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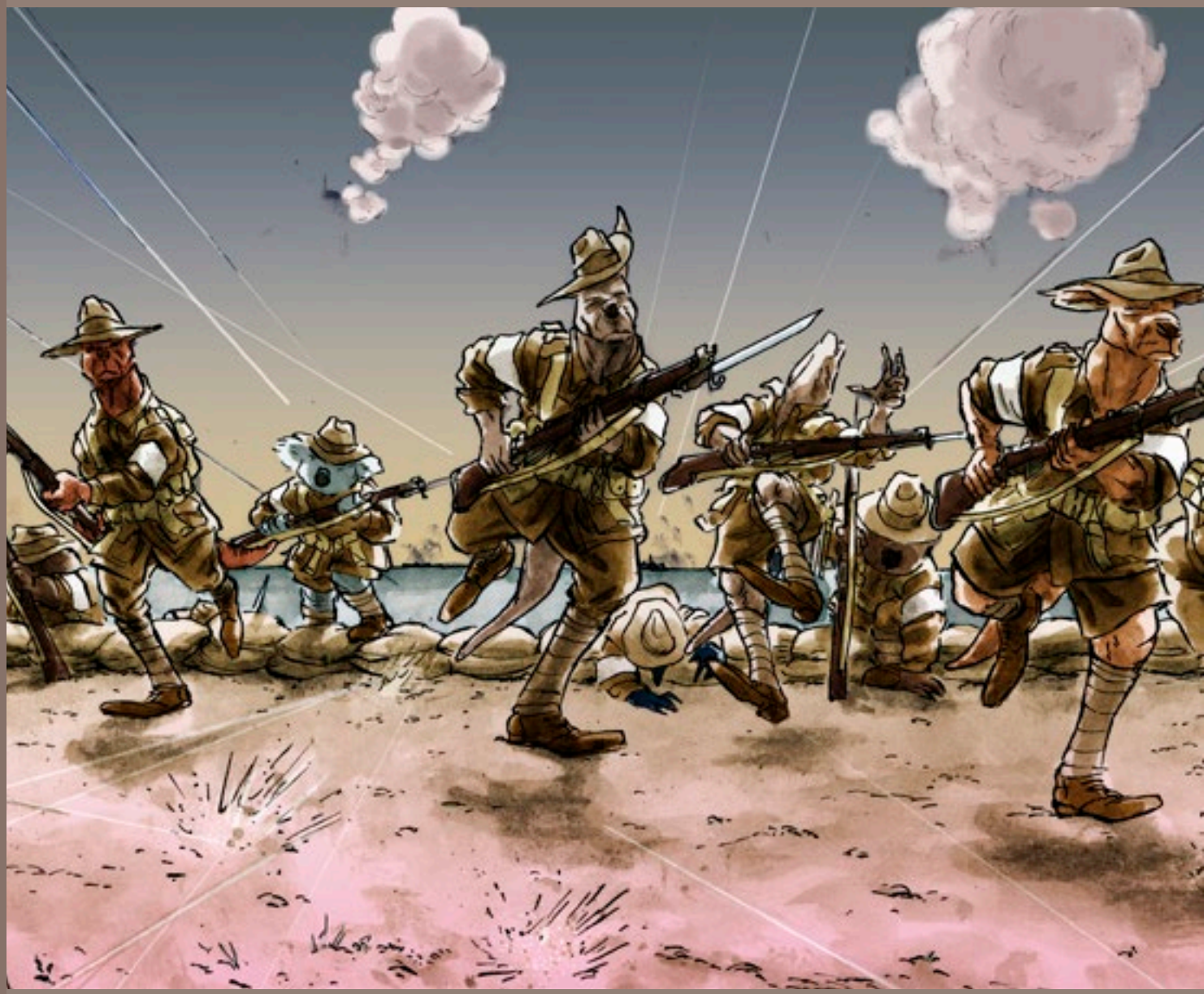
The Cost of Defence

ASPI Defence Budget Brief 2015–2016



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Eighty-seven million, nine hundred & eighteen thousand, four hundred & fifty-four dollars & seventy-nine cents per day

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ASPI Defence Budget Brief 2015-16

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Note on title:
The figure of $87,918,454.79 represents one three-hundred-and-sixty-fifth of net defence funding for 2015–16. This does not include funds appropriated to the Defence Housing Authority, nor those administered by Defence for military superannuation schemes and housing support services.

Contents

Executive Director's introduction

This is ASPI's fourteenth annual Defence Budget Brief. Our aim remains to inform discussion and scrutiny of the Defence budget and the policy choices it entails.

As has been the custom in the past, we explore new areas in this year's Brief. The new entrant this year, *Pay and People,* benchmarks the salaries paid to the Australian Defence Force in the context of the recent 2% a year pay rise.

We've also exploited a new source of information this year, the public listing of Defence contracts. It's provided a rich insight into how money is spent within the organisation. Note that the contract values are as reported by Defence but may not reflect actual expenditure in every instance.

Acknowledgements are due. The not inconsiderable task of preparing the document for publication has been ably taken care of by Janice Johnson. Many others have helped by providing comments, offering advice, and checking facts. Our thanks go out to them all. Special thanks goes to Ms Palmo Tenzig who did the lion's share of the work on the Pay and People chapter.

Also, Defence was kind enough to look over a preliminary draft of this Brief and provide valuable comments. This helped clarify some important points and resulted in improved accuracy in many areas. Of course this does not in any way imply that Defence endorses this document or even supports its conclusions.

My colleague Mark Thomson, who is ASPI's Senior Analyst for Defence Economics, has once again pulled together the brief in the short time available. For this I extend my sincere thanks. As always, responsibility for the judgements contained herein lie with Mark and me alone.

Lastly we should acknowledge that we at ASPI are not disinterested observers of the Defence budget. Our funding from government is provided through Defence at the rate of eight thousand, seven hundred and fifty-six dollars and thirty-seven cents ($8,756.37) per day. Details can be found in our 2013-14 Annual Report.

Peter Jennings
Executive Director

Executive summary

With fiscal consolidation firmly on the back burner, it was not surprising that Defence did very well again in the May budget. Nominal defence spending will grow by $2.0 billion next financial year (2015-16) to $32.1 billion. In real terms, the year-on-year increase amounts to a 4.5% boost.

Defence Budget 2015

Defence funding 2015-16:	$32.1 billion
Share of GDP:	1.93%
Share of Commonwealth spend:	7.5%
Real growth on prior year:	4.5%

Expenditure shares

Investment:	$9.7 billion	(30.1%)
Personnel:	$11.7 billion	(36.3%)
Operating:	$10.8 billion	(33.6%)

Cost of deployments

Afghanistan & Middle East:	$862 million
Border protection:	$49 million

Key budget measures

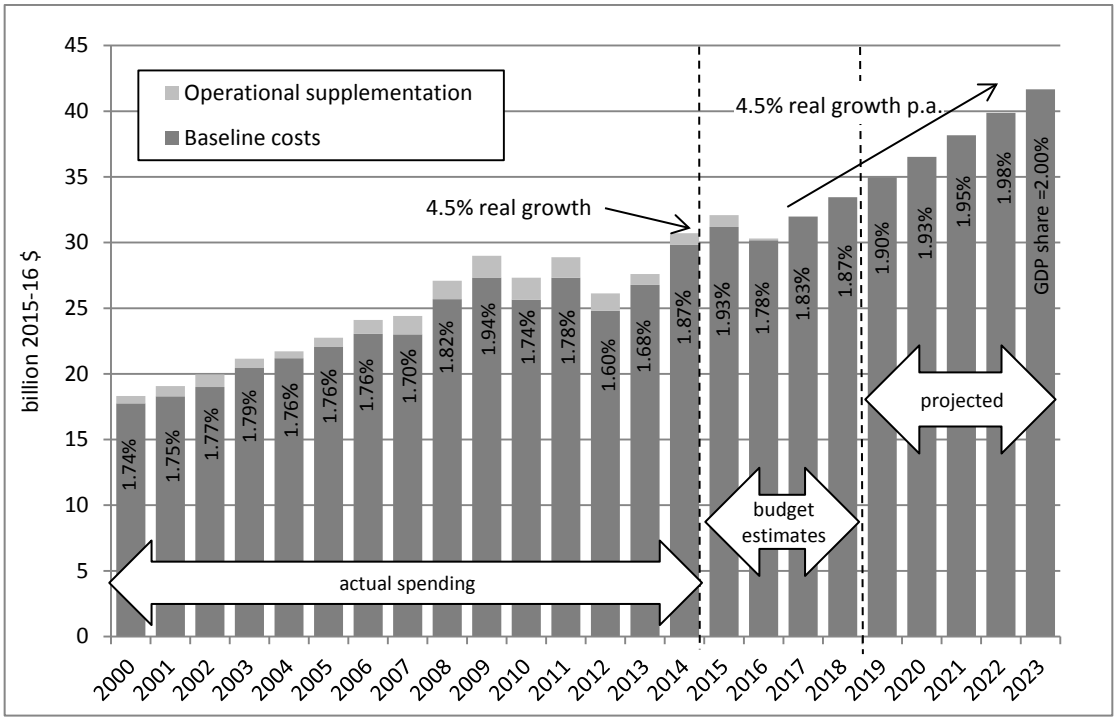
$2.8 billion adjustment for foreign exchange

$802 million for operational supplementation

As a share of GDP, defence spending will reach 1.93% next financial year. But while this sounds impressive, it needs to be put in context. Next year's funding includes a large chunk of foreign exchange supplementations ($1.4 billion accumulated since 2013) and funding to cover the net additional cost of operations ($911 million). Absent these two no-win no-loss adjustments, the GDP share would have been below 1.8%. It would have been smaller still had nominal GDP growth not been slower than expected.

However, and more importantly, next year's budget maintains a credible path to spending 2% of GDP on defence by 2023-24. And it's the long-term target that matters. Not just because of the Prime Minister's election promise, but because 2% of GDP in 2023-24 is going to be worth a lot more than 2% of GDP today (28% more in real terms if the economy grows at 2.5% a year over the forthcoming decade).

On current plans, defence spending will fall next year and then grow steadily for the two years that follow. Beyond that point, it's up to the White Paper—due later this year—to plot a path to achieving the promised 2% of GDP in 2023-24. A possible trajectory is shown below, where it's assumed that funding grows at 4.5% real from 2018-19 onwards.



The assumption of steady growth reflects the reality that defence funding cannot be ramped up rapidly. Back in the 2000s when the budget was growing at 3% real a year, money was handed back unspent on multiple occasions. Neither Defence nor defence industry can be turned on and off like a tap.

If the government wants to be assured of reaching 2% of GDP by 2023-24, they should commence the ramp-up next year rather than allow defence spending to fall and then rebuild. The result would be smaller and more manageable annual increments in funding. Indeed, even if it meant bringing money forward from the early 2020s—delivering the same quantum of funds over the decade—and undershooting on the 2% target in the final year, it would be worth doing. What matters is a realistic and manageable growth in defence funding to achieve a stronger defence force, not the contrived achievement of an arbitrary number. Viewed this way, it will defy common sense if the White Paper allows baseline defence funding to fall one iota between today and 2023-24.

> ***….it will defy common sense if the White Paper allows baseline defence funding to fall one iota between today and 2023-24.***

Of course, there are fiscal realities to be taken into account. This year's budget saw the projected date of a federal surplus slip by twelve months, from 2018-19 to 2019-20. Irrespective of when the government begins the climb up to 2% of GDP, this constitutes a risk to defence funding. There's a binary political calculus about surpluses and deficits. At the moment, it's easy to boost defence spending because the opportunity cost isn't a foregone surplus. The situation will change around the end of the decade when the political prize of delivering a surplus comes within reach. If the choice is between reneging on a promise about defence funding, or going to yet another election without having delivered a surplus, it's not hard to guess the outcome.

So taking the fiscal situation into account, it makes even more sense to continue increasing defence funding next year. Bringing investment spending (which is relatively mobile) forward from the end of the decade into the next couple of years could actually help the government achieve a surplus when the time comes. Of course, care would be needed to avoid unmanageable peaks and troughs.

2015 White Paper

Balancing defence funding with fiscal imperatives is only one of the challenges facing Defence and the government. To start with, there's a White Paper to deliver. As we observed last year, 2% of GDP in the 2020s is a lot of money compared with the scale of Australia's current defence force. Chances are that the White Paper will present an ambitious vision for the future force. Let's hope that a planning process constrained by nothing more than an arbitrary fraction of GDP comes up with a sensible plan for the future. The risk is that proposals of lesser worth will make it over the line simply because money's available. Certainly, Defence's planners won't be offering to hand money back.

There's also a basket of technical issue to be resolved. It's easy to promise that defence spending will be a certain share of GDP in a certain year. But foreign exchange movements

and the vagaries of economic growth make it difficult to construct a funding model that does so without lumbering Defence with financial risk. The sensible approach would be to fix a funding envelope with GDP share as a *planning benchmark*, and then adjust the envelope to ensure that its buying power is maintained against the buffeting of foreign exchange and inflation. An inflexible year-by-year peg against GDP share would be unworkable.

The government has described the forthcoming White Paper and its accompanying plan for the ADF with a range of adjectives, including fully costed, externally assured, achievable, affordable, credible, realistic, properly funded and enduring. That's a tall order to deliver. But if the new White Paper is to 'restore the compact that should rightly exist between the Government and its Defence Force'—as the Minister has said—there'll need to be another adjective added to the list: transparent. If the government wants to be believed when it claims it has a 'credible, affordable and properly funded' plan, it'll have to show us the money.

Past White Papers have taken different approaches. Without doubt, the Howard government's 2000 effort set the gold standard. It provided a decade's worth of overall funding guidance in the document, and backed it up with a detailed breakdown of new funding over the decade in the budget that followed. It then published a detailed decade-long public Defence Capability Plan in 2001 (transparency declined rapidly in later editions). The subsequent 2009 and 2013 White Paper provided far less information than the 2000 version. That's understandable: the 2000 document had an important story to tell, whereas its successors had a lot to hide.

The degree of funding transparency in the 2015 Defence White Paper will be a litmus test of how serious the government is about its commitment to defence. The Howard government wasn't afraid of being held to account; let's hope the Abbot government isn't either.

Military pay

Given the controversy surrounding the sub-inflation pay rise awarded to the ADF, we benchmarked ADF salaries against international comparators in the Budget Brief this year. While comparisons are difficult, the following broad trends emerged; our enlisted personnel receive relatively higher salaries than their overseas counterparts while our officers are on a par—except for our three- and four-star officers, who are much better paid than their equivalents overseas.

> ***If separation rates rise and recruitment rates fall, the labour market will have passed its verdict on the 2% per annum ADF pay rise.***

As interesting as these various benchmarks are, supply and demand will have the final say. That is; the adequacy or otherwise of the ADF salary increase will be determined by the decisions that ADF members and potential recruits make over the next three years. If separation rates rise and recruitment rates fall, the labour market will have passed its verdict on the 2% per annum ADF pay rise.

Two things likely contributed to the government's parsimonious approach. First and foremost, they want to balance the federal budget and ADF pay would set a precedent for the remainder of the public sector. Second, they probably want to drive down real wages in

the economy to increase Australia's export competitiveness. By constraining wage growth in the public sector, there is hope that it will flow on to private sector wages.

The government is undertaking a brave experiment. The latest Treasury projections for wage growth in the economy over the next three years are 2.5%, 2.75% and 2.75% respectively. The government is counting on ADF members sticking around despite increasingly better prospects in the civilian economy. They might get away with it; transition costs are high for individuals and loyalty is a real thing among military personnel. Trouble is, for four years in a row the ADF has fallen short of its target strength: 1,059 persons fewer in 2011-12, 2,029 fewer in 2012-13, 1,871 fewer in 2013-14 and 1,251 fewer in 2014-15. And total numbers fell over the first three years. This might simply reflect poor workforce planning. Let's hope so. The alternative is that ADF employment was losing its lustre prior to the latest workplace arrangement. If that's what's happened, it's one hell of a time to be experimenting.

Reform

Once again, Defence is going to be reorganised and reformed, this time following a First Principles Review headed by former Rio Tinto head David Peever. With 76 separate recommendations, it will shape how business is done across the organisation. Key changes include the reintegration of the Defence Materiel Organisation into Defence and the disbanding of the Capability Development Group.

If nothing else, Defence is going to be shaken up and some (but not all) of its managerial overheads are going to be cut. The planned changes will provide the opportunity to improve governance, accountability, planning, management information, performance monitoring, risk management and budget discipline. Of course, we've been promised this time-and-time before and yet here we are again.

The merits of many of the changes are far from self-evident—if they were they would have occurred a long time ago. The best that can be said is that they are new ideas that might be worth a try. In the long run, defence reform is more an exercise in trial and error than intelligent design. With luck, we keep the things that work and reject those that don't.

You don't have to be a pessimist to see the risks in some of the changes ahead. Creating a 'stronger strategic centre' in two parts is a bold move. To succeed, the tensions from contestability will have to be held in check to avoid thwarting cooperation between the newly created civilian and military sub-empires. And even if relations remain cordial, it's far from clear why a headquarters divided into two parts will work better than a single integrated one.

…defence reform is more an exercise in trial and error than intelligent design.

Nowhere are the risks greater than when it comes to the new 'end-to-end' approach to capability development. We're told that the new capability and acquisition group will prepare the business cases for first- and second-pass approval of projects, yet the people presently performing that role are slated to go back to the services. Has this been thought through? We'll find out soon enough, with two mega-projects to be decided over the next couple of years; the replacement submarines and future frigates. It won't help that the top layer of DMO's acquisition expertise is set to be shown the door.

On the positive side, by not promising a treasure trove of implausible savings the First Principles Review has avoided the errors of the past. To the contrary, although some modest personnel reductions are proposed, the review identifies a number of areas where additional investment will be required to build the enterprise capacity to operate more effectively—both in terms of human capital and information technology. It's entirely possible that the cost of additional investment will exceed any savings that might arise. That shouldn't be taken as a sign of failure, but of maturity.

