

MILITARY SPENDING AND OFFICIAL DEVELOPMENT ASSISTANCE IN RECIPIENT STATES: IS THERE A RELATIONSHIP?

NAN TIAN AND DIEGO LOPES DA SILVA

I. Introduction

Official development assistance (ODA) is an important complement to development and welfare spending in low- and middle-income states. Despite its importance, the annual level of global ODA has remained relatively flat in the past decade: ODA amounted to \$55.4 billion in 2017, just 3.4 per cent more than in 2008.¹ As donors continue to fail to meet their commitment to increase ODA to 0.7 per cent of their gross domestic product (GDP), low- and middle-income states are forced to devise developmental strategies that are less reliant on external aid, which can often lead to difficult trade-off decisions on scarce domestic resources.

Building on the adoption of the Monterrey Consensus on financing for development in March 2002, the 2015 Addis Ababa Action Agenda (AAAA) sets clear priorities on spending that encourage states to set nationally appropriate spending targets for essential public services such as health-care, education, the provision of electricity and sanitation.² One possible strategy for increasing domestic funding for development and allocating more resources to these priority services might be to reduce military spending. When national security is not jeopardized, shifting expenditure from the military sector can contribute to increased domestic capacity to fund development. In that sense, reallocating resources from the military, wherever possible, alongside ODA could provide a workable option for joint efforts by government and donors to promote development.

However, it has also been argued that ODA can have the unintended consequence of enabling recipient states to shift 'freed-up' resources away from

SUMMARY

● Official development assistance (ODA) plays an important and complementary role in promoting development in low- and middle-income states. Previous research in the literature has shown that ODA can have unintended consequences by enabling recipient states to shift 'freed-up' resources away from activities now funded by ODA to other spending categories. This literature has argued that the 'freed-up' resources could be funding military spending.

This SIPRI Insights on Peace and Security queries these conclusions and contributes to the debate by placing the relationship between ODA and military spending in context. The results show that, for low-income states, armed conflict is a major explanatory factor in determining the positive association between increases in ODA and increases in military spending. While the existence of armed conflict drives both higher military spending and the need for higher levels of ODA, peace helps to lower military spending and states' reliance on external aid.

¹ Organisation for Economic Co-operation and Development (OECD), 'Net ODA', 2019.

² United Nations, *Monterrey Consensus of the International Conference on Financing for Development: The Final Text of Agreements and Commitments Adopted at the International Conference on Financing for Development, Monterrey, Mexico, 18–22 March 2002* (United Nations: New York, 2003); and United Nations, *Addis Ababa Action Agenda of the Third International Conference on Financing for Development (Addis Ababa Action Agenda): The Final Text of the Outcome Document Adopted at the Third International Conference on Financing for Development (Addis Ababa, Ethiopia, 13–16 July 2015) and Endorsed by the General Assembly in its Resolution 69/313 of 27 July 2015* (United Nations: New York, 2015).



activities currently funded by ODA to other categories of spending, such as military spending.³ A study by the University of Washington's Institute for Health Metrics and Evaluation found that, on average, for every US dollar of development assistance provided directly to governments to further health-related aims, recipient governments decreased their own health spending by \$0.43–1.14.⁴ While the study states that it is almost impossible to tell where these budget savings went—or whether they went to sectors that had a positive impact on health—the lower spending on healthcare shows a shift in resource priority from the originally intended destination of health spending to another sector. Of key concern is the possibility that a corresponding increase in military spending might be an unintended consequence of development aid.

This SIPRI Insights queries whether there is a relationship between ODA and recipients' reallocation of financial resources from non-military to military spending. In doing so, it contributes to ongoing debates concerning the use and effectiveness of aid as a tool for lifting states out of poverty.⁵ To investigate this issue, this paper assesses the correlation between military spending as a share of government expenditure and ODA received as a share of government expenditure, for 93 ODA recipients in the period 2008–17 (see annex 1). It also looks at whether recipient income level and experience of armed conflict are explanatory factors in the relationship between ODA and military spending.

Section II summarizes the links between ODA, military spending and development, and discusses the potential channels for interaction. Section III describes the analytical strategy and the data used in the analysis. Section IV explores the data on ODA and government expenditure allocated to the military. Section V uses various scatter plots to identify whether a relationship exists between the two variables, the direction of correlation, its consistency and strength, and specific outliers of interest. Section VI complements the analysis by using case studies to assess trends in ODA and military spending. Section VII provides some concluding thoughts.

II. Official development assistance and military spending

ODA is the government aid provided by donor states to promote the economic development and welfare of developing countries. This aid comes in the form of grants, loans and various types of monetary concessions.⁶ To determine which states qualify to receive ODA, the Organisation for Economic Co-operation and Development (OECD) uses the World Bank's income groupings, which categorize economies based on their gross national income (GNI) per capita. The relevant groups are low-income (less than

³ Collier, P. and Hoeffler, A., 'Unintended consequences: Does aid promote arms races?', *Oxford Bulletin of Economics and Statistics*, vol. 69, no. 1 (2007).

⁴ Murray, C. J. L. et al., *Financing Global Health, 2010: Development Assistance and Country Spending in Economic Uncertainty* (Institute for Health Metrics and Evaluation, University of Washington: Seattle, WA, 30 Nov. 2010), p. 50 and pp. 52–54.

⁵ United Nations, 'Increased aid, development critical to eradicating global poverty, delegates stress in Second Committee', Meetings coverage, GA/EF/3502, 17 Oct. 2018.

⁶ OECD, 'What is ODA?', Fact sheet, Apr. 2019.



\$1045 GNI), lower middle-income (\$1045–4125) and upper middle-income (\$4126–12 745).⁷

ODA is grounded in the OECD Development Assistance Committee (DAC) developmental mandate.⁸ Military aid falls outside the scope of ODA and is classified as other official flows.⁹ The DAC's *ODA Casebook on Conflict, Peace and Security Activities* provides an example of this restriction: a project by the United Kingdom to train and equip the Lebanese armed forces as a way to secure Lebanon's border with Syria was deemed ineligible as it would directly contribute to the recipient's military capability.¹⁰ In 2016 the OECD DAC agreed to extend the definition of ODA to technical cooperation that supports good governance in the security sector, on the provision that it does not contribute to the recipient's military capability. The ineligibility of military activities is central to this paper, as ODA should not be directly related to military spending. However, there can be an indirect correlation between ODA and military spending, as explained below.

Global ODA has fallen in recent years

Both the OECD and the United Nations General Assembly have recognized the importance of development aid. The UN General Assembly, for example, has urged donors to meet their commitment to increase aid budgets to 0.7 per cent of GDP.¹¹ However, global ODA has fallen in recent years. Foreign aid from official donors fell by 2.7 per cent in 2018 compared with the previous year, following a 0.6 per cent decrease between 2016 and 2017.¹² More worryingly, there was also a decline in the share of assistance going to the poorest and least developed states.¹³

Military spending and development

When deciding which sectors to prioritize, governments with scarce resources are faced with the need to allocate them in a way that is beneficial to both development and national security. In this setting, military and non-military spending compete for a share of overall government expenditure.¹⁴ Increases in the non-military share of government expenditure can indicate

⁷ These were the income thresholds as of Feb. 2020. The OECD Development Assistance Committee (DAC) revises its list of ODA recipients every 3 years, removing states that have exceeded the high-income threshold for 3 consecutive years at the time of the review. This threshold changes in accordance with changes to the GNI categories provided by the World Bank. OECD DAC, 'DAC list of ODA recipients'.

⁸ OECD DAC, 'The Development Assistance Committee's mandate', [n.d.].

⁹ In 2016 the OECD revised its ODA eligibility criteria for peace and security-related expenditure to include use of the military as a last resort to deliver development services and humanitarian aid and to prevent violent extremism. For more detail on the change in definition see OECD, 'The scope and nature of 2016 HLM decisions regarding the ODA eligibility of peace and security-related expenditures', DAC Secretariat, Mar. 2016.

¹⁰ OECD DAC, *ODA Casebook on Conflict, Peace and Security Activities*, DCD/DAC (2017)22/Final (OECD Development Cooperation Directorate: Paris, 20 Oct. 2017), p. 29.

¹¹ Vanheukelom, J. et al., *Reporting on Development: ODA and Financing for Development*, Final Report (European Centre for Development Policy Management: Maastricht, Apr. 2012).

¹² United Nations, Inter-agency Task Force on Financing for Development, *Financing for Sustainable Development Report 2019* (United Nations: New York, 2019).

¹³ Lamble, L., 'Poorest countries bear the brunt as aid levels fall for second successive year', *The Guardian*, 10 Apr. 2019; and OECD, 'Development aid drops in 2018, especially to neediest countries', OECD Newsroom, Apr. 2019.

