calculations made with the help of figures from the UN.

The ACDA has time series from 1968 through 1993, with the exception of 1986 and 1991. The figures are generally higher than the rates for military expenditure as a percentage of GDP calculated by the SIPRI (1995) and my own calculations made with the help of data from the UN. For example, military expenditure as a percentage of GDP is estimated at 4.7 per cent in 1990 (the last year for which all the sources have data), i.e. more than double the indicators presented in table 3.1.6.

The IISS also publishes time series through 1994, but with some observations lacking. In the last edition (1995/96) budgeted figures in national currency and US dollars are included for 1995. The figures are higher than those provided by the UN, but slightly lower than those calculated by the ACDA.

The CIA's Internet pages estimate military expenditure in Tanzania for the 1994/95 fiscal year at US $69 million, which is considerably lower than the IISS estimate, which puts budgeted expenditure at US $114 million. No rate has been calculated for the country's military burden (military expenditure/GDP), probably as a result of lacking data on GDP.

The access to data on military expenditure has improved somewhat the last few years, and the divergences between figures published in different publications have been reduced. As is the case for most of Norway's main partner countries for development assistance, much remains to be done with regard to data collection. The indicator calculated on the basis of data from the UN does not indicate that Tanzania has particularly high military expenditure in relative terms. Following a negative trend in the mid-1980s, Tanzania has substantially reduced military expenditure in relation to social expenditure. Social indicators have nevertheless moved in an unfavourable direction. Infant mortality is higher and the number of pupils enrolled in primary schools is lower today than was the case ten years ago. This is probably primarily ascribable to the economic setbacks experienced by Tanzania rather than militarization.

Table 3.1.6. Indicators of the degree of militarization and social indicators. All figures in per cent

Year	1970	1980	1985	1986	1987	1988	1989	1990	1991
Militarization									
Mil. exp./GDP SIPRI	3.8[1]	4.9	2.7	2.7	2.7	2.2	2.2	2.1	1.7
Mil. exp./GDP[2]	1.4	2.6	3.0	3.1	3.2	2.3	2.5	2.3	1.9
Mil. exp./Gov. exp.[2]	5.9	8.9	13.3	15.0	14.5	10.4	9.1	8.6	6.2
Mil. exp./Soc. exp.[2]	31.2	46.4	117.1	131.2	132.2	105.1	90.6	74.7	52.1
Social indicators									
Infant mortality	13.2	10.3	11.0	10.8	10.6	10.4	11.2	11.5	11.5
Primary education	34	93	72	69	66	66	63	63	69

1) Figure is for 1975.
2) The indicators were calculated based on figures obtained from the UN.

3.1.7. Uganda

Sources:

The IMF publishes time series from 1974 through 1986 (the last two years are estimates) in national currency (shilling) for the fiscal year, which ends on 30 June. However, the last edition of Government Finance Statistics which contains information on military expenditure is from 1991, and in the yearbooks for the period 1988 to 1991 no updating or revision has been made. Since 1992 Uganda has been removed from the IMF's country register, thereby eliminating an important source for military expenditure.

The UN's National Accounts Statistics has no figures on military expenditure.

The SIPRI has figures from 1975 through 1993 on military expenditure in Uganda. The figures are presented in national currency at current prices, in US dollars at constant prices, and as a percentage of GDP. Major revisions of the figures have been made from the SIPRI Yearbook 1992 to the edition for 1995.

The ACDA has time series from 1968 through 1993 in the editions to which I have had access. All figures are presented in current and constant prices as well as a percentage of GDP. The rates for the military burden (military expenditure/GDP) are in general considerably lower than those presented by the SIPRI, as will be seen in table 3.1.7. The only exception is 1987 where the ACDA's figure is slightly higher. Towards the end of the period, however, the figures from the two sources are more in accord.

The IISS has series for Uganda from 1974 through 1994 in the editions to which I have had access. Budgeted military expenditure in 1995 is also presented in the detailed section. Military expenditure as a percentage of GDP is estimated at 1.6 per cent in 1993, i.e. close to the figure presented by the SIPRI. For 1994, there is most likely a misprint in the table showing all countries on page 268 in the yearbook from 1995/96. The estimated rate of military expenditure as a share of GDP is shown as 2.4 per cent, thus indicating a sharp rise from the previous year. However, by calculating the rate with the help of figures in the more detailed table for Uganda, the rate appears to be 1.4 per cent.

The CIA's Internet pages estimate military expenditure in Uganda at US $55 million for the 1993/94 fiscal year. This is equivalent to about 1.7 per cent of GDP and is close to the estimates from the other sources.

Since Uganda has not reported military expenditure to the IMF since 1986 or to the UN, it has not been possible to calculate separate indicators. The other sources, however, provide figures which are very similar in the latter part of the period. Because of the considerable divergences between sources in earlier years, it is difficult to carry out a time-series analysis. It appears as though Uganda has gradually reduced military expenditure in relation to GDP after passing a peak at the beginning of the 1990s. This must be viewed in conjunction with the political situation in the country. Infant mortality has exhibited a negative trend since 1980, while the primary education rate has fallen by 10 percentage points since 1990. The country is, however, experiencing increasing democratization and sharp economic growth, and will thus be in a better position to give priority to social development in the near future.

Table 3.1.7 Indicators of the degree of militarization and social indicators. All figures in per cent

Year	1975	1980	1985	1986	1987	1988	1989	1990	1991	1992	1993
Militarization											
Mil. exp./GDP SIPRI	2.9	2.2	2.9	3.1	2.7	2.5	2.7	3.3	3.0	1.8	1.7
Mil. exp./GDP[1]	2.7	1.5	1.3	1.8	3.2	1.3	1.6	2.0	2.7	1.8	1.4
Mil. exp./Gov. exp.[1]	18.2	24.4	15.6	24.7	63.2	25.4	25.8	18.8	15	11.1	8.8
Mil. exp./Soc. exp.	..	..	..	..	..	..	..	..	..	..	..
Social indicators											
Infant mortality	..	9.7	10.8	10.5	10.3	10.1	9.9	11.7	11.8	12.2	11.4
Primary education[2]	53	50	70	71	70	77	..	76	71	71	67

1) The indicators were obtained from the ACDA.
2) Because of lacking data, information on primary education was obtained from both the World Bank and UNESCO, entailing that the series are not consistent.

