



**Defence Review 2009 – Long Term Funding
Regime for the Defence Agencies**

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Table of Contents

1	Introduction	1
2	Policy Framework.....	1
2.1	Role and Importance of Funding Systems.....	1
2.2	Proposed Objectives for Assessment of the Defence Funding System	2
3	Background	3
3.1	Funding Levels	3
3.2	Breakdown of NZDF Spending.....	4
3.3	Overview of Current Funding System.....	5
3.4	Comparison of NZ and International Funding Systems	6
3.5	Fixed and Variable Components of NZDF Operating Expenditure.....	6
3.5.1	<i>Longer Term Cost Control Mechanisms</i>	9
4	Analysis	9
4.1	Current Financial Situation	9
4.2	Drivers of Current Structural Deficit	10
4.2.1	<i>Impact of Inflation on Operating Costs</i>	10
4.2.2	<i>Asset Price Inflation</i>	12
4.2.3	<i>Impact of Exchange Rate Fluctuations</i>	13
4.2.4	<i>Revaluation Impacts</i>	14
4.2.5	<i>Funding of Large Capital Acquisitions</i>	14
5	Recommended Improvements to the Current Funding System	17
5.1	Partial Offsetting of Inflationary Impacts.....	17
5.1.1	<i>Annual Inflation Adjustment of Total Allowable Operating Expenditure</i>	17
5.1.2	<i>Inflation Adjustment Only for Agreed Cost Items</i>	18
5.1.3	<i>Protection from Depreciation and Capital Charge Impacts of Asset Revaluations</i>	18
5.2	Planning and Funding of Large Asset Procurements	18

1 Introduction

This paper addresses the question of how best to design a regime to provide long term funding certainty and sustainability for the New Zealand Defence Force (NZDF) and to a lesser extent the Ministry of Defence (MoD). It sets out the economic principles that should be applied in designing a funding regime, assesses the current regime, and recommends areas for change.

It has been prepared by Firecone as an input into the 2009 Defence Review.

2 Policy Framework

Well functioning funding systems are vitally important for the successful operation of government agencies. While comprehensive reviews of agencies' overall funding levels are sometimes carried out in New Zealand, the Government, through the Treasury, largely focuses its vote effort on assessing proposals for additional funding, such as for new capital equipment or changes to the level or quality of outputs produced. Implicit in this approach is an assumption that in most instances government agencies should be able to continue to provide their existing levels and quality of output within fixed, nominal funding levels.

The Government's standard long term funding regime is a simple one; each agency's operational funding is kept fixed in nominal terms unless an explicit Ministerial decision is taken to direct the agency to change the quality or quantity of its outputs in some way. Note that it is recognised that all government agencies are likely to face cost increases over time. The assumption is that those cost increases should be able to be met through savings realised from ongoing productivity improvements. This is one of the ways that the Government, through the Treasury, aims to maximise the value for money provided by public sector agencies. Note that more fundamental 'baseline reviews' of agencies' funding are occasionally undertaken where strong concerns exist that current funding levels are inadequate.

This assumption that government agencies should be able to indefinitely supply their existing outputs given current funding levels appears to be valid for many agencies, at least over the medium term. However, in a small number of votes, such as defence and health, government agencies appear unable to sustain their operations without ongoing funding increases. Without such increases, repeated funding crises often occur. It is in such votes that the question of how to best design a sustainable, long term funding regime is most important.

2.1 Role and Importance of Funding Systems

New Zealand has an internationally recognised, well designed public sector financial management system. That system contains a number of different elements relating to: strategic planning; Ministerial decision-making; budget setting and funding; departmental monitoring and accountability; and financial reporting.

The key element of that system that is considered by this paper is the way that the defence agencies' operational and capital budgets are set, and how they evolve over time. We refer to this element as the defence 'funding system' throughout this paper.

A well designed funding systems is only one of a number of requirements needed to ensure that the New Zealand defence agencies operate efficiently and effectively, provide value for money, and deliver the products and services sought by the government. For that reason, the Defence Review includes a number of other work streams, including projects looking at different possible levels and mixes of defence capabilities, the level of funding needed to provide those different capability options, and procurement processes. This paper needs to be read in conjunction with those other streams of work.

In our view the role of a well functioning funding system is essentially to give long term effect to Ministerial decision making; ensuring that the defence agencies deliver value for money by providing the desired level and quality of services on a sustainable basis over time. A funding system that is not sustainable over the medium to long term undermines the ability of Ministers to be confident that the explicit output purchase decisions they make in any given year will be maintained in the future.

If designed well, funding systems can also help to encourage ongoing organisational improvement, thereby minimising costs and maximising quality of service over time. Similarly, if designed badly funding systems can lead to unpredicted and undesirable variations in the quantity and quality of services provided, inefficiencies in operations, and /or increased costs over the long term.

2.2 Proposed Objectives for Assessment of the Defence Funding System

The design of a well functioning funding system requires a careful balance to be struck between a number of competing considerations:

- *Sustainability / durability* – it is important that the defence agencies are able to continue to provide the government's desired level, mix and quality of defence-related outputs over time.
- *Fiscal control* – it is important that the Government is able to exercise adequate control over spending levels, including an ability to forecast spending with reasonable accuracy over the near term.
- *Flexibility* – it is important that the defence agencies are able to make continuous changes to their operational arrangements over time, in response to changes in strategic outlook and/or incremental planning changes.
- *Incentives* – it is important that the defence agencies are incentivised to make ongoing improvements in the efficiency and management of their operations, and adjust to the impact of unforeseen events in a way that minimises increased costs to the Crown.