Shipbuilding

In late May, the government announced the results of its forensic review of the troubled Air Warfare Destroyer project. A sobering picture emerged: an additional twelve-month delay and a cost blowout of around $1.2 billion. As the finance minister observed, we're now paying $3 billion each for ships we could have bought overseas for around $1 billion each. The three vessels will now be delivered between 30 and 33 months later than originally planned.

A rescue plan has been put in place that will see either a managing contractor or partnering arrangement to insert further expertise in the government-owned ASC shipbuilder. This potentially inserts a fourth party into the mix alongside the existing three alliance partners executing the project: ASC, Raytheon and Defence. This stops well short of actually putting a private sector firm in charge of completing the project (as was done back in the 1980s when two half-completed FFG frigates languished in the then government-owned Williamstown dockyard). Perhaps the alliance framework was too complex a knot to unpick.

Notwithstanding the slow motion debacle of the AWD project, the government says that it 'will release an enterprise-level naval shipbuilding plan later this year, which will provide for the long-term future of the Australian naval shipbuilding industry'. Really? Three vessels for the price of nine and we are going to double down on domestic shipbuilding?

In fairness, local industry can claim that they have been unfairly tainted by the poor performance on a government-owned entity. But surely we need credible assurance that the domestic private sector firms can produce vessels at something approaching an internationally competitive price before we sign up to tens of billions of dollars of domestic naval construction.

> ***…the very real risk is that we'll end up expanding the navy to meet local industry's demand for work.***

At first glance, the recently released RAND report on Australian naval shipbuilding provides a way ahead in the form of a continuous build program. However, on closer examination (see Chapter 7), the RAND report fails to muster a plausible case for the strategies it proposes. A continuous build program would require either a larger fleet or more frequent replacement of vessels than is the norm. Either way, the additional cost would be measured in billions of dollars. With so much extra money sloshing around due to the 2% of GDP promise, the very real risk is that we'll end up expanding the navy to meet local industry's demand for work. The tail will wag the dog, and the taxpayer will pick up the bill for creating a monopoly shipbuilder.

Chapter 1 – Background

Main Points

Australia faces emerging risks on strategic and economic fronts.

The government has to reconcile the economic and strategic risks facing Australia with the expectations of the electorate.

This year's budget revealed a further deterioration in Australia's fiscal position, with a surplus now not expected until 2019-20.

1.1 Strategic Context

Not since at least the end of the Cold War has it been so easy to paint a disturbing picture of the global strategic landscape.

Ukraine's sovereignty has been trashed by Russia. Large swaths of Iraq and Syria have descended into medieval barbarism. On the African continent, massacres and kidnappings occur amid terrorists training grounds. The Mediterranean is awash with the bodies of refugees fleeing the mayhem unleashed in North Africa. Israel and the occupied territories fester with no solution in prospect. And despite a deal in the offing, Iran's nuclear ambitions remain at best delayed, threatening a breakout of nuclear proliferation in the Middle East.

Closer to home, North Korea remains in the hands of a bizarre despot. Thailand stands on the brink of chaos if not civil war. And then there's China.

After two decades of strong economic growth, China is testing the limits of its neighbours' forbearance, including through an egregious claim to almost all of the South China Sea. A claim it's asserting through brinkmanship rather than diplomacy. It's hardly surprising that Japan is shaking off its introspections to bolster its defences and strengthen its strategic alliance with the United States. If only the United States was the omnipotent power it once was. Over the past five years, real defence spending in China has increased by 48% while US defence spending has fallen by almost 18%.

With such an outlook, you'd think that it would be easy to make the case for robust defence spending. If only it were that simple. Just as there's a storm brewing on the strategic horizon, dark clouds are gathering on the economic horizon.

It's been almost eight years since the world was rocked by the most serious financial crisis since the 1930s, yet the recovery remains weak, uneven and fragile. In the United States, the green shoots of recovery have withered on the branch more than once—perhaps this time the recovery will hold. The Eurozone remains in the grip of anaemic growth, with crippling high unemployment in Greece (25.7%), Spain (23.4%), Italy (12.6%) and France (10.6%) to name a few. To make matters worse, the single currency has proven to be a trap that sustains damaging trade imbalances within its boundary. Meanwhile, Japan is close to recording two decades of economic stagnation, despite heroic fiscal measures. Debt has skyrocketed in many developed nations as governments have borrowed massively to make ends meet in the face of collapsing revenues.

For a while it looked as though emerging economies such as China had escaped the ravages of the financial crisis, but that's not the case. Having substituted infrastructure investment for exports after the crisis, China is now struggling to generate domestic demand. As a result, consistent 10% per year growth is looking more like 6%.

Policymakers have not been idle. Interest rates have been slashed to zero and quantitative easing has been injecting billions of dollars into the monetary bases of Japan, the United States and the Eurozone. But much like pumping air into a type with a hole, they've little to show for it in terms of economic growth—though we cannot be sure what the counterfactual would have been.

The influx of so much money into those economies has devalued their currencies and prevented others from being export competitive. One country's exercise of sovereign monetary policy looks like a volley fired in a currency war to another.

If this were not enough, low interest rates are fuelling extraordinary asset price booms in many markets. These booms might turn out to be unstable bubbles that lead to further financial crises. Let's hope the watered-down tightening of financial market regulation prove sufficient to prevent a repeat of the cascading contagion of September 2008.

For a country such as Australia with a narrow export base and, for the moment at least, a narrow tax base, the first line of defence against economic and financial uncertainty is low debt. If the worst happens, the government's capacity to borrow will be the shock absorber that will have to cushion the blow. The less debt we have entering the next crisis, the more ability we'll have to ride it out.

Now you can see the problem. To guard against strategic uncertainty we need to invest in a capable defence force. To guard against economic instability, we need to get the deficit under control and pay down debt. Trouble is: each and every dollar can only be spent once.

If the government had to choose between national security and economic security, that would be bad enough. The risks on either front are difficult to quantify and even harder to compare. But there's a third claimant to those rare and precious dollars; an electorate that still remembers the good times of the resource boom and the successive waves of tax cuts and middle class welfare. Everyone agrees that we need to tighten belts in the post financial crisis world—only everyone thinks that their own belt is quite tight enough thank you. Whatever the government does to rein in spending or boost revenue it risks an electoral backlash.

Thus, it was hardly surprising on Budget Night the Treasurer set aside talk of budget emergencies and 'debt and deficit disasters'. Instead, we got a stimulus package targeting small business and middle Australia. Meanwhile the projected date of a return to surplus slipped a year and Australia's projected accumulated debts grew once more. For the moment, this is good news for Defence. With fiscal discipline relaxed, the prospects for near-term increases to Defence spending look good. However, each year that hard decisions are deferred is another year we'll be living with heightened risk to our economic security. Moreover, the more that our debt grows, the harder it will be to fulfil the promise to boost defence spending in the longer term.

1.2 Political Context

The Abbott government came to power promising to rectify the systemic underfunding of current defence plans, including through its election promise to boost defence spending to 2% of GDP by 2023-24. More importantly, from a political perspective, the government also promised to 'repair the budget' and set a path to surplus.

The tension between balancing the budget and properly funding existing plans for defence will come to a head later this year with the delivery of the government's 2015 Defence White Paper.

Key Points

The government reduced its emphasis of fiscal repair in this year's budget. As a result, it was more favourably received than its predecessor.

Economic issues continue to take precedence over defence in the public eye.

The electorate remains volatile and quick to express its displeasure with government.

Debate over defence spending will occur within the government itself and across the broader media rather than between the government and the opposition. Although defence isn't a high priority in people's minds—as explained below—the opposition has shown no readiness to argue against higher defence spending. That said, their policy of spending 2% of GDP when economic circumstances allow, is more guarded than the government's promise of doing so within a decade.

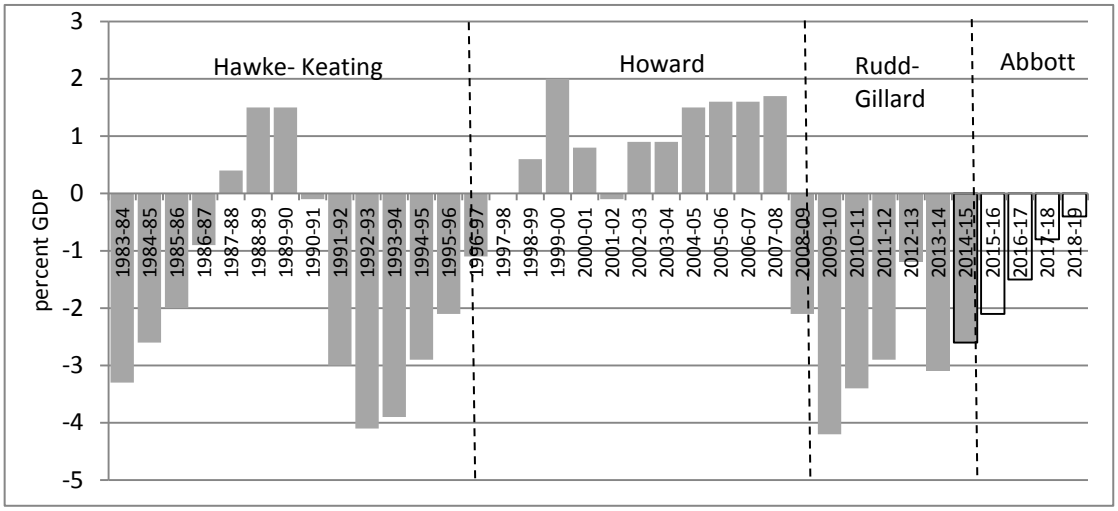
The unlikelihood of a broader debate on defence issues reflects the substantial bipartisan agreement on most aspects of defence policy. The underlying concepts laid out in the Fraser government's 1976 Defence White Paper have been echoed in every subsequent document. Where changes have occurred, they've been evolutionary adaptations to our changing circumstances. And while some changes have given rise to political debate at the time—such as the priority to be accorded to 'expeditionary' operations—bipartisan support has eventually been found. More generally, successive governments have been largely happy to take the advice tendered to them from the ADF leadership, tempered only by the fiscal constraints of the day.

One area where a clear difference has emerged between the government and opposition is naval shipbuilding; in particular the question of whether to build submarines in Australia. It's no secret that the government is actively exploring the option of importing boats from Japan, while remaining committed to a domestic build program.

Politics and money

From 2009 until 2012, the previous government's commitment to defence funding was all but totally eclipsed by the political imperative to deliver a fiscal surplus—a goal embraced equally by the then Opposition. Why the rush to get out the red? 2012-13 was the last opportunity for the Gillard government to demonstrate (not just promise) a surplus before the 2013 federal election. And how important was that? As Figure 1.2.1 shows with alarming clarity, it was very important; the last federal Labor treasurer to deliver a surplus was Paul Keating in 1989-90. Given the context, a surplus in 2012-13 was the political equivalent of a holy grail worth seeking at just about any cost.

Figure 1.2.1: Underlying cash balance 1983 to 2019



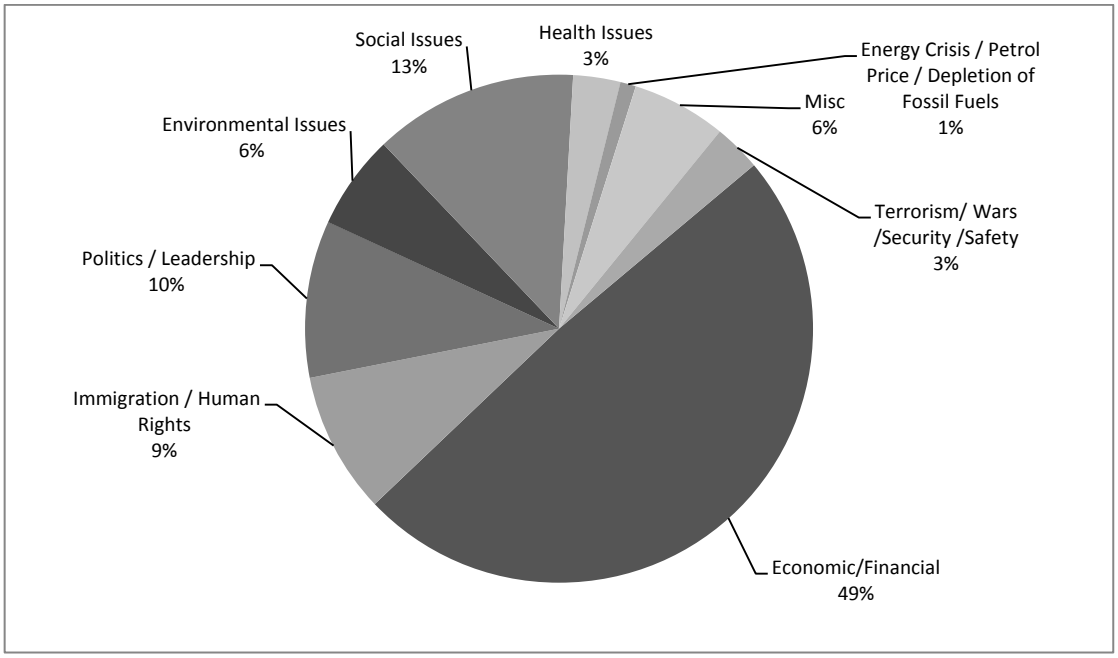
Source: Treasury Papers

So far, the Abbott government has adroitly avoided putting a hard date on when it plans to return the budget to surplus—though projections point towards 2019-20. But while there's still political capital from returning to surplus, the backlash following last year's budget has tempered the government's approach. In any case, with many key savings measures blocked in the Senate, progress out of the red was going to be slower than planned anyway.

Public opinion—defence and security

At the moment, Australians place a relatively low priority on security. Figure 1.2.2 shows the percentage of respondents who identified particular issues as the most important problem facing Australia in April 2015.

Figure 1.2.2: What do people worry about?

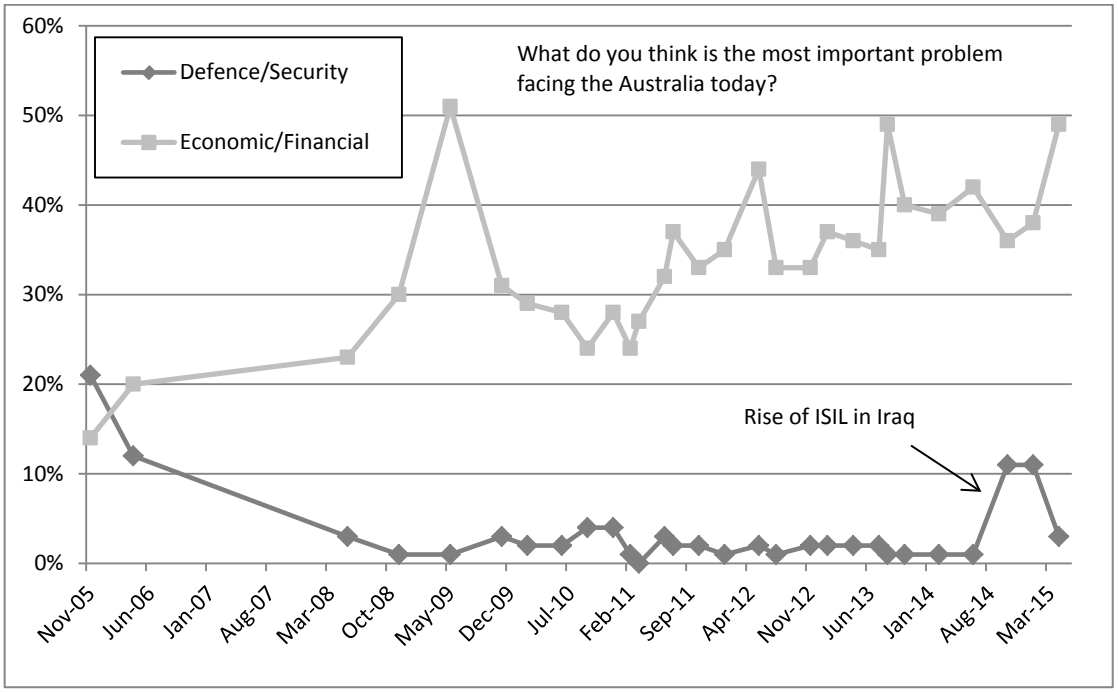


Source: Roy Morgan Research, Finding No. 6209, April 2015.

The relatively low priority currently given to defence is consistent with the downward trend in public perception of the seriousness of defence-related matters from late 2005 to mid-

2015, see Figure 1.2.3. Note the jump in concern around the time of ISIL's rise in Iraq, and the long-term continuing growth in concern about economic issues.