3.1.8. Zambia

Sources:
Neither the IMF nor the UN presents data on military expenditure. Previously, Zambia prohibited the publication of defence expenditure.

The SIPRI has time series for military expenditure in Zambia from 1975 through 1994 in the yearbook editions to which I have had access. The rate for military expenditure as a percentage of GDP is not calculated for 1992 and 1994. After rising sharply in 1991, the SIPRI's calculations for 1993 show that military expenditure as a percentage of GDP has fallen to 1.3 per cent. The estimated rate for 1991 of 6.3 per cent is probably ascribable to a decline in GDP rather than rising military expenditure. Earlier editions of the SIPRI's yearbook note that the specified figures on military expenditure are very uncertain. This reservation is not in the 1995 edition after the authorities removed the ban on the publication of military expenditure.

The ACDA has time series from 1968 through 1993 for military expenditure, but there are several observations lacking for the 1980s. For the last part of the period covered by the latest edition of the yearbook (1991 to 1993) the rate for military expenditure as a percentage of GDP has not been calculated. This may be due to a lack of information about GDP since military expenditure in 1993 is put at US $56 million (at both current and constant prices). The SIPRI's estimate is US $39 million for the same year, entailing that the estimates vary considerably here. The ACDA's rate for the military burden (military expenditure/GDP) is higher than the figures presented by the SIPRI in those years it is possible to compare.

The IISS also publishes its own estimates for military expenditure and has long time series (from 1965). Military expenditure is put at US $58 million in 1993, equivalent to 1.5 per cent of GDP. In 1994, budgeted military expenditure amounts to US $38 million, corresponding to 1.0 per cent of GDP. In absolute terms, the figures presented by the ACDA and the IISS are generally in accord, while the estimated rates for military expenditure in relation to GDP correspond more closely with figures from the SIPRI. The difficulties of determining GDP, partly as a result of high inflation, may be the reason for the divergences.

The CIA's Internet pages estimate military expenditure in Zambia at US $45 million in 1994, i.e. slightly higher than the figure presented by the IISS. The estimated rate for the military burden (military expenditure/GDP) is 1.4 per cent.

The national budget is readily available, but previously contained no information on defence expenditure, whereas the other sectors were described in detail. In the budget for 1995 (the fiscal year coincides with the calendar year), defence expenditure is included. It is divided into current and capital costs and presented in great detail. It is somewhat uncertain whether pension expenditure is included, but the item "other emoluments" may include pensions since the allocated amount in this category is about the same size as wages and salaries. It must be considered a major step forward that Zambia has now started to publish its military expenditure. The official figures show that the country has low military expenditure in relation to GDP. The country has recorded a negative trend in social indicators in recent years, with infant mortality at 10.3 per cent in 1993. This is probably ascribable to the economic setbacks experienced by Zambia rather than high military expenditure.

Table 3.1.8. Indicators of the degree of militarization and social indicators. All figures in per cent

Year	1975	1980	1985	1986	1987	1988	1989	1990	1991
Militarization									
Mil. exp./GDP SIPRI	[2.9]	[3.5]	2.4	3.7	3.2	2.4	1.6	1.9	6.3
Mil. exp./Gov. exp.[1]	[6.8]	[9.3]	6.7	8.9	9.3	8.4	7.5[p]	..	..
Mil. exp./Soc. exp.[1]	[28.6]	[53.6]	37.4	76.3	67.5	52.2	..	..	..
Social indicators									
Infant mortality	10.6[2]	10.6	8.4	8.2	8.0	7.8	7.6	8.2	10.6
Primary education	96	95	103	104	97	..	95	93	92

[ ] indicates an estimate entailing considerable uncertainty.

1) The indicator was calculated with the help of the estimate for military expenditure provided by the SIPRI, while the other figures were obtained from the IMF. There is a break in the IMF's series from 1986 so the time series are not consistent. The indicators must be considered very uncertain.

2) Figure is for 1970.

p) Projection of total government expenditure.

3.1.9. Zimbabwe

Sources:

The IMF publishes time series from 1976 through 1989 in national currency (dollar) at current prices for the fiscal year. Zimbabwe changed the period of calculation for the fiscal year in 1985 when the authorities decided that instead of having the fiscal year coincide with the calendar year it would extend from 1 July to 30 June. As a result, the figures are not necessarily consistent prior to and after 1985, a factor which makes it difficult to carry out a time-series analysis. There has been no revision or extension of the time series in Government Finance Statistics Yearbook 1994 compared with the previous year's edition.

The UN publishes data from 1970 to 1991. In the period through 1988, however, it is not possible to obtain detailed information on defence expenditure. In the classification by sector there is only one combined category for "general public services, defence, public order and safety". In the latest available edition of National Accounts Statistics (1992), the combined category for the period 1989-1991 is split up into three sub-groups with a specification of defence expenditure. The time series are presented in national currency at current prices. There is no information as to whether the series follow the fiscal year or the calendar year.

In the editions to which I have had access, the SIPRI has figures from 1965 through 1994. Up to 1985 the figures are slightly lower than those of the IMF, but this situation has been reversed in that towards the end of the 1980s the SIPRI has reported higher military expenditure. This may be due to the fact that SIPRI converts military expenditure to apply to the calendar year while the IMF uses the fiscal year for expenditure and converts GDP to obtain consistency. The divergence is greatest in 1986, amounting to 80 million Zimbabwe dollars. In the last part of the period the figures from the two sources are in greater accord. The SIPRI has calculated that military expenditure as a percentage of GDP was 4.4 per cent in 1992 and 3.8 per cent in 1993.

The ACDA has figures from 1973 through 1993. There are some divergences between the rates provided by the ACDA and the two rates shown in table 3.1.9, but the trend is the same. After peaking in 1987, with miliary expenditure estimated at 7.5 per cent of GDP, the rate gradually declines to 4.3 per cent in 1993. This is slightly higher than the calculations made by the SIPRI.

The IISS has long time series for military expenditure in Zimbabwe (Rhodesia is reported in earlier editions). The latest estimate is from 1994 and refers to budgeted figures. Military expenditure is estimated at 3.5 per cent of GDP. The rate in 1993 is put at 3.8 per cent, i.e. identical to the SIPRI's calculations.

The CIA's Internet pages contain information on military expenditure for the 1994/95 fiscal year, putting the figure at US $175 million, or 3.1 per cent of GDP. This is slightly lower than the level indicated by the IISS, which has an estimate of US $193 million.

