

# Budgeting for Defence in the UK<sup>1</sup>

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## Introduction

The Labour Government, elected in July 2024, immediately commissioned a Strategic Defence Review.<sup>2</sup> The announcement said “Amid war in Europe after Putin’s illegal invasion of Ukraine, conflict in the Middle East, and global threats increasing, the review will consider the threats Britain faces, the capabilities needed to meet them, the state of UK armed forces and the resources available.” The focus of this paper is consideration of the resources available, choosing the defence budget, which the government will do in the context of a more general spending review. While the Prime Minister has reaffirmed his “serious commitment” to spending 2.5% of GDP on defence, no timetable has been given.

It is generally agreed that the current programme is both unaffordable and inadequate. The Ministry of Defence (MOD) forecasts that during the 10 years to 2032-33 total planned defence spending will exceed the projected defence budget by £42.5bn, NAO (2023, 2.8).<sup>3</sup> Rob Johnson, who had recently retired as the Director of the Office of Net Assessment and Challenge said “The UK armed forces ‘cannot defend the British homelands properly’ and are unprepared for ‘conflict at any scale’.”<sup>4</sup> John Healey in the announcement of the review said “we need a new era for defence. Hollowed-out armed forces, procurement waste and neglected morale cannot continue.”

Constructing a new defence budget will be central to the Review. But since defence budgets are quite opaque, an introduction to the numbers and issues may be useful. This paper will emphasise the choices to be made rather than suggest what those choices should be.

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<sup>1</sup> I am grateful for comments from Nick Vaughan and Andy Ross and at an MOD Lunchtime Lecture August 1 2024.

<sup>2</sup> Press release “New era for defence: government launches root and branch review of UK armed forces, 16 July 2024.

<sup>3</sup> The National Audit Office (NAO) under the Comptroller and Auditor General (C&AG) audits government accounts and conducts other investigations. It is responsible to Parliament, not the government, and reports to the Public Accounts Committee, (PAC).

<sup>4</sup> Financial Times 1 July 2024.

The Defence Review will need to balance a fragile fiscal position against a general perception of increased threat and growing international insecurity. Increasing the share of military expenditure in GDP to 2.5% by 2030 would possibly just be enough to finance the current force structure and planned equipment programme. Giving evidence to the Public Accounts Committee in January 2024 the MOD Permanent Secretary said “depending on the timing of a move to 2.5% of GDP, the plan could well be affordable as currently set out.”<sup>5</sup> But 2.5% of GDP will not be enough to also acquire extra capabilities to deal with increased threats. The war in Ukraine has indicated the need for, among other things, larger stockpiles and better air defence than currently planned. Adjusting to the new reality will require a serious reassessment with the withdrawal from service and cancellation of the procurement of less relevant capability.

The fragile fiscal position results from the fact that not only is there no money to spare, given present fiscal rules on debt and commitments on taxes, but there are also a range of other pressing demands on the government budget.<sup>6</sup> There is a National Health Service funding shortfall. Some local councils, universities and utilities like Thames Water are nearly bankrupt. There are large public sector pay awards. There is severe overcrowding in prisons and a justice system near collapse worsening the prison crisis. To balance the books, previous governments have relied on “if only” hopes: if only the economy would grow faster; if only big efficiency savings could be found in public provision; if only tax evasion and avoidance could be reduced. These hopes have not been realised.

The story of defence since World War II has been one of growing imbalances between resources, capabilities and commitments, temporarily resolved by defence reviews, where capabilities and commitments have to be sacrificed, but the underlying problems are not solved.<sup>7</sup> As Ben Wallace, then Defence Secretary said, in the foreword to MOD (2021p2): “Previous reviews have been over-ambitious and under-funded, leaving forces overstretched and under-equipped.” It might be argued that the 2024 review might be easier if defence spending is increased. However, in previous periods of increasing defence spending, while resources did grow, commitments grew faster, exacerbating the problems. This was the case

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<sup>5</sup> PAC, Oral evidence: Monday 22 January 2024, Q20.

<sup>6</sup> The Office of Budget Responsibility (OBR) March 2024 comment that the margin by which the budget meets the fiscal rules on their central forecast is a small fraction of the risks around that forecast. Some of the assumptions on which the central forecast is based, such as increasing fuel duty and public expenditure targets, OBR described as “fiscal forecast fictions”.

<sup>7</sup> HCL (2023) provides a brief guide to previous defence reviews.

during the New Cold War period from 1979 to 1985, of increased tension following the Soviet invasion of Afghanistan,

Since defence reviews tend to be at times of economic crisis they are often criticised as being budget driven rather than threat driven. But in defence planning these should be two sides of the same coin, the marginal security gain should equal the opportunity cost. To efficiently balance budget and threat was the aim of the planning, programming, budgeting system (PPBS) developed in the US in the 1960s. Although the information requirements for PPBS make it infeasible in practice, it remains a useful framework for thinking about the problem.

## **Planning, programming, budgeting, system**

Modern defence economics developed at RAND in the 1950s, was embodied in Hitch and McKean (1960) and implemented by Robert McNamara in the Pentagon. In the UK it was promoted as a framework for defence budgeting in the influential study Greenwood (1972). Planning involves setting objectives and developing a strategy to achieve those objectives, which determines the forces and capabilities needed over the next 10-20 years. Programming specifies how those forces and capabilities are to be acquired. Budgeting allocates the funding for the program. System ensures that everything is linked together, with appropriate procedures for management, control accountability and ensuring the equipment has the support that will enable it to provide capability.

Capability is the ability to carry out a task. NAO (2020, p1) say ‘military capability is not simply a piece of equipment such as a tank. Rather, it is a tank with a trained crew that: can communicate with others on the battlefield; can meet identified threats; and can be properly maintained and repaired during its lifetime’. In the UK the way the equipment is fitted into the system is described by the “Defence Lines of Development”: Concepts & Doctrine; Equipment; Information; Infrastructure; Interoperability; Logistics; Organisation; Personnel; and Training. These ‘enablers’ must be planned and put into the programme and budget. Thus, the cost of a capability such as a tank is not just the initial investment but also the costs of operating, maintaining and sustaining it.