- *Managerial control* – it is important that managers in the defence agencies have the authority and control needed to make the changes necessary to deliver the efficiency improvements discussed above, and adjust to unforeseen events.
- *Simplicity / ease of use* – it is important that the rules of any funding system are easy to understand and follow, and consistent with broader government budget processes.

These objectives provide a high level policy framework for considering the current defence funding system, and suggesting changes to it.

3 Background

3.1 Funding Levels

Funding for the defence agencies is split between two votes: Vote Defence Force and Vote Defence. Appropriations for Vote Defence Force in 2009/10 total over \$2,827m, and include:

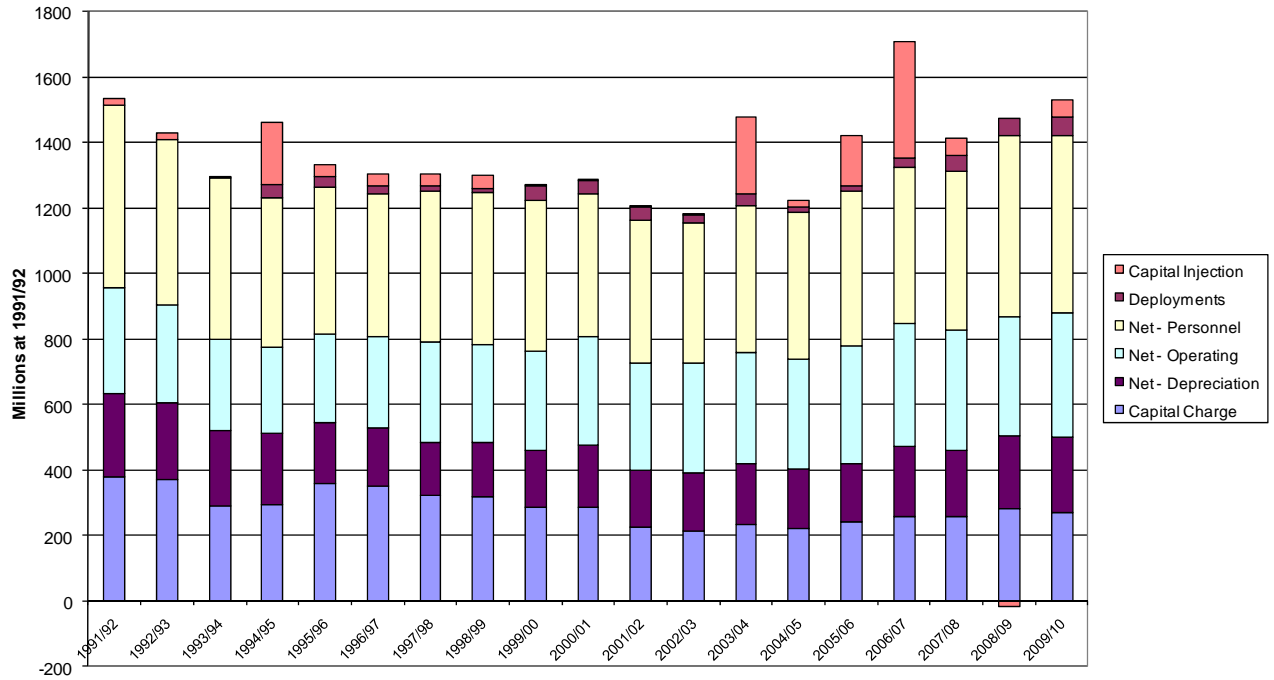
- approximately \$2,037m to fund a range of military forces across the army, navy and airforce
- around \$82m to fund current deployed forces; and
- around \$678m for the purchase of new assets.

In turn, appropriations for (the Ministry of) Defence in 2009/10 total over \$379m, and include:

- \$369m for the purchase, modification or refurbishment of defence equipment
- around \$5m for the provision of policy advice
- nearly \$4m for the management of asset procurement or refurbishment on behalf of the Crown.

These current funding levels are significantly higher than those provided in the first half of the decade. After being subject to broadly static nominal operating baselines from the late 1990s to 2002/03, and falling real funding levels, the NZDF's operating budget has steadily increased from around \$1.4bn in 2002/03 to the current level of around \$2.1bn (see Figure 1 below). Similarly, following the Defence Capability and Resourcing Review (DCARR) and subsequent Defence Sustainability Initiative (DSI), the government has significantly increased funding for new and upgraded defence equipment.