The national budget is organized according to branches of the armed forces. Current costs and capital costs are shown separately in a satisfactory manner, and the presentation of the different sub-categories is the same for the annual editions to which I have had access. Expenditure on pensions does not appear to be included, in accordance with the IMF's guidelines. The budgeted figures are higher than the final figures published by the IMF. There is greatest accord between the national budget and the IISS, but also here the budgeted figures are slightly higher than the level published internationally.

The conclusion for Zimbabwe must be that access to data is satisfactory and there is a large degree of openness. However, considerable divergences between data from various sources entail that for

analytical purposes material should be obtained from one source. As shown in table 3.1.9, Zimbabwe has reduced its military expenditure in relation to social expenditure to a little less than 42 per cent in 1991. The country's position was relatively favourable with regard to social indicators, but infant mortality rose sharply in 1993, to 6.7 per cent. This is probably due more to the difficulties experienced by the country, including a protracted drought, than increasing militarization. The education rate is very high, and it is obvious that the authorities are giving priority to having as many people as possible receive a primary education inasmuch as a greater number of pupils are enrolled outside their relevant grade level.

Table 3.1.9. Indicators of the degree of militarization and social indicators. All figures in per cent

Year	1976	1980	1985	1986	1987	1988	1989	1990	1991
Militarization									
Mil. exp./GDP SIPRI	4.3	[8.6]	6.1	6.8	7.0	6.4	6.1	6.3	5.0
Mil. exp./GDP[1]	4.0	8.7	I5.9	6.5	7.3	4.7	6.8	I5.9	5.1
Mil. exp./Gov. exp.[1]	16.1	8.7	I15.5	16.5	17.1	16.3	16.5	I13.1	14.3
Mil. exp./Soc. exp.[1]	72.9	119.7	I56.5	57.1	61.5	55.3	53.1	I49.9	41.8
Social indicators									
Infant mortality	9.6[2]	7.4	7.7	7.4	7.2	4.9	4.6	4.9	4.8
Primary education	74[2]	115	131	129	136	128	125	117	..

1) The indicators were calculated on the basis of figures from the IMF up to and including 1989, and thereafter figures from the UN.
2) Figure is for 1970.
[ ] indicates an estimate entailing considerable uncertainty.
I indicates a break in the series.
The IMF has a break in the time series from 1985.

3.2. Asia

3.2.1. Bangladesh

Sources:
The IMF published data on military expenditure on a somewhat sporadic basis up to 1985. The latest editions of Government Finance Statistics contain no information about the country.

The UN has time series from 1980 through 1990 in national currency (taka) at current prices for the fiscal year, which begins on 1 July. There is a rough breakdown into current expenditure and capital expenditure which seems to contain the same sub-groups each year. It is not possible to verify whether expenditure on pensions is included in the total amount. In National Accounts Statistics 1992, the figures for 1990 have been revised compared with earlier editions, but the time series were not extended.

The SIPRI has time series from 1972 to 1994 in national currency at current prices for the calendar year. As noted in the discussion on Bangladesh in Rolland (1994), there were considerable divergences between the published estimates for military expenditure in SIPRI Yearbook 1992 and the UN's National Accounts Statistics 1990. The divergence was particularly great in 1985. While the UN reported total military expenditure of 1138 million taka, the SIPRI estimated the amount at 5790 million taka. (This was more in line with the IMF which estimated military expenditure at 5061 million taka in 1985.) In the latest available editions of the yearbooks (SIPRI Yearbook 1995 and National Accounts Statistics 1992), the UN's figure is very close to that of the SIPRI, putting military expenditure in 1985 at 5815 million taka, whereas the SIPRI has retained its figure. There are now only small divergences in the information from the two sources in the period it is possible to compare. The last rate for military expenditure/GDP which the SIPRI has calculated is for 1992, probably as a result of the lack of information on GDP.

The ACDA has time series from 1972 through 1993 and, as noted in section 2.2, these are only presented in US dollars calculated with the help of the official exchange rate. The source has also calculated military expenditure as a percentage of GDP and total government expenditure. The ACDA's rate for the military burden (military expenditure/GDP) is slightly higher than that of the SIPRI up to 1989. The divergence, however, is marginal and since 1990 the two sources have virtually the same rates.

The IISS has time series for military expenditure through 1994. The budgeted figure for 1995 is also presented. For 1992, the rate for military expenditure as a percentage of GDP calculated by the IISS is the same as the rate indicated by the SIPRI. Changes in military expenditure as a share of GDP for 1993 and 1994 indicate that resources for the military sector are increasing in relative terms, with rates of 1.9 and 1.8 per cent, respectively.

The CIA's Internet pages indicate that military expenditure as a share of GDP was 1.7 per cent for the 1993/94 fiscal year.

During the last two years it has become easier to judge the quality of data on military expenditure in Bangladesh. There is now considerably greater accord between the sources after the UN revised its data upwards. It is not inconceivable, however, that the various sources make use of each other's publications, which may have a certain contagious effect. It is nevertheless easier to use series that do not diverge substantially. The latest figures from the IISS and the CIA's Internet pages indicate that military expenditure is rising slightly relative to GDP, but in spite of this development the country does not appear to be particularly militarized. The social indicators point to a negative situation for

the country's social standards, but the *trend* has been positive the last few years. One exception, however, is the latest figure on infant mortality, which shows that it rose to 10.6 per cent in 1993.

Table 3.2.1. Indicators of the degree of militarization and social indicators. All figures in per cent

Year	1980	1985	1986	1987	1988	1989	1990	1991	1992
Militarization									
Mil. exp./GDP SIPRI	1.3	1.3	1.5	1.6	1.5	1.5	1.5	1.4	1.5
Mil. exp./GDP[1]	0.9	1.3	1.4	1.4	1.5	1.5	1.3	..	..
Mil. exp./Gov. exp.[1]	5.5	8.2	9.4	9.3	9.3	9.2	8.9	..	..
Mil. exp./Soc. exp.[1]	47.2	53.5	57.2	52.3	59.8	56.1	57.0	..	..
Social indicators									
Infant mortality	13.6	12.3	12.1	11.9	11.8	10.6	10.5	10.3	9.1
Primary education	62	60	60	59	..	70	73	77	..

1) The indicators were calculated on the basis of figures from the UN's National Accounts Statistics, 1992.