¹⁴ Dunne, J. P. and Perlo-Freeman, S., 'The demand for military spending in developing countries', *International Review of Applied Economics*, vol. 17, no. 1 (2003).



preferences aligned with the spending priorities set out in the AAAA, such as on the provision of education, healthcare and infrastructure. Conversely, increasing the share of military spending in government expenditure will mean a lower share for sectors that focus on economic or human development.

Nearly three-quarters of the world's military spending is accounted for by the 10 largest spenders—most of which are developed countries. However, it is often the poorer states that allocate the largest proportion of their government expenditure to the military.¹⁵ Despite the arguments of some scholars and policymakers, the empirical evidence provides little or no support for the idea that military spending has a positive effect on economic growth or development, and there is increasing evidence that it is likely to have negative economic effects.¹⁶

The main explanation for how military spending restricts growth is through opportunity costs, which are most acute and immediate for low-income states.¹⁷ Alternative forms of expenditure are able to contribute more to development than military spending can. There is a trade-off between how many schools, hospitals and roads could have been funded, for example, if military spending were lower.¹⁸ States undoubtedly need a certain level of security in order to deal with internal and external threats, but excessive or unnecessary spending on the military prevents money and other resources from being used for purposes that can directly improve development outcomes.¹⁹

There is little support for the idea that military spending has a positive effect on economic growth or development

Possible channels of interaction

While, by definition, ODA cannot be used by the recipient for military purposes, the two can interact indirectly with regard to development spending. For an ODA recipient, an increase or decrease in development assistance can influence its budget decisions and lead to a shift in the allocation of financial resources. The potential indirect link between ODA and military spending, which this paper investigates, has been assessed by numerous researchers with results that vary significantly depending on theoretical approach and methodological design.

Collier and Hoeffler, for instance, found that aid is a significant determinant of military spending, and went so far as to claim that military spending

¹⁵ Average military spending as a share of government expenditure in the low-income group of ODA recipients was 7.9% between 2008 and 2017. This compared to an average of 6.5% in the other income groups of ODA recipients.

¹⁶ Brauer, J., Dunne, J. P. and Tian, N., 'Towards demilitarization? The military expenditure-development nexus revisited', ed. R. Matthews, *The Political Economy of Defence* (Cambridge University Press: Cambridge, UK, 2019); and O'Hanlon, M., 'Dollars at work: What defense spending means for the US economy', Brookings, 19 Aug. 2015.

¹⁷ Archer, C. and Willi, A., *Opportunity Costs: Military Spending and the UN's Development Agenda* (International Peace Bureau: Geneva, Nov. 2012).

¹⁸ Perlo-Freeman, S., 'Military and social expenditure', *SIPRI Yearbook 2016: Armaments, Disarmament and International Security* (Oxford University Press: Oxford, 2016), pp. 520–34. It has been argued by some that military spending, instead of draining resources, promotes development through the stimulus effects of increased employment of otherwise idle or underemployed resources and enhanced economic activity and growth. However, empirical studies have not produced robust findings to support this assertion.

¹⁹ Dunne, J. P. and Tian, N., 'Military expenditure and economic growth: A survey', *Economics of Peace and Security Journal*, vol. 8, no. 1 (2013).



in Africa is almost double in the presence of aid.²⁰ Their findings suggest that ODA has a positive effect on military spending, meaning that higher ODA is associated with increased military spending and vice versa. Collier and Hoeffler found that, on average, a one percentage point increase in aid as a share of GDP increased military spending by 3.3 per cent. Furthermore, they noted that since ODA and military spending move in the same direction, if ODA decreases, military spending will also decrease—possibly because recipients may reduce the share of military spending to cover the loss of aid. However, by measuring average aid over a five-year period the authors do not fully capture the importance of sequencing: a recipient state's decision to shift resources from developmental spending to the military is better measured by the amount of aid received in the previous year rather than an average amount or the amount received in the current year. While the authors' methodological approach has raised questions, some other recent research has found evidence to support the direct relationship between ODA and military spending identified by Collier and Hoeffler.²¹ Such findings challenge previous studies that found no evidence of such a relationship.²²

Another possible relationship rarely addressed is the inverse relationship between ODA and military spending. On receiving more aid, states might reduce their military spending as a means of providing further funding for their development aims.²³ Reducing government expenditure on the military could release resources to be used in development-related, non-military areas. Coinciding with an increase in ODA, this shift in spending priorities would provide an important boost to development. In such cases, donors and recipients would share the burden of financing development.

This same inverse relationship could also occur when reduced aid coincides with an increased share of military spending in government expenditure. This could be seen as a double loss since fewer financial resources, both external and domestic, would be dedicated to development.

This paper explores the correlation between ODA as a share of government expenditure and military spending as a share of government expenditure. Most studies analyse military spending either as a share of GDP or in absolute terms. Military spending as a share of government expenditure, however, provides a more accurate measure of policy priorities. Furthermore, as a way to account for differences in national income, states can be divided into income categories of low-, lower middle- and upper middle-income economies. Exploring correlations within groups can shed light on group-specific relationships that might otherwise be masked in a sample of all the groups.²⁴

²⁰ Collier and Hoeffler (note 3).

²¹ Kono, D. Y. and Motinola, G. R., 'The uses and abuses of foreign aid: Development aid and military spending', *Political Research Quarterly*, vol. 68, no. 2 (2012); and Langlotz, S. and Potrafke, N., 'Does development aid increase military expenditure?', *Journal of Comparative Economics*, vol. 47, no. 3 (2019).

²² See e.g. Cashel-Cordo, P. and Craig, S. G., 'The public sector impact of international resource transfers', *Journal of Development Economics*, vol. 32, no. 1 (1990); and Feyzioglu, T., Swaroop, V. and Zhu, M., 'A panel data analysis of the fungibility of foreign aid', *World Bank Economic Review*, vol. 12, no. 1 (1998).

²³ This effect was found in more democratic states. For more details see Kono and Motinola (note 21).

²⁴ The effect where a trend appears in several different groups of data but disappears or reverses when these groups are combined is known as the Yule–Simpson effect.



III. Analytical strategy and data

This study measures military spending as a share of total government expenditure.²⁵ This measure reflects ODA recipient preferences in resource allocation and whether states prioritize military spending over development-related spending. Military and non-military spending constitute total government expenditure. Measured in shares, the two together must add up to 100 per cent of government expenditure.²⁶ ODA is also measured as a share of total government expenditure in order to compare it with military spending.

This method operationalizes the concept of opportunity cost for military and non-military spending, whereby an increase in the share of one must be countered by a decrease in the other. This allows analysis of relative changes in the share of military or non-military spending as ODA levels change.

Analytical strategy

The study consists of three parts. The first part analyses the data on all 93 ODA recipient states that provided data on their military spending for the period 2008–17. The analysis investigates whether there is a pattern between the average share of ODA received and the average share of military spending in government expenditure—that is, whether states that rely on ODA also spend a large proportion of their government expenditure on the military (i.e. high shares of ODA and military spending) or the converse (low shares of ODA and military spending). States are also disaggregated by income group to assess whether income has an impact on the relationship between average reliance on ODA and average military spending.

The second part consists of a more detailed analysis of whether there is a relationship between ODA and military spending, based on particular income groups. Specifically, this second step examines whether changes in ODA as a share of government expenditure are related to a change in military spending as a share of government expenditure.

A simple and effective way to assess whether a relationship exists between ODA and military spending is to look at the correlation between the two variables. To also account for sequencing that is associated with receiving ODA and military spending, aid received in previous years (i.e. time $t-1$ and $t-2$) is correlated with the current year's military spending (i.e. time t). There are three possible correlation outcomes: positive, negative or no correlation.²⁷ A lack of correlation between ODA and military spending would suggest that there is no linear relationship between the two—that is, changes in one are not consistently associated with changes in the other. In contrast, when one variable (military spending) increases as the other (ODA) increases, the correlation is positive; while when one decreases as the other increases there is a negative correlation.

²⁵ Government expenditure refers to general government expenditure as defined by the International Monetary Fund (IMF) World Economic Outlook (WEO), IMF WEO Database, Apr. 2019, <<https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx>>.

²⁶ Military spending (M) plus non-military spending (NM) must equal total government expenditure (G). Thus, the shares, $M/G + NM/G = 1$.

²⁷ The correlation is measured using a Pearson's correlation coefficient and is denoted from 1 through 0 to -1.



A scatter plot shows the changes in ODA and military spending as a share of government expenditure, where the annual change in ODA is represented on the horizontal axis and corresponding annual changes in military spending are represented on the vertical axis. Points on the scatter plot fall within one of four quadrants, each of which represents the direction of the change in ODA and military spending. A trend line can be used to show the direction of the correlation, if any, between ODA and military spending.²⁸ An upward sloping trend line crossing the bottom left and the top right is indicative of a positive relationship, while a trend line crossing the top left and the bottom right shows a negative relationship.²⁹

A history of armed conflict can be a unifying reason for both an increase in military spending and an increase in the level of ODA received by a given state. Income groups were therefore also subdivided into smaller samples according to experience of conflict. Conflict is known to reverse development, creating a need for ODA, and to drive military spending upwards. Experience of armed conflict can reasonably be associated with both ODA and military spending.³⁰ This interaction should be acknowledged as it can lead to misinterpretation of the data. For instance, if armed conflict is ignored, a concurrent increase in ODA and military spending might be mistakenly read as a case of aid *enabling* recipients to shift resources to increase military spending. Thus, it is useful to distil the relationship between ODA and military spending based on experience of conflict.