While the military know that “failing to plan is planning to fail” they also know that “no plan survives contact with the enemy”. So it is with Defence Reviews. In practice, they chart a way forward that is rapidly reversed or outline a future policy that is never implemented, often because they are rapidly overtaken by unanticipated events. The Nott Review of 1981, which was going to reduce the Navy, was followed by the 1982 Falklands War, which depended on vessels

that were due to be scrapped. The 1990 Options for Change Defence Review was followed by the 1991 Gulf War. The Strategic Defence Review of 1998 was followed by 9-11 and the interventions in Afghanistan and Iraq. The Strategic Defence and Security Review of 2015 was followed by Brexit. The 2021 Integrated Review of Security, Defence, Development and Foreign Policy was followed by COVID and the Russian Invasion of Ukraine. The Integrated Review had to be “Refreshed” in 2023.

Nemeth and Dew (2024) provide a survey of the academic debates on recent defence reviews in the context of an organisational and strategic management perspective whereby the MOD seeks to maintain its corporate autonomy and avoid budgetary restriction. They comment, p37, “If there is one outstanding feature of UK defence policy it is the amazing long-term stability of the UK’s defence posture despite the regular drumbeat of turmoil created every time a strategic review is initiated.” An illustration of that continuity has been the number of defence reviews since 1964 that have announced that the UK is withdrawing from East of Suez, but commitments East of Suez keep creeping back again, needing a further withdrawal. Nemeth and Drew also note that the core concept of “balanced forces” has been the dominant theme in every British strategic review since the Cold War, as it has since World War II.

The quantitative manifestation of policy is the budget. Budgets are inputs designed to produce an output. In the case of defence that output is inherently difficult to measure and consequently so are the price and productivity of defence.<sup>8</sup> One might think of a military “Value Chain” in which budgets finance forces (personnel and equipment, soldiers and tanks); which are inputs to providing military capability (the ability to do particular things, such as transport and supply an armoured brigade); which contribute to meeting military objectives (prevail in combat) which through defence or deterrence contributes to security, the ultimate output. Of course, budgets are investments and much of the policies, forces and capabilities are inherited from the decisions made in previous budgets. Equipment contracts are also long term, making acquisitions expensive to cancel.

This description of linked elements makes it more precise than it is in practice. Each of the elements, security, capability, forces and even budgets are difficult to measure. Each of the links is very tenuous, and depend among other things on the effectiveness of: the procurement and maintenance of equipment; the recruitment, training and morale of the

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<sup>8</sup> The difficulties are discussed in Smith (2024).

troops; and the leaderships and choice of tactics and strategy. Very capable forces may prove ineffective as a result of bad leadership.

In principle, the planning process involves thinking forward to the security objective and then reasoning back through each stage that needs to be accomplished to reach that goal. This involves asking a series of questions. What will be the UK role in the world and its associated vital interests? What are the most likely threats to those interests? How much can we rely on our allies, particularly the US? What are the Capabilities (military or other) needed to meet the threats? What are the Forces needed to provide the required military capabilities? What is the Budget needed to provide those forces? How does the value of the possible security gains of the expenditure compare with the benefits of its alternative uses, the opportunity cost of defence? In a dynamic context one also needs to specify a discount rate that will determine how should the needs of current operations should be traded off against investing in future capabilities?

The answer to most of those questions is we have no idea and much of defence policy is reactive: responding to unpredicted events. But in order to plan the MOD has to try and answer them. MOD (2023 p4) sets out objectives. “The main purpose of the Ministry of Defence (MOD) is to protect the people of the United Kingdom, prevent conflict, and be ready to fight our enemies. We are prepared for the present and fit for the future. Our priority outcomes over the past year have been to: 1. Protect the UK and its Overseas Territories; 2. Enhance global security through persistent engagement and response to crises; 3. Understand and counter, state and non-state threats; 4. Contribute to NATO collective deterrence and Defence; 5. Modernise and integrate Defence capabilities by taking a whole force approach to our people and increasing the use of technology and innovation.” The objectives should guide choices about specific aspects of the force structure, such as the size of the various services and the type of equipment that they will need, but such general objectives are far too vague to do so.

For planning one needs more specific objectives and the changing nature of the army objectives was nicely described by Chief of the General Staff, General Sir Patrick Sanders in oral evidence to the HCDC. He said “the nature of the operation or the task you are going to undertake is always sui generis; it is always unique. I have served in, if you like, four Armies: one that was optimised for the cold war; one that was optimised for interventions, starting with humanitarian interventions in Sierra Leone and the Balkans, and then expanded into interventions in the Middle East; one that reset itself for counter-insurgency or stabilisation operations in Iraq and Afghanistan and, tactically, became extremely proficient and well

prepared for it; and now an Army that is optimising for war and for warfighting.”<sup>9</sup> He did not mention his service in Northern Ireland during the “Troubles”.

Given the unpredictability of threats and the impossibility of optimising against unknowns, a common analogy is to treat defence policy as an insurance policy. You do not know what may occur, so you pay a premium, a defence budget of some percentage of GDP, which is invested in such a way that it pays off by reducing damage if an adverse event, such as a threat, materialises, and possibly deterring the threat. The investments are in various sorts of military capabilities and they may pay off in ways that could not be predicted in advance, such as the use of Military Aid to Civil Power (MACA) during the COVID pandemic. In contrast to the optimisation approach, the insurance approach might ask what is covered by the policy and what is the premium? Some in the military would claim that UK Governments have paid for the minimum “Third Party Fire and Theft” cover but claimed upon it as if it were “Fully Comprehensive”.

Thinking about how to calibrate and manage risk prompts a comparison between specialisation and diversification. Specialisation involves acquiring relatively few, expensive platforms, like aircraft carriers, optimised for particular roles. These platforms have to be provided with arms, personnel, support, logistic, and protection, with the danger that, because there are so few of them, each platform is too valuable and vulnerable to use. Diversification suggests: many “cheap and cheerful” general-purpose systems that can be used for a variety of roles. The conflicts the UK has been involved in, like the Falklands, the Gulf, Iraq and Afghanistan have largely been “come-as-you-are-wars” using whatever equipment was available at the time, not equipment optimised for that type of conflict.