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3.2.2. India

Sources:

The IMF publishes figures for military expenditure in national currency (rupees) at current prices for the fiscal year, which starts on 1 April. The latest official figures are from 1991, but there are provisional figures for 1992 and projections for 1993. A check of the provisional figures shows that they are updated regularly as the final figures become available. The series are consistent and suitable for a time-series analysis.

The UN has time series for military expenditure through 1990. The amounts are also presented in national currency at current prices for the fiscal year. The series were extended by two years from the 1990 to the 1991 edition of National Accounts Statistics, but in the latest available edition (1992) the series were neither revised nor extended. The total amount is roughly broken down into sub-groups which primarily distinguish between current expenditure and capital costs. It is not possible to determine whether pension expenditure is included. Informal information indicates, however, that it is included in the total amount even though the IMF's definition presupposes that pension expenditure is excluded. The UN's figure is virtually identical to that of the IMF up to 1984, but expenditure is subsequently considerably higher.

In its yearbook for 1995, the SIPRI has time series for military expenditure in national currency through 1994. The time series coincide closely with those of the IMF. In SIPRI's yearbook for 1992, military expenditure as a percentage of GDP is slightly higher than my own calculations made with the help of data from the IMF, but in the latest edition there is greater accord between the rates.

The ACDA has series for military expenditure in India through 1993. The agency's figures are very close to the rates for the military burden (military expenditure/GDP) reported by the SIPRI up to 1991, but the ACDA's rates for 1992 and 1993 are higher, at 3.1 and 3.3 per cent, respectively.

The IISS publishes time series through 1994, with the last year referring to budgetary data. The figures in national currency for the last few years are slightly higher than those reported by the IMF and the SIPRI, and this is also reflected in slightly higher rates for the military burden. The IISS has calculated that military expenditure as a percentage of GDP was 2.8 per cent in both 1993 and 1994.

The CIA's Internet pages are in accord with the IISS, estimating military expenditure as a share of GDP at 2.8 per cent for the 1994/95 fiscal year.

Access to data on military expenditure in India appears to be satisfactory. National budgets are available to the public, and the country reports on a regular basis to international sources. Divergences between the various sources exist, but they are not substantial. The greatest divergence I have come across is in the calculation of the rate for military expenditure in relation to social expenditure. In the calculations I have made use of figures from the IMF when this has been possible. However, the IMF only reports central government expenditure. A different indicator will be obtained when considerable local government resources are involved. In the case of India, for example, military expenditure amounts to more than 410 per cent of total central government expenditure on health and education in 1990, while the same rate calculated with figures from the UN is 73 per cent. The UN includes expenditure from the various states in its total amount. Expenditure on education in particular shows a sharp increase, with the figure nine times higher when the various states are included, while health expenditure shows a threefold increase. The social indicators also indicate that priority is being given to education, but infant mortality remains high. As shown in table 3.2.2, however, infant mortality has been reduced substantially the last twenty years.

Table 3.2.2. Indicators of the degree of militarization and social indicators. All figures in per cent

Year	1975	1980	1985	1986	1987	1988	1989	1990	1991	1992	1993
Militarization											
Mil. exp./GDP SIPRI	3.3	3.1	3.0	3.4	3.6	3.4	3.2	2.9	2.7	2.5	2.7
Mil. exp./GDP[1]	3.2	2.6	3.0	3.6	3.6	3.4	3.1	2.9	2.6	2.5	..
Mil. exp./Gov. exp.[1]	22.4	19.8	18.5	20.2	19.9	19.1	17.5	16.6	15.5	14.4	14.5
Mil. exp./Soc. exp.[1]	538.8	570.5	465.5	535.4	444.9	404.9	454.0	410.7	408.3	397.7	353.0
Mil. exp./Soc. exp.[2]	256.5[3]	72.8	79.2	92.4	91.9	88.1	80.6	72.9	..		
Social indicators											
Infant mortality	12.2	12.3	8.9	8.6	9.9	9.7	9.5	9.2	9.0	7.9	8.0
Primary education	65	76	92	..	98	99	98	97	98	102	..

1) The indicators were calculated on the basis of figures from the IMF.
2) The indicators were calculated on the basis of figures from the UN.
3) Figure is for 1970.

3.2.3. Pakistan

Sources:

The IMF publishes figures up through 1986 in national currency (rupees) at current prices for the fiscal year, which ends on 30 June. In Government Finance Statistics Yearbook 1993 the series on government expenditure by function ends in 1982, while total government expenditure is presented up to 1991. In the latest available edition (1994), the table which contains government expenditure by function is omitted. I have not been able to ascertain why the IMF has stopped publishing data the last few years. There have been no changes in budget routines so the time series are consistent, but not particularly interesting due to the lack of information for the past decade.

The UN has time series for government expenditure through 1991 in national currency at current prices. However, it is still difficult to find data on military expenditure in the UN's publications since only a total amount for "general public services and defence" is reported. In addition to the total amount, the publication contains tables with a rough breakdown into sub-groups for the various sectors. A distinction is made between current costs and capital costs, but here as well the defence sector is included in the above-mentioned combined category. The figures for expenditure on social sectors are considerably higher than those published by the IMF. I assume that this is due to the inclusion of expenditure at state level in the total amount (as described for India in section 3.2.2), but this is not explicitly stated in the text to the table.

In the editions to which I have had access, the SIPRI has data on military expenditure from 1954 to 1993, as well as its own estimate for 1994. As shown in table 3.2.3, the rates for the military burden (military expenditure/GDP) are on the whole slightly lower than my own calculations made with the help of figures from the UN and a distribution formula based on earlier figures from the IMF. (See footnote under the table for a more detailed description of the method of calculation.)

The ACDA publishes data through 1993. In the latest edition of the yearbook (1993-1994), the estimates for military expenditure were revised downwards slightly compared with the previous edition. This may be due to a change in the base year, and changes in the exchange rate have probably resulted in lower military expenditure measured in US dollars. The ACDA's estimate for military expenditure as a percentage of GDP is roughly the same as that reported by the SIPRI up to 1990. However, for the last three years for which it has been possible to compare the two sources the ACDA's figure has been slightly lower; their rate for 1993 shows that military expenditure as a percentage of GDP came to 6.4 per cent.