An effective way to assess whether a relationship exists between ODA and military spending is to look at the correlation between the two

The third part of this study analyses trends in ODA and military spending between 2008 and 2017 in selected states. To minimize selection bias, extreme cases—or those furthest from the distribution mean—were chosen. Extreme cases are a valuable resource for exploratory studies as they probe possible relationships in an open-ended manner.³¹ Figure 1 helps to identify cases of interest. Extreme cases are usually chosen based on the value of the dependent variable. However, cases where both ODA and military spending are high are of particular importance here, and thus countries with the share of both ODA and military spending being above the average for low-income states are prime choices for case studies.

The correlations in the second part of the study describe whether there is any association between these variables, its strength and direction—positive or negative. Case studies can provide further insight into how these two variables evolve and the possible explanations for their behaviour. The case studies can also address other explanatory factors omitted from the correlations.

²⁸ The trend line in this case is the best fit line for all the data points in the scatter plot. This is determined by minimizing the square distance between the line and all the points in the scatter plot.

²⁹ The trend line (the predicted effect of ODA on military spending) is plotted at 95% confidence intervals (upper and lower bounds). This means that 95% of the time, the true population mean (i.e. military spending) lies within the bounds of the upper and lower intervals.

³⁰ Collier and Hoeffler (note 3).

³¹ Seawright, J. and Gerring, J., 'Case selection techniques in case study research: A menu for qualitative and quantitative options', *Political Research Quarterly*, vol. 61, no. 2 (June 2008).

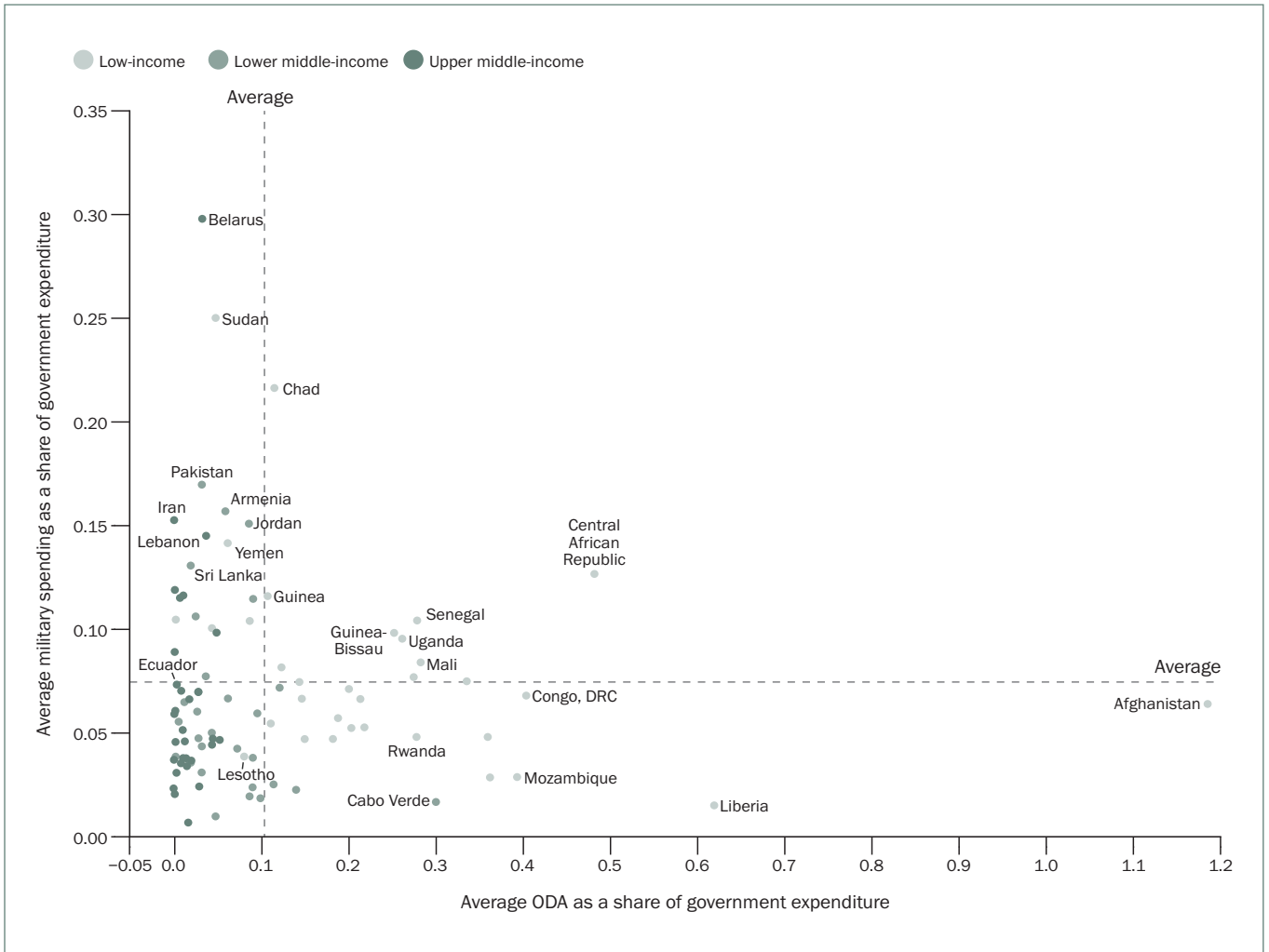


Figure 1. Average share of military spending and official development assistance (ODA) in government expenditure, 2008–17

Sources: SIPRI Military Expenditure Database, <<https://www.sipri.org/databases/milex>>; OECD data, <<https://data.oecd.org>>; and IMF World Economic Outlook Database, <<https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx>>.

Measuring military spending and official development assistance

To assess the relationship between ODA and military spending, this study uses military spending data from SIPRI, ODA data from the OECD DAC and data on total government expenditure from the International Monetary Fund’s World Economic Outlook. Combined, this data covers 93 ODA recipient states for the period 2008–17.³² A list of the states by income group included in the study can be found in annex 1.

The SIPRI definition of military spending includes all current and capital expenditure on: (a) the armed forces, including peacekeeping forces; (b) defence ministries and other government agencies engaged in defence projects; (c) paramilitary forces, when judged to be trained and equipped for military operations; and (d) military space activities. Measuring military

³² The data was obtained in Apr. 2019 from the SIPRI Military Expenditure Database, <<https://www.sipri.org/databases/milex>>; OECD data, <<https://data.oecd.org>>; and the IMF World Economic Outlook Database, <<https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx>>.



spending as a share of total government spending highlights the policy choices and budgetary preferences of a given state in a given year.³³

The OECD DAC provides data on ODA in two forms: in millions of US dollars and as a share of the GNI of the donor state.³⁴ To perform a comparison between what is received as ODA and what a recipient state spends on its military, this study converts ODA in millions of US dollars to ODA received as a share of the recipient's total government expenditure. For the purposes of this research, ODA includes all the financial resources and technical assistance that have been transferred from the donor to the recipient state. This includes donor-implemented projects that do not involve a financial transfer to the recipient, as these are still counted as ODA to the recipient.

This study uses the Uppsala Conflict Data Program's (UCDP) definition of armed conflict. A state is considered to be in an armed conflict if battle-related deaths reach a threshold of 25 in a calendar year. Armed conflict includes interstate, intrastate, extra-systemic (i.e. between a state and a non-state group outside the state's territory, where the government side is fighting to retain control of a territory outside the state system) and internationalized internal conflict.³⁵

IV. How do ODA recipients allocate military spending?

Figure 1 is a scatter plot of military spending (vertical axis) and ODA (horizontal axis), each measured as an average share of total government expenditure for the 93 ODA recipients for which SIPRI has data, for the period 2008–17. For ease of interpretation and comparison, income groups are distinguished by colour.

ODA recipients on average received the equivalent of 10 per cent of their government expenditure in assistance between 2008 and 2017. Afghanistan was exceptional as it received ODA equivalent to an average of 118 per cent of its annual government expenditure in this period.³⁶ Liberia had the second-highest share, with ODA equivalent to an average of 62 per cent of its annual government expenditure between 2008 and 2017.

Low-income states received the most ODA as a share of their government expenditure, as reflected in their positions to the right of the average line (see figure 1). On average, these states' ODA was equivalent to 25 per cent of their government expenditure. Lower middle-income states received less ODA, corresponding to an average of 6.7 per cent of their total government expenditure. As expected, upper middle-income states are found to the left side of the scatter plot, as ODA does not equate to a large proportion of their government expenditure. Their average share of ODA to total government

³³ Military spending can also be measured in constant US dollars to control for inflation, which is a useful indicator for assessing spending trends over time. Another possibility is to report military spending as a share of GDP (i.e. the military burden), which is a rough indicator of the proportion of resources used for military activities and therefore of the economic burden imposed on the national economy.