Figure 1.2.3: Less important than it used to be



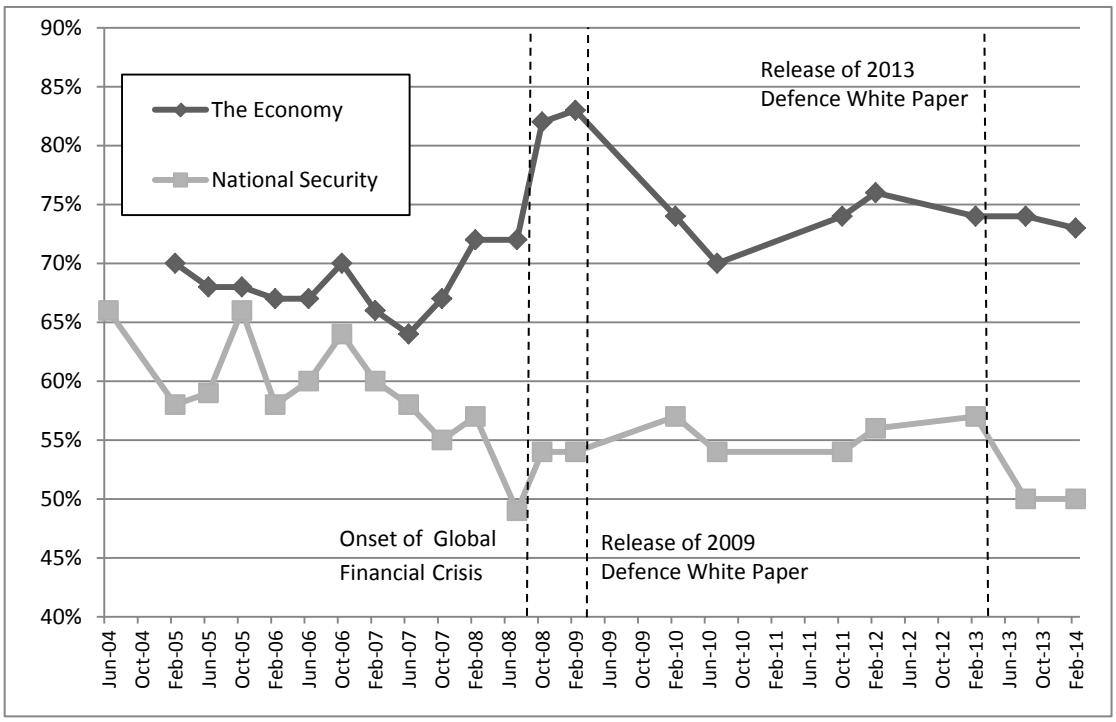
Source: Roy Morgan Research, Finding No. 6209, April 2015.
Defence/Security includes terrorism, wars, security, safety and relations with other countries.
Economic/Financial includes economy, cost of living, interest rates, unemployment, taxation, inequality.

The seemingly dramatic long-term change in public sentiment in Figure 1.2.3 is at least partially an artifact of respondants being asked to identify a single 'most important' issue. It's entirely possible for defence to still be important in its own right, even if it's not the most important issue of the day. With this in mind, we turn now to examine a more graduated measure of the perceived priority of defence-related issues over time. Figure 1.2.4 plots the percentage of Australians polled who rated 'national security' and/or 'the economy' as very important in the context of the question: *Would you say each of the following issues is very important, fairly important or not important on how you personally will vote in the federal election?*

As expected, the falling priority for national security is less dramatic in a survey where respondents can choose more than one item from a list of possiblilities. Nonetheless, it's still clear from the data that the GFC heralded a higher priority for the economy, partially at the expense of national security. It's interesting to note that after a pronounced swing in favour of the economy around the time of the GFC, sentiment subsequently plateaued at new levels more favourable to economic issues and less favourable to national security.

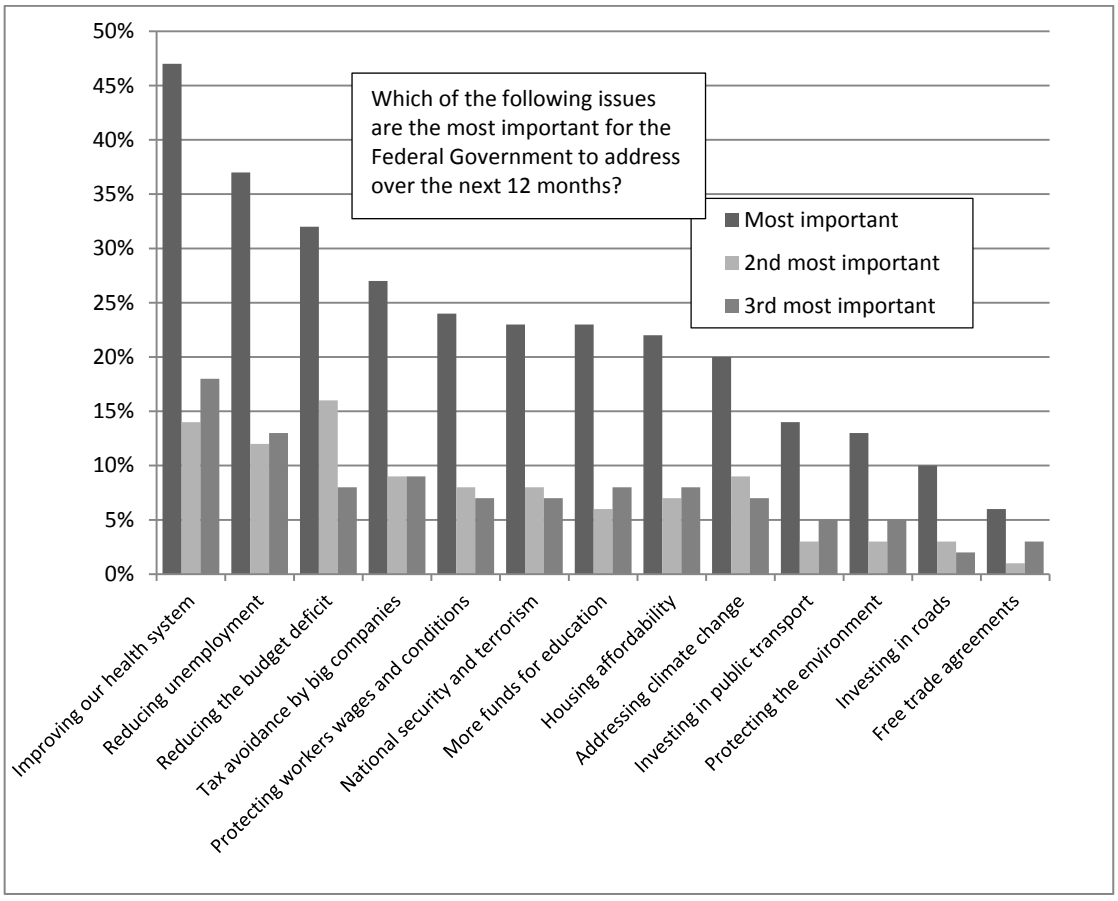
Another recent poll asking people to identify the three most important issues facing the government (Figure 1.2.5) rated 'national security and terrorism' below five other choices.

Figure 1.2.4: Guns versus butter



Source: Newspoll for The Australian newspaper, June 2004 to February 2014.

Figure 1.2.5: National Security and Terrorism—middle of the pack

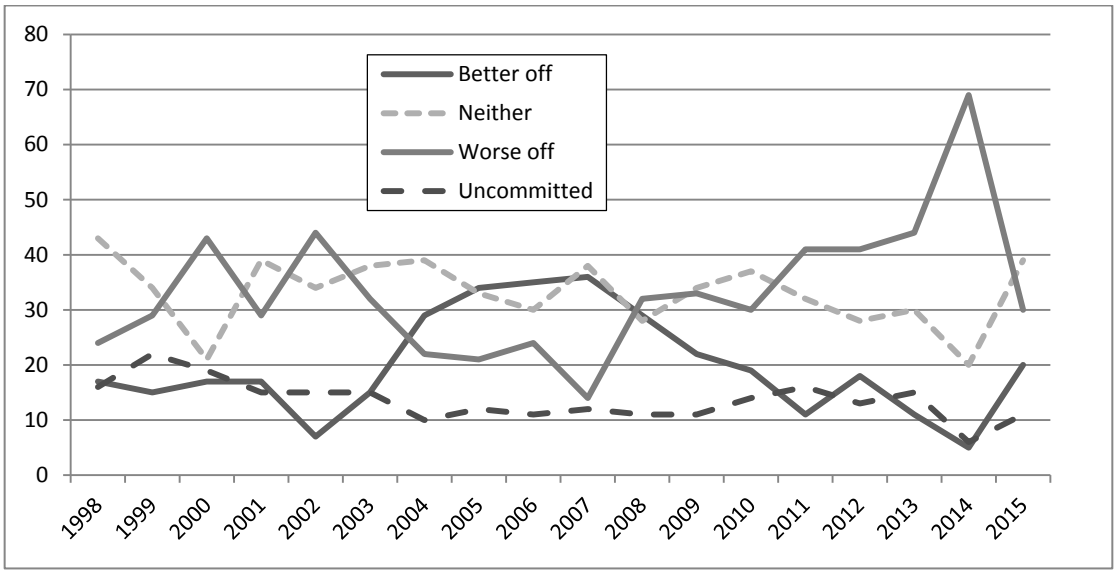


Source: Essential Media Report December 2014

Public opinion—budgets and surpluses

Last year's budget was poorly received. Figure 1.2.6 shows that 69% of people felt they would be worse off as a result compared with any budgets stretching back 17 years. This year's budget fared much better, with half as many people saying that the budget left them worse off, and almost twice as many people saying that they were better off.

Figure 1.2.6: Better or worse off after budget?



Source: Newspoll, Budget Poll, April 1998 to 2015

There is a unresolvable tension in achieving fiscal consolidation. Every dollar used to reduce the deficit must come from either higher taxes or reduced government spending. Nonetheless, more than 70% of people believe that a return to surplus is either 'very important or somewhat important', see Table 1.2.1. At the same time—i.e. prior to the budget—only 26% of people had confidence that the government was on the right track to do so, see Table 1.2.6.

Table 1.2.1: Importance of surplus?

Q. How important is it that the Government returns the budget to surplus?	
Very important	31%
Somewhat important	40%
Not very important	14%
Not at all important	6%
Don't know	9%

Source: Essential Report, 28 April 2015

Table 1.2.2: Confidence in return to surplus?

Q. The Government says that while the budget deficit is not likely to fall significantly in the near future, it is on the right track to return to surplus. How confident are you that the Government has an effective plan to eliminate the budget deficit?	
Very confident	9%
Somewhat confident	27%
Not very confident	28%
Not at all confident	24%
Don't know	13%

Source: Essential Report, 28 April 2015

In terms of what people think is a 'reasonable timeframe to return the budget to surplus', 6% of people said 1-2 years, 45% said 3-5 years, 24% said 6-10 years and 9% said more than 10 years; 16% of respondents did not know (Essential Media Report 28 April 2015).

Faced with the choice of raising taxes or reducing spending, there was a preference for the latter over the former, see Table 1.2.3, and Defence was not high on the list for cutting, see Figure 1.2.7. Roughly speaking, defence comes out in the middle of the pack, with 34% of respondents in 2013 and 38% in 2014 supporting reduced spending. Both of these results are substantially higher than the 10-12% who supported defence cuts in the polls represented in Figure 1.2.8 and Table 1.2.4. Perhaps the critical difference is that higher results arose in the context of choosing between tax hikes and spending cuts, and then only counted respondents who supported cuts.

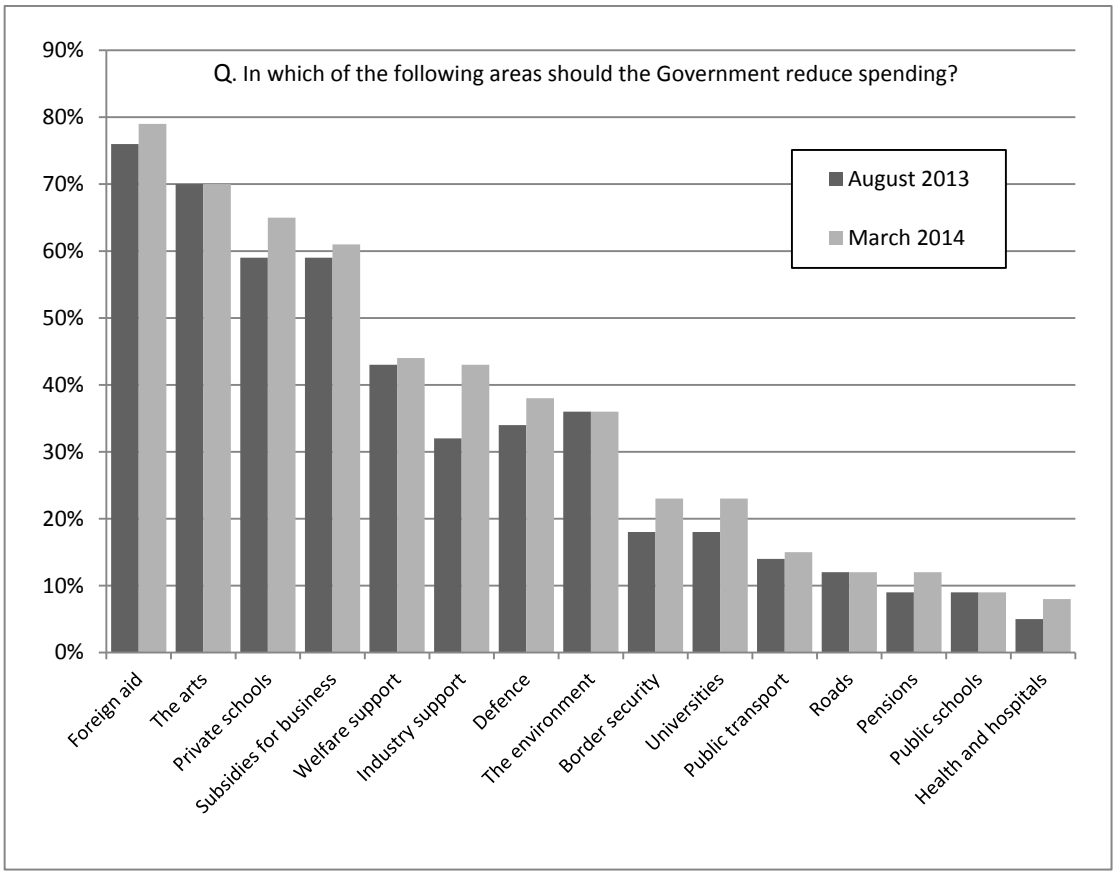
Table 1.2.3: Raise taxes or cut spending?

Do you think the Government should raise taxes or cut spending to reduce the national debt or should they do neither? (%)

	May 2013	August 2013	March 2014
Raise taxes	13	6	6
Reduce spending	55	45	47
Both	n/a	21	19
Neither	20	18	20
Don't know	12	10	8

Source: Essential Media Report May 2013, August 2013 and March 2014

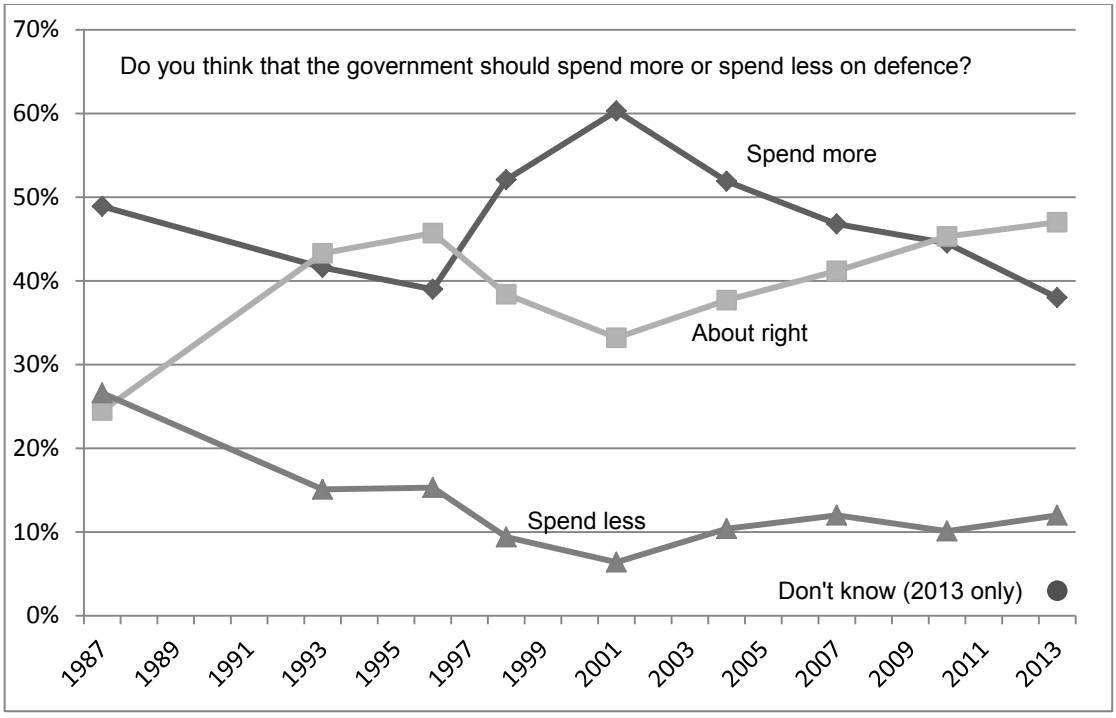
Figure 1.2.7: Where to swing the axe



Source: Essential Media Report August 2013 and March 2014

**Industry support was 'Support for manufacturing industry', Subsidies refers to 'Subsidies for business'.*

Figure 1.2.8: How much is enough?



Sources: McAllister et al: Trends in Australian political opinion: results from the Australian election study, 1987-2010. Lowy Institute Poll 2013.

Table 1.2.4: How much is enough?

Do you think that the government should spend more or spend less on defence?' (%)

	1987	1993	1996	1998	2001	2004	2007	2010	2013
Spend much more on defence		14.1	10.2	18.5	20.6	15.5	14.9	15.1	38
Spend some more on defence	48.9	27.5	28.8	33.6	39.7	36.4	31.9	29.4	
About right at present*	24.5	43.3	45.7	38.4	33.2	37.7	41.2	45.3	47
Spend less on defence	26.6	11.3	11.2	7.5	4.7	8	8.4	7.7	12
Spend a lot less on defence		3.8	4.1	1.9	1.7	2.4	3.6	2.4	
Don't know									3

* 'Doesn't matter' 1987.