The IISS publishes figures from 1971 to 1995 (the last year refers to budgeted amounts). The amounts in national currency are higher than those reported by the SIPRI, which is also reflected in higher rates for the military burden (military expenditure/GDP). The series provided by the IISS and the SIPRI seem to be in accord up to the end of the 1980s, but in recent years the figures reported by the IISS have been slightly higher than those of both the SIPRI and the ACDA. Military expenditure as a percentage of GDP is estimated at 7.0 per cent in 1993 and 6.9 per cent in 1994.

The CIA's Internet pages put Pakistan's military expenditure for the 1994/95 fiscal year at US $3.2 billion. This is slightly less than the figures published by the IISS, and is equivalent to a military expenditure/GDP rate of 5.6 per cent.

The availability of data on military expenditure in Pakistan appears to be satisfactory. However, the information provided shows fairly considerable variation, a factor which makes it difficult to evaluate the material. My conclusion is that there are shortcomings in the routines for the publication of the magnitude of resources used by the defence sector. There is nevertheless no doubt that Pakistan has high military expenditure in relative terms. This is particularly true when measured against the

amounts allocated to health and education. Even when the indicator is calculated with the help of the highest reported figures for social expenditure, military expenditure is more than two and a half times greater. The social indicators also reflect Pakistan's priorities. Infant mortality is high, and the country has the lowest primary education rate among all of Norway's main partner countries for development assistance. To some extent this may be ascribable to cultural factors since the rate for boys enrolled in primary education was 49 per cent in 1990 compared with only 27 per cent for girls. However, it is still low when the figure is compared with another Muslim country, Bangladesh, where the rates are 78 and 68 per cent, respectively.

Table 3.2.3. Indicators of the degree of militarization and social indicators. All figures in per cent

Year	1975	1980	1985	1986	1987	1988	1989	1990	1991	1992	1993
Militarization											
Mil. exp./GDP SIPRI	6.2	5.3	7.1	7.5	7.6	6.9	6.5	6.8	6.6	6.3	6.8
Mil. exp./GDP[1]	[6.2]	[5.6]	[7.5]	[7.8]	[9.7]	[9.2]	[8.5]	[7.8]	[6.8]	..	..
Mil. exp./Gov exp.[1]	[35.4]	[47.8]	[47.3]	[46.7]	[51.4]	[44.6]	[47.2]	[45.7]	[45.5]	..	..
Mil. exp./Soc. exp.[1]	[353]	[265]	[271]	[253]	[300]	[228]	[254]	[238]	[236]	..	..
Social indicators											
Infant mortality	11.3	12.6	11.5	11.1	10.9	10.7	10.6	10.3	9.7	9.5	8.8
Primary education	51	57	47	44	52	40	38	37	46	46	..

[ ] denotes that the indicators are shrouded with considerable uncertainty.
1) The indicators were calculated with the help of figures from the UN's National Accounts Statistics. Since the UN only specified a combined amount for "General public services and Defence", it is estimated that defence expenditure accounts for 80 per cent of the total amount based on IMF publications for earlier years, and the indicators were calculated on the basis of this assumption. No explicit information is provided in the statistical annex as to the content of the expenditure, but it is assumed that the amounts also cover expenditure at state level as described for India under section 3.2.2.

3.2.4. Sri Lanka

Sources:

The IMF publishes time series up to 1993 (preliminary figures for the last year) on military expenditure in national currency (rupees) at current prices for the fiscal year, which coincides with the calendar year. The figures are updated and are consistent in the reporting period.

The UN has figures on final government consumption expenditure on the military sector up to 1992. The series are extended and updated in National Accounts Statistics 1992 from the 1991 edition. There is no breakdown of current and capital costs as I have seen for various other countries. The figures differ substantially from the time series published by the IMF where reported expenditure on defence is higher while expenditure on social sectors is lower (see table 3.2.4 for indicators calculated with the help of the two sources). The differences are probably ascribable to the different basis of measurement for the two sources. The UN looks at government final consumption expenditure and also includes local government expenditure, whereas the IMF looks at consolidated government expenditure.

The SIPRI has information on military expenditure in Sri Lanka in national currency at current prices from 1954 through 1992. Considerable revisions of the figures from 1985 to 1992 are presented in the yearbook for 1995. In the latest edition, military expenditure in national currency is identical to the figures published in the IMF's Government Finance Statistics Yearbook 1993. The SIPRI states that the figures are uncertain, probably because it is has not been possible to check these against other sources. In the SIPRI's yearbook for 1992, military expenditure as a percentage of GDP is considerably higher than my own rates calculated with the help of figures from the IMF's 1993 edition (see Rolland (1994, p. 23), particularly towards the end of the period. The SIPRI has in other words now chosen to disregard these figures.

The ACDA publishes figures up through 1993. Their calculations are in accord with my own calculations made with the help of information from the IMF in the period through 1987. The divergences are subsequently considerable, and the ACDA's rates for military expenditure as a percentage of GDP are considerably higher than calculations made using figures from the IMF. Military expenditure as a percentage of GDP is estimated at 4.8 per cent in 1993.

The IISS has figures up through 1993. Budgetary data are also presented for 1994 and 1995. The figures reported by the IISS are close to the ACDA's rates for military expenditure as a percentage of GDP, i.e. considerably higher than the rates calculated with the help of figures from the IMF. The IISS puts the military burden (military expenditure/GDP) in 1993 at 4.8 per cent. According to the budget, an equivalent rate is planned in 1994.

The CIA's Internet pages put military expenditure in Sri Lanka at US $412 million in 1994. This is about US $100 million lower than the figures estimated by the IISS and corresponds to a military burden (miliary expenditure/GDP) of 3.6 per cent.

There are many sources that publish military expenditure for Sri Lanka, but because of the substantial divergences in the amounts reported it is difficult to judge which information is correct. I am nevertheless inclined to believe that the estimates provided by the IISS and the ACDA for more recent years are the most credible. A state of war has existed in several provinces in Sri Lanka, and this will naturally be reflected in higher expenditure on military activities. However, this has not had a negative effect on the social indicators thus far. The country has the lowest infant mortality rate among all of Norway's main partner countries for development assistance, and the primary education rate is very high.