³⁴ OECD iLibrary, 'Net ODA, 1960–2017', [n.d.].

³⁵ For more information see Uppsala Conflict Data Program (UCDP), *UCDP/PRIO Armed Conflict Dataset Codebook*, Version 19.1, (UCDP: Uppsala, 2019).

³⁶ Afghanistan is an outlier but, even when excluded from the calculations, the average ODA as a share of government spending for all states falls by only 0.08 percentage points.



expenditure was 1.7 per cent for 2008–17, almost 15 times smaller than that of low-income states. While outliers do exist, there is a clear pattern in the distribution of income groups along the average line for ODA: poorer states receive more support and thus rely on ODA to a greater extent than richer states.

For military spending as a share of government expenditure, the distribution of the income groups along the average line is less clear. On average, ODA recipients allocated about 7.2 per cent of their government expenditure to the military in 2008–17. Belarus, which is an upper middle-income state, stands out as an outlier as it spent almost one-third of its government expenditure on its military, followed by Sudan (a low-income state) at 25 per cent. These outliers are far from the norm but do not affect the overall average share of military spending in total government expenditure to any great extent.³⁷

On average, upper middle-income and lower middle-income states allocated similar shares of their government expenditure to the military between 2008 and 2017, at 6.9 and 6.2 per cent respectively. In low-income states—precisely those most in need of investment in development-related areas—the average was higher, at 8.2 per cent. In 2008–17 the 10 states that had the highest military spending as a share of government expenditure, distributed among the income groups, were: (a) three upper middle-income states: Belarus, Iran and Lebanon; (b) four lower middle-income states: Armenia, Jordan, Pakistan and Sri Lanka; and (c) three low-income states: Chad, Sudan and Yemen. This suggests that, unlike ODA, military spending as a share of government expenditure does not have a linear relation to income group.

An analysis of the quadrants of the scatter plot in figure 1 highlights different patterns of interaction between ODA and military spending. In the lower left quadrant are the states with below-average shares of both ODA and military spending. This portion of the scatter plot is composed mainly of lower middle-income and upper middle-income states, the only exception being Lesotho. The upper left quadrant consists of states that spent above the 93-state average share on military spending but received lower than average amounts of ODA. Military spending in this group ranges from a low of 7.3 per cent of total government expenditure in Ecuador to a high of almost 30 per cent in Belarus.³⁸

The states in the right quadrants of the scatter plot are the cases of most interest to this research, as they are the most reliant on ODA. Low-income states are predominant in both quadrants. In addition to Afghanistan (118 per cent), the two other noteworthy low-income states with a heavy reliance on ODA as a share of their government expenditure are Liberia (62 per cent) and the Central African Republic (CAR; 48 per cent).

Low-income states received the most ODA as a share of their government expenditure

³⁷ When Belarus is excluded from the calculations, the average falls by only 0.02 percentage points.

³⁸ Belarus's high share of military spending in government expenditure can be explained by its proximity to, and the perceived threat of, Russia. Tian, N. et al., 'Global developments in military expenditure', *SIPRI Yearbook 2020: Arms, Disarmament and International Security* (Oxford University Press: Oxford, forthcoming).



In the lower right quadrant are the states where high levels of reliance on ODA occur alongside below-average military spending as a share of government expenditure. More interesting, however, are the states in the upper right quadrant, where both the share of ODA and military spending as a proportion of government expenditure are above average. The large share of total resources allocated to the military contrasts with the high development needs of these states.

All the states in the upper right quadrant are low-income states. While it is not surprising that many of these states have a high proportion of their government expenditure supplemented by ODA, what their levels of military spending indicate is less clear. Given the lack of development and the opportunity cost of military spending, section V focuses on low-income states and whether changes in ODA are related to changes in the share of military spending in government expenditure.

V. Do changes in military spending correlate with changes in ODA in low-income states?

Figure 2 is a scatter plot of the annual changes in the share of military spending in government expenditure (vertical axis) and in the share of ODA in government expenditure (horizontal axis) for low-income states, for the period 2008–17. Each point represents an individual state's year-on-year change. For instance, ODA and military spending as a proportion of government expenditure in Chad both shrank in 2014, by around 0.4 and 0.6 percentage points respectively. These changes are shown in the lower left quadrant of the scatter plot. Conversely, in 2017, ODA as a proportion of government expenditure in Togo increased by 0.5 percentage points, coinciding with an increase in military spending as a share of government expenditure of 0.3 percentage points. As both were positive, Togo's changes in that year are located in the upper right quadrant.

Figure 2 provides insight into changes in ODA and the corresponding changes in military spending by state and year. Overall, the points plotting the changes in both ODA and military spending as a share of government expenditure are dispersed in such a way that a positive trend line can be identified. The same operations were performed for the lower middle- and upper middle-income groups with no evidence of a correlation or trend for either group.

The positive trend line for low-income states, crossing the lower left quadrant and the upper right quadrant, means that shares of ODA and military spending are moving in the same direction: increases in ODA shares are associated with increases in military spending shares, while decreases in ODA shares are associated with decreases in military spending shares. On average, an increase in the ODA share of one percentage point is associated with a 0.09 percentage point increase in the share of military spending. The same percentage point relationship can be observed for a decrease in ODA share.

One concern with the correlation in figure 2 is that it does not capture the possible time lag associated with receiving ODA and government spending decisions. Since it is possible to argue that foreign aid affects a government's decisions on budget allocations, the government may plan expenditure,

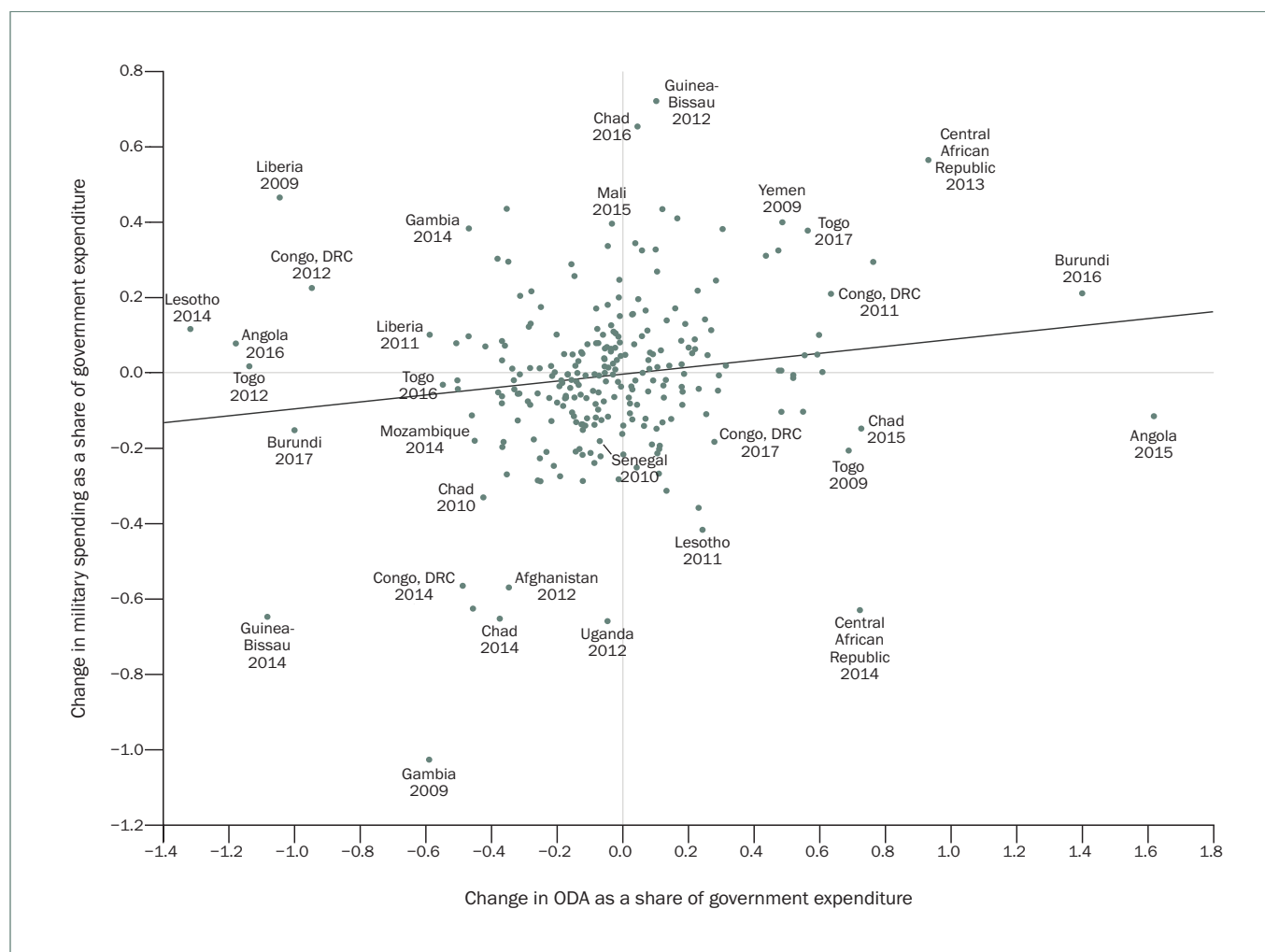


Figure 2. Annual change in official development assistance (ODA) and military spending as a share of government expenditure in low-income states, 2008–17

Note: The trend line in the figure is the best fit line for all the data points in the scatter plot. This is determined by minimizing the square distance between the line and all the points in the scatter plot. It is plotted at 95% confidence intervals (upper and lower bounds). This means that 95% of the time, the true population mean (i.e. military spending) lies within the bounds of the upper and lower intervals.