Figure 1 – Real Defence Funding Over Time

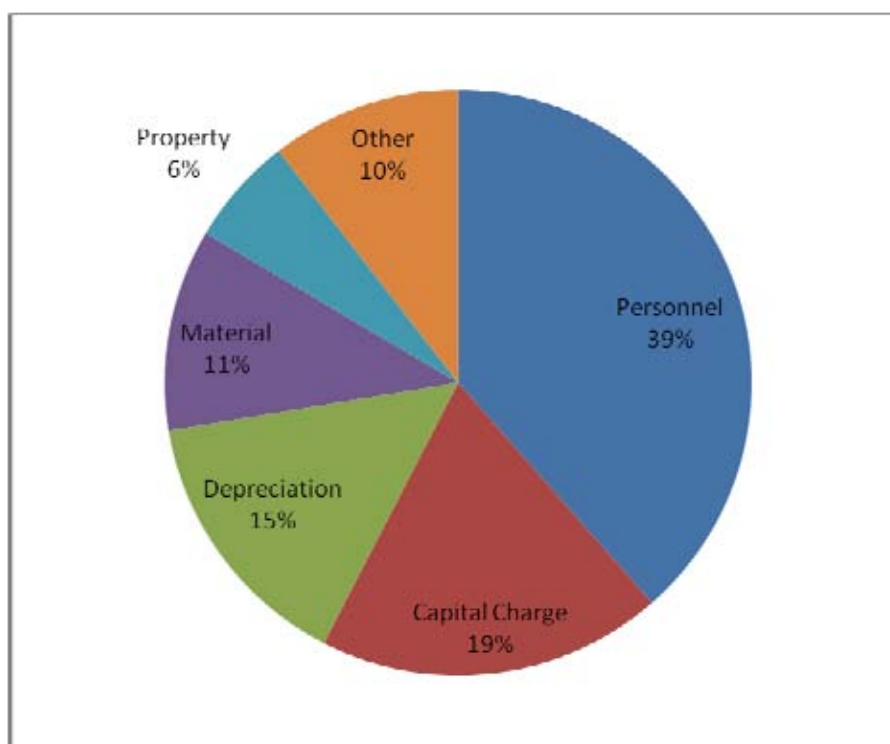


While consistent, cross-country measures of defence spending can be difficult to derive, it is clear that defence spending in New Zealand is low by international standards. Assessed using a standardised NATO measurement methodology New Zealand’s defence spending is currently around 1% of GDP. This level is considerably lower than the world average of around 2%, and that of key allies such as Australia (2.4%), the United Kingdom (2.4%), and the USA (4.06%). However, New Zealand’s spending levels are similar to, or greater than, those in a number of other OECD countries such as Japan (0.8%), Switzerland (1%), and Canada (1.1%). Further, this lower level of spending may arguably be appropriate given New Zealand’s physical and geo-political environment.

3.2 Breakdown of NZDF Spending

The NZDF’s operating costs are dominated by a relatively small number of key expense items (see Figure 2 below). The three largest items – personnel costs, the capital charge, and depreciation – together made up 72% of total operating expenditure in 2008/09. Once the next two largest items are added – material costs (such as clothing, ammunition and fuel) and property costs (such as maintenance and rent) – approximately 90% of NZDF’s total operating costs are explained.

Figure 2 – Breakdown of NZDF Operating Expenditure (2008/09)



Two important implications of the NZDF’s cost structure should be noted.

First, any increases in capital expenditure will have a direct and unavoidable impact on operating costs. As slightly over a third of total operating costs relate to depreciation and the capital charge, this impact is potentially significant. Maintenance costs – at \$200m per annum – further strengthen this link between increases in capital spending, and operating costs. Accordingly it is important that NZDF’s operating and capital funding levels are kept in balance (discussed in more detail below).

Second, the opportunities for NZDF to reduce its operating costs in the short term are limited. The large proportion of NZDF’s total operating expenditure made up of items like personnel, capital charge and depreciation means that the potential scope for short term cost savings is limited. NZDF’s internal analysis suggests that short term cost savings can only practically be pursued in around 12% of the vote (see section 3.5 below for further discussion). Because of the small size of this ‘variable’ portion, modest expense overruns in areas such as personnel and depreciation require very large reductions in those areas where short term cost savings can be realised.

3.3 Overview of Current Funding System

The NZDF and MoD are funded in the same way as most other government departments and crown entities in New Zealand:

- They receive annual appropriations for operating and capital spending in each budget round (in the past, multi-year appropriations have also been provided for some output classes, but none have been provided for the 2009/10 financial year).
- No adjustment is made for inflation from year to year. All government agencies are expected to make ongoing productivity improvements in order to continue operating within slowly reducing real (inflation adjusted) funding levels.
- No certainty is provided over the level of funding that will be provided in future years. While baselines are often rolled over from year to year, the Government has the right to adjust its purchase decisions as it wishes, and adjust the agencies' funding up or down accordingly.

3.4 Comparison of NZ and International Funding Systems

This 'standard New Zealand funding model' differs in key ways from that used for defence agencies in a number of other countries. For example:

- a general inflation adjustment to operating costs is provided in Australia, Canada and the USA (Australia recently introduced a 2.5% fixed indexation for defence spending from 2009/10 to 2030¹, and general USA budgeting procedures require inflation adjustment of departmental baselines²); and
- the Australian government insulates its defence agencies from the impact of foreign exchange fluctuations on a 'no-win, no-lose' basis³.

3.5 Fixed and Variable Components of NZDF Operating Expenditure

Under the Public Finance Act, government agencies are legally required to keep their expenditure at or below the levels appropriated by Parliament. While departments can sometimes successfully seek an additional appropriation outside of the regular budget cycle, in general terms this requirement means that departments must offset any unexpected spending increases by reducing spending elsewhere in their vote.

In the case of the NZDF this requirement can be particularly onerous given the potential for large, uncontrollable swings in operating expenditure and the relatively small areas of spending

¹ See 'Budget Review 2009-10: Defence and Security Issues', Parliamentary Library of Australia (can be found at http://www.aph.gov.au/library/pubs/RP/BudgetReview2009-10/DefenceAndSecurity_Defence.htm)

² See 'The Congressional Budget Process – An Explanation', Committee on the Budget, United States Senate, 1998

³ See 'Mechanics of Funding for Defence', Parliamentary Library of Australia.

that are able to be reduced in the 'short run' of say, 1-2 years. While all costs can be reduced given a sufficient period of time, NZDF estimates that only around 12% of total operating expenditure is in practice variable over a short period of 1-2 years. Such costs are referred to as variable costs in the remainder of this paper, with all other costs referred to as fixed in the short term.