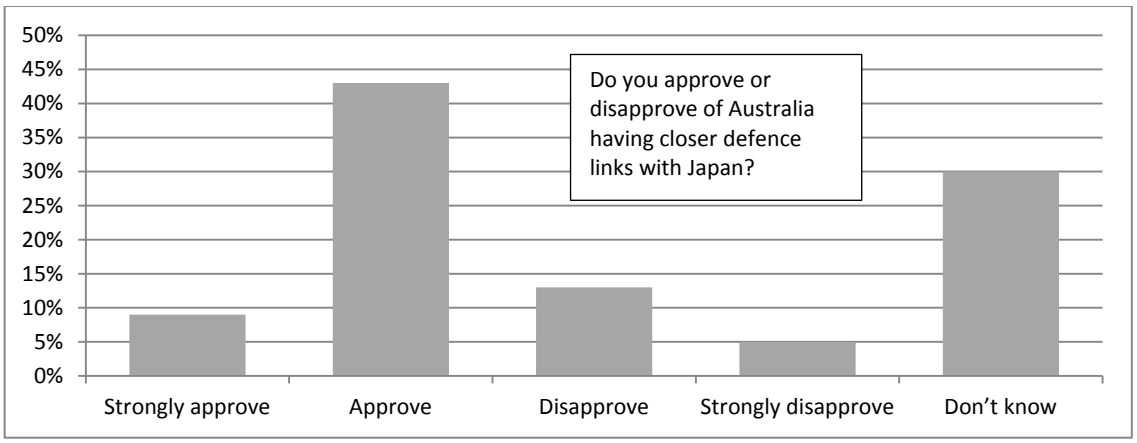
Sources: McAllister et al: Trends in Australian political opinion: results from the Australian election study, 1987-2010. 2013 figures from Lowy Institute Poll 2013.

Public opinion — Submarine purchase

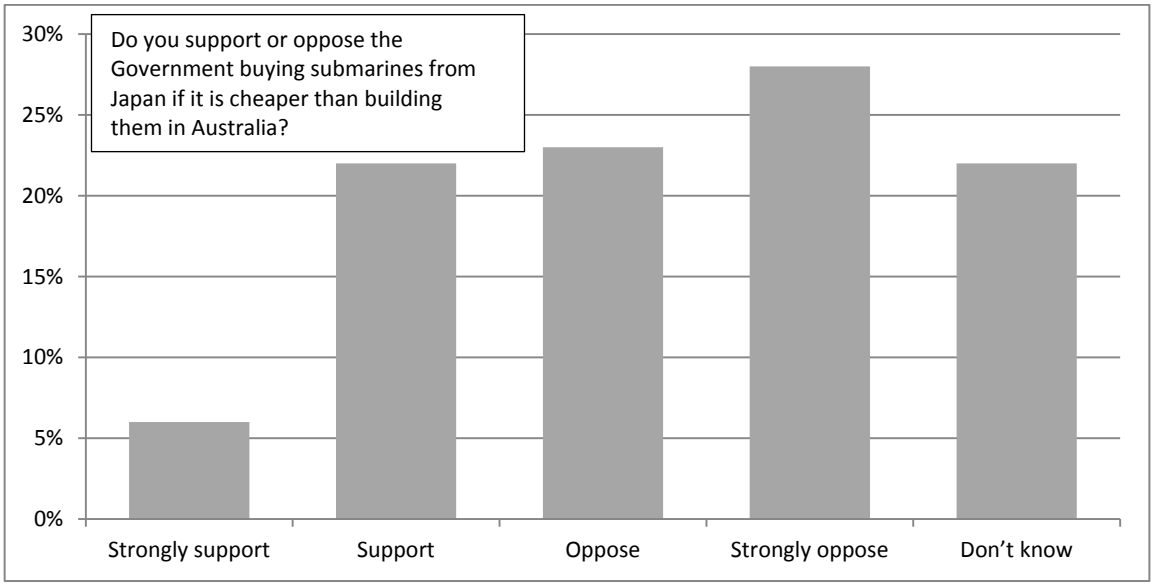
The government is currently conducting a 'competitive evaluation process' to choose a foreign partner to help supply the next generation of Australian submarines. The three countries under consideration are France, Germany and Japan. It has not been decided whether the submarines will be built in Australia or offshore. The following three charts present recent relevant polling. While 51% of Australians approve of closer defence links with Japan, the public tends to favour local construction of submarines.

If the next federal election is as close as is now expected, the government will be under pressure to allocate one or more major naval construction projects to South Australia—either the replacements for the Collins class submarines or the replacements for the Anzac frigates, or both.

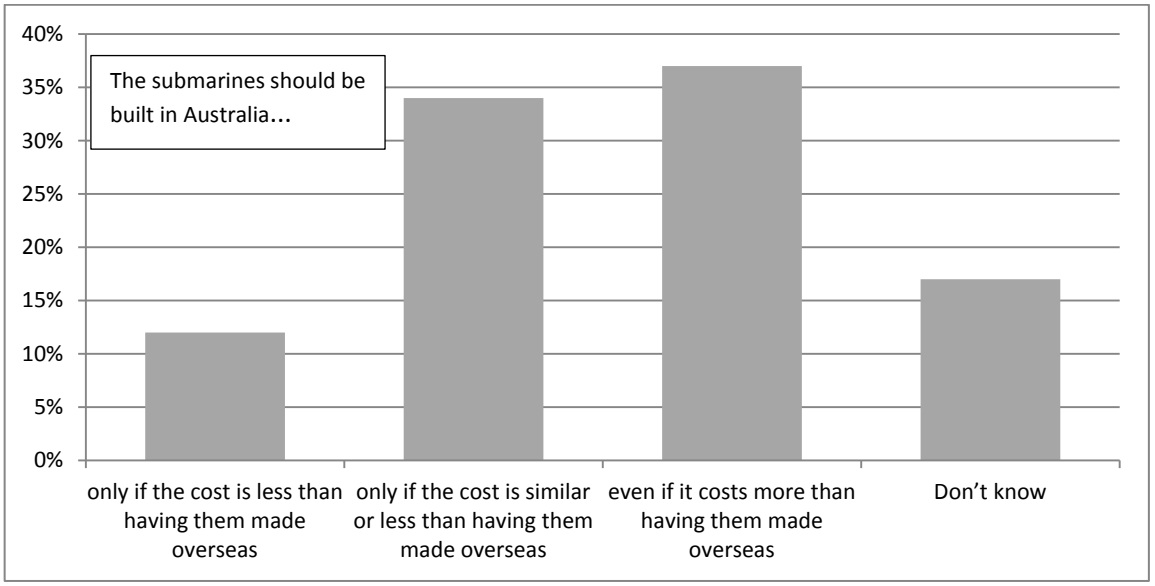
Figure 1.2.9: Submarines—local, foreign or Japanese?



Source: Essential Report, 15 July 2014



Source: Essential Report, 16 September 2014

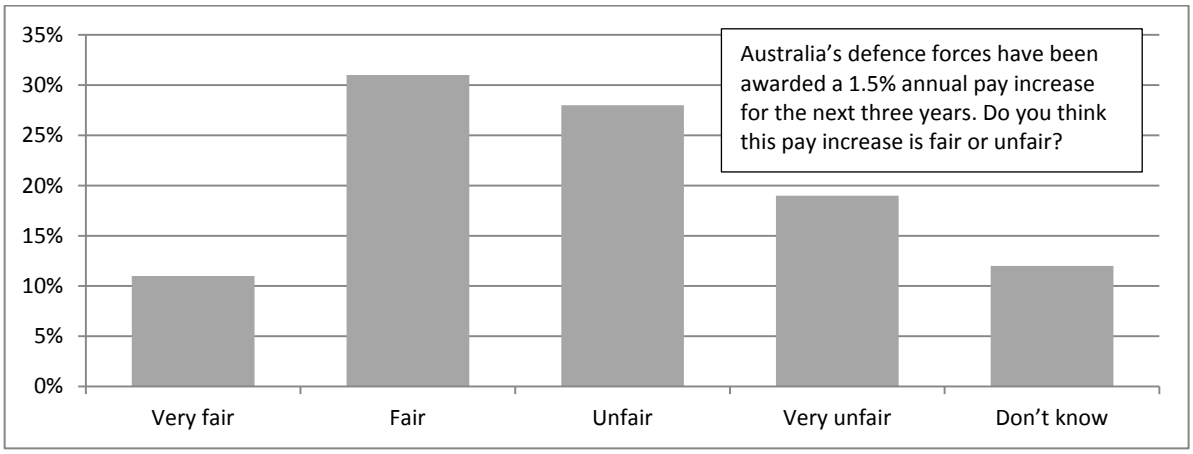


Source: Essential Report, 16 February 2015

Public opinion — ADF pay rise

In late 2014, the government granted the ADF a three-year 1.5% per annum pay increase (revised upwards to 2% per annum in 2015). As Figure 1.2.10 shows, public sentiment was divided on the issue.

Figure 1.2.10: ADF pay deal—fair or unfair

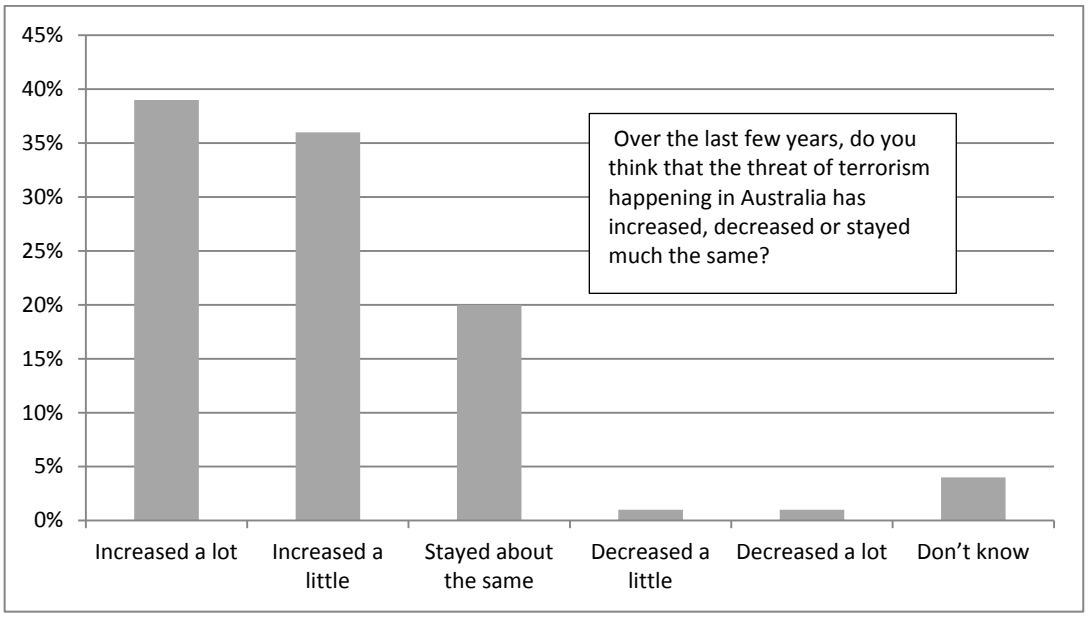


Source: Essential Report, 2 December 2014

Public opinion — Terrorism

An Essential Media poll conducted on 3 March 2015 found an increased public perception of the threat of terrorism in Australia, Figure 1.2.11. Consistent with this finding, respondents were also in favour of higher anti-terrorism spending and tougher laws (see Tables 1.2.5 and 1.2.6).

Figure 1.2.11: Perceived threat of terrorism



Source: Essential Report, 3 March 2015

Table 1.2.5: Spend more?

Q. Do you think the Australian Government should be spending more or less on anti-terrorism measures or is current spending about right?	
Spending more	39%
Spending less	12%
Current spending about right	33%
Don't know	16%

Source: Essential Report, 3 March 2015

Table 1.2.6: Tougher laws?

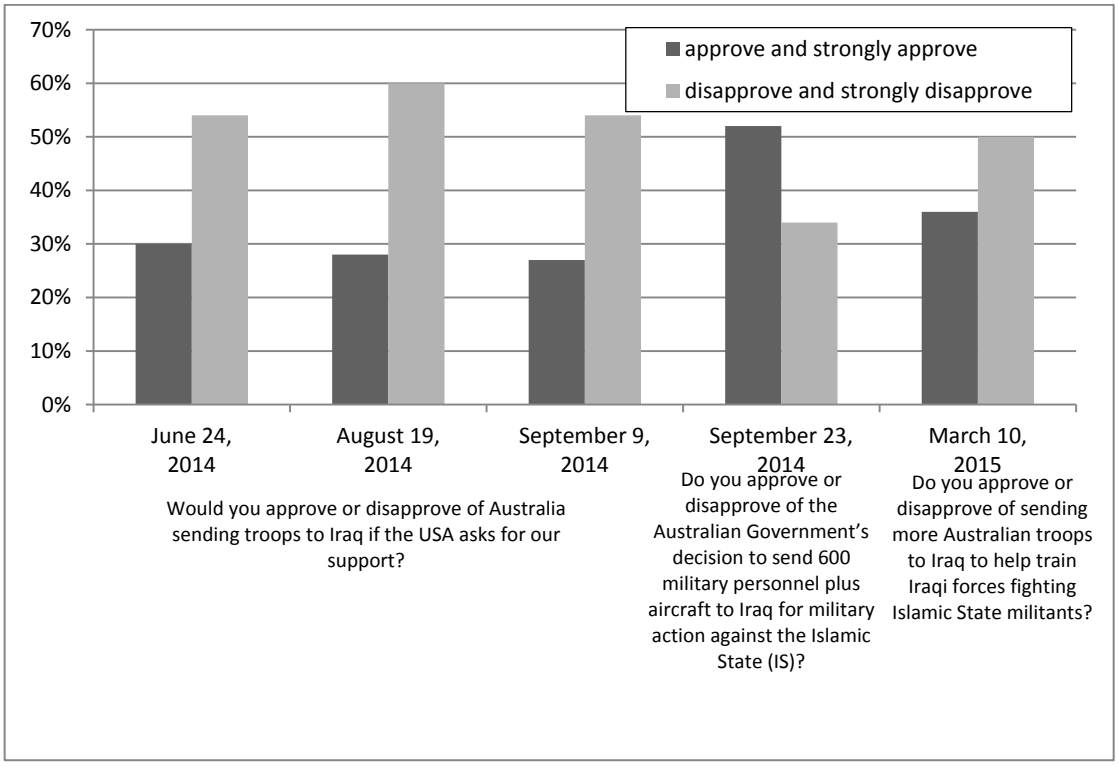
Q. When it comes to issues of national security, do you think there should be more restrictions on rights and freedom for some people so there can be more security for others or do you think our current laws strike the right balance between freedom and security?	
Should be more restrictions	56%
Strike the right balance	28%
Don't know	16%

Source: Essential Report, 3 March 2015

Public opinion — Iraq deployment

In 2014, public support for the deployment of the ADF to Iraq depended on both the timing and wording of the question (Figure 1.2.12). Between 13% and 19% of people responded 'don't know' across the five surveys. An Essential Media poll on September 23, 2014 found that only 15% of respondents thought that the Iraq deployment would make us more safe (sic), and 51% thought that it would makes us less safe. In the same poll, 36% of respondents cited the main reason for Australia sending military forces to Iraq was 'to fight against terrorism', 29% cited 'to support the USA', and 9% cited 'to protect the people of Iraq', and another 9% cited 'to distract attention from the government's problems'.

Figure 1.2.12: Deployment to Iraq 2014



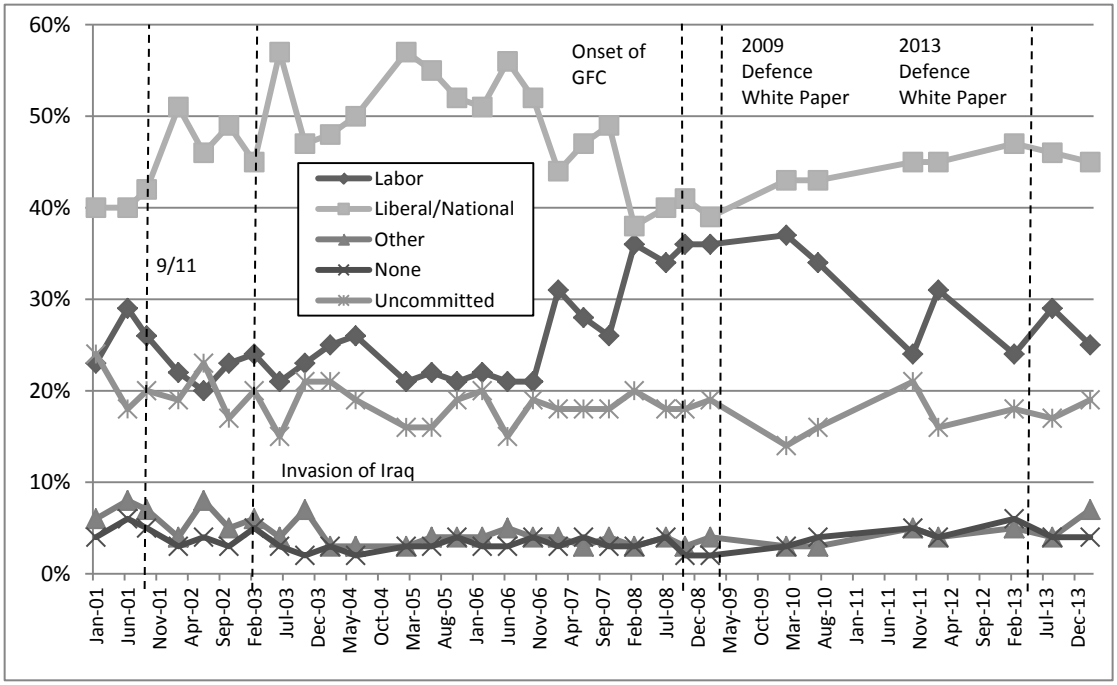
Source: Essential Report, June, August and September 2014, and March 2015

Who is trusted to handle defence?

Figure 1.2.13 shows polling results over 13 years on who is best able to handle defence/national security. Although confidence in the relative merits of Labor and the

Coalition converged around the time of the 2007 federal election, the results diverged in favour of the Coalition following the 2009 Defence White Paper. The Coalition has maintained a strong lead since late 2009.