Table 3.2.4. Indicators of the degree of militarization and social indicator. All figures in per cent

Year	1975	1980	1985	1986	1987	1988	1989	1990	1991	1992	1993
Militarization											
Mil. exp./GDP SIPRI	1.5	1.5	[2.8]	[2.4]	[3.1]	[2.1]	[1.8]	[2.1]	[2.8]	[2.4]	..
Mil. exp./GDP[1]	0.8	0.7	2.8	2.4	3.1	2.1	1.6	2.1	2.8	3.0	3.1
Mil. exp./Gov. exp.[1]	2.9	1.7	8.5	7.6	9.6	6.9	5.3	7.4	9.5	11.2	11.4
Mil. exp./Soc. exp.[1]	17.2	14.4	70.5	59.8	72.9	48.2	31.9	46.4	71.9	67.5	73.0
Mil. exp./Soc. exp.[2]	..	30.6	96.7	151.8	153.1	130.4	79.7	104.1	112.2	116.9	..
Social indicators											
Infant mortality	4.5	4.4	3.6	2.9	3.3	2.1	2.0	1.9	1.8	1.8	1.7
Primary education	77	100	103	103	104	107	107	107	108	..	..

[ ] denotes that the indicators are shrouded with considerable uncertainty.
1) The indicators were calculated based on figures from the IMF.
2) The indicator was calculated with the help of figures from the UN.

3.3. Central America

3.3.1. Guatemala

Sources:
The IMF publishes time series for military expenditure from 1972 through 1989 in national currency (quetzale) at current prices for the fiscal year, which coincides with the calendar year. However, the series are somewhat sporadically reported in the various editions of Government Finance Statistics Yearbook, entailing that many editions are required to obtain the longest time series. There is a break in the series in 1984, thereby making it difficult to carry out a consistent time-series analysis with the help of this statistical material. There was no updating or reporting of new figures for military expenditure from the 1993 edition to the 1994 edition of Government Finance Statistics. Some other series, however, have been projected up to and including 1993 in the latest yearbook.

The UN's National Account Statistics contains no figures on military expenditure.

In the editions to which I have had access, the SIPRI publishes military expenditure for the period 1975 to 1991. Throughout the comparable period the figures are between 20 and 50 million quetzales higher than those reported by the IMF. The entire time series were revised in the 1995 yearbook compared with the 1992 edition where expenditure in the period 1985 to 1988 now appears to be lower than previously. The opposite is the case for the latter part of the period. The series, however, have not been extended.

The ACDA provides figures on military expenditure from 1968 through 1993 in the editions to which I have had access. Estimates are provided for the period 1982-1984. The series are identical to the calculations I have made with the help of data from the IMF presented in table 3.3.1, and are 0.2 percentage points lower than the figure reported by the SIPRI for the entire period it is possible to compare.

The IISS has series for military expenditure in Guatemala from 1980 to 1993 as well as its own estimates and budgeted figures for expenditure in 1994 and 1995. The rates for military expenditure as a percentage of GDP are close to those reported by the ACDA and my own calculations made with the help of data from the IMF. The IISS puts military expenditure as a percentage of GDP at 1.1 per cent in both 1993 and 1994.

The CIA's Internet pages estimate military expenditure in Guatemala at US $121 million, or 1.0 per cent of GDP, in 1993.

Access to data on military expenditure in Guatemala appears to be satisfactory. Most sources have relatively long time series, and there is no major divergence between the various sources. I have not succeeded in obtaining the national budget, entailing that it has not been possible to carry out a more detailed examination of the various sub-groups. This is probably because the country is relatively new in terms of Norway's official development aid, and libraries have therefore not yet given priority to obtaining sufficiently detailed information about the country. As shown in table 3.3.1, Guatemala has low military expenditure in per cent of GDP and social expenditure. The latest figures also show that this situation is being maintained in that military expenditure is budgeted at about 1 per cent of GDP in 1994. Social indicators have improved in recent years. Infant mortality was more than 6 per cent at the beginning of the 1990s, while the World Bank's latest figure shows that it fell to 4.6 per cent in 1993.

Table 3.3.1. Indicators of the degree of militarisation and social indicators. All figures in per cent

Year	1975	1980	1985	1986	1987	1988	1989	1990	1991
Militarization									
Mil. exp./GDP SIPRI	1.2	1.8	1.8	1.4	2.0	1.9	1.8	1.5	1.2
Mil. exp./GDP[1]	1.2	1.3	1.6	1.2	1.8	1.6	1.6	..	..
Mil. exp./Gov. exp.[1]	12.3	10.6	17.1	12.7	15.7	13.7	13.3	..	..
Mil. exp./Soc. exp.[1]	49.7	42.1	95.7	59.7	56.3	48.1	45.0	..	..
Social indicators									
Infant mortality	7.5	7.0	6.5	6.1	5.9	5.7	5.5	6.2	6.0
Primary education	62	69	76	..	77	..	79	..	79

1) The indicators were calculated based on data from the IMF.

3.3.2. Nicaragua

Sources:

The IMF publishes figures for military expenditure in Nicaragua for the first time in Government Finance Statistics Yearbook 1994. The time series are short, running from 1990 to 1993, and are presented in national currency (gold córdoba) at current prices for the fiscal year, which coincides with the calendar year.

The UN publishes no information on military expenditure in Nicaragua.

The SIPRI presents figures in national currency at current prices from 1960 to 1988 in its SIPRI Yearbook 1992. In the yearbook for 1995, the times series have been changed and only contain four years in national currency at current prices. The information is identical to the figures from the IMF. No information is provided on military expenditure at constant prices or in per cent of GDP.

The ACDA has series through 1993, but there are major breaks in the time series. Data for the period 1986-1990 are not available. As noted, the source always publishes figures in US dollars only as well as estimated rates. There are considerable divergences from the SIPRI rates when it has been possible to compare them, and the two sources alternate as to presenting the highest level. For the latter part of the period, table 3.3.2 shows that the ACDA's figures are higher than the rates for military expenditure as a percentage of GDP which I have calculated with the help of data from the IMF.

The IISS provides data from 1965 through 1994, but there is also a break in the series. For 1985, the figures are closer to those of the ACDA than the SIPRI, but for 1991 the IISS estimates military expenditure as a percentage of GDP at 9.1 per cent, i.e. almost double the rate reported by the ACDA. Towards the end of the period, however, the figures in US dollars reported by the IISS are very close to the ACDA's estimates, while military expenditure as a percentage of GDP appears to be slightly lower. Military expenditure as a share of GDP is estimated at 2.0 per cent by the IISS for both 1993 and 1994.

The CIA's Internet pages estimate military expenditure in Nicaragua at US $32 million in 1994, equivalent to 1.7 per cent of GDP. The estimate is US $7 million lower than the figure published by the IISS.