Sources: SIPRI Military Expenditure Database, <<https://www.sipri.org/databases/milex>>; OECD data, <<https://data.oecd.org>>; and IMF World Economic Outlook Database, <<https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx>>.

such as an increased allocation to the military, based on previous levels of ODA. Thus, the correlation of interest is that between the change in military spending as a share of government expenditure at time t (i.e. the current year) and the change in ODA as a proportion of government expenditure at time $t-1$ and $t-2$ (i.e. aid received in previous years). The correlation was therefore replotted using military spending at time t and ODA as a proportion of government expenditure at time $t-1$ and $t-2$. The result of this robustness exercise was the same as shown in figure 2.³⁹ This suggests that both current and past levels of ODA are correlated to spending decisions in aid recipient countries.

³⁹ This correlation is statistically significant at the 5% significance level.

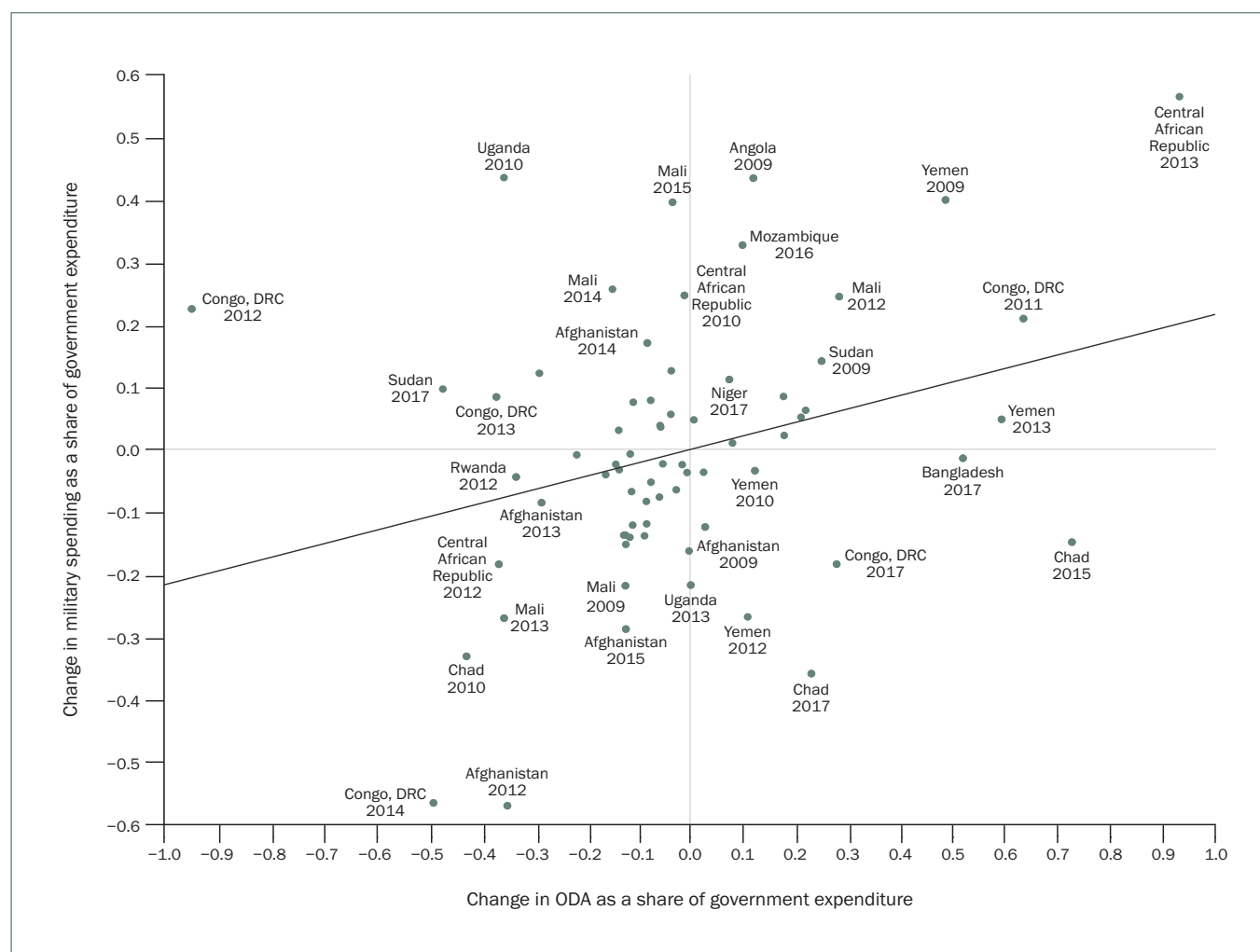


Figure 3. Annual change in official development assistance (ODA) and military spending as a share of government expenditure in low-income states, years with armed conflict, 2008–17

Note: The trend line in the figure is the best fit line for all the data points in the scatter plot. This is determined by minimizing the square distance between the line and all the points in the scatter plot. It is plotted at 95% confidence intervals (upper and lower bounds). This means that 95% of the time, the true population mean (i.e. military spending) lies within the bounds of the upper and lower intervals.

Sources: SIPRI Military Expenditure Database, <<https://www.sipri.org/databases/milex>>; OECD data, <<https://data.oecd.org>>; and IMF World Economic Outlook Database, <<https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx>>.

Observations in the upper right quadrant of figure 2—where ODA and military spending increase concomitantly—are likely to be explained by the presence of armed conflict. Countries ravaged by violent conflict may require both more ODA and more resources for the military. In that sense, all these elements are potentially intertwined.

Figure 3 is a scatter plot of annual changes in ODA and military spending of all the low-income states that have experienced some form of armed conflict in the period 2008–17. For low-income conflict-affected states, higher ODA as a share of government expenditure is also positively correlated with changes in military spending as a share of government expenditure.⁴⁰ The results in figure 3 not only support the findings in figure 2, but also show a stronger

⁴⁰ This correlation is statistically significant at the 5% significance level.



correlation—that is, a steeper trend line and a larger correlation coefficient. On average, an increase in ODA by one percentage point is associated with a 0.22 percentage point increase in military spending, and vice versa.

Figures 2 and 3 provide consistent observations on the association between changes in ODA and military spending as a share of government expenditure in low-income states. Nonetheless, any correlation must be treated with caution for two key reasons. First, the correlation coefficient is relatively weak. Second, unidentified factors could explain the matching trends between ODA and military spending, making this a spurious correlation. This section has only considered the role of income level and experience of conflict, but other factors such as the nature of the political regime in a given state could also be important.

While the correlations in figures 2 and 3 provide some insight into the relationship between the changes in ODA and military spending across states over a 10-year period, they do not provide insight into outliers or explain the country-specific factors that affect expenditure priorities. Moreover, they do not provide reasons as to why a state may be in receipt of aid for extended periods. For example, figure 3 shows that changes in ODA and military spending as a share of government expenditure in the CAR were correlated. However, this observation says little or nothing about the CAR's levels of ODA and military spending as a share of government expenditure at the start of 2008 or the end of 2017. Important questions, such as whether the CAR was increasing its share of ODA and military spending in government expenditure, cannot be answered using cross-country correlations alone. Section VI therefore provides an analysis of country-specific trends in ODA and military spending as a proportion of government expenditure.

VI. Country case studies

This section analyses specific states where heavy reliance on ODA is combined with a high proportion of total government expenditure being allocated to military spending (see figure 1). Extreme cases, or those furthest from the average, are of particular interest because they embody two contending features: a pressing need to finance development and large allocations for military spending as a proportion of government expenditure. By looking at specific cases, this section disentangles the correlation presented in section V and attempts to illustrate the complexities of the relationship between ODA and military spending. It traces the evolution of ODA and military spending over the period 2008–17—a dimension that is absent from sections IV and V.