Four key expense items – personnel costs, property, depreciation and capital charge costs – together make up around 80% of NZDF's total operating costs. Once deployment costs are removed, all but one of the individual cost elements within those four categories are fixed in the short term. Only allowances (equivalent to around 1 % of total operating expenditure) can be reduced in the short term; see Table 1 below).

With the exception of allowances, cost savings in these four key expense categories can only be achieved by selling assets or reducing staff numbers, both of which take time to achieve, typically impose short term costs, and undermine long term defence capability.

Table 1 – Variable Elements of Personnel, Property, Depreciation and Capital Charge Costs

	Total (excl deployment costs)	Fixed Portion	Variable Portion	
			\$m	%
Personnel Costs				
Base Pay	\$669m	\$669m	\$-	0%
Superannuation	\$57m	\$57m	\$-	0%
Allowances	\$26m	\$-	\$26m	100%
Other	\$34m	\$34m	\$-	0%
Property Costs				
Maintenance	\$60m	\$60m	\$-	0%
Rental	\$12m	\$12m	\$-	0%
Other	\$48m	\$48m	\$-	0%
Depreciation	\$308m	\$308m	\$-	0%
Capital Charge	\$400m	\$400m	\$-	0%
Total Personnel, Property Depreciation and Capital Charge	\$1,614	\$1,588m	\$26	1.6%
Total Operating Expenditure	\$2,022m			1.3%

As a result, if NZDF needs to reduce variable costs in order to offset cost increases elsewhere in the vote, it must look primarily at the remaining 20% of the vote. A greater portion of these remaining areas of expenditure is variable, but not all. The fixed and variable elements of the remaining areas of NZDF's vote are shown in Table 2 on the following page.

Table 2 – Variable Elements of Material, Training, Travel and other Residual Operating Costs

	Total (excl deployment costs)	Fixed Portion	Variable Portion	
			\$m	%
Material				
Equipment and Spares	\$55m	\$28	\$28m	50%
Consumables	\$15m	\$8	\$8m	50%
Fuel	\$46m	\$9	\$37m	80%
Clothing	\$22m	\$22	-	0%
Ammunition	\$17m	-	\$17m	100%
Food	\$20m	\$20	-	0%
Other	\$35m	\$24	\$12m	33%
Education and Training	\$21m	-	\$21m	100%
Travel	\$40m	-	\$40m	100%
Repairs and Maintenance (SME)	\$78m	\$39	\$39m	50%
Recoveries & FX	(\$58m)	(\$29m)	(\$29m)	50%
Other				
Computer and software	\$11m	\$11m	-	0%
Contractors	\$30m	-	\$30m	100%
Other Professional Fees	\$16m	\$8m	\$8m	50%
Residual Items	\$60m	\$43m	\$18m	29%
Total Material, Travel, Training and Other Costs	\$408m	\$181m	227m	56%
Total Operating Expenditure	\$2,022m			11.2%

Again, once deployment costs are removed, a significant portion of spending in these remaining areas of NZDF's operating expenditure are fixed in the short term. Only around 11% of total operating expenditure can be reduced in these spending areas in the short term. Combined with the approximately 1% of total operating expenditure that is variable in the short term in the larger personnel, property, depreciation and capital charge expenditure items, this means that only around 12% of NZDF's operating budget is controllable in the short term.

In summary, if cost overruns occur in areas of spending that are outside of NZDF's control, such as due to high levels of defence-specific inflation, in order to keep overall spending levels within appropriation, NZDF must make relatively significant cuts in the roughly 12% of spending where short term reductions are practical.

To put this in perspective, the impact of assets revaluations alone (discussed in more detail below) has resulted in increases in operating expenditure of an average of \$11.7m per year over

the last seven years. This is equivalent to slightly over 5% of the total variable portion of NZDF's vote. Over the past 5 years NZDF has been automatically funded for the operating cost impact of any asset revaluations. However, that arrangement has now ceased. If the impact of assets revaluations remains at previous levels, and no additional appropriation is provided, cuts of around 5% will be needed in the future across all variable elements of NZDF's operating costs solely in order to accommodate these revaluation impacts.

Anecdotal evidence suggests that an ability to forecast and manage spending pressures has seen NZDF forced to make undesirably large spending cuts in the small number of areas where reductions are possible in the short term in order to keep spending levels within appropriated levels. This has led to a number of perverse outcomes such as cutbacks in maintenance, retention of assets beyond economic operating lives, cutbacks in recruiting, and a failure to increase salaries and wages in line with market increases. While these actions allowed NZDF to successfully manage its short term funding pressures, they appear to have left a negative long term legacy in terms of an undermining of NZDF's overall capability.

3.5.1 Longer Term Cost Control Mechanisms

The analysis provided above is not intended to suggest that it is not possible for NZDF to make more substantial efficiency gains over the longer term. It is accepted that further improvements are possible and desirable in a range of areas, including:

- introduction of further flexibility into NZDF's platforms and systems;
- improvements in internal planning and management processes; and
- an improved whole of life focus to asset procurement and management.

However, the realisation of improvements in these areas takes time, and cannot be replicated on a compounding, annual basis. Perhaps more importantly, such longer term efficiency improvements are most effectively delivered in a stable management environment. There is a risk that the repeated requirement for NZDF to find relatively significant short term savings has diverted management attention, and led to short term cost cutting measures that undermine NZDF's ability to deliver longer term efficiency gains.