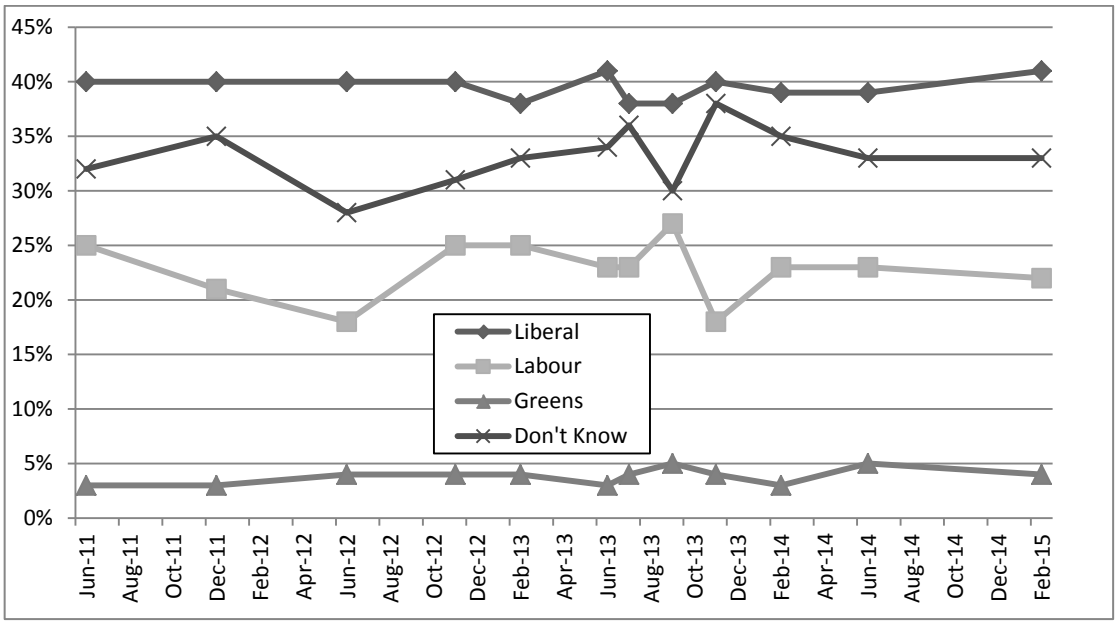
Figure 1.2.13: Who is best able to handle defence/national security?



Source: Newspoll for The Australian newspaper, January 2001 to February 2014.
(Defence pre-June 2004, National Security post-June 2004)

Newspoll has not conducted a 'best able to handle' poll since early 2014. Fortunately, an overlapping and more recent picture of voter perceptions can be found in Essential Media's 'trust most' poll graphed in Figure 1.2.14. The results are broadly consistent between the latter years of the Newspoll data.

Figure 1.2.14: Which party would you trust to handle 'security and the war on terrorism'



Source: Essential Media, June 2011 to February 2015.

Political volatility

The September 2013 federal election saw the Abbott government elected with a comfortable majority in the lower house; 90 seats to the Coalition and 55 seats to Labor. As Table 1.2.7 shows, the electoral system rewards larger parties at the expense of the smaller when it comes to proportioning seats. Of particular note is the large swing to 'other' candidates—fully three times larger than the swing to the Coalition. So while Labor and the Greens fared badly in the December poll, only around a quarter of their lost primary votes went to the Coalition.

Table 1.2.7: Lower house primary votes and seats, 2013 federal election

	Votes	%	Swing	Seats	%
Liberal/National Coalition	5,882,818	45.55	+1.93	90	60.00
Australian Labor Party	4,311,365	33.38	-4.61	55	36.67
The Greens	1,116,918	8.65	-3.11	1	0.67
Other	1,603,826	12.42	+5.79	4	2.67

Source: Australian Electoral Commission

A similar trend can be observed in the results for the Senate in the 2013 election (see Table 1.2.8). The Greens and Labor lost 9.5% of the primary vote, the Liberal/National Coalition lost almost 1% and 'other' candidates enjoyed a collective swing of more than 10%. The April 2014 Western Australian Senate recount saw the major parties punished again, with swings in the primary vote of 5% against Labor and 7% against the Liberal/National Coalition. Perhaps surprisingly, the Greens enjoyed half of the 12% collective swing away from the two main parties.

Table 1.2.8: Upper house primary votes and seats, 2013/2014 federal election

	Votes	%	Swing	Seats	%
Liberal/National Coalition	5,057,218	37.71	-0.92	17	42.5
Australian Labor Party	4,038,591	30.11	-5.02	12	30
The Greens	1,159,588	8.65	-4.46	4	10
Palmer United Party	658,976	4.91	4.91	3	7.5
Other	2,498,646	15.66	6.28	4	10

Source: Australian Electoral Commission

Note: votes are taken from September 2013 election, seat numbers and percentages include April 2014 Senate re-election

Although the March 2014 South Australian and November 2014 Victorian elections saw moderate two-party preferred swings (1.4% and 3.6% respectively), the January 2015 Queensland election saw a massive 14% swing against the incumbents and the March 2015 New South Wales election saw a sizable 10% swing. Voters have demonstrated their willingness to switch allegiance quickly.

Notwithstanding its strong parliamentary position, the new government's willingness to pursue unpopular policies is likely to be tempered by the electorate's demonstrated volatility and dissatisfaction with the major parties. If so, the government may find it politically difficult to deliver a surplus and boost defence spending as promised.

The government's election platform

Key points from the Abbott government's election policy document *The Coalition's Policy for Stronger Defence* appear in Table 1.2.9 along with an assessment of progress to date.

Table 1.2.9: Coalition defence election platform

Policy	Status
Continuation of the fundamental defence policy objectives as set out in the 2000 Defence White Paper—i.e. Defence of Australia with concentric circles (p.3).	
'There will be no further cuts to Defence spending under a Coalition government.' (p.4)	$76 million in efficiency dividends were taken from Defence in the 2014-15 Budget.
Savings will be sought from Defence but 'any savings that the Coalition finds from rationalising the Defence bureaucracy will be reinvested in greater military capacity and front line capabilities'. (p.4)	See above.
'….decisions necessary to ensure that Australia has no submarine capability gap within 18 months of the election. (p.4)	More than 18 months have elapsed without a conclusive decision.
'….replacement of the current submarine fleet will centre around the South Australian shipyards. (p.4)	Foreign options are under consideration.
Contingent of advice from Defence chiefs, 'we will proceed with the initial purchase of up to 72 JSFs.' (p.5)	Approval announced 23 April 13.
'The Coalition's Defence White Paper will closely consider the need for unmanned aerial surveillance vehicles'. (p.5)	Commitment to purchase Triton UAV made on 13 March 2013.
'We will look for areas where it would be in the mutual interest of Australia and the United States to deepen our longstanding alliance relationship building on the recent announcement to rotate a marine brigade through Darwin'. (p.6)	
'….publish an objective replacement Defence White Paper with costed, affordable ways to meet Australia's defence and national security objectives.' (p.6)	
'The Coalition will appoint a high-profile team to undertake a first-principles review of the structure of the Defence Department and all its major processes.' (p.6)	Completed as promised.
'We will work with the Australian defence industry to avoid production troughs by co-operating closely with companies…' (p.7)	
'We will reform the Defence Materiel Organisation (DMO) to ensure it employs commercially experienced procurers with an understanding of commercial principles and risk.' (p.7)	Reform of DMO is about to commence.
'…consider further options for reforming the DMO, including proposals for establishing it as a more independent agency driven by cost-benefit assessments'. (p.7)	Presumably, these options were considered.
Recipients of the Defence Forces Retirement Benefits (DFRB) and the Defence Force Retirement and Death Benefits (DFRDB) military superannuation pensions will see their payments indexed in the same way as aged and service pensions.' (p.7)	Funding provided in 2014 Budget.
'….all ADF dependants will be eligible to claim for out of pocket expenses for GP services. Additionally, each ADF dependant will be able to claim up to $400 per year for allied health services such as physiotherapy, psychology, dentistry and podiatry. (p.8)	Funding provided in 2014 Budget.
'The Coalition will re-build ADF Gap Year programme, progressively increasingly numbers until an average of 1,000 places per annum is made available in the programme.' (p.9)	Funding provided in 2014 Budget.
'Within a decade, Defence spending will be two per cent of GDP'. (p.10)	

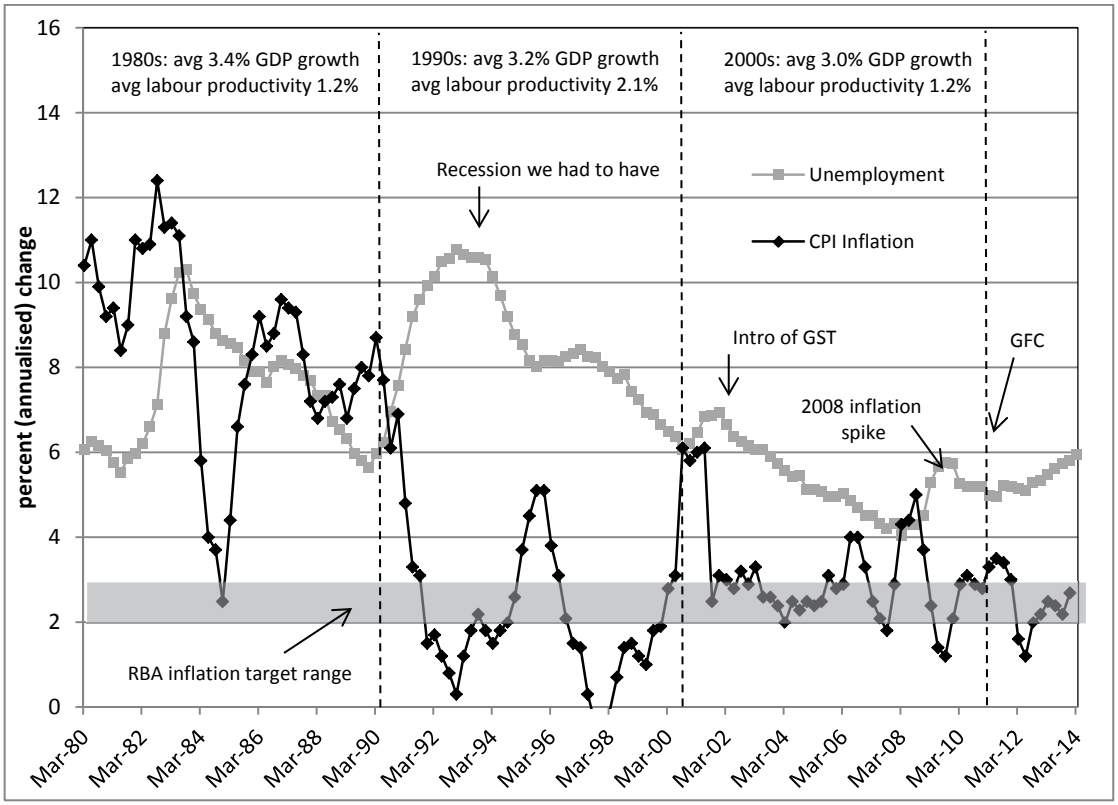
Source: The Coalition's Policy for Stronger Defence, 2013.

1.3 Economic Context

From the early 1990s until late 2008, Australia enjoyed relatively favourable economic conditions, see Figure 1.3.1. Three things stood out:

- In the 1990s, inflation fell to effectively half of what it was in the 1970s and 1980s, notwithstanding a short-lived spike in 2008.
- Economic growth was healthy, averaging 3.4% during the 1990s and 3.2% from 2000 to 2007, despite a fall in labour productivity growth.
- Unemployment fell from a peak of 10.8% in late 1992 to a 34-year low of 4% in early 2008 (at the same time as workforce participation edged up from 62.7% to 65.2%).

Figure 1.3.1: Australian economic performance 1980 to 2014

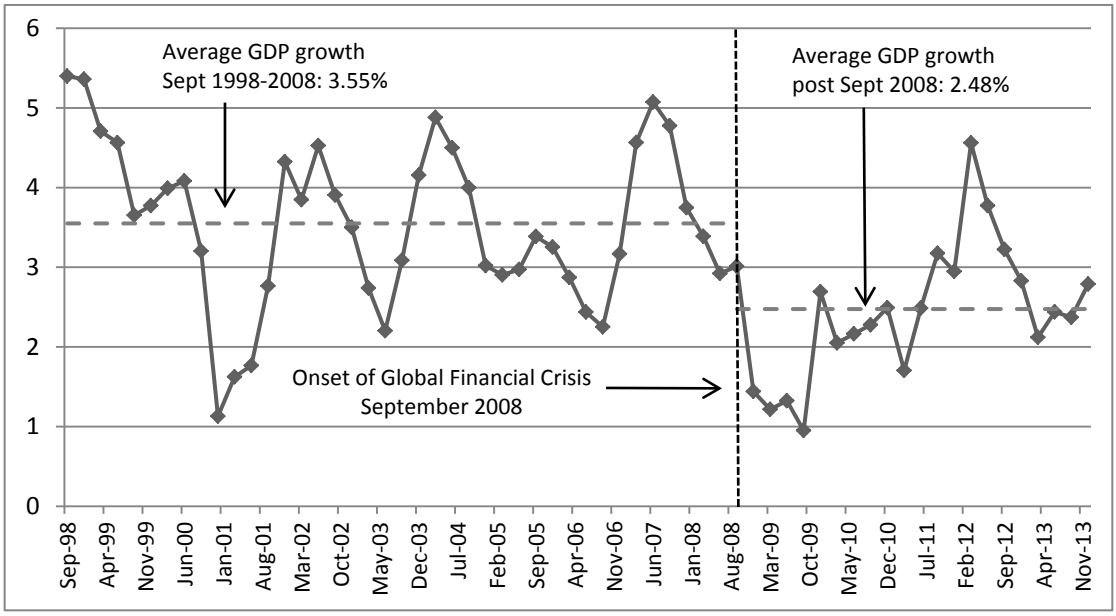


Source: Reserve Bank of Australia (RBA), Australian Bureau of Statistics (ABS) and Treasury statistics.

Strong economic growth allowed the Howard government to simultaneously increase spending and cut taxes in its later years. It was a happy time all around. Few areas were happier than Defence, which saw its funding grow more or less in tandem with GDP from 1999 onwards. But from around 2004, when unemployment fell below 5%, capacity constraints started to be felt in the economy and in 2008 inflation began to rise quickly.

Then, in late 2008, the GFC hit and it looked as though a substantial recession was on the cards. But Australia weathered the economic storm better than expected and only experienced a limited slowdown. Nonetheless, a return to trend growth is yet to emerge. Indeed, economic growth for the decade prior to the GFC averaged 3.55% compared with 2.48% subsequently (see Figure 1.3.2).

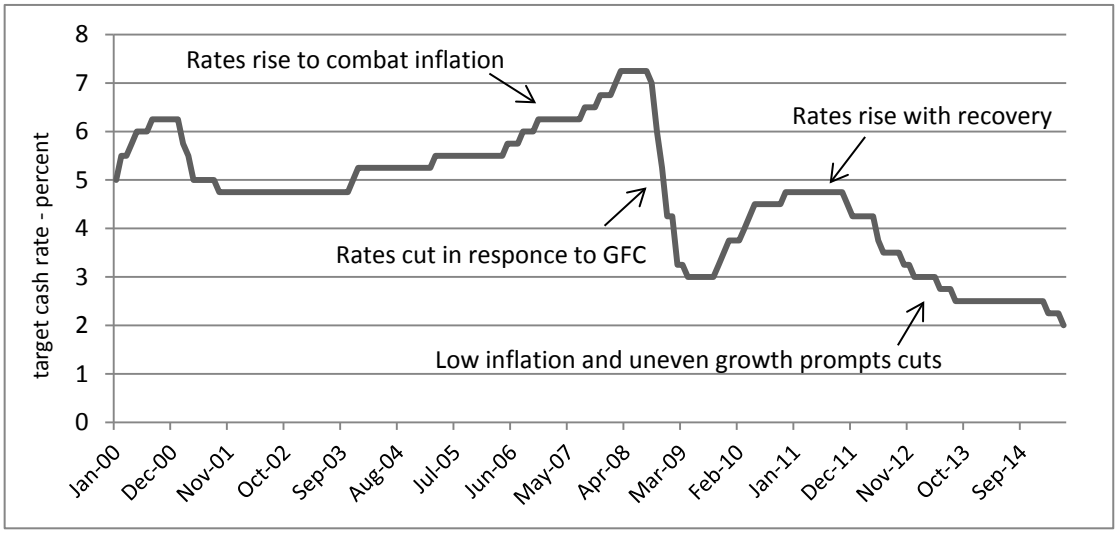
Figure 1.3.2: Seasonally adjusted annual GDP growth by quarter



Source: Reserve Bank of Australia (RBA), Australian Bureau of Statistics (ABS).

The timing of the events is reflected in the changes to the RBA target cash rate set out in Figure 1.3.3. From late 2009 until late 2010, rising inflation and restored growth saw the official interest rate rise progressively by 1.75%. Over the same period, unemployment fell to around 5.2%. In late 2011, however, the RBA changed tack and cut rates by 1% in three steps over a six-month period to an expansionary 3.75% as inflation moderated. Over the next year, from May 2012 to May 2013, the cash rate fell by another 1% as unemployment hedged upwards. After a further downward revision in August 2013, the cash rate fell to a post-1990 low of 2.5%. (The average cash rate since 1990 has been 5.6 %.)