One can make a similar comparison between standard procurement processes and Urgent Operational Requirements, UORs, now referred to as Urgent Capability Requirements, UCRs. The procurement process for UCRs responds rapidly to unforeseen threats, mission critical operational risk, or to essential safety requirement that pose an intolerable risk to life. The urgency and unique nature of these requirements prevents the normal acquisition process from being followed, and accepts that risk may be taken against performance, cost, or coherence with wider Defence equipment and activity programmes, in particular with the defence lines of development. There are different weightings of time, performance and cost from standard contracts. When time is given priority, rapid procurement is possible. In 2023

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<sup>9</sup> House of Commons Defence Committee, Oral evidence, 7 November 2023. Q211.

the Archer system, replacing artillery sent to Ukraine, was acquired from Sweden in two months and was in service within a year.

While it is important to try to plan, in practice the MOD has to muddle through and the budget is the outcome of bargaining between multiple stakeholders with different interests and different views. Although this paper talks of the MOD as a unitary actor, it is riven with internal conflicts and inter-service rivalry. The primary bargain is between the MOD and the finance ministry, the Treasury, which MOD has always seen as enemy number one, the adversary in a perpetual battle. Hennessy (2003, p. 196) describes how, in the event of a nuclear war, Project Turnstile would evacuate, the 210 people thought needed to keep the UK running. MOD, who organised Project Turnstile, did not include anyone from the Treasury on the passenger list.

The Treasury is inevitably unpopular because it is usually the only voice in government trying to control public sector spending and balance the budget. It is the overall budget to which we now turn.

## **Government Budget constraint**

Two equations drive fiscal policy. The budget balance equation says that defence expenditure plus other government expenditure, including debt interest, minus government revenue, from taxes and other sources, equals the general government financial surplus or deficit. The financing equation says that the surplus or deficit equals the change in debt plus the change in money supply. Thus, a change in defence expenditure has to be matched by changes in other elements of these two equations. There will be difficult decisions about other expenditures and taxation, but here we consider debt.

Historically, British military expenditure has been driven by wars which have been debt financed, Smith (2022). Figure 1 gives the share of military expenditure as a percent of GDP over 1700-2020, in which the pattern of wars is very clear. The many 18<sup>th</sup> century wars, mainly against the French, culminated in the Napoleonic Wars ending in 1815. Then for almost a century the share of military expenditure was low, except for peaks during the Crimean and Boer Wars. The graph in Figure 1 has been truncated at 19% because the share was over 50% during both World Wars and these peaks would distort the picture. The current level, around 2%, is close to the long-run peace-time average.