4 Analysis

4.1 Current Financial Situation

The NZDF's medium term financial forecasts indicate that it is facing a 'structural deficit'. In other words, the NZDF considers that it will require relatively significant funding increases over the next 3-5 years in order to maintain its current level and scope of operations. The table below shows NZDF's forecasts of their minimum funding requirements in order to function under a 'moderately reduced capability' scenario. The figures assume no capital spending in addition to that already committed, and only the minimum increase in personnel needed to operate the new Protector vessels and operate the Joint Command and Control System (leaving personnel

numbers below the levels set out in the Defence Sustainability Initiative). However, the figures do assume an ongoing 1% per annum increase in personnel costs which are needed to attract and retain key staff⁴.

Table 3 – Funding Increases Required Under a ‘Moderately Reduced Capability’ Scenario

	09/10 (current baselines)	10/11 (\$m) required increase to baselines	11/12 (\$m) required increase to baselines	12/13 (\$m) required increase to baselines	13/14 (\$m) required increase to baselines
Expenditure					
Personnel	\$812.90m	\$22.71m	\$36.49m	\$60.06m	\$72.11m
Operating	\$585.32m	\$46.42m	\$49.57m	\$96.53m	\$108.80m
Depreciation	\$356.10m	\$35.22m	\$80.00m	\$81.42m	\$71.76m
Annual Increase	\$1,745.33m	\$104.34m	\$166.06m	\$238.00m	\$252.66m
Resulting Baselines	\$1,754.33m	\$1,858.67m	\$1,920.39m	\$1,992.33m	\$2,006.99m

As shown in the table above, the NZDF forecasts that in total, an increase of around \$250m above current baselines will be needed by 2013/14 to avoid any more than modest decreases in NZDF’s capabilities.

The section below explains the underlying causes of this structural deficit. The largest single driver is the impact of inflation. However, other factors are also been relevant.

4.2 Drivers of Current Structural Deficit

All government agencies are subject to a range of different drivers that sometimes place upwards pressure on costs. However, the list of drivers, and their relative importance, typically differs from agency to agency. This section explains why NZDF is facing an ongoing structural deficit despite recent funding increases.

4.2.1 Impact of Inflation on Operating Costs

In-house analysis shows that the NZDF is subject to defence-specific rates of inflation that are higher than the general, economy-wide rate. There are two elements to this:

- cost increases arising from ongoing improvements in the technological capability of military hardware; and
- increases in the cost of ‘like for like’ defence-related goods and services.

⁴ A full list of the assumptions used to cost the different operating scenarios presented in this paper is provided in Appendix I.

The price impact of ongoing technological improvements should not, in theory, be referred to as inflation. However it can still give rise to significant, largely unavoidable cost pressures. Such 'technology creep' impacts first and foremost on the cost of large capital items, and is discussed in the following section on asset price inflation.

The second element – increases in the cost of goods measured on a 'like for like' basis – is a true inflationary impact. General economy-wide inflation measures such as the CPI capture the average movement in prices of a representative basket of goods. That basket of goods is designed to reflect the purchasing practices of 'typical' households. The typical basket of goods and services purchased by the NZDF is, unsurprisingly, distinctly different from that purchased by a typical household. For example, a recent Canadian study⁵ found that food and clothing amount for 24.6% of the CPI, but only 1.2% of defence spending. As a result, the potential exists for NZDF to face inflationary impacts that are substantially different from the CPI.

NZDF's analysis of its overseas currency purchases suggests that the impact of defence-specific inflation, excluding currency movements, has had a significant impact on operating costs in recent years. The line by line analysis found that over the five years to 2008/09, the average annual increase in the cost of like for like goods was 10.6%. If fuel purchases are excluded, that figure drops to 5.9%. The respective figures for the 5 years to 2007/08 are 7.0% and 4.4%.

NZDF has commissioned external advice from the NZ Institute of Economic Research on how to best measure its operating cost inflation. That work is ongoing. However, these preliminary figures suggest that NZDF has faced considerably higher inflation costs over the last 5-6 years than the economy as a whole: the average annual increase in the CPI over the five years to 2008/09 was 2.9%. Further, these cost increases impact on a significant portion of the NZDF vote: ammunition, equipment maintenance and fuel costs are around \$200m per annum, and depreciation costs around \$250m per annum.

Note again that these figures *exclude* the impact of price increases associated with technological improvements (which are discussed further in the following section).

In summary, if fuel costs are included NZDF appears to have faced a rate of inflation slightly over three times that of the economy as a whole over the last five years. Even excluding fuel costs, the NZ defence-specific rate of inflation is over two times that of the economy as a whole.

NZDF's inhouse analysis suggests that this high level of defence-specific inflation over the last five years has directly increased its operating costs by approximately \$30m per annum. Further, the impact of inflation on assets values (see following section) has increased depreciation costs by an additional \$20m per annum. As discussed earlier, the NZDF estimates the entire variable

⁵ Solomon B, 'Defence Specific Inflation: A Canadian Perspective', Defence and Peace Economics, Volume 14, 2002

component of its operating budget at around \$250m per annum. This combined inflationary impact of \$50m represents a significant portion of that variable portion of NZDF's operating budget.

4.2.1.1 International Literature on Defence Specific Operating Cost Inflation

A small number of studies internationally have assessed the question of whether defence-specific operating cost inflation is consistently higher than the CPI. The findings of those studies are mixed. Some have identified consistently higher rates, while others have not been able to identify a sustained difference between defence-specific inflation and the CPI. A key element of this debate is how to treat wage increases, which typically exceed the rate of inflation over time. Arguments exist around the extent that it is possible for defence agencies to compensate for increasing real wage costs by adopting more capital-intensive working methods.

We consider that it is likely that this debate will continue for some time. In the meantime, we believe that the data provided by NZDF provides reasonably strong evidence that defence-specific inflation has outstripped general inflation in New Zealand over recent years.