Figure 1.3.3: RBA target cash rate 2001 to 2014

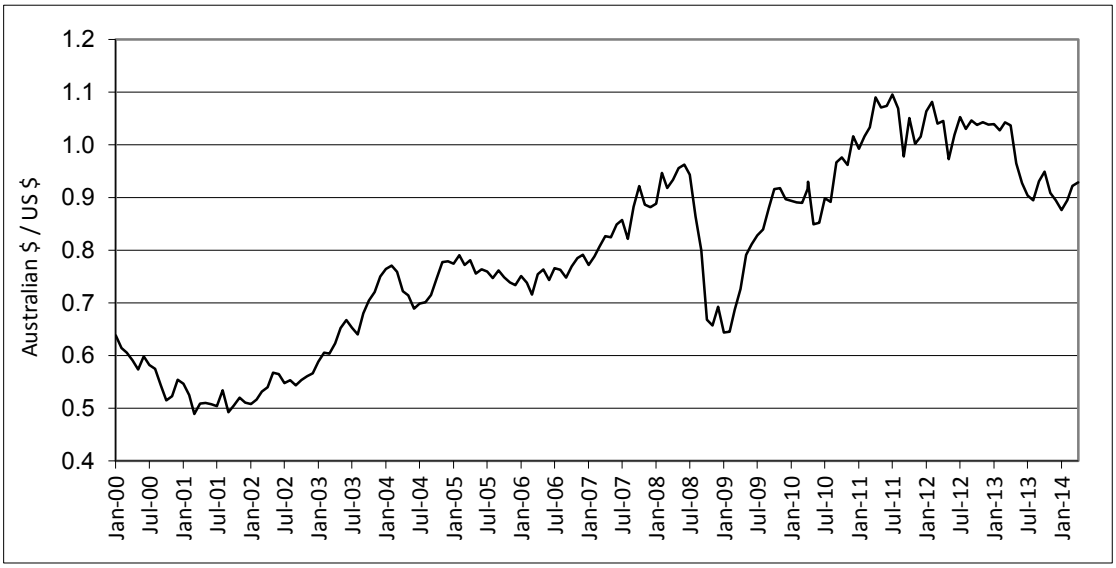


Source: RBA

Defence funding is affected by two economic parameters; the value of the Australian dollar—particularly relative to the US dollar—and the rate of inflation. These are explored below beginning with foreign exchange.

Defence spends something like $5 billion a year offshore (no official figure is available) mostly in contracts written in US dollars. And while Defence is insulated from foreign exchange fluctuations on a no-win, no-loss basis, the government, and ultimately the taxpayer, feels the pain or gain. In recent years, the USD–AUD exchange rate has fluctuated substantially, as Figure 1.3.4 shows. At the time of writing, the exchange rate was around US$0.93 having reached a post-float high of $1.11 against the US dollar in July 2011. The budget assumes a continuing rate of US$0.93.

Figure 1.3.4: Foreign exchange



Source: RBA

Since 2009-10, the Defence budget has nominally received fixed 2.5% annual indexation, calculated from 2009-10 but only applied from 2013-14. (This is separate from and in addition to the adjustments made for foreign exchange). The relative percentage gain or loss compared with CPI and 'core' inflation is calculated in Table 1.3.1, including historical figures for comparison.

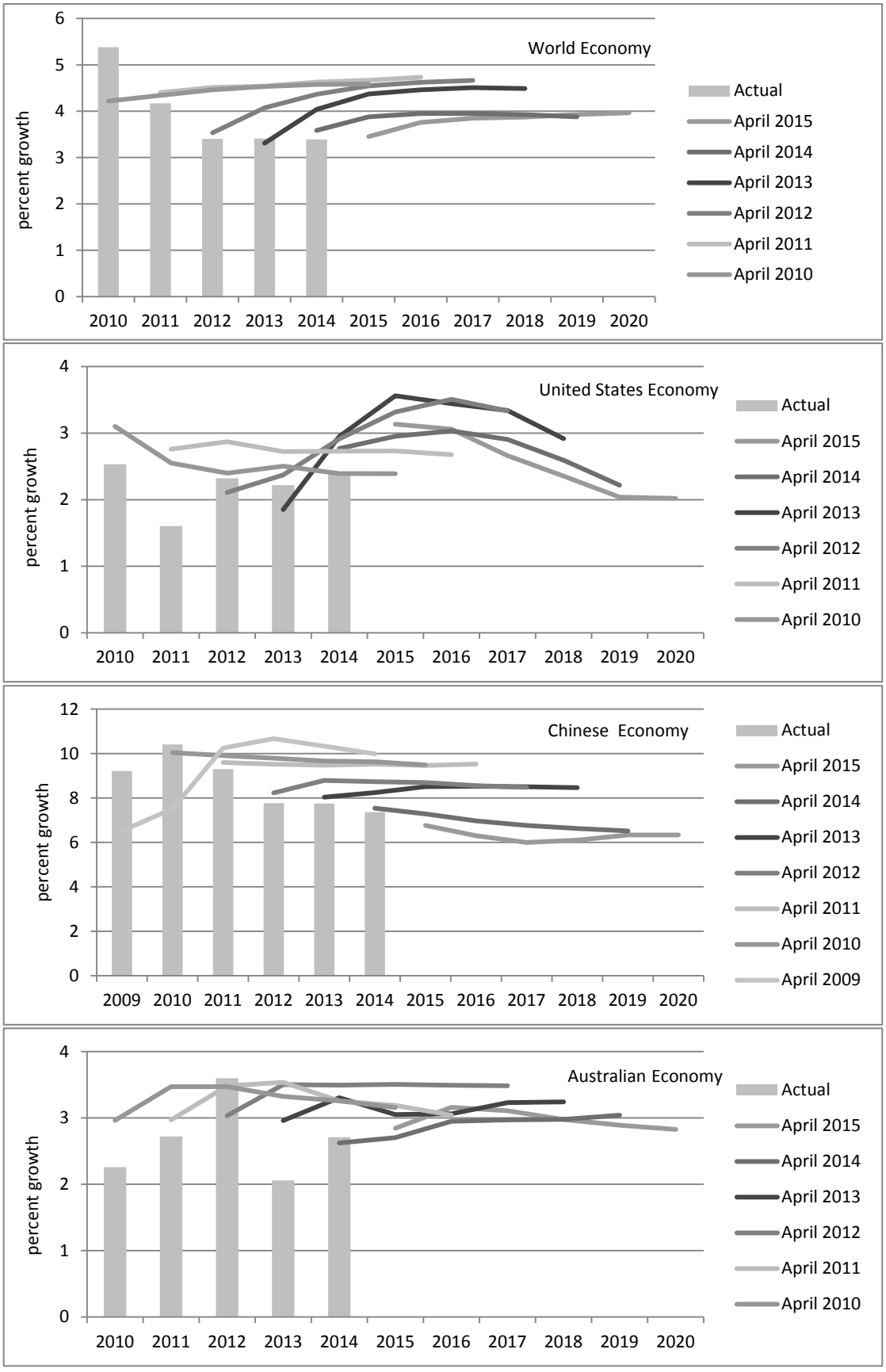
Table 1.3.1: CPI inflation, 'core' inflation and 2.5% indexation

	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17
Fixed 2.5%	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
CPI	2.4	2.4	3.2	2.9	3.4	3.1	2.4	3.1	2.4	2.3	2.3	1.75	2.5	2.5
Difference	0.1	0.1	-0.7	-0.4	-0.9	-0.6	0.1	-0.6	0.1	0.2	0.0	0.75	0.0	0.0
Fixed 2.5%	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
'core' inflation*	2.7	2.7	2.9	2.9	3.9	4.4	3.3	2.5	2.4	2.4	2.6			
Difference	-0.2	-0.2	-0.4	-0.4	-1.4	-1.9	-0.8	0.0	0.1	0.1	-0.1			

Source: APH Library, RBA, ABS and Budget Papers. Average of the RBA weighted median and trimmed mean measures.*

The frustratingly slow growth of economies worldwide is shown in Figure 1.3.5 which compares actual GDP growth with successive IMF esimates. Time and time again hopes of recovery have been dashed.

Figure 1.3.5: Slower than expected growth around the world

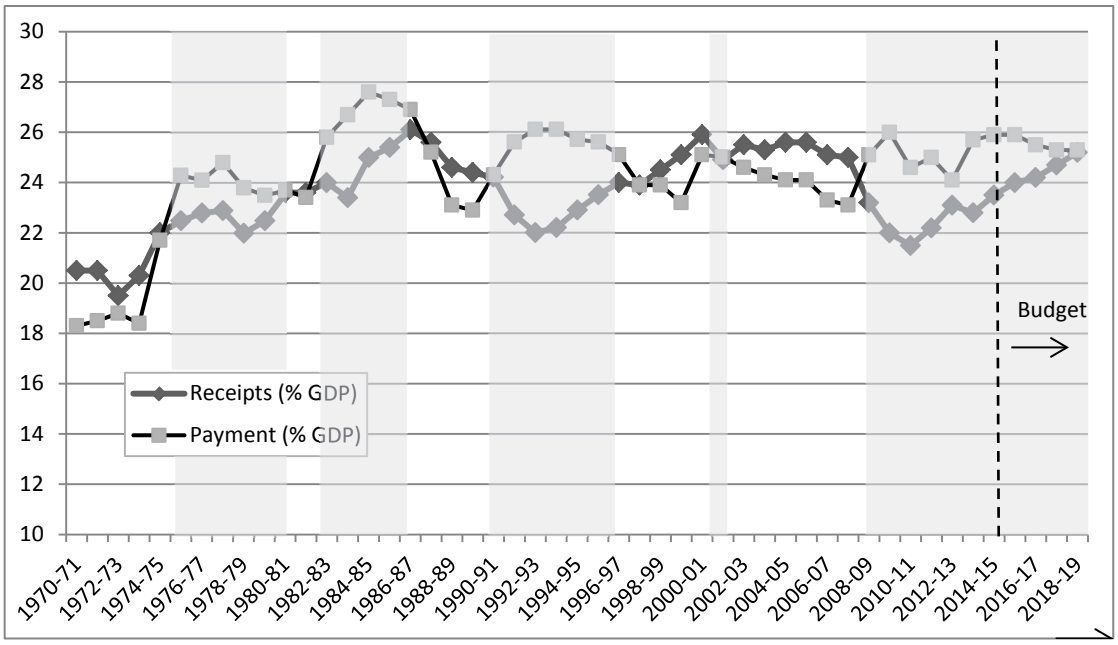


Source: IMF World Economic Outlook, April 2010-2015

1.4 Fiscal Context

Between 1970 and 1984, annual Australian Government payments grew from 18.3% to 27.6% of GDP (see Figure 1.4.1). Subsequently, payments moderated downward to around 23% and then fluctuated around an average of 24.8% of GDP up until the present day.

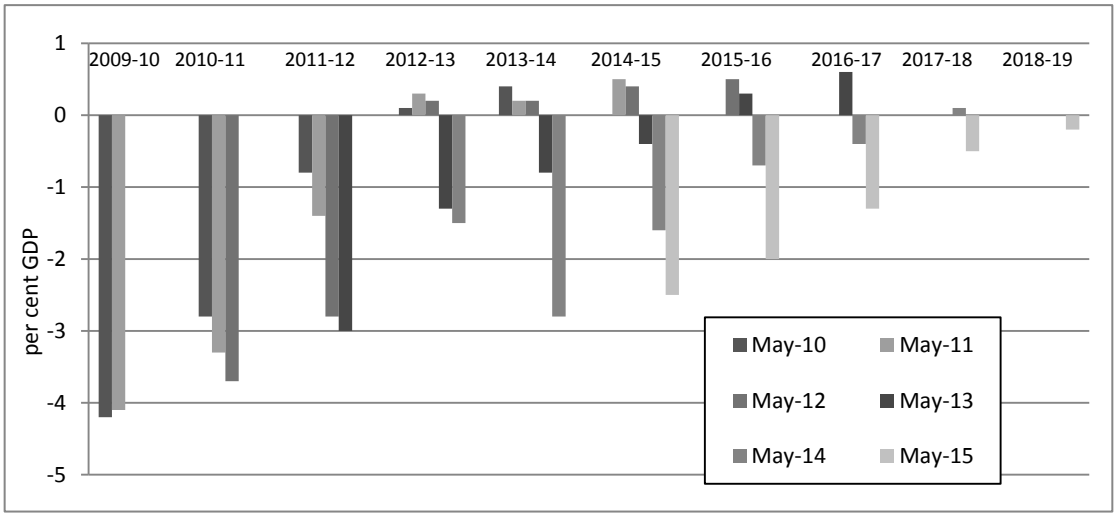
Figure 1.4.1: Australian Government payments and receipts 1970 to 2018



Source: Treasury Budget Papers, Budget 2015-16. Note: receipts are exclusive of Future Fund earnings.

Over the period 1970 to 2014, the Australian Government ran deficits in 27 out of 45 years, as marked in grey overshadow in Figure 1.4.1. The most recent excursion into deficit budgeting was caused by the GFC, which precipitated falling receipts, rising 'automatic stabiliser' spending and policy-led Keynesian spending. From 2009 onwards, there was a further deterioration of the government's fiscal outlook as revenues failed to materialise. Figure 1.4.2 graphs the dramatic changes to the fiscal outlook in successive official estimates from 2009 onwards.

Figure 1.4.2: The changing outlook—fiscal balance per cent GDP



Source: 2009-10 to 2015-16 Budget Papers

A more detailed comparison appears in Table 1.4.1, which compares the outlooks in the past four budgets. Note the severe and continuing deterioration in the government's fiscal position between 2012 and today, deficits are shaded in grey. Key figures are as follows, the planned surplus (as at May 2012) for 2012-13 blew out by around $22 billion, and the predicted deficit (as at May 2013) for 2013-14 grew from $18 billion to $50 billion.

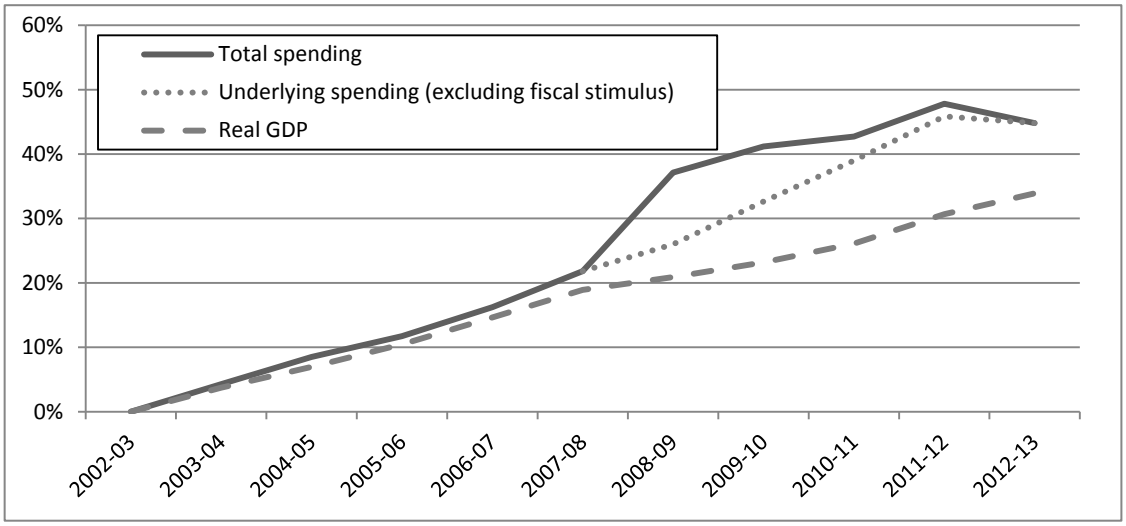
Table 1.4.1: Budget aggregates 2012-13 and 2013-14 Budgets (nominal billion dollars)

		Historical Figures						Budget Estimates				
		2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Budget 2012-13	Underlying cash	**-27.1**	**-54.8**	**-47.7**	**-44.4**	**1.5**	**2.0**	**5.3**	**7.5**			
	Per cent of GDP	-2.2	-4.3	-3.4	-3.0	0.1	0.1	0.3	0.4			
	Fiscal balance	**-29.7**	**-52.9**	**-42.0**	**-42.0**	**2.5**	**2.6**	**7.0**	**9.5**			
	Per cent of GDP	-2.4	-4.1	-2.8	-2.8	0.2	0.2	0.4	0.5			
Budget 2013-14	Underlying cash	**-27.1**	**-54.8**	**-47.7**	**-43.4**	**-19.4**	**-18.0**	**-10.9**	**0.8**	**6.6**		
	Per cent of GDP	-2.2	-4.3	-3.4	-2.9	-1.3	-1.1	-0.6	0.0	**0.4**		
	Fiscal balance	**-29.7**	**-52.9**	**-42.0**	**-44.5**	**-20.3**	**-13.5**	**-6.3**	**6.0**	**10.8**		
	Per cent of GDP	-2.4	-4.1	-2.8	-3.0	-1.3	-0.8	-0.4	0.3	**0.6**		
Budget 2014-15	Underlying cash	**-27.1**	**-54.8**	**-47.7**	**-43.4**	**-18.8**	**-49.9**	**-29.8**	**-17.1**	**-10.6**	**-2.8**	
	Per cent of GDP	-2.2	-4.3	-3.4	-2.9	-1.2	-3.1	-1.8	-1.0	-0.6	-0.2	
	Fiscal balance	**-29.7**	**-52.9**	**-42.0**	**-44.5**	**-23.5**	**-45.1**	**-25.9**	**-12.2**	**-6.6**	**1.0**	
	Per cent of GDP	-2.4	-4.1	-2.8	-3.0	-1.5	-2.8	-1.6	-0.7	-0.4	0.1	
Budget 2015-16	Underlying cash	**-27.0**	**-54.5**	**-47.5**	**-43.4**	**-18.8**	**-48.5**	**-41.1**	**-35.1**	**-25.8**	**-14.4**	**-6.9**
	Per cent of GDP	-2.1	-4.2	-3.4	-2.9	-1.2	-3.1	-2.6	-2.1	-1.5	-0.8	-0.4
	Fiscal balance	**-29.7**	**53.9**	**-51.8**	**-44.5**	**-23.5**	**-43.7**	**-39.4**	**-33.0**	**-23.4**	**-9.2**	**-3.3**
	Per cent of GDP	-2.4	-4.2	-3.7	-3.0	-1.5	-2.8	-2.5	-2.0	-1.3	-0.5	-0.2

Source: Treasury Budget Papers No. 1 for 2014–15 and beyond.