Figure 1. Share of Military Expenditure in GDP 1700-2022, truncated at 19%

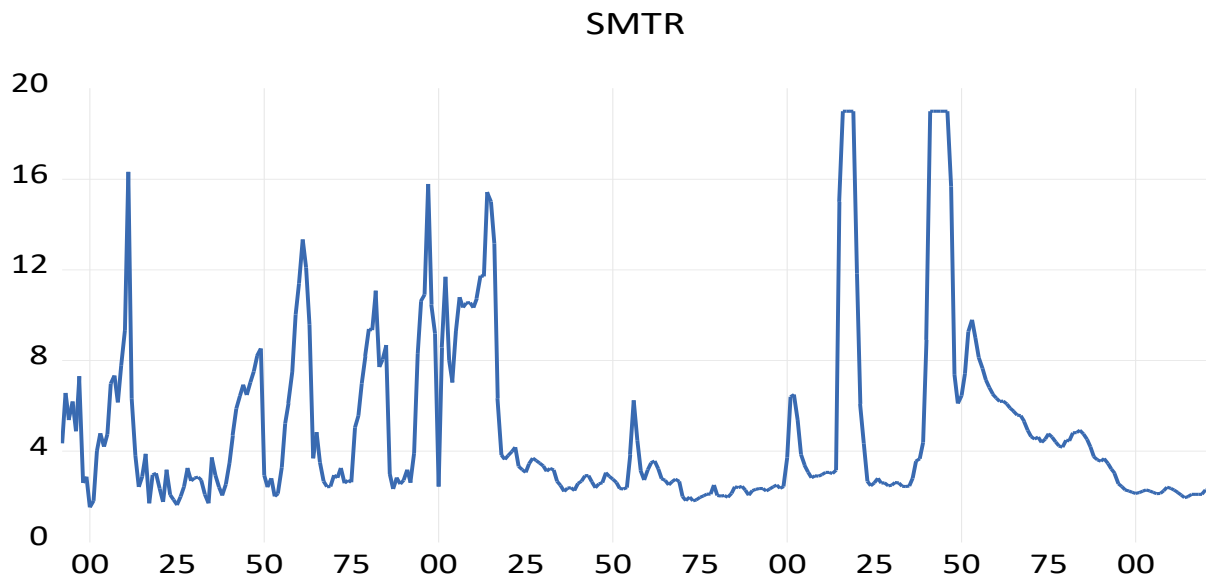


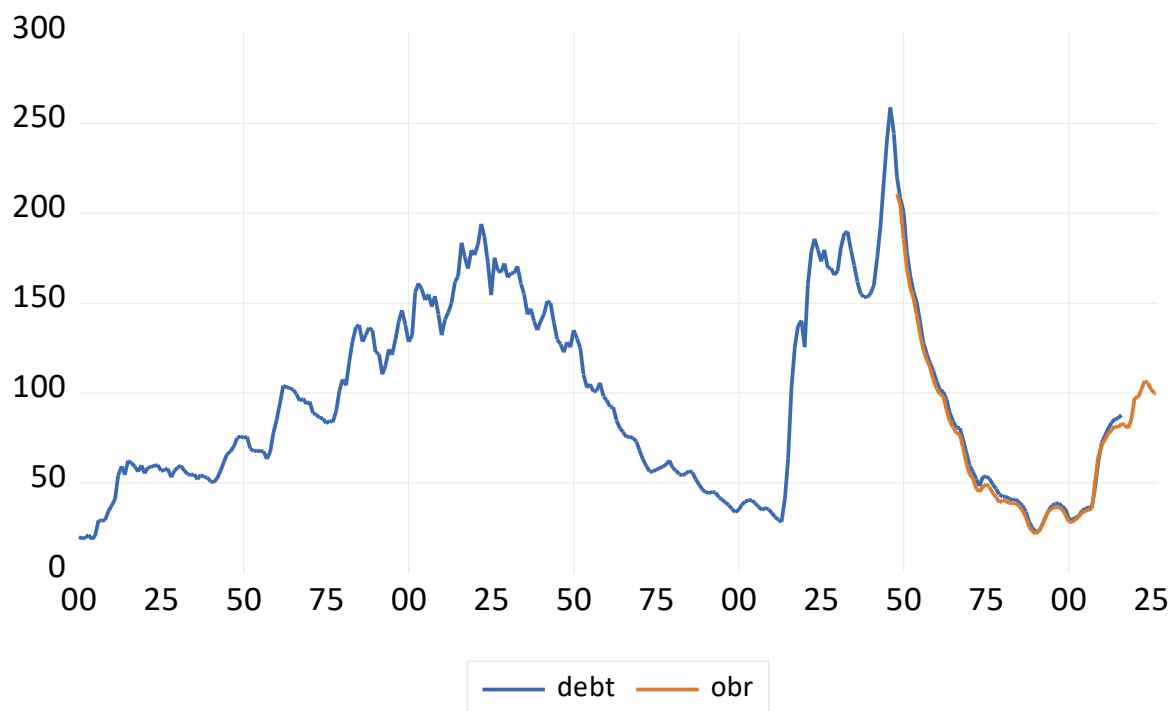
Figure 2 gives UK national debt as a percent of GDP over a similar period.<sup>10</sup> The Bank of England was set up in 1694 primarily to provide finance for wars. The saw-tooth pattern over the first 125 years, matches Figure 1 in reflecting the sequence of 18<sup>th</sup> century wars. Debt peaked at almost 200% of GDP at the end of the Napoleonic Wars, then declined to a minimum in 1913. It rose with World War I and hit a peak of 250% of GDP at the end of World War II. Debt fell to another minimum at the end of the 20th century. Unlike the previous increases, the rise in the share in the 21<sup>st</sup> century was not associated with war, but with financial crisis and pandemic.

Figure 2. UK National Debt 1700-2027.

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<sup>10</sup> There are a range of measurement issues associated with measuring the national debt. These include whether it should be valued at par or market prices and the treatment of Bank of England quantitative easing. This series is based on the series from the Bank of England Millennium of Macroeconomic data spreadsheet linked to Office of Budget Responsibility (OBR) figures excluding the Banks of England.





Governments can borrow if they have credibility, if lenders, in particular financial markets, believe that the government can and will make any contracted payments of interest and principal. Making payments is easier to do if the government borrows in its own currency, which it can do if it has credibility. Almost all UK government debt is in sterling. There is a demand for government debt from many economic actors, including from pension and insurance companies. They wish to hold long-dated, safe, liquid assets, including assets indexed to inflation. Few non-sovereigns can provide such security over thirty to fifty years. Governments do not even have to promise to repay. British Consols (Consolidated Debt) issued from mid-18<sup>th</sup> century till early 20<sup>th</sup> century were perpetuals. The Government did not have to redeem them but could do so if it wished and it has redeemed them. The Government is more likely to be able to keep up the payments if it borrows to invest rather than to consume. Hence the “golden rule” of fiscal policy: only borrow to invest. The 18<sup>th</sup> century wars were a good investment in financial terms, the 20<sup>th</sup> century wars less so. But the debt was paid off and credibility maintained. Credibility may also be lost if borrowing explodes without an indication of the capacity to repay or if the burden of interest payments become large relative to taxation.

If governments endanger their credibility they will not be able to borrow, or only borrow at penal interest rates. Prime Minister Truss and Chancellor Kwarteng did this with their mini-budget of September 2022, which frightened the markets and added a substantial risk premium to their borrowing rate. Bill Clinton’s chief strategist James Carville famously said:

“I used to think that if there was reincarnation, I wanted to come back as the President or the Pope or as a .400 baseball hitter. But now I would want to come back as the bond market. You can intimidate everybody.” But governments can be unnecessarily intimidated. After 2010, there were a large number of productive, UK public investment projects, which could have contributed to growth. The government was also able to borrow at effectively zero interest rates, but claimed it was afraid of losing credibility and instead adopted austerity. But the low interest rates suggested it did have credibility, which, it could have used to make productive investments.<sup>11</sup> Now it faces both a backlog of investment and higher interest rates.

## **Measuring the defence budget.**

The first question one might ask about the UK defence budget is: how much does the UK spend on defence? Unfortunately, that is not an easy question to answer, and those who do not wish to get enmeshed in accounting details, and are happy with a number around £50bn to £60bn in 2023, should rush on to the next section. Because of differences in definitions, the numbers reported to NATO differ from those in the National Accounts, which differ from the various totals given in the defence budget. There are also complications from the difference between Financial years, April-March, and calendar years and between constant price or current price data. Because of the difficulties of measuring the price of defence, the UK practice is to use the GDP deflator to convert to constant prices. The bulk of defence expenditure represents a demand for goods and services rather than a transfer payment like pensions, social security or debt interest which only represents a claim on resources when the recipients spend it.