4.2.2 *Asset Price Inflation*

The MoD and NZDF purchase the bulk of their military hardware from overseas suppliers. Given the relatively small value of their purchases, the MoD and NZDF are price takers in those markets.

There is very strong evidence internationally to show that increases in the cost of military hardware internationally consistently outstrip the rate of inflation. For example, recent American studies⁶ found that cost escalation for naval ships and fixed wing aircraft is around double the rate of consumer inflation, or higher. Those studies found that the factors that contribute to price rises in military hardware can be split into two broad categories: economy-driven factors and customer-driven factors. They concluded that increases in the cost of economy driven factors, such as the cost of labour and materials, broadly matched the general rate of inflation. The remainder of the observed cost escalation was driven by customer factors, most importantly increases in the complexity of the systems sought.

In other words, armed forces around the world are consistently seeking more sophisticated, technologically advanced military hardware. The ship, aircraft, and weapons purchased today are of a higher quality than those available one or more decades earlier. As a result their unit cost is considerably higher.

⁶ RAND National Defense Research Institute. "Why Has The Cost of Fixed-Wing Aircraft Risen?", 2008 and "Why Has the Cost of Navy Ships Risen?", 2006.

This leaves New Zealand facing a difficult choice. If our armed forces are to be effective, and kept as safe as possible, their hardware needs to be as good as that held by allies they will be working with, or the enemies they will be fighting against. It is therefore not practical for New Zealand to attempt to resist this ongoing escalation in the sophistication of military hardware by buying outdated equipment. Accordingly, New Zealand must either choose to continue to increase its defence-related capital expenditure at a faster rate than inflation, in order to sustain its armed forces at their current size and scope, or reduce its operational capabilities to ensure that those elements which are retained remain able to operate at an effective level.

In this regard it should be noted that there is an element of path dependence to the development of NZDF's capabilities. Once a key capability has been lost, such as the air combat wing, it becomes more difficult or costly to reinstate it due to the loss of appropriately skilled staff.

In addition to its impact on necessary levels of capital spending over time, this asset price inflation will have direct operating cost impacts through its effect on depreciation. As discussed in the previous section, NZDF estimates that this impact has been in the order of \$20m per annum over recent years. In other words, in the absence of explicit decisions to reduce capability, ongoing increases in defence-related *operating* expenditure should be expected as a result of increases in the cost of *capital* goods.

Anecdotal evidence also suggests that in past appropriations the Ministry and NZDF have failed to adequately forecast the increased operating costs resulting from the ongoing impact of asset price inflation (see discussion below).

4.2.3 *Impact of Exchange Rate Fluctuations*

In-house analysis shows that the NZDF is also subject to considerable foreign exchange fluctuations. Recent work commissioned by the NZDF⁷ found that the NZ dollar can spend significant periods of time well away from its long term average value against key currencies. For example, with respect to the US dollar it found that the NZ dollar is more than 10% above the 10 year-average for 39% of the time, and more than 10% below the 10-year average for 33% of the time. Put another way, the NZ dollar only lay within 10% of its average long term value for less than 30% of the decade considered.

Due to their fluctuating nature, exchange rate variations do not lead to a sustained increase in NZDF's operating costs. However, their impact in any given year can be significant, and require additional, temporary, cost savings to be found.

⁷ Asia-Pacific Risk Management Ltd. "Foreign Exchange Risk on Capital Asset Purchases." May 2007.

4.2.4 Revaluation Impacts

In line with accounting practices, NZDF revalues its assets at regular intervals. The fair replacement value of an asset can be affected by a range of factors, including inflationary impacts and exchange rate fluctuations.

The cumulative operating cost impact of NZDF asset revaluations over the past seven years is shown in Table 4 below.

Table 4 – Impact of Asset Revaluations on NZDF Operating Costs

Year	Impact	Cumulative Impact
2003/04	\$16m	\$16m
2004/05	\$-	\$16m
2005/06	\$8m	\$24m
2006/07	\$22m	\$66m
2007/08	-\$13m	\$53m
2008/09	\$8m	\$61m
2009/10	\$21m	\$82m

Overall, the impact of these asset revaluations has been to add an additional \$82m of operating costs over the last seven years. NZDF has been compensated for such revaluation impacts in recent years, as a result of an agreement put in place under the previous government. However, this agreement has now expired. If revaluation impacts of these levels continue, NZDF will now be required to find even higher levels of offsetting operational costs savings to keep its overall expenditure within appropriated levels.

4.2.5 Funding of Large Capital Acquisitions

The procurement of large, bespoke capital items is an inherently complex and risky process. A recent study for the British Treasury⁸ found a consistent ‘optimism bias’, or tendency for a project’s costs and duration to be underestimated and/or benefits to be overestimated. For the capital cost of equipment, they found an average optimism bias of 10-200%. In other words, *on average* the final cost of large capital equipment items is 10%-200% higher than the original estimate. Many OECD governments have therefore spent considerable effort over recent years to refine their procurement processes with a view to improving value for money and minimising delivery risk.

Anecdotal evidence suggests that weaknesses in the processes used to procure large capital items have also contributed to the NZDF’s current, weak financial situation. We understand that these issues are also being covered in the procurement work stream. They are therefore only relatively briefly discussed in this paper.

⁸ Mott MacDonald. “Review of Large Public Procurement in the UK.” July 2002.