It is very difficult to find long, consistent time series for military expenditure in Nicaragua. Since the end of the war, however, it appears that the defence sector is laying claim to considerably fewer resources. It is easier to find data on military expenditure for the period after 1990. Several sources publish figures, and the sources are in greater accord even though there are still some divergences. There are many indications that the country is heading in the right direction with regard to access to data on military expenditure. The country has also recorded a positive trend in social indicators following the end of the war. Even though infant mortality is high, the figures are moving on a downward *trend*, and the primary education rate is on a par with that of OECD countries.

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Table 3.3.2 Indicators of the degree of militarization and social indicators. All figures in per cent

Year	1975	1980	1985	1990	1991	1992	1993
Militarization							
Mil. exp./GDP SIPRI[1]	1.7	5.7	23.2	..	l5.4	3.2	2.6
Mil. exp./GDP[2]	..	..	..	10.3	2.9	2.3	2.0
Mil. exp./Gov. exp.[2]	..	..	..	28.5	10.3	7.6	6.8
Mil. exp./Soc. exp.[2]	..	..	..	105.8	34.3	27.0	24.8
Social indicators							
Infant mortality	4.6	9.1	6.9	5.5	5.6	..	5.1
Primary education	85	100	101	98	101	102	..

1) The indicators were obtained from the SIPRI Yearbook 1985, 1989 and 1992 and the ACDA's WMEAT 1993-1994 (the period 1991-1993).
l indicates a break in the time series.
2) The indicators were calculated based on figures from the IMF's Government Finance Statistics Yearbook 1994.

4. Conclusion

In recent years the size of a country's military expenditure has been the subject of increased attention on the aid policy agenda. This has been particularly relevant in connection with the debate on good governance where increased transparency is an important ingredient. The purpose of this study has been to provide an updated picture of the degree of militarization in Norway's main partner countries for development assistance. The study is a direct follow-up of Rolland (1994) where I evaluated and compared the sources which publish data on military expenditure for Norway's main partner countries. Moreover, I calculated the following indicators: military expenditure as a percentage of GDP (the military burden), military expenditure as a percentage of government expenditure and military expenditure in relation to total expenditure on health and education. Norwegian development aid is poverty oriented, and the last indicator was calculated based on the notion that a good public health and education programme will benefit the poorest segment of the population. In order to obtain some indication of the society's social standards I also included infant mortality and the primary education rate for the countries. In this study all the figures were calculated with the help of new information that is now available, and the number of countries covered was increased in line with new Norwegian priorities. As will be seen in figures 4.1 and 4.2[8], there appears to be a certain pattern with regard to the size of military expenditure in relation to social expenditure and the social indicators. The countries with the highest military expenditure in relative terms also have high infant mortality. However, this particularly applies to three countries, notably Pakistan, Ethiopia and Mozambique, and the latter two have experienced a protracted war. With regard to the relationship between the primary education rate and military expenditure in relation to social expenditure, it seems that countries with high relative military expenditure have a low primary education rate. However, this picture is again dominated by the same three countries as for infant mortality. One exception here is South Africa, which in spite of high relative military expenditure has a very high primary education rate. This is probably ascribable to the country's very special recent history. (The figures in the chart are from 1993/94.) In the wake of the demise of the apartheid system, the transitional government has made considerable efforts to educate the black members of the population, at the same time that too swift a reduction in defence might have a destabilizing effect. I would emphasise, however, that the figures are only meant to be an illustration. No statistical causal analysis has been carried out here, and the problems are so complex that a greater number of explanatory variables is required. The indicators are also rough, and they do not capture the possibility that high government health and education expenditure can be distributed within each sector in a manner which favours costly hospitals and universities and gives little priority to primary programmes. Nor has account been taken of private programmes, a factor which influences the situation particularly in South Africa, but also some of the other countries.

The SIPRI has estimated the average military burden (military expenditure/GDP) for developing countries at 3.8 per cent in 1991, down from about 5 per cent in 1985. By starting with the SIPRI rate for our main partner countries, we find that of the fifteen countries for which the SIPRI publishes figures on the military burden, seven countries are above the average while eight countries are below the average. The calculations also show that military expenditure as a percentage of GDP has *risen* from 1985 to 1991 in three countries, notably Botswana, Zambia and Sri Lanka. This is a worrisome development and at variance with the average of developing countries which shows declining military expenditure relative to GDP. For Zambia, however, this is probably due more to the major economic problems the country has experienced in the period, with a decline in GDP, a situation which results in a greater military burden even though military expenditure is maintained at a constant level. Sri Lanka has nearly doubled its military expenditure in relative terms since 1980, a development which must be viewed in conjunction with the conflict between various ethnic groups. For the other

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[8] The figures were obtained by using the information from the latest available year for all countries when this is possible. In other words, the figures have not been obtained for the same year for all countries. The figures cover 14 countries as it has not been possible to find information about expenditure on social sectors in Uganda.

countries covered in this study military expenditure as a percentage of GDP appears to have peaked at the end of the 1980s and then moved on a downward trend in line with general developments in the wake of the cold war. In several of the countries that have experienced a protracted war there has been a dramatic decline in the military burden after a peaceful solution was found. This applies to Ethiopia, Mozambique and Nicaragua. Compared with the results presented in Rolland (1994), the figures show that for the majority of Norway's main partner countries for development assistance the defence sector is using an increasingly smaller share of the countries' resources.

If the countries are to be judged on the basis of data availability, Zimbabwe is in a class by itself. It is relatively simple to obtain detailed information from the government budgets, the country is covered in most international sources, and there are few divergences between the various publications. India also appears to have a liberal attitude towards public inspection of military budgets, but there are considerable divergences between the various sources, and it is thereby more difficult to judge the quality of the data. The situation for Namibia, however, has deteriorated. The country has not reported data on military expenditure to the IMF the last two years, and I was not able to obtain national budgets after 1993. The most gratifying change has taken place in Zambia. Previously, it was not possible to find satisfactory information about military resource use since the government refused to disclose military expenditure. This emerged clearly in that the military sector was not discussed in the readily available and detailed national budgets. In Zambia's national budget for 1995, however, the defence sector is included and broken down into current and capital expenditure as prescribed. Access to data from Norway's main partner countries which were in a state of war until recently has also improved during the last few years. Even though the situation has improved with regard to data availability, there is with few exceptions a constant need for a dialogue with our main partner countries concerning the publication of military expenditure. In some cases it may also be advantageous to provide assistance in the form of general training in data processing since the lack of statistical know-how is a problem which does not only apply to military expenditure.