From 2001/2 the UK introduced a system called Resource Accounting and Budgeting (RAB). Under RAB, government accounts are on an accruals basis: spending is recorded when the obligation to pay is incurred, rather than a cash basis, when the payments are made. RAB is discussed in Hartley (2011) and was designed to bring public sector accounting practices into line with private sector practices. Like the private sector, there is a balance sheet and the accounts include a variety of “non-cash” items such as allowance for depreciation (capital consumption) and various types of provisions. For most Government Departments, the balance sheet total is relatively small. For MOD total non-current (fixed) assets, such as land,

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<sup>11</sup> This was pointed out at the time, for instance <https://www.independent.co.uk/news/uk/politics/the-deficit-is-just-a-smokescreen-for-a-tory-attack-on-the-state-former-civil-service-head-says-10491761.html>

buildings and equipment, amounted to £175bn in March 2023. Of this about £70bn were “Single Use Military Equipment”, weapons, for which there is not a commercial market, making valuation difficult.

Spending is divided between Department Expenditure Limits (DEL) which represents expenditure that can be controlled in advance and Annually Managed Expenditure (AME) that is more difficult to control. For other Departments AME tends to be items like unemployment benefits which are difficult to predict. In the case of MOD it is largely “provisions”, such as allowance for the future cost of disposal for old nuclear submarines, which are currently just tied up in port. Variations in provisions can make AME volatile without there being equivalent cash expenditures. For instance, because of changes in provisions, AME moved from a big positive number £10.787 in 2021/22 to a big negative number -£13.856bn, in 2022/23, reflecting the significant change to Treasury Discount Rates used in the valuation of long-term nuclear decommissioning provisions.<sup>12</sup> This had no cash implications.

The total DEL is split into the Capital DEL (investment in fixed assets) of about £20bn in 2022-3 and the Resource DEL (current spending) of about £40bn. The cost of operations, are financed out of the Treasury Reserve, not included in the estimates but included in the DEL after the end of the financial year. This means that historical figures which include operations are often not comparable with projections which do not. In the past Treasury funding covered provision for operations in Iraq and Afghanistan, from 2022/23 it was primarily support for Ukraine

There is also a cash figure, which is more comparable with pre-RAB defence expenditures and is used by MOD to construct longer runs of data. Net cash requirement for 2022-3 was £49bn, and Defence Spending £53bn. Defence Spending is presented as the sum of the resource and capital budgets, net of depreciation and impairments. This reflects the resources required plus the net investment in them, but avoids double counting the writing down of the existing capital stock and the cash outlay on new assets.

For a number of reasons defence budgets are not comparable over time. RAB introduced in two stages from 2000/01 caused a major break in many series. Between 2008-9 and 2009-10 there was another break in some series associated with the introduction of International Financial Reporting Standards, IFRS. The treatment of leases caused the Auditor and Comptroller General to qualify the accounts for 13 consecutive years from the introduction of

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<sup>12</sup> Departmental resources spreadsheet Worksheet 1: Defence Expenditure Outturn 1981/82 to 2022/23.

IFRS up to 2022. The MOD budget for 2022/23 included around £3bn to finance the implementation of accounting standard IFRS 16 (a non-cash movement). Between 2015-16 and 2016-17 a large part of R&D was moved from the Resource DEL to the Capital DEL.

The figure reported to NATO for calendar year 2023 was £54bn. NATO-qualifying spending is made up of the core MOD budget plus additional funding provided to MOD for military operations, its support to Ukraine and drawdown of contingency. Additional NATO-qualifying spending sits outside the MOD budget and includes parts of the Single Intelligence Account, Armed Forces pensions and the Integrated Security Fund.<sup>13</sup>

for 2022-3 £55.5 bn.

The national accounts figure for 2022-3 is £55.5 bn.<sup>14</sup> This uses UN, classification of the functions of Government (COFOG) definitions which are not comparable with NATO definitions or UK defence budget definitions. For example, the NATO Defence figures include pensions whereas in COFOG these are included in Social Protection. The figure given by the Stockholm International Peace Research, SIPRI, the main source for international data on military expenditure for financial year 2022-3 was £54bn.

Charging capital consumption was intended to cause Departments to economise on assets, selling land not needed, for instance. But the assets include stocks of ammunition and it is not clear that economising on them is a good idea. More generally it has been argued that RAB is not appropriate for defence. For instance, Fullerton (2023) says about it “ Yet for over 20 years, the financial accounting process that has been forced upon the Ministry of Defence has complicated procurement, derailed major capital programmes and substantially degraded capability.”

## **International comparisons of the defence budget**

If one is interested in comparing UK military expenditure with other countries there are further difficulties. The comparison with allies may be to judge burden sharing, with antagonists to judge threat, though in both cases military expenditures are only one element in the judgement. Even ignoring differences in definitions of defence spending, there are major problems in international price comparison. The simplest procedure is to take the current price domestic defence budget and multiply it by the dollar exchange rate to get a

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<sup>13</sup> NATO say “The figures represent payments actually made or to be made during the course of the fiscal year. They are based on the NATO definition of defence expenditure. In view of the differences between this and national definitions, the figures shown may diverge considerably from those which are quoted by national authorities or given in national budgets.” [https://www.nato.int/cps/en/natohq/topics\\_49198.htm](https://www.nato.int/cps/en/natohq/topics_49198.htm)

<sup>14</sup> HM Treasury Public Expenditure Statistical Analyses PESA (2023) table 4.2 .

dollar figure. Table 1 gives SIPRI estimates for 2023 military expenditures in dollars using market exchange rates and as a share of GDP for a selection of countries. The numbers for Russia and China are SIPRI estimates, rather than national figures. Market exchange rates can be very volatile, so what appear to be large variations in military expenditure may just be products of exchange rate variation. SIPRI also give figures at constant US dollars which avoids this problem for comparisons over time, but international comparisons are sensitive to the base year chosen.

Table 1. International comparisons of Military Expenditure and GDP in 2023.