The key concerns around the processes used to acquire large capital items highlighted by our research included:

- An insufficient focus by the Ministry on the NZDF's ongoing interests in the procurement process, leading to:
 - an undue focus on minimising upfront acquisition costs, at the expense of higher ongoing operational costs over the life of the asset; and
 - insufficient attention to the specification of ongoing maintenance and spares arrangements with the asset supplier.
- Inadequate budget provision being made for the operating cost implications (maintenance, depreciation and the capital charge) of new acquisitions.
- Price escalation eroding the number or quality of capital items that can be purchased from within the capital funding envelope agreed by the previous government (combined with a failure to upgrade the Long-Term Development Plan to reflect the impacts of that price escalation).
- A lack of prioritisation between different planned acquisitions once price escalation made the full programme of purchases unaffordable.
- Cabinet approval for an acquisition, along with the relevant funding, being sought relatively early in the acquisition process, when project costs are inevitably indicative. After that approval, an unduly strong focus was retained on avoiding any increases in acquisition costs above the indicative amounts that were approved.
- Inadequate guidance and involvement by the central agencies, in particular the Treasury.

4.2.5.1 Revised Capital Acquisition Processes

Cabinet agreed a revised policy framework for the management and acquisition of large capital items in December 2007. Some of the key elements of that new framework were:

- The adoption of a 'whole of life' focus to asset procurement and management.
- A requirement that a specified list of 'capital intensive agencies' (including NZDF and the Ministry of Defence) demonstrate an advanced standard of asset management.
- A formal two-stage Cabinet approval process for all capital investment proposals above a specified threshold:
 - with Stage 1 approvals focussing on the strategic choices involved, and providing only indicative costs and benefits; and

- Stage 2 approvals providing a more detailed business case and more fully developed costs and benefits.
- A requirement that high-risk capital expenditure proposals be subject to an additional layer of project or programme assurance, based on the UK Gateway approach.
- Confirmation that Treasury is responsible for developing, promulgating and maintaining the proposed capital asset management framework.

In line with the requirement to provide an additional layer of project assurance, the MoD has developed a management framework for large procurement processes based on the following key stages:

- *Project initiation.* After preliminary in-house work, the Minister of Defence is informed of the Ministry and NZDF's intention to commence a large acquisition process.
- *Gate 1 – Approval to initiate.* A high-level cost-benefit and risk analysis is prepared, setting out different purchase options, and submitted to government. Estimated costs and timelines are significantly uncertain at this stage.
- *Gate 2 – Approval to commence acquisition.* A detailed business case is prepared, outlining the investment proposal and procurement strategy. Decisions on the exact nature of the equipment needed to achieve the desired capability have not been finalised at this stage.
- *Gate 3 – Approval to negotiate.* Following an evaluation of tenders, approval is sought to negotiate with a preferred provider.
- *Gate 4 – Approval to commit.* Once negotiations with the preferred tenderer are complete, approval is sought to commit funds and enter into a binding contract.

These new acquisition guidelines and processes should help to address a number of the concerns discussed above. In particular the combined requirements on NZDF to adopt a whole of life focus, and a two-pass approval process, should help to ensure that the operating cost implications of new procurements are adequately forecast and budgeted for. However, it should be noted that a number of the defence acquisition projects currently underway were initiated prior to these new guidelines being introduced. Further, it may take some time for the Ministry and NZDF to gradually improve their expertise in these areas. The concerns discussed above may therefore not be immediately addressed by the revised acquisition processes put in place by Cabinet.

Our recommendations for further possible improvements for managing the acquisition of large defence capital items are provided in the section below.

5 Recommended Improvements to the Current Funding System

As noted, New Zealand has an internationally recognised, well designed public sector financial management system. In general, we consider that the long term funding regime used for New Zealand's government agencies, including the defence agencies, is of high quality. However, our analysis outlined above suggests that due to the unique nature of the NZDF in particular, a small number of key changes to the funding system are desirable for the defence agencies. This final section outlines our recommended changes.

If implemented, each of these proposed changes would have a fiscal impact. Given the current fiscal situation facing the Government the costs and benefits of these proposed changes will need to be carefully assessed. However, they should not be rejected simply because of their fiscal impact; we believe that the high level of fiscal restraint and control provided by the current funding system has come at a cost which should be taken into account.

5.1 Partial Offsetting of Inflationary Impacts

All New Zealand government agencies are currently required to find ongoing productivity improvements to fund the impact of inflation on their operations. However, as discussed above, there is evidence to suggest that this policy places a significantly greater burden on the NZDF than it does on most other New Zealand government agencies due to high levels of defence-specific inflation. NZDF's analysis suggests that this is a key factor that has led to NZDF's current financial difficulties.

We therefore recommend that a policy change be made to provide NZDF a degree of protection from the higher than average levels of inflation it faces.

There are several different ways that this could be achieved, providing varying levels of protection. Three key options are outlined below. However, under all options it should be emphasised that the objective of the policy should be to remove the relative disadvantage that NZDF currently faces due to facing higher than 'normal' rates of inflation, rather than to remove any requirement on them to secure ongoing productivity improvements.

5.1.1 Annual Inflation Adjustment of Total Allowable Operating Expenditure

The simplest form of protection against the impact of inflation would be to provide the NZDF with automatic, ongoing inflation adjustments to all non-capital appropriations. This could be done using one of Statistics New Zealand's existing inflation indices, such as the consumer price index. Alternatively a fixed annual adjustment could be agreed, based on average historic rates of inflation, or the mid-point of the RBNZ's current inflation target band; 2%.