Without making this a main element in Norway's development assistance programme, it would probably still be useful to discuss the routines for access to data on military expenditure with our

Figure 4.1 Military expenditure in per cent of social expenditure and infant mortality in fourteen of Norway's main partner countries for development assistance

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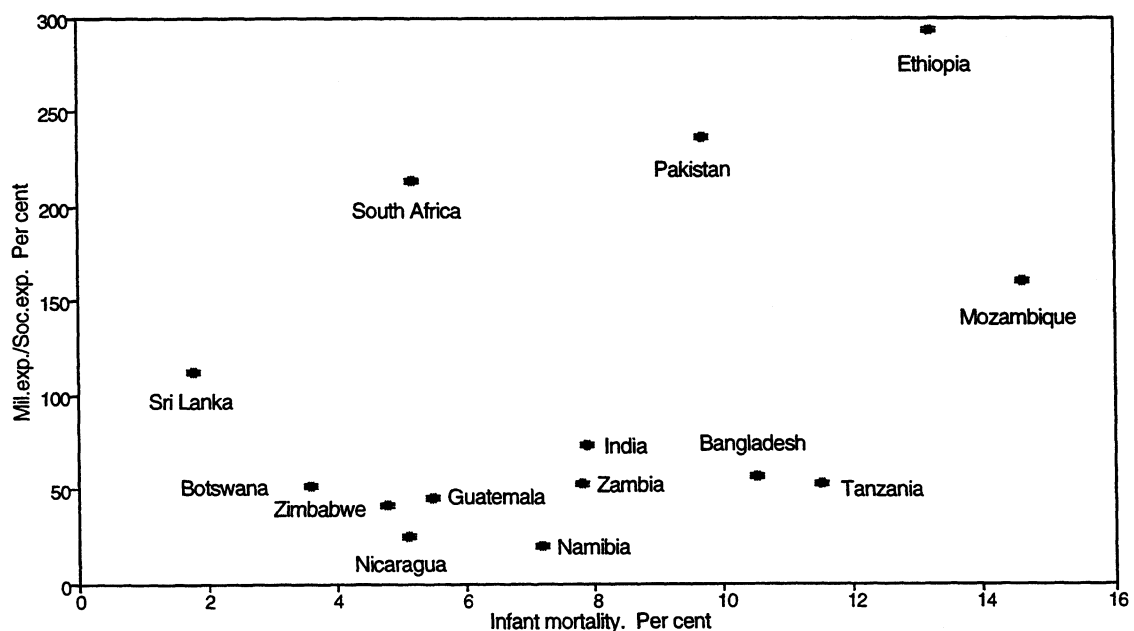
Figure 4.2   Military expenditure in per cent of social expenditure and the primary education rate for fourteen of Norway's main partner countries for development assistance.
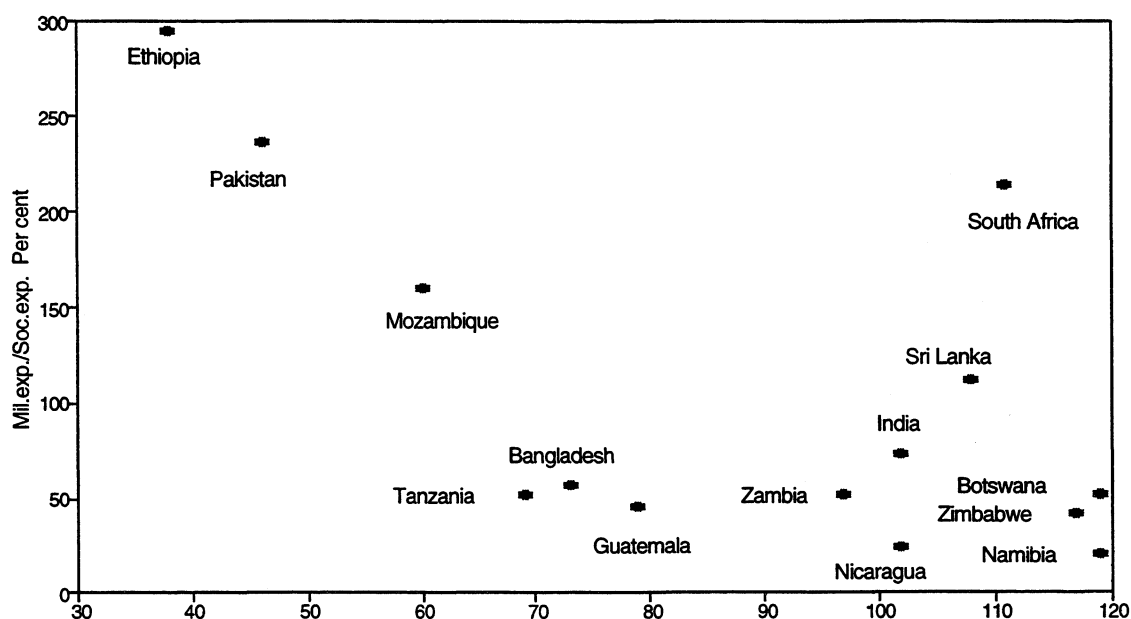
main partner countries in bilateral talks. Moreover, this is a subject which is also on the agenda in multilateral talks. As early as 1981 the UN General Assembly adopted a resolution on the obligation of member states to report the size of military expenditure to the UN. As members of the UN, our main partner countries can also be urged to comply with UN resolutions. Several UN agencies are also interested in military resource use, and the UNDP has raised the issue of military expenditure with recipient countries in connection with talks on public sector reforms. Meetings in the consultative groups (C.G. meetings) also appear to be a well suited forum for talks on good governance, including military expenditure.

The IMF and World Bank are both attempting to improve the data base and are analyzing the relationship between military expenditure and development. Through their "Public Expenditure Reviews" and Article IV consultations, they are also making efforts to ensure that maximum resources are used for development and minimum resources for defence. The IMF and World Bank, however, have thus far experienced difficulties in obtaining sufficiently detailed information in order to carry out sound analyses. Another problem is that the aim of the institutions is not to become involved in political decisions in the various countries, and the defence sector is often an area in which countries do not want external interference. With a view to the data problems which continue to exist with regard to military expenditure, it would be an advantage for Norway to support the IMF and the World Bank in their efforts to improve data availability and openness in this area.

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