,2023	US \$bn	Share%	GDP \$bn	GDP PPP \$bn
US	880.1	3.36%	27,361	27,361
China	309.5	1.67%	17,795	34,644
Japan	51.9	1.20%	4,213	6,252
Russia	126.5	5.86%	2,021	6,452
UK	69.2	2.26%	3,340	4,026
France	57.1	2.06%	3,030	4,169
S. Korea	46.9	2.81%	1,713	2,794

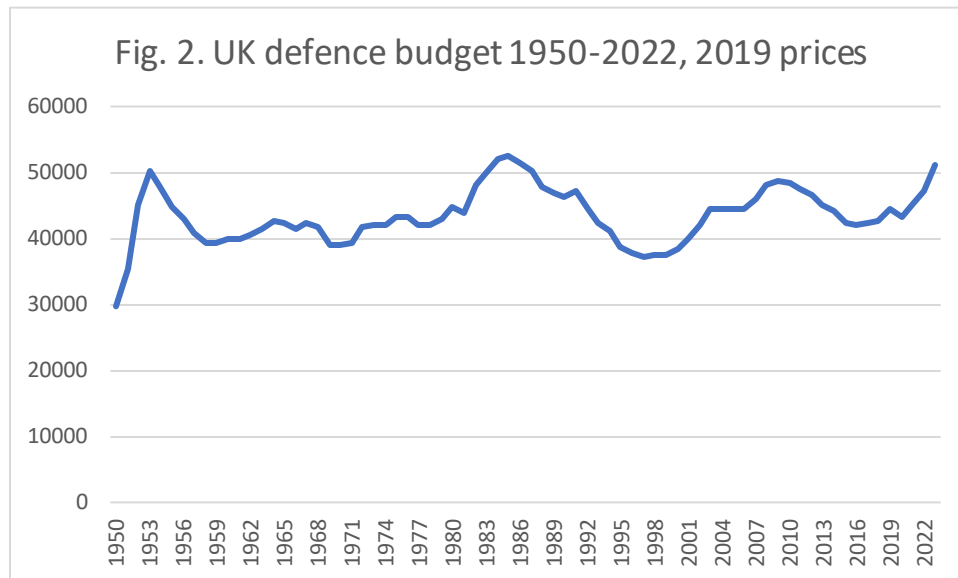
Comparison is complicated by the fact that the structure of prices differs between countries. In poor countries, wages are low and one can maintain a large army cheaply. Purchasing power parity (PPP) GDP deals with this by using international prices. World Bank estimates of these are given in the table. There have been a number of attempts to provide a PPP measure of military expenditure, such as Robertson (2022), but none are widely accepted. Multiplying the share by PPP GDP might give some idea of a more comparable measure. On this basis Chinese military expenditure would be 35% higher.

South Korea is an interesting comparator. Nemeth (2024) argues that it has a powerful military with larger armed forces and more firepower and armour than European militaries. It also produces high quality weapons systems and conducts larger military exercises than NATO while having a smaller defence budget than European powers. It has a clear priority, defending against the real threat from North Korea and it has a strong industrial base, manufacturing is 24% of GDP, compared to 9% in the UK.

## **Trends in the UK Defence Budget**

The figures above are in current prices, one would like to measure real defence spending, defence output, but as noted above that is difficult. In the absence of a defence specific measure of inflation we correct for general inflation using the GDP deflator. As Figure 2

shows, the real defence budget has been roughly constant, moving between about £40-50bn in 2019 prices. This is the SIPRI current price series deflated by the GDP deflator. For the overlapping period it is very similar to the constant price cash/net cash figure in the Departmental Resources 2023 spreadsheet. The peaks represent the Korean War, the New Cold War after 1979, the involvement in Iraq and Afghanistan, and the recent increase.



The combination of growing real GDP and roughly constant real defence spending after 1950 means that the share of defence in GDP has fallen.

While Figure 2, shows roughly constant real military expenditure this is the outcome of conflicting forces. Because of Britain’s poor economic performance, the resources available to the defence budget have been systematically less than the costs required to meet declared security commitments. The outcome that has arisen can be characterised in a number of different ways. Critics present UK policy as a Hegelian dialectic, in which the thesis of budgetary inadequacy confronts the antithesis of cost escalation. The synthesis is not a defence policy appropriate to a middle-ranked power, but a set of unresolved contradictions. As a percentage of income Britain has spent more on defence than comparable European countries, has incurred too many commitments, buys weapons which are too expensive and has failed to elaborate a security doctrine that can be sustained over the medium term. Supporters present UK policy as a Newtonian dynamic equilibrium which manages to maintain a subtle and impressive balance between the opposing forces operating on it.

The PAC (2021 p10) Report on Equipment Program summarised it as follows. “The Permanent Secretary told us that in 2010 the defence budget had been made affordable, but at the expense of capability. Then in 2015, capability shortfalls were addressed but without

sufficient funding. The budget was, therefore, constantly unbalanced in one way or another. He told us that he hoped now to develop a coherent and sensible package of capabilities which are backed up by resources, allowing the Department to plan properly in the longer-term.” His hopes were not realised.

## **Priorities within the Defence Budget**

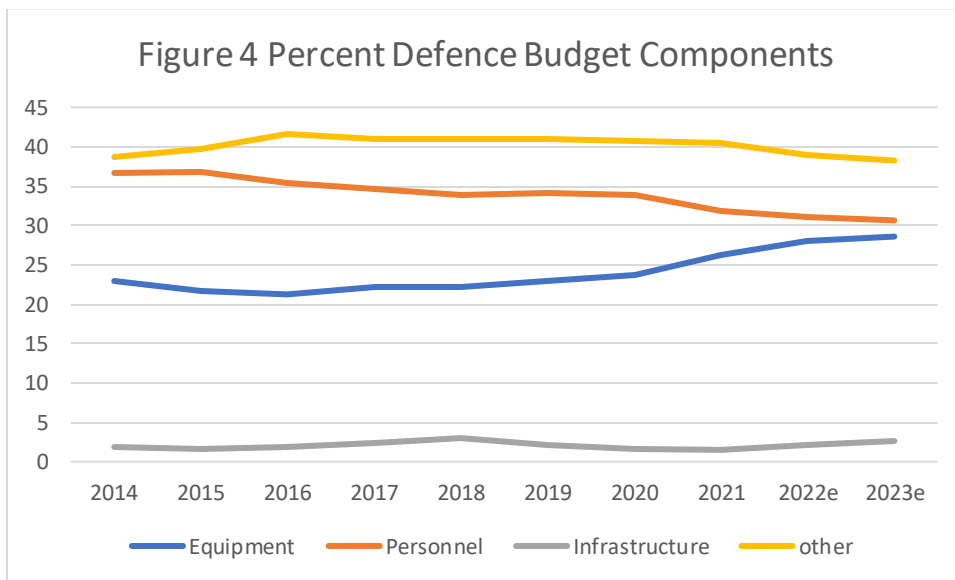
The plan has to try to match objectives, capabilities, resources and budgets over two horizons. There is the 12-18 month short-term horizon, when expenditure must be squeezed into the annual Department Expenditure Limit, and the 10-15 year long-term horizon required for equipment planning. Postponing expenditure on equipment whose cost has escalated in order to fit the annual budget can often raise costs, distort priorities, and create a “bow-wave” of postponed expenditure which complicates longer term planning.