Note that the Australian Government has indexed its Defence agencies operating expenditure to take account of the impacts of inflation for some time. Initially, the rate of indexation was revised annually on the basis of the non-farm GDP implicit price deflator. However, due to the growing volatility of this deflator, the recent Australian Defence White Paper proposes that

Defence spending be indexed at a fixed rate of 2.5 per cent from 2009-10 to 2030. This decision was aimed at providing the defence forces there greater certainty over future funding levels and a resulting greater ability to make the sorts of long-term plans sought by the Australian Government.

The key advantages of this option of providing a general inflation adjustment are that it would be simple to implement and understand, and would give a relatively high degree of certainty to the NZDF (depending on how the adjustment was calculated). It's key disadvantage is that the degree of protection provided would only be crudely related to the actual inflationary impact facing NZDF, as it would not be based on estimates of defence-specific inflation.

5.1.2 Inflation Adjustment Only for Agreed Cost Items

A second alternative would be to protect NZDF against estimates of the impact of inflation on key cost items, such as depreciation, capital charge, personnel, fuel and ammunition.

The key advantage of this option is that the level of funding adjustment provided would be explicitly tied to NZDF's actual cost drivers and rates of inflation. In turn, it's key disadvantages are that it would increase funding uncertainty for NZDF and require extra administrative effort.

If this option were to be pursued the first step would need to be to more carefully assess NZDF's historic rates of inflation on an expenditure item-by-item basis, and confirm both a list of cost items that compensation should be provided for, and an agreed methodology for estimating inflation rates for those items in the future.

5.1.3 Protection from Depreciation and Capital Charge Impacts of Asset Revaluations

A third approach would be to only provide inflation adjustment for the depreciation and capital charge impacts of any revaluation of NZDF's assets.

This option would again have the benefit of being more closely tailored to the actual inflationary impacts faced by NZDF and would capture the two key cost drivers which both have a significant impact on total operating expenditure levels, and are clearly outside of NZDF's control. In turn, the key disadvantage is that it would only protect NZDF against a subset of the inflationary impacts facing it.

5.2 Planning and Funding of Large Asset Procurements

The second key area where our analysis suggests that improvements to the current funding system are desirable is in relation to the procurement of large, bespoke capital assets.

The procurement of such assets is universally found to be a complex and risky activity. Cost escalations are unavoidable, and should be planned for. However, it remains important that procuring agencies face strong incentives to minimise cost escalations, and that in aggregate a

high degree of control is maintained over spending levels. Further, Ministers and senior managers need accurate and timely information in order to set, and revise, strategic priorities.

The recently agreed policy framework for the management and acquisition of large capital items should help to address many of the concerns we have identified around the procurement and funding of large bespoke assets. In particular:

- The explicit adoption of a ‘whole of life’ focus to asset procurement and management should help to ensure that the operating cost implications of new procurements are adequately budgeted for and that an appropriate balance is struck between capital and operating costs during the procurement process (i.e. capital cost savings are not sought at the expense of increased operating costs and a higher overall whole of life cost).
- The introduction of a formal two-stage Cabinet approval process for larger capital investment proposals should help to ensure that the capital and operating spending levels appropriated by Parliament better match the costs ultimately faced by the Ministry and NZDF.
- The requirement for high-risk capital expenditure proposals to be subject to an additional layer of project or programme assurance should help to ensure that procurements are better managed.
- Increasing Treasury involvement in the capital asset management framework should again help to improve the consistency and quality of procurement processes, while at the same time ensuring that Treasury has a more sophisticated and realistic understanding of procurement processes.

However, it should be emphasised that these changes to the Government’s procurement processes are only a first step. Anecdotal evidence suggests that sustained effort is required to adjust internal MoD and NZDF processes to fully match this revised framework.

Further, we consider that a small number of further changes to the rules governing NZ defence-related procurements are desirable in order to strengthen NZDF’s long term planning processes, and provide NZDF with a modestly greater flexibility to adjust to unforeseen events. To some extent our recommended changes represent a formalisation of existing practice, but in other areas they are a change from past practice. Our recommended changes are:

- That the Ministry be required to prepare an updated Long Term Development Plan (LTDP) every two years, covering the upcoming ten year period.
- That each Plan should:

- be based on an indicative funding envelope (covering both capital and operating expenditure) that has been jointly agreed by the Ministers of Defence and Finance. (Note that this indicative envelope would not be a guarantee of future funding; it would be used for planning purposes only).
- provide a high level summary of forecast operating costs, to provide an early warning of sustainability problems.
- The Ministry should continue to seek approval for large capital acquisitions on a case by case basis (through the required two-stage process) based on the acquisition priorities arising from the most recent LTDP.
- NZDF's core operating funding (i.e. excluding that for fluctuating items such as deployments) should be appropriated through a rolling, 3 year appropriation. And NZDF be given a degree of flexibility to shift money forward or backward between years within its three year appropriation

The requirement to prepare a biennial LTDP, covering both capex and opex, should help to: strengthen the focus on long term planning within the NZDF; ensure that decision makers have up-to-date information; and provide early warnings of potential funding problems. Further the requirement that this plan be based on an agreed capital and operating funding envelope should help to ensure that the exercise remains consistent with the current funding environment, and therefore relevant.

In turn, the proposal that all NZDF operating funding be provided on a rolling three year appropriation, with the constrained ability to shift funds between years, would provide a greater degree of flexibility for NZDF to manage one-off, unforeseen events, such as cost increases resulting from exchange rate fluctuations. However, this approach would still see NZDF subject to a high level of overall fiscal control, and facing strong incentives to manage costs. If this recommendation is pursued, further work would be needed to determine the nature of the constraints that should be placed on the ability to shift funds between years. Constraints could be placed on the overall level of funding that can be shifted, and/or the circumstances in which shifting is allowed.