The worsening fiscal position was caused by a combination of increased spending and less than anticipated revenues. The Parliamentary Budget Office has produced a graph that succinctly captures the spending situation by plotting together the growth in GDP and government spending for the period 2002-03 to 2012-13 (see Figure 1.4.3).

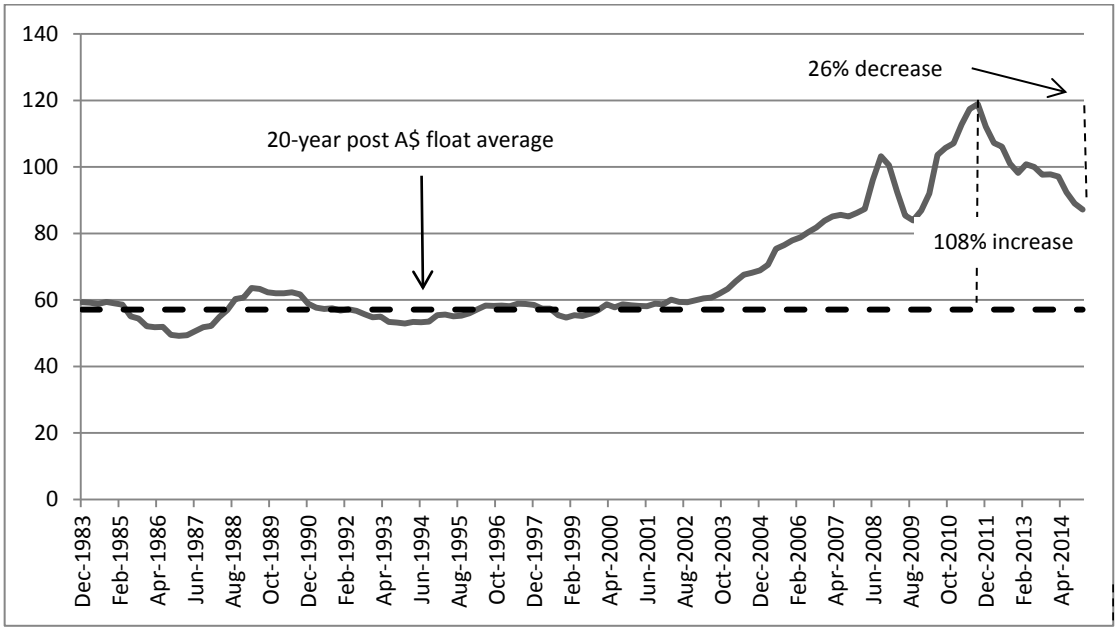
Figure 1.4.3: Growth in government spending and GDP



Source: Australian Government Spending Part 1, February 2013, Parliamentary Budget Office.

The recent deterioration in government revenues is due to several factors; including reduced company profits and sluggish nominal GDP growth (tax depends on nominal rather than real GDP levels). A key factor overall was the substantial fall in Australia's terms of trade, as shown in Figure 1.4.4.

Figure 1.4.4: Australia's terms of trade index



Source: ABS Australian National Accounts 5206.0.

The terms of trade measure the quantity of imports an economy can purchase per unit of exports. Concurrent with the mining boom, Australia's terms of trade grew substantially, reaching a historical peak in September 2011 before falling 26% to its current level (as at December 2014). This year's budget assumes the terms of trade will decline 8.5% in 2015-16, and rise by 0.75% in 2016-17. If a larger falls occurs, there'll be added pressure on government revenues.

The projected slow return to surplus shown belies the true situation. Much of the fiscal recovery arises due to fiscal drag, or bracket creep, the process by which inflation progressively shifts individuals into higher tax brackets. Fiscal drag shifts the burden of taxation away from companies and onto individuals, thereby reducing the incentive to work. At the same time, fiscal drag lowers the balance point for progressivity in the income tax schedule.

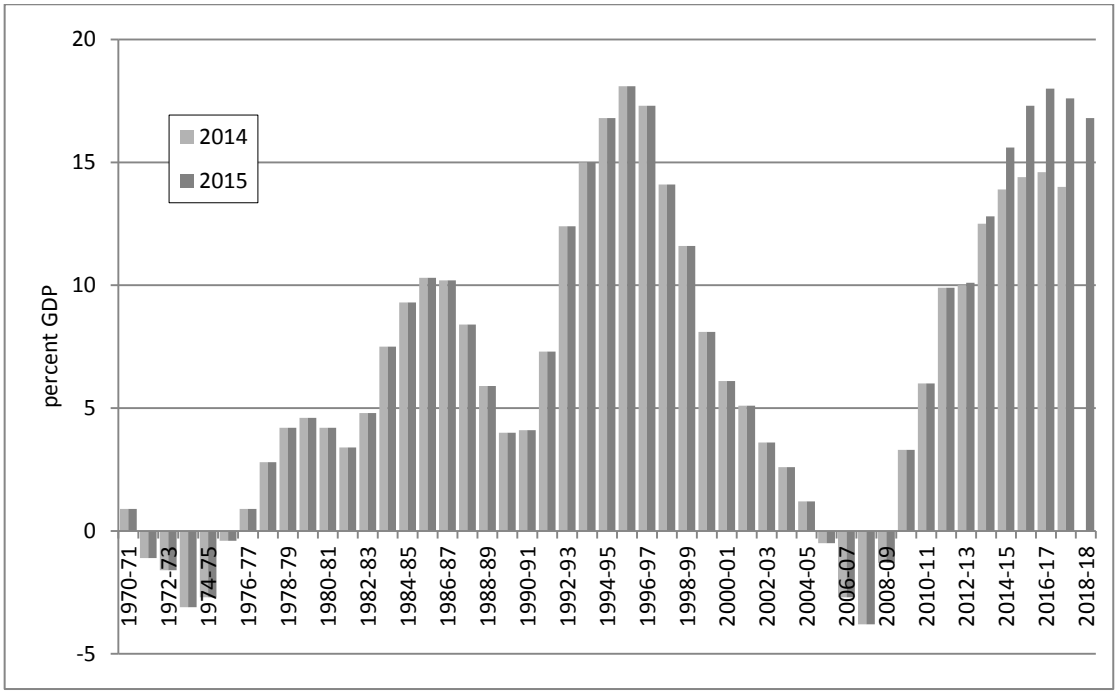
In reality, future governments will almost certainly find it politically expedient to return at least some of the gains from fiscal drag by way of tax cuts. And if a future government wants to reform the taxation and welfare systems, fiscal drag provides a war chest to soften the blow of policy changes. So while it's possible to rely on fiscal drag to redress the structural balance, doing so is suboptimal. What's really required are long-term structural changes to government spending and revenues.

Deficits result in debt. Fortunately, unlike most other advanced economies, Australia entered the GFC with no debt. As a result, our accumulated and projected debt is far below

the daunting levels—typically 80-100% of GDP—faced by many European economies and the United States. Figure 1.4.5 shows the past and projected net Australian Government debt out to 2018-19 as assessed in May 2014 and 2015. The deterioration in our debt position over the past 12 months is apparent. Note that growth in the economy coupled with the assumed slow remediation of the deficit results in debt peaking as a share of GDP in 2016-17.

Although a net debt of around 17.5% of GDP is not extraordinary by international standards, it is far from desirable. If offsetting impact of the Future Fund is accounted for, gross debt will be closer to 30% of GDP. And remember, the Future Fund is hypothecated against the liability of otherwise unfunded public sector superannuation. Moreover, debt brings with it the substantial ongoing impost of interest payments and greater vulnerability in the event of another financial crisis or economic downturn.

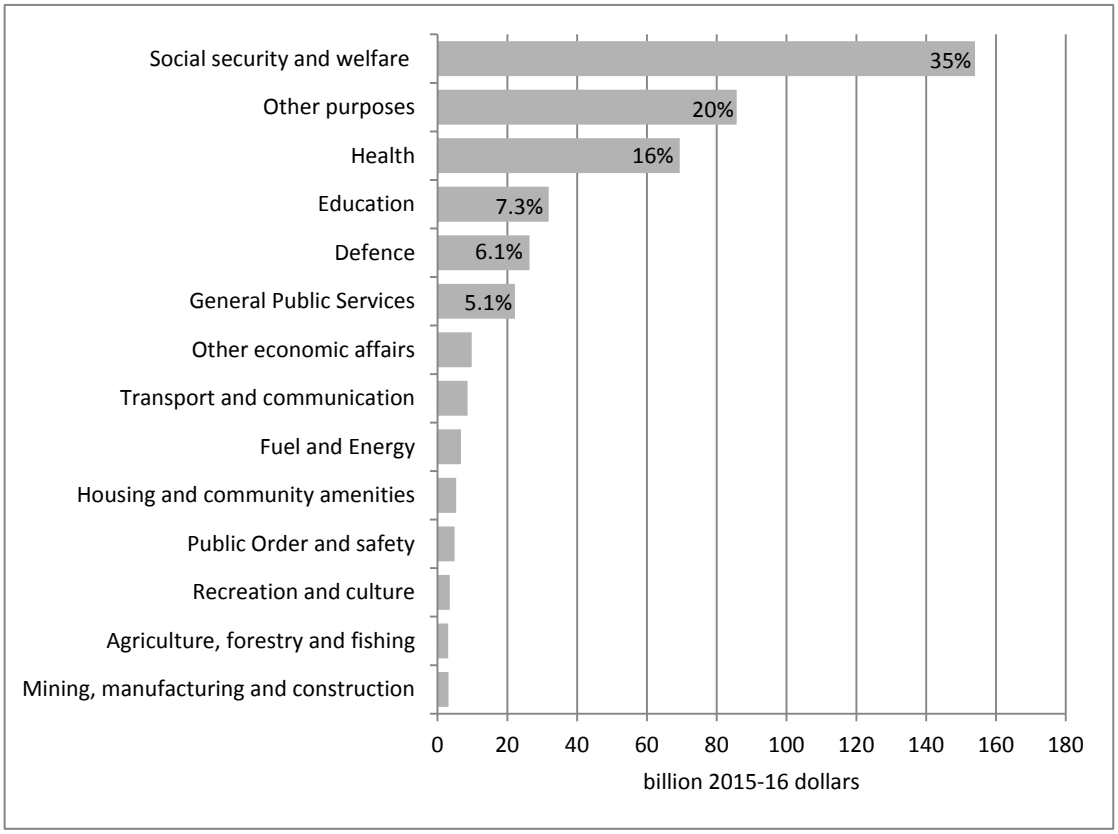
Figure 1.4.5: Australian Government net debt



Source: Treasury Papers, May 2014 and 2015.

To put defence spending properly into a fiscal context, we turn now to examine the structure of Australian Government spending. Figure 1.4.6 shows Australian Government spending by function for 2015-16. As can be seen, defence spending accounts for a relatively small part of the total. The reputation of defence as a 'big spender' probably arose because it involves a small number of very large purchases rather than millions of small payments as occurs in health, education and social security. Note that in this chart defence spending excludes capital investment.

Figure 1.4.6: Australian Government expenses by function 2015-16

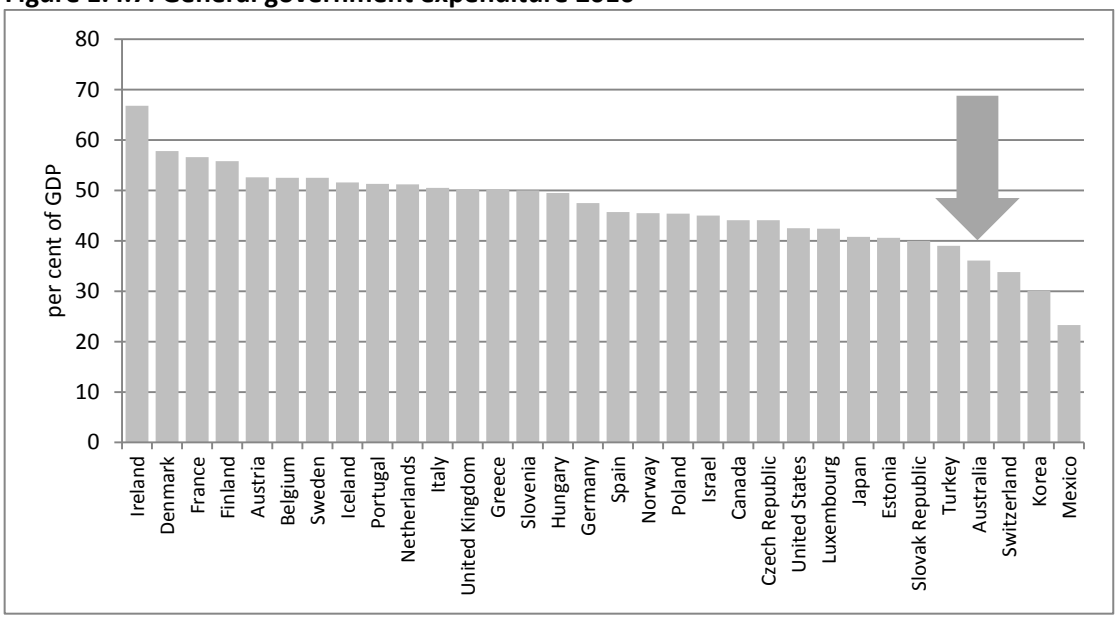


Source: 2015-16Budget Papers

Comparing defence spending with other components of federal (i.e. Australian Government) spending fails to take into account the additional public revenues expended at the state and local level. In 2011, for example, federal spending accounted for only around two-thirds of public spending (source OECD statistics). Taking local and state government spending into account, defence spending represents only 3.9% of public expenditure in Australia. Even this figure fails to properly put defence spending into context. The denominator in the ratio (general government expenditure) is highly dependent on the extent to which the government intermediates between individuals and the providers of services such as health and education. The level of intermediation varies substantially between different countries, as demonstrated in Figure 1.4.7, which shows general government expenditure across the OECD.

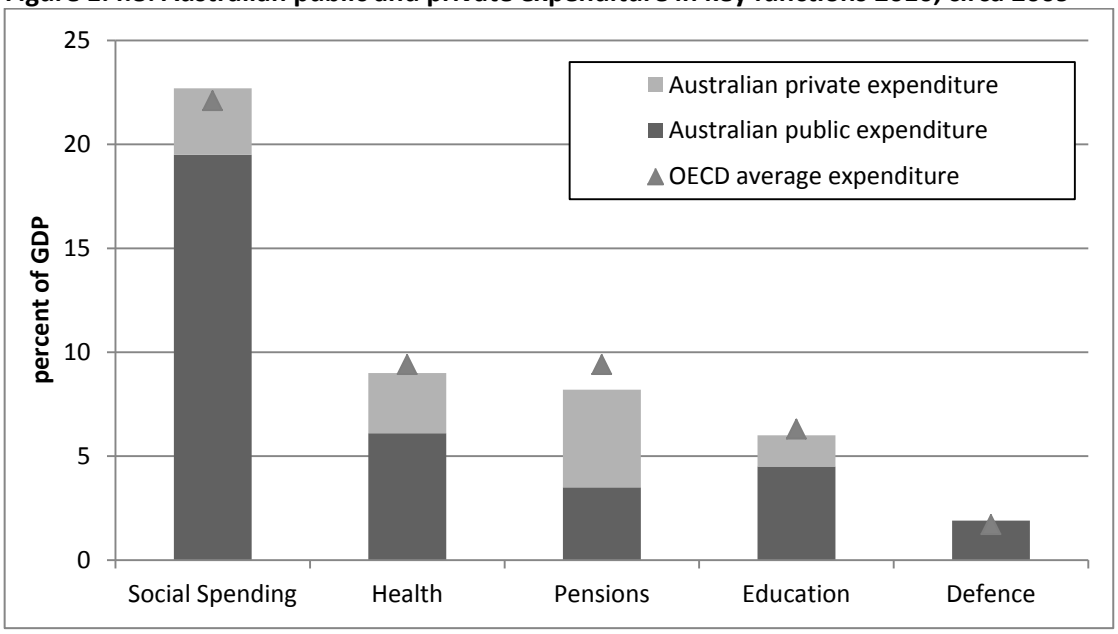
Because of Australia's relatively low level of general government expenditure, the percentage devoted to defence is higher than it would be otherwise. A better way to capture the true scale of defence spending relative to the usual cited 'opportunity cost' areas of social spending, health, pensions and education is to compare defence spending to the total (public plus private) expenditure in those areas. This is done in Figure 1.4.8.

Figure 1.4.7: General government expenditure 2010



Source: OECD Factbook, 2013.

Figure 1.4.8: Australian public and private expenditure in key functions 2010, circa 2009



Source: OECD Factbook, 2013 (Defence OECD figure is actually NATO European average for 2011). .

As is clear from the figure, defence expenditure is small compared with combined public and private expenditure in the four areas. Moreover, although Australia's general government expenditure is small by OECD standards, our public plus private expenditure in these areas is fully commensurate with the aggregate OECD expenditure.

The critical point to observe is that defence is different from the competing areas of expenditure in a very important respect. Although a shortfall in government spending on social, health, pensions or education can be made up for through private spending, only the government can provide the public good of defence in practice. Thus, any shortfall in the provision of defence by the government can't be remediated.

1.5 Defence Organisation and Management

The Outcomes and Program Framework

Since 2009-10, the Defence budget has been set out according to a framework of 'outcomes' and 'programs'. This replaces the 'outcomes' and 'outputs' framework established in 1999.

Outcomes are the results or benefits that the Commonwealth aims to deliver to the community through the work of its agencies. They are specified for each agency, and are meant to express the purpose or goal of each agency's activities.