Budgets vibrate in response to a series of cycles of different frequency and amplitude. A high frequency cycle is the comings and goings of defence ministers. There were seven Secretaries of State for defence and eleven Ministers for defence procurement between the general elections of 2010 and 2024. A low frequency cycle is the pattern of replacement of the nuclear deterrent, which during construction, as in the coming years, absorbs a large part of the budget. The first phase of the cycle began when the UK agreed to purchase the US Polaris missile system in 1962 and the Polaris armed Resolution class nuclear submarines entered service in 1968. The second phase of the cycle began in the early 1980s, when the government decided to replace Polaris with Trident, another US missile. Trident armed Vanguard Class submarines became operational in 1994. The third phase of the cycle began in 2006, when a decision was taken to replace the deterrent. Construction of the Dreadnought class submarines began in 2016. They may enter service in the 2030s.

Any defence review should be based on a set of costed options that cover the costs of the equipment, personnel, infrastructure and other support costs associated with a capability, existing or proposed. The costed options answer questions like: how much would scrapping the two aircraft carriers save? This cost would then be balanced against the contribution of the capability to the security objectives such as defence of the UK or contribution to NATO. Few costed options are available in the public domain, the best information is probably on the nuclear deterrent, discussed below, where the expenditure is identified and ringfenced.

One cannot start from scratch. There are existing contracts and commitments which may be expensive to unwind. When the coalition government in 2010 considered cancelling the carriers it concluded that given the nature of the contracts cancelling would cost more than building them. Proposed investments are constrained by sources of supply including the domestic defence industrial base, which may be maintained for reasons of resilience or autonomy. Procurement involves not only the choice between the best buy in terms of time, cost and performance, but the appropriate source. The equipment may be imported, produced under license; produced collaboratively; or domestically developed and produced. Firms may be reluctant to re-open a production line unless the government underwrites the fixed costs or guarantees a large enough order. Given the constrained budget the government may not be able to afford to do this. Conversely governments may procure a weapon for which there is no requirement to maintain industrial capacity or nationalise a firm playing a strategic role as was the case of Sheffield Forgemasters in 2021. The treatment of British firms abroad, such as BAE Bofors in Sweden and foreign firms in the UK such as Thales in many UK locations, including Belfast, complicates the matter.

The MOD reports to NATO under four headings, they are (with 2022 Percentages): Equipment (28%); Personnel (31%); Infrastructure (2%); Other (39%). Their evolution over time is shown in Figure 4.



## Personnel

In 2023 the trained strength of the Army was 74,834, Navy/Marines 29,348, RAF 29,385. The total of 133,567, compares with 190,270 in 2000. Personnel costs have been influenced



by the fact that recruitment and retention of suitably qualified and experience personnel has been a recurrent problem and this has impacted operations. The MOD is considering mothballing Royal Navy ships because of crew shortages, and the only Royal Navy ship able to fully replenish the UK's aircraft carriers was unavailable in 2024 because of a refit. PAC (2024 p17). There were similar availability problems with attack submarines.

HCDC (2024, p3) concluded: "The UK Armed Forces have deployed above their capacity in response to the worsening security situation, but all have capability shortfalls and stockpile shortages, and are losing personnel faster than they can recruit them. They are also consistently overstretched, and this has negatively impacted retention as well as delaying the development of warfighting readiness. Either the Ministry of Defence must be fully funded to engage in operations whilst also developing warfighting readiness; or the Government must reduce the operational burden on the Armed Forces." The MOD is considering various changes in its personnel policies, including "zig-zag careers" where people can come in and out of the armed forces more easily.

There is a certain amount of choice about what sort of personnel perform the defence activities. It may be the military. then the choice is between the three services, (army, navy, RAF). The military personnel may be volunteers, conscripts or reserves. Britain stopped conscription in the early 1960s but the idea of national service was revived by previous Conservative government in 2024. Civilian personnel may be government employees; or come from the private sector. Private sector provision comes in a variety of forms of arrangement, from use of Private Finance Initiative, Government Owned Contractor Operated facilities to Private Military Companies providing armed personnel.

## Equipment

Figure 4 shows the percentage spent on equipment has been increasing at the expense of Personnel and Other. Although despite being an increasing share of an increasing total, the equipment budget is under considerable strain. Managing the equipment programme is the responsibility of six top level budgets (TLBs). The TLBs and their planned spend in £bn over the ten years covered by the 2023-33 Equipment Plans are: the four front line commands, Navy (£41.50bn), Army (£42.43bn), RAF (£34.52bn) and Strategic Command, responsible for joint operations, (£32.13bn) plus the Defence Nuclear Organisation, DNO, (£62.79bn) and the Strategic Programmes Directorate, responsible for novel and complex weapons, (£25.98bn).

The pattern over that period is shown in table 2.<sup>15</sup> Not all the costs have been allocated to the TLBs and the central estimate of the forecast cost of the equipment plan is £305.5bn over those ten years compared with an indicative budget of total available spending of £288.6. The budget is indicative because the government had not announced its planned spending for most of that period.