Five low-income states meet the criteria: the CAR, Mali, Guinea-Bissau, Senegal and Uganda. These states' shares of ODA and military spending are above the average of their income group and of the entire sample. Afghanistan is also included in the analysis because it is an outlier. Its reliance on ODA, at an average of 118 per cent of government expenditure, is the greatest of all recipients, and its military spending as a proportion of government expenditure is below average for ODA recipients because most of its military spending is covered by external donors.



The six selected country cases

Central African Republic

Armed conflict broke out in the CAR in 2012. Seleka forces—a coalition of mostly Muslim armed rebel groups—began an offensive against the government and seized control of the capital and largest city, Bangui. As the attacks gained momentum, Seleka forces carried out a coup in March 2013. Violence ensued when the, mainly Christian, Anti-balaka armed group rose up against the Seleka, plunging the country into conflict and a humanitarian crisis.⁴¹ In 2014, following international pressure, there was a power shift towards a transitional government. These events are reflected in the CAR's allocation of military spending as well as in the ODA it received. Aid spiked in the aftermath of the outbreak of conflict, mostly to address the worsening living conditions in conflict-affected areas. The German Government, for instance, funded projects to enhance the humanitarian support provided to refugees and internally displaced persons.⁴² Between 2012 and 2015, ODA as a proportion of government expenditure increased from 11 per cent to 108 per cent (see figure 4).

The CAR exemplifies how armed conflict can be a driver of both ODA and military spending

The onset of armed conflict caused military spending to rise from 11 per cent of government expenditure in 2012 to nearly 21 per cent in 2013. Regional stakeholders brokered a peace deal in 2014, at which time military spending as a proportion of government expenditure returned to 11 per cent. The UN Multidimensional Integrated Stabilization Mission in the Central African Republic (MINUSCA) was established in 2014 to protect civilians and disarm warring parties, but violence persists among some factions. The continuing fighting partly explains the maintenance of elevated levels of military spending as a proportion of government expenditure even after the peace deal (see figure 4).⁴³

The CAR exemplifies how armed conflict can be a driver of both ODA and military spending. In 2013 the CAR's economy shrank by 36 per cent and 75 per cent of the population in 2019 was living on less than \$1.90 a day.⁴⁴ The conflict has wreaked havoc, shifting resources to military spending while also stimulating inflows of external aid. This coupling reaffirms the need to account for armed conflict in aggregate correlations, as noted above.

Mali

In January 2012 violence erupted in northern Mali following a rebel uprising by the Tuaregs, who were seeking self-determination. Extremist jihadist groups subsequently took the opportunity to pursue their own violent conflict as an Islamist insurgency. In the wake of the increased violence, the Malian armed forces overthrew the elected president, Amadou Toumani

⁴¹ Davis, I. and Melvin, N., 'Armed conflict in sub-Saharan Africa', *SIPRI Yearbook 2019: Armaments, Disarmament and International Security* (Oxford University Press: Oxford, 2019), pp. 129–31.

⁴² German Federal Ministry for Economic Cooperation and Development, 'Germany is supporting the Central African Republic with a contribution for food and health care', 14 Mar. 2014.

⁴³ Eyssen, B., 'Central African Republic peace deal: Violated and fragile', *Deutsche Welle*, Aug. 2019; and Losh, J., 'Central African Republic seeks a salve for the scars of war', *The Guardian*, 29 Nov. 2019.

⁴⁴ World Bank Group, World Development Indicators Database, Dec. 2019, <<https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=CF>>.

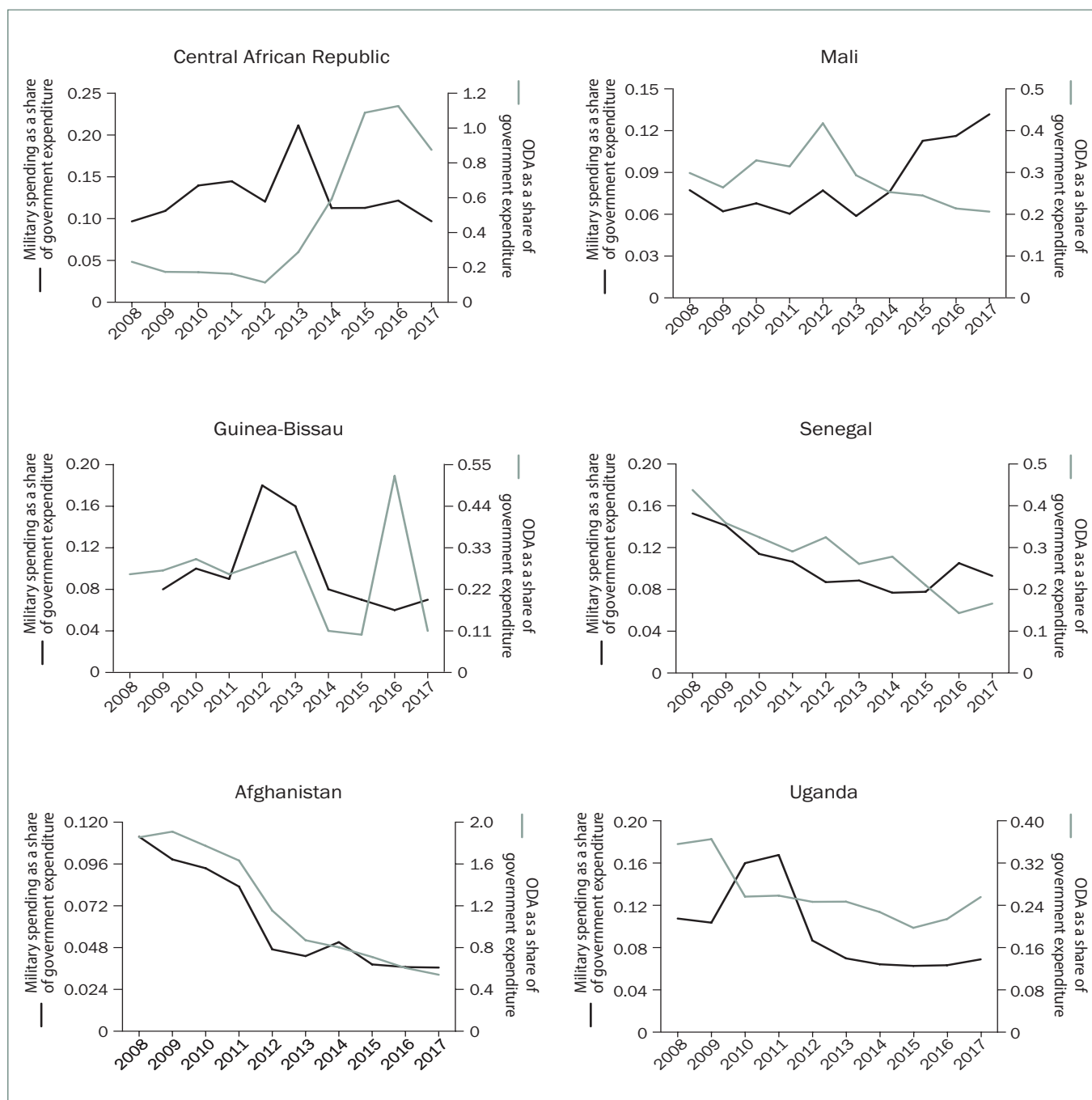


Figure 4. Official development assistance (ODA) and military spending as a share of government expenditure in selected states, 2008–17

Sources: SIPRI Military Expenditure Database, <<https://www.sipri.org/databases/milex>>; OECD data, <<https://data.oecd.org>>; and IMF World Economic Outlook Database, <<https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx>>.

Touré, in a coup. The military accused Touré of mishandling the rebellion and neglecting the army, leaving it ill-equipped.⁴⁵

In 2013 deteriorating security conditions led to Operation Serval, a UN-approved, French-led military intervention in collaboration with the Malian Government, in particular to fight the extremist jihadist groups

⁴⁵ Nossiter, A., 'Soldiers overthrow Mali government in setback for democracy in Africa', *New York Times*, 22 Mar. 2012.



in northern Mali.⁴⁶ Mali's military had been unable to match the violent groups, and had retreated from several cities as Tuareg and jihadist forces advanced.⁴⁷ The insurgents were heavily armed with weapons seized in Libya.⁴⁸ To improve combat conditions, military spending as a proportion of government expenditure has increased continuously since 2013, and reached over 13 per cent in 2017.

Since the military coup in 2012, ODA has fallen in absolute terms, as donors responded to the breakdown of democracy. The European Union (EU) cut aid and the World Bank suspended funds to Mali.⁴⁹ In addition to cuts, there has been a qualitative shift in ODA since 2012 as humanitarian aid has increased in relative importance to address food security issues and access to healthcare. ODA as a proportion of government spending has declined substantially since the coup, from 41 per cent in 2012 to 20 per cent in 2017.