Programs are activities that agencies undertake in pursuit of the outcomes they are expected to deliver.

The performance of agencies is measured under the framework. This is done through specific targets (like flying hours for Air Force) and, ultimately, the extent to which their programs actually deliver the outcomes intended. So the aim is to show not only how much an agency is *doing*, but how much it's actually *achieving.* Defence is currently being restructured following the First Principles Review. The output/organisational structure is likely to evolve further as a result. See Chapter 4.

The Defence Outcomes

Since 2009-10, the Defence Outcomes have been:

Outcome 1: The protection and advancement of Australia's national interests through the provision of military capabilities and the promotion of security and stability.

Outcome 2: The advancement of Australia's strategic interests through the conduct of military operations and other tasks as directed by Government.

Outcome 3: Support for the Australian community and civilian authorities as requested by Government**.**

The programs that contribute to these three outcomes are set out in Figure 1.5.1. Note that the programs are closely aligned with the actual organisational structure of Defence, as can be seen by comparison with the Defence 'wiring diagram' in Figure 1.5.2.

This framework provides greater visibility of resources consumption within the organisation than the output-based approach that was in place up to 2007-08. But this comes at the loss of knowing what it costs to deliver military capability, which is what the old framework attempted to do. Ultimately, what really matters is how much it costs to deliver ships, planes and battalions ready for deployment, not how much money is spent on health services, legal advice or personnel management. Of course, in a perfect world we would be told both.

Curiously, at the same time as Defence's formal budget framework abandoned the concept of outputs in favour of an organisation-based program approach, the 2009 White Paper said Defence would move to an output-driven internal budgeting model. Forty-eight months on, we still don't know what this will entail or the extent—if any—to which it will be visible to the public. It would be ironic if Defence finally moved to an internal output-based budget after abandoning output-based external budgeting and reporting. It may be that the whole idea has been abandoned.

Figure 1.5.1: The Defence Outcome-Program framework (May 2015)

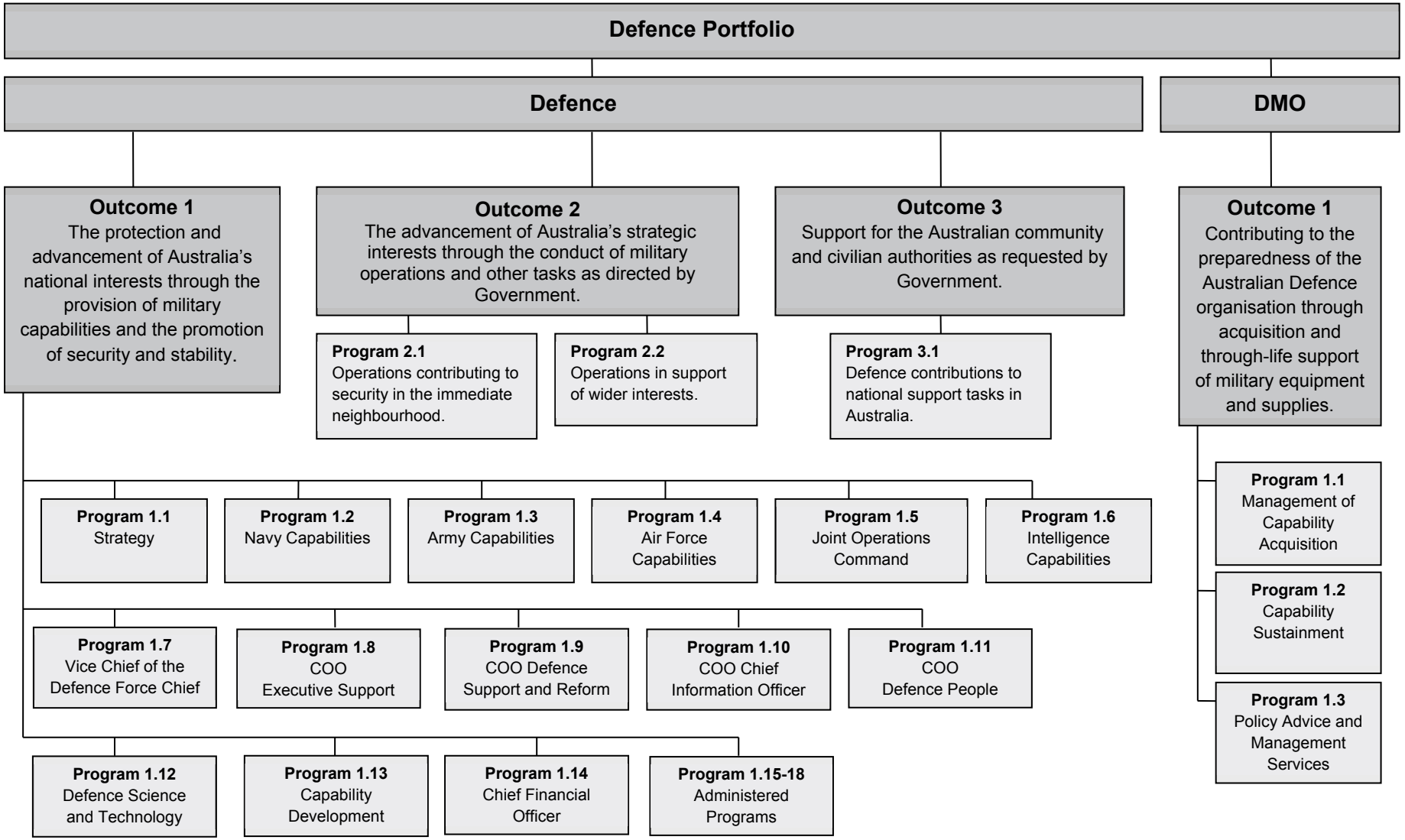
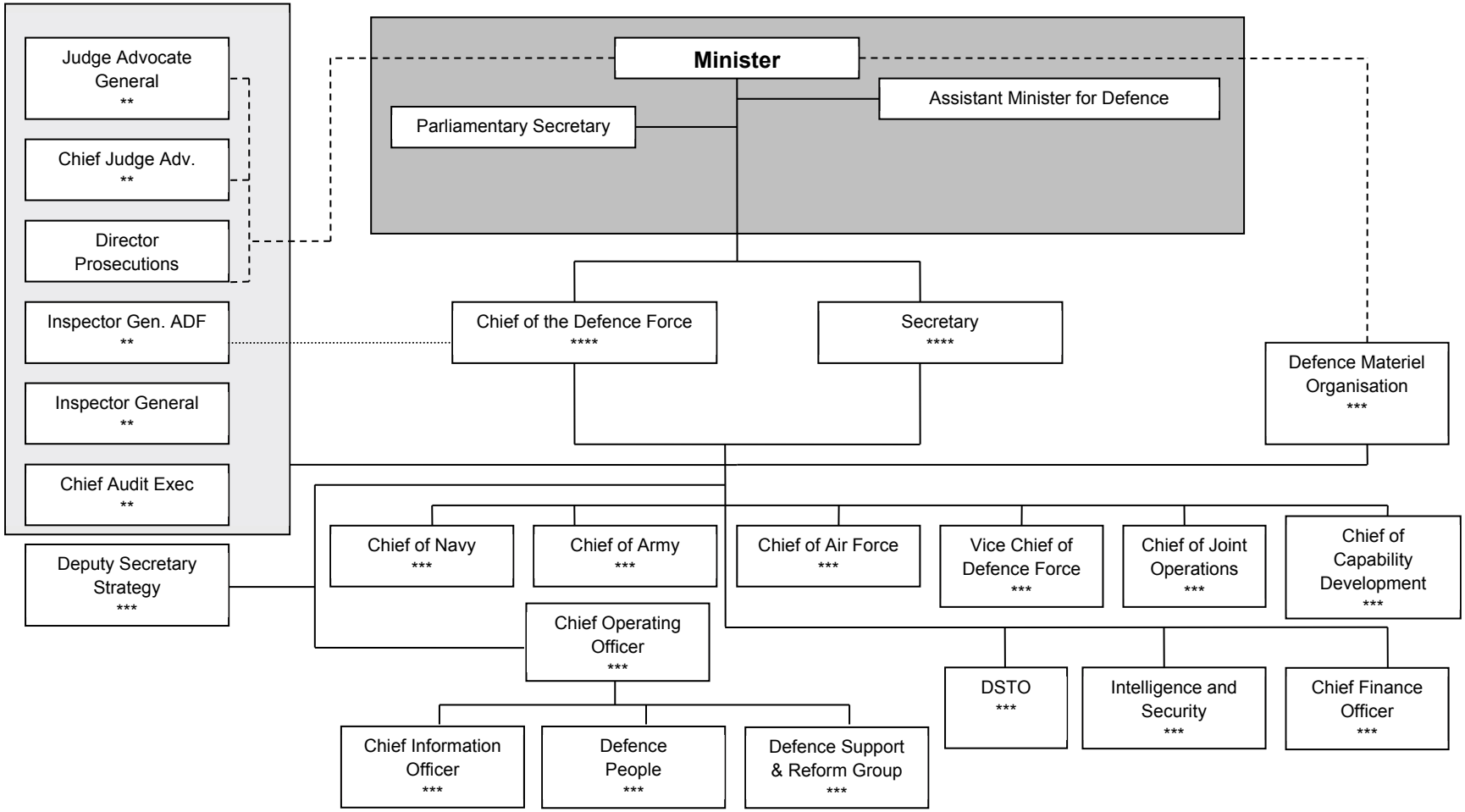


Figure 1.5.2: Defence organisational structure (as May 2015)



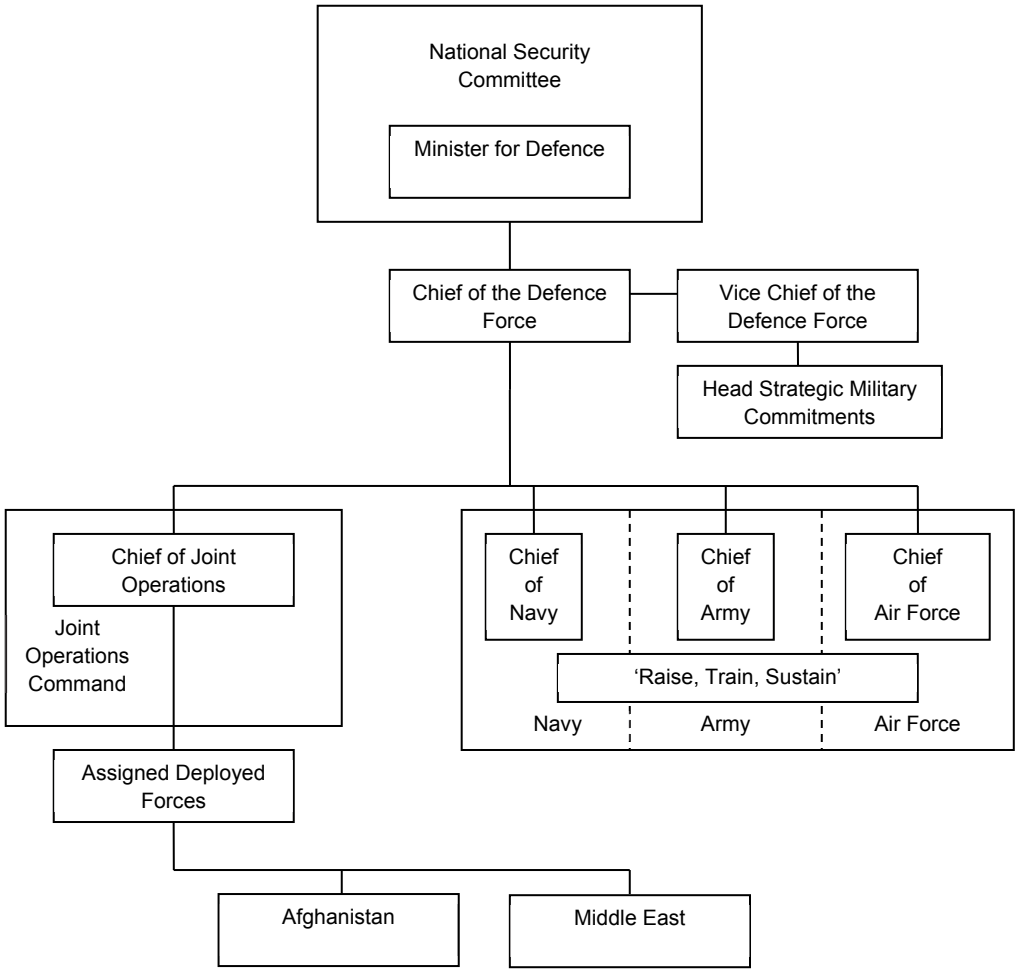
ADF command structure

It's important not to confuse the day-to-day management of the Department of Defence with the command of military operations. The former occurs through the diarchy of the CDF and Secretary and group/program arrangements outlined above. The latter is exercised through a formal command chain and dedicated headquarters structure.

On a day-to-day basis, the three Services (Navy, Army, and Air Force) are responsible for raising, training and sustaining their forces. When forces are deployed on operations or major exercises, the designated force elements are assigned to Headquarters Joint Operations Command (HQJOC) for that purpose. Since late 2008, HQJOC has been housed at a purpose-built facility near Bungendore in rural NSW and is staffed by around 750 personnel.

A more detailed outline of ADF command and HQJOC appears in Chapter 2.6 of this brief under Program 1.5.

Figure 1.5.3: ADF command structure



1.6 National Security Spending

The events of 9/11 prompted the recognition that no single agency has the capacity, or range of capabilities, necessary to ensure our security. The threat of terrorism within Australia, and to Australians abroad, has forced a whole-of-government approach to national security at the federal level. Even beyond the threat of terrorism, it's increasingly recognised that our national security interests are best served by a coordinated approach that uses all of the levers available to government.

It's beyond the scope of this Defence Budget Brief to analyse and explain the budgets of all the agencies that contribute to national security. Instead, we'll content ourselves with a broad-brush description of how much is spent in key agencies. If nothing else, it provides a useful yardstick against which we can measure what's spent on defence. Unfortunately, because of the difficulty in finding data, our discussion excludes spending at the state and local levels.

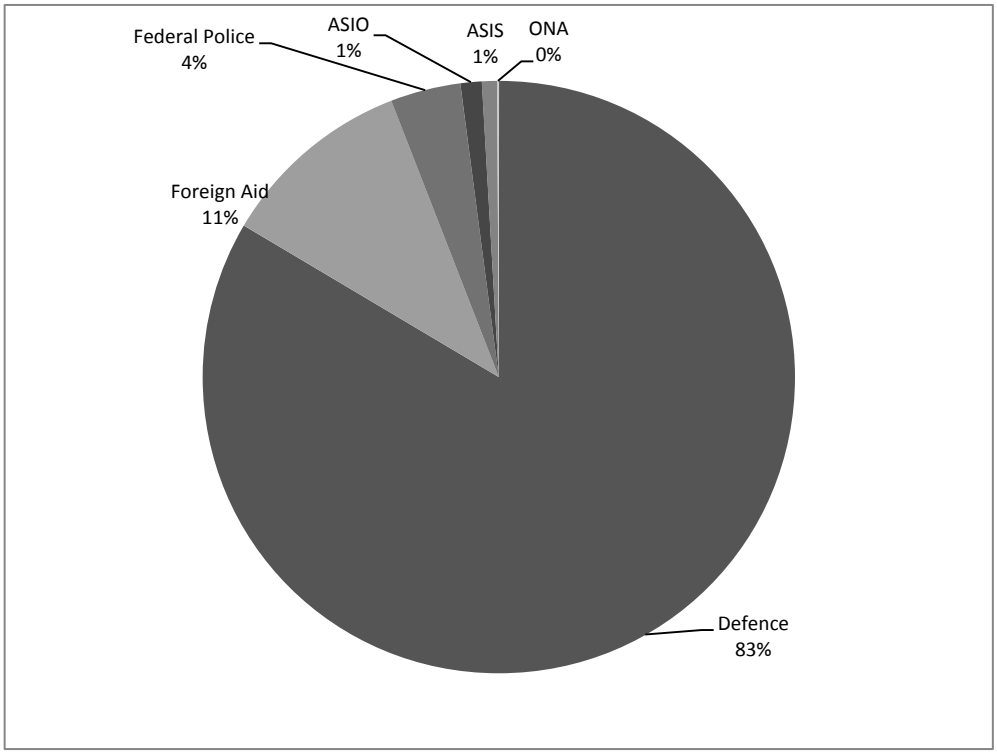
This year's budget papers included a 14 page glossy brochure, *Protecting Australia*, which explained the steps taken by the government to keep Australia safe and secure. It mentioned $1.2 billion of spending for national security, including $450 million to 'strengthen intelligence capabilities and challenge extremism'. This built on $630 million provided mid-year in additional funding to security agencies. The remaining $750 million was new funding to support ADF deployments to Afghanistan, Iraq and the Middle East.

A number of federal agencies can make a credible claim to delivering some part of our national security. In selecting agencies, we've taken a liberal view of what constitutes national security, although we've excluded funding for outcomes within agencies that are clearly unrelated. Here's our list, which can't claim to be exhaustive, in alphabetical order:

- Australian Federal Police (AFP)
- Australian Security Intelligence Organisation (ASIO)
- Australian Secret Intelligence Service (ASIS)
- Department of Defence (DOD)
- Overseas Development Assistance (DFAT)
- Office of National Assessments (ONA).

Clearly, some of the activities of the listed agencies (even with the restriction to specific outcomes) go beyond national security. Conversely, other agencies that have been left out, like the Australian Customs and Border Protection Service, make a significant contribution to national security within their broader range of responsibilities. Such is the challenge of dealing with the aggregated data available in the budget papers. Figure 1.6.1 compares the appropriations allocated to each of the aforementioned agencies in 2015-16. Note that because of the absorption of AusAID into DFAT, care should be taken comparing Overseas Development Assistance in 2015-16 to that in earlier years.