Table 2 Planned spending split by Commands, £bn

	23/24	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Air	3.57	3.19	3.31	3.28	3.33	3.42	3.45	3.64	3.64	3.69
Army	3.41	3.50	3.93	4.76	4.70	4.45	4.65	4.36	4.32	4.34
DNO	6.02	5.92	6.09	6.05	6.25	6.53	6.38	6.22	6.49	6.84
Navy	4.28	4.09	4.08	4.22	4.39	4.60	4.22	4.14	5.56	1.92
Strategic	3.35	3.79	3.77	3.44	3.28	2.98	3.01	2.90	2.97	2.65
S. Programmes	1.59	1.63	1.67	2.00	2.47	3.24	2.96	3.53	3.44	3.44
Total	22.22	22.12	22.85	23.75	24.42	25.22	24.67	24.79	26.42	22.89

The MOD recognised that the Plan was unaffordable. with the central estimate of the most likely shortfall being £16.9bn, with a range of £7.6bn to £29.8bn. Costs are projected to rise faster than the indicative budget, which is assumed to grow by 0.5% a year. If the UK moved towards 2.5% of GDP by 2030, real growth would be nearer 3%. growth Between the 2023 and 2022 plans there was a £65.7 billion increase in forecast costs but only a £46.3 billion increase in the budget. The greatest increases between the 2022 and 2023 plans were in the Nuclear and Royal Navy costs. The costs of the DNO increased by £38.2bn, 63%, relative to the previous plan.

The figures in Table 2 are not comparable between TLBs. NAO (2023, 1.12) notes TLBs have taken different approaches to preparing their forecasts in the Plan. Some include the full predicted costs of the capabilities that government expects the MoD to provide, while others only include costs for those programmes they can afford. These assumptions change from year to year making comparisons over time difficult. Several capabilities specified in the Integrated Review and its Refresh are partly or fully excluded from the Plan, so the shortfall under-estimates the cost of predicted capabilities. PAC (2024, p3) said “The real deficit, however, is even larger, because some parts of the Armed Forces have not included costs for all the capabilities government expects the MoD to provide, but only those they can afford. The Army, for example, could need around £12 billion more to fund all the capabilities the

<sup>15</sup> Taken from the spreadsheet 20240219-EP23\_SupplementaryDataTables.

government seeks.” Ideally, costs should be substantially lower than projected budgets towards the end of the planning period to allow space for MOD to respond to new needs. (PAC 2024 p4) The MoD has allocated a budget of £288.6 billion to the current Plan’s 10-year timeframe. This is £46.3 billion more than the MoD allocated in the 2022–2032 Plan and is 49% of the entire 10-year forecast defence budget. However, forecast costs have increased by £65.7 billion to £305.5 billion, resulting in a £16.9 billion deficit between the MoD’s capability requirements and the budget available to provide them. This is the largest affordability gap in any of the 12 Plans published by the MOD to date.

Procurement problems continue. PAC (2024 p7) comment that “only two of the 46 MoD equipment programmes that are included in the Government Major Projects Portfolio (GMPP) are rated as being highly likely to be delivered to time, budget, and quality.” MOD has announced a new Integrated Procurement Model, MOD (2024). Among other things this involves spiral development. Get a capability with basic performance out quickly and then increase performance over time. It seems unlikely to perform better than the many reforms of procurement described in Smith (2022).

## Nuclear deterrent

The cost of the nuclear deterrent includes missiles, warheads, submarines, their core reactors which provide propulsion, communications, electronic warfare etc. Estimates of the costs of the earlier nuclear deterrent systems can be found in HCL (2023, 8166). The UK’s current nuclear deterrent is provided by four Vanguard-class ballistic missile submarines (SSBN) which house the Trident II D5A missile and its Mk4/ Holbrook warhead. Annual in-service costs, which also include the costs of the Atomic Weapons Establishment and the Nuclear Warhead Sustainment Capability Programme, basing, decommissioning and disposals, are currently estimated at 6% of the defence budget (£3 billion for 2023/24 based on current planned expenditure).

The treatment of the financing of the nuclear deterrent has been a continued source of dispute. At the Spring Budget 2023, the Chancellor of the Exchequer said there was a need for “enduring additional investment” and allocated an additional £3 billion to the nuclear enterprise across 2023-24 and 2024-25. HM Treasury has agreed that the MOD should

ringfence all direct elements supporting the deterrent programme and nuclear-powered attack submarines, including the entire DNO budget, in-service submarine support elements from the Navy and related programmes in the UK Strategic Command. These form the DNE (Defence Nuclear Enterprise), which has a £109.8 billion budget over the 10 years to 2032-33. The MOD had retained an additional £34.5 billion funding for the DNE as centrally managed expenditure, rather than delegating it to the TLBs included in the DNE: the DNO, the Navy and the UK Strategic Command. PAC (2024) concluded that the MOD's prioritisation of the Defence Nuclear Enterprise carries a risk that this will further squeeze budgets for conventional capabilities.

## **Conclusion**

A central question will be whether the coming review will attempt major surgery removing an important role or salami slicing, cutting little bits off everything to maintain balanced forces. In either case MOD is likely to minimise the pain by proposing sacrifices to the elements of the defence budget that politicians value most and are least likely to want cut and emphasise the employment consequences of the cuts. Since defence tends to be a high wage sector there are fewer jobs per billion pounds than elsewhere.

The strategic vision should indicate the areas of the world where the UK should commit its defence contribution, given that it can no longer afford to be a global player. Should it be Continental Europe, the North Atlantic, the Middle East, the South China Sea, or elsewhere in the world. It should indicate the likely form of the threats, conventional, nuclear or novel like cyber. It should indicate the capabilities needed to meet those commitments: nuclear deterrent, ground forces, naval forces, air forces, and the enablers to make the equipment effective. Within each of these broad classes there are very specific decisions to make, such as whether the aircraft should have people in them and the appropriate level of readiness and required stocks of munitions. Not only are these decisions difficult, but if history is any guide they are likely to be rapidly overtaken by events.

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