Mali is facing a severe security crisis with an under-equipped military. Military provision has accounted for an increasingly large proportion of Mali's public expenditure while ODA has decreased in both absolute and relative terms. Military spending and ODA as a proportion of government expenditure have taken diverging paths since 2013 (see figure 4). In that sense, Mali is distinct from the CAR. While security concerns dictate the increasing shares of military spending in both cases, the stance of donors in the wake of the military coup in 2012 reduced Mali's access to ODA.

Guinea-Bissau

Armed conflict may not be the only driver of increased military spending as a proportion of government expenditure. Other possible factors are political instability and the military's influence on government decision making in a given state. These factors appear to be of particular importance in the case of Guinea-Bissau. Its armed forces have routinely intervened in politics since the country gained independence from Portugal in 1974. Since then, there have been numerous coups (the most recent of which was in 2012) and attempted coups, which have destabilized Guinea-Bissau's institutions.⁵⁰

Since 2011, Angola has been supporting Security Sector Reform (SSR) activities in Guinea-Bissau as part of wider efforts, alongside the EU and the Community of Portuguese Speaking Countries (Comunidade dos Países de Língua Portuguesa, CPLP), to reform and promote civilian control over Guinea-Bissau's military. The armed forces opposed these reforms and claimed that Angola intended to take control of Guinea-Bissau's natural resources.⁵¹ Immediately after the 2012 coup, military spending as a proportion of government expenditure rose from 8.7 per cent in 2011 to 18 per cent in 2012.

⁴⁶ United Nations Peacekeeping, 'MINUSMA fact sheet: United Nations Multidimensional Integrated Stabilization Mission in Mali', Updated 26 Mar. 2020.

⁴⁷ Polgreen, L., 'Mali army, riding US hopes, is proving no match for militants', *New York Times*, 24 Jan. 2013.

⁴⁸ Patrick, S. M., 'Collateral damage: How Libyan weapons fueled Mali's violence', Council on Foreign Relations Blog, 23 Jan. 2013.

⁴⁹ Nossiter, A., 'Leaders of Mali's military coup seem to have uncertain grasp on power', *New York Times*, 23 Mar. 2012.

⁵⁰ Powell, J. and Besaw, C., 'Understanding coup risk in Guinea-Bissau', *Political Violence at a Glance*, 25 Mar. 2019.

⁵¹ Kohl, C., *The Reform of Guinea-Bissau's Security Sector: Between Demand and Practice*, Peace Research Institute Frankfurt (PRIF) Report no. 126 (PRIF: Frankfurt, 2014).



ODA as a proportion of government expenditure fell in the years following the coup, from 32 per cent in 2013 to 11 per cent in 2014. In 2014 the military government handed over power after a general election, opening up a pathway for the return of democracy. The election of a new government led to improved relations with donors. The EU restored its ties and resumed aid flows. In 2016 ODA as a proportion of government expenditure spiked at 51 per cent following a \$106 million aid package of debt relief (see figure 4).

Military spending as a proportion of government expenditure has remained at 6–8 per cent since 2014. Given Guinea-Bissau's harsh economic conditions—it is among the poorest and most fragile states in the world—and its high propensity for military coups, this level of military spending as a proportion of government spending remains a concern with regard to both its future stability and its ability to achieve sustainable development. Unlike Mali or the CAR where armed conflict is the main driving influence on military spending, in Guinea-Bissau it is largely the political role of the military that affects the proportion of public expenditure devoted to military spending.

Senegal

Senegal is the only country among the six discussed in this section that is not categorized by the OECD as a fragile state.⁵² Senegal has made significant progress with political and economic reform since the end of the conflict with the separatist Movement of Democratic Forces of Casamance (Mouvement des forces démocratiques de Casamance, MFDC) in 2001, and was by 2019 regarded as one of Africa's most stable states.⁵³ Since 2014, the economy has grown by more than 6 per cent per annum and poverty levels have fallen. In this context, ODA as a proportion of government expenditure declined from 44 per cent in 2008 to 16 per cent in 2017. Aid was used mostly to fund projects related to social infrastructure, or to foster economic activity.⁵⁴ In addition, economic growth has enabled Senegal to raise revenue and promote policies oriented to domestic development.

Senegal also cut its military spending as a proportion of government expenditure during the 2008–17 period. In 2008 military spending accounted for 15 per cent of public expenditure—more than twice the average for ODA recipients. By 2017 it had shrunk to 9.3 per cent, closer to the average for ODA recipients. In 2011 there were minor skirmishes between the government and MFDC forces, but these were not sufficient to affect the declining trend.⁵⁵

Peace is a significant explanatory factor in Senegal's shift towards less reliance on ODA and a smaller proportion of military spending in its government expenditure. Senegal therefore provides a useful comparison with the other cases, as an example of how the absence of conflict can allow a more development-oriented allocation of resources. Senegal's military spending

Senegal is an example of how the absence of conflict can allow a more development-oriented allocation of resources

⁵² OECD, 'States of fragility', [n.d.].

⁵³ Leichtman, M., 'The exception: Behind Senegal's history of stability', *The Conversation*, 14 Mar. 2019.

⁵⁴ OECD, 'Compare your country: Aid statistics by donor, recipient and sector' (Recipient view), 'Senegal: country profile' (charts showing gross disbursements of ODA in 2017).

⁵⁵ BBC News, 'Casamance "MFDC rebels" kill Senegal soldiers', 21 Dec. 2011.



as a proportion of government expenditure remains above the average for ODA recipients but the declining trend is positive for development.

Uganda

In the case of Uganda, ODA and military spending as a share of government expenditure appear to be moving in the same direction—both decreasing over the period 2008–17—supporting the result described in section V.

While Uganda was affected by armed conflict in the period 2008–17, the severity was far lower than in countries such as Afghanistan, the CAR or Mali. The conflict, which is ongoing, mostly consists of minor skirmishes with the remaining elements of the Lord's Resistance Army, which has been active since around 1987, and the Allied Democratic Forces, a jihadist group active since the mid-1990s.⁵⁶ Over the period 2008–17 Uganda's military spending increased in absolute terms but did not keep pace with the overall higher level of government spending in the period, which explains the fall in military spending as a share of government expenditure. This was also the case for ODA received as a share of government expenditure.

The case of Uganda thus serves as an important example of the need to assess the correlation between military spending and ODA in the wider economic context. Based on a simple assessment of the trends, it might be assumed that military spending fell in Uganda in 2008–17 in response to the improving security situation there and to cover a decrease in aid as a share of government spending. However, the reality is that both military spending and ODA increased in absolute terms over the period. As noted above, the decreases in military spending and ODA as shares of government expenditure can be attributed to a substantial increase in government expenditure. The improved security environment fostered economic growth and offered the Ugandan Government the opportunity to boost overall spending. The government allocated greater financial resources to non-military spending during 2008–17, which indirectly supported development.

Similar to the case of Senegal, the improved security situation in Uganda and the move towards peacebuilding appear to have paved the way for a more development-centric strategy. In this way, Uganda and donors are together sharing the 'burden' of development.

Afghanistan

As mentioned above, Afghanistan is by far the largest recipient of ODA as a proportion of government expenditure. This aid has mostly been used to finance projects that address Afghanistan's weak state capacity and its poor security environment. As Afghanistan's largest donor between 2008 and 2017, the United States sought to strengthen state capacity by financing projects related to fiscal sustainability and the supply of essential public goods.⁵⁷ Aid from all donors to Afghanistan decreased in the latter part of the period as a reaction to widespread corruption.⁵⁸ Although ODA declined

⁵⁶ Nantulya, P., 'The ever-adaptive Allied Democratic Forces insurgency', Africa Center for Strategic Studies, 8 Feb. 2019.

⁵⁷ OECD, 'Compare your country' (note 54), 'Afghanistan: Country profile' (charts showing gross disbursements of ODA in 2017).

⁵⁸ Danish, J., 'Afghanistan's corruption epidemic is wasting billions in aid', *The Guardian*, 3 Nov. 2016.



from 185 per cent of government expenditure in 2008 to 54 per cent in 2017, it remained well above the average of all ODA recipients and of low-income ODA recipients.

At 6.4 per cent for 2008–17, Afghanistan's average military spending as a proportion of government expenditure was below the average for ODA recipients. Between 2008 and 2017, military spending as a proportion of government expenditure fell from 11 per cent to 3.6 per cent. That proportion, however, is not representative of Afghanistan's total military effort as it does not include military aid. In 2017 about \$4.5 billion in military aid was provided to Afghanistan through the US Agency for International Development (USAID).⁵⁹ SIPRI's methodology excludes military aid from the military spending of the recipient country and so Afghanistan's military spending figures do not include these amounts. The inclusion of military aid would move Afghanistan far above the average, to the extreme corner of the upper right quadrant of figure 1.

As the USA looks for further ways to withdraw its troops from Afghanistan, Afghanistan will increasingly have to bear the costs of providing its own security. This is likely to lead to increases in military spending as a proportion of government expenditure.⁶⁰ If the declining trend for ODA continues, Afghanistan's capacity for development will be severely reduced. This predicament is worsened by Afghanistan's weak state capacity: public expenditure is currently much higher than tax revenues. A 2019 report estimated government revenues at just one-fifth of total expenditure.⁶¹

Summary of the cases

The six country case studies discussed above contain elements that complement the interpretation of the scatter plots and correlations. Conflict was the major driver of both ODA and military spending in most cases, while in one case, Guinea-Bissau, instability of the political regime had an important effect on military spending and ODA. Most cases demonstrate that the outbreak of violence absorbs a significant share of public expenditure, shifting resources that could otherwise be used to fund development-related activities. Thus, conflicts have not only direct costs in terms of diverting funds to military spending, but also indirect costs linked to loss of life, the destruction of capital assets and a halt in investment. ODA provides some relief from this dire situation.

Conversely, peace is a fertile environment for sustainable development. In Senegal, economic growth led to military spending falling as a proportion of government expenditure, allowing it to pursue development. For Uganda, it was an improvement in the country's security situation that fostered economic growth and allowed for higher levels of government expenditure and lower reliance on external aid. Nonetheless, the absence of conflict is

⁵⁹ US Agency for International Development, 'US foreign aid by country', Updated 20 Feb. 2020.

⁶⁰ Gibbons-Neff, T. and Barnes, J., 'NATO eyes troop reductions in Afghanistan as US draws down', *New York Times*, 5 Feb. 2020. See also Thomas, C., *Afghanistan: Background and US Policy in Brief*, Congressional Research Service (CRS) Report for Congress R45122 (US Congress, CRS: Washington, DC, Updated 31 Jan. 2020).

⁶¹ International Bank for Reconstruction and Development and World Bank, *Financing Peace: Fiscal Challenges and Implications for a Post-settlement Afghanistan* (World Bank: Washington, DC, 2019).



not a sufficient condition for economic development. Institutions must be strengthened against vested interests. In Guinea-Bissau, the involvement of the military in politics increased the level of military spending. Reforming military institutions, especially budgeting practices, can lead to a more appropriate allocation of resources. This might be difficult in Guinea-Bissau, however, as attempts to achieve such an outcome led to the military coup in 2012. In the case of Afghanistan, corruption and the misuse of aid have led donors, notably the USA, to withdraw aid. Military spending as a proportion of government expenditure has also declined in Afghanistan, but any cuts are likely to have been offset by increases in military aid.

The six cases illustrate how diverse the relationship between ODA and military spending can be. Conflict was a major driver of both in most cases, but other elements, such as stability of the political regime and economic performance, also appear to have had an important role. The only known case where misuse of aid took place was in Afghanistan. However, it is unlikely that the diverted funds went to the military, as this sector was generously funded through military aid.

VII. Conclusions

This SIPRI Insights has explored the relationship between ODA and military spending. The main finding is that these two elements are particularly entangled in low-income states. Besides being the largest recipients of ODA on average, low-income economies are also the states that on average allocate the highest share of their government expenditure to the military. This group of countries are also the most resource-constrained and face the largest opportunity cost in military spending.

Annual changes in ODA were positively correlated with military spending in low-income states. In other words, there was an association between increases in ODA and increases in military spending. Conversely, as ODA fell, military spending also fell accordingly. The apparent absence of correlations for the other income groups confirms the specificity of low-income states observed in section V.

Section VI focused on a few select cases to disentangle the correlations found in the trend lines and scatter plots. They suggested that the existence of armed conflict is an important explanatory factor driving the variations in ODA and military spending. Above all, however, the cases showed that other elements, such as the role played by the military at the political level and strong economic performance, are also relevant.

The above results derive from the use of descriptive statistics and correlations. Inferential studies could increase understanding of the possible interactions between ODA and military spending, as well as the potential causal paths. To achieve these aims, one must take into account other relevant elements. At the same time, qualitative case studies could provide further support for quantitative evidence, explore alternative causal paths or even introduce other variables. Comprehensive quantitative approaches combined with qualitative case studies have proved useful in highlighting the need for mixed methods research on the matter. Future research should

Peace is a fertile environment for sustainable development



seek to combine inferential statistical techniques with qualitative analyses of relevant cases.

The relationship between ODA and military spending is an ongoing debate in both academic and policy fields. One hypothesis often put forward in the literature argues that aid frees up resources in recipient states, allowing them to increase their military spending. However, the correlations and case studies discussed in this paper do not support this theory. The correlations at the aggregate level for low-income states do find a positive relationship between ODA and military spending—but this relationship is also influenced by the existence of armed conflict, stability of the political regime and economic performance. In particular, accounting for conflict increased the correlation coefficient and led to results more statistically significant than when this factor was not considered. Thus, conflict contributes to both higher military spending as a proportion of government spending and the need for ODA. In contrast, sustained peace appears to help to decrease military spending in low-income states and reduce their reliance on external aid.


Annex 1. List of official development assistance recipients included in this paper

Low-income	Lower middle-income	Upper middle-income
Afghanistan	Armenia	Albania
Angola	Bolivia	Algeria
Bangladesh	Cameroon	Argentina
Benin	Cabo Verde	Azerbaijan
Burkina Faso	Côte d'Ivoire	Belarus
Burundi	Egypt	Belize
Cambodia	El Salvador	Bosnia and Herzegovina
Central African Republic	Georgia	Botswana
Chad	Ghana	Brazil
Congo, Democratic Republic of the	Guatemala	Chile
Ethiopia	Honduras	Colombia
Gambia	Indonesia	Dominican Republic
Guinea	Jordan	Ecuador
Guinea-Bissau	Kenya	Fiji
Lesotho	Kosovo	Gabon
Liberia	Kyrgyz Republic	Guyana
Madagascar	Moldova	Iran
Malawi	Mongolia	Iraq
Mali	Morocco	Jamaica
Mauritania	Nicaragua	Kazakhstan
Mozambique	Nigeria	Lebanon
Nepal	Pakistan	Mauritius
Niger	Papua New Guinea	Mexico
Rwanda	Sri Lanka	Montenegro
Senegal	Tajikistan	Namibia
Sierra Leone	Tunisia	Paraguay
Sudan	Ukraine	Peru
Tanzania	Vietnam	Serbia
Togo		Seychelles
Uganda		South Africa
Yemen		Turkey
Zambia		Uruguay
Zimbabwe		

SIPRI is an independent international institute dedicated to research into conflict, armaments, arms control and disarmament. Established in 1966, SIPRI provides data, analysis and recommendations, based on open sources, to policymakers, researchers, media and the interested public.

GOVERNING BOARD

Ambassador Jan Eliasson,
Chair (Sweden)
Dr Vladimir Baranovsky
(Russia)
Espen Barth Eide (Norway)
Jean-Marie Guéhenno (France)
Dr Radha Kumar (India)
Ambassador Ramtane
Lamamra (Algeria)
Dr Patricia Lewis (Ireland/
United Kingdom)
Dr Jessica Tuchman Mathews
(United States)

DIRECTOR

Dan Smith (United Kingdom)



STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE

Signalistgatan 9
SE-169 72 Solna, Sweden
Telephone: +46 8 655 97 00
Email: sipri@sipri.org
Internet: www.sipri.org

SIPRI INSIGHTS ON PEACE AND SECURITY NO. 2020/8

MILITARY SPENDING AND OFFICIAL DEVELOPMENT ASSISTANCE IN RECIPIENT STATES: IS THERE A RELATIONSHIP?

NAN TIAN AND DIEGO LOPES DA SILVA

CONTENTS

I. Introduction	1
II. Official development assistance and military spending	2
Military spending and development	3
Possible channels of interaction	4
III. Analytical strategy and data	6
Analytical strategy	6
Measuring military spending and official development assistance	8
IV. How do ODA recipients allocate military spending?	9
V. Do changes in military spending correlate with changes in ODA in low-income states?	11
VI. Country case studies	14
The six selected country cases	15
Summary of the cases	20
VII. Conclusions	21
Annex 1. List of official development assistance recipients included in this paper	23
Figure 1. Average share of military spending and official development assistance in government expenditure, 2008–17	8
Figure 2. Annual change in official development assistance and military spending as a share of government expenditure in low-income states, 2008–17	12
Figure 3. Annual change in official development assistance and military spending as a share of government expenditure in low-income states, years with armed conflict, 2008–17	13
Figure 4. Official development assistance and military spending as a share of government expenditure in selected states, 2008–17	16

ABOUT THE AUTHORS

Dr Nan Tian (South Africa) is a Senior Researcher with the SIPRI Arms and Military Expenditure Programme, where he is responsible for monitoring and managing the SIPRI Military Expenditure Database. His research interests focus on the causes and impact of military expenditure and civil war.

Dr Diego Lopes da Silva (Brazil) is a Researcher with the SIPRI Arms and Military Expenditure Programme. He holds a PhD in Peace, Defense and International Security Studies from the São Paulo State University, Brazil. His current research concerns the interplay between institutions, political transitions and military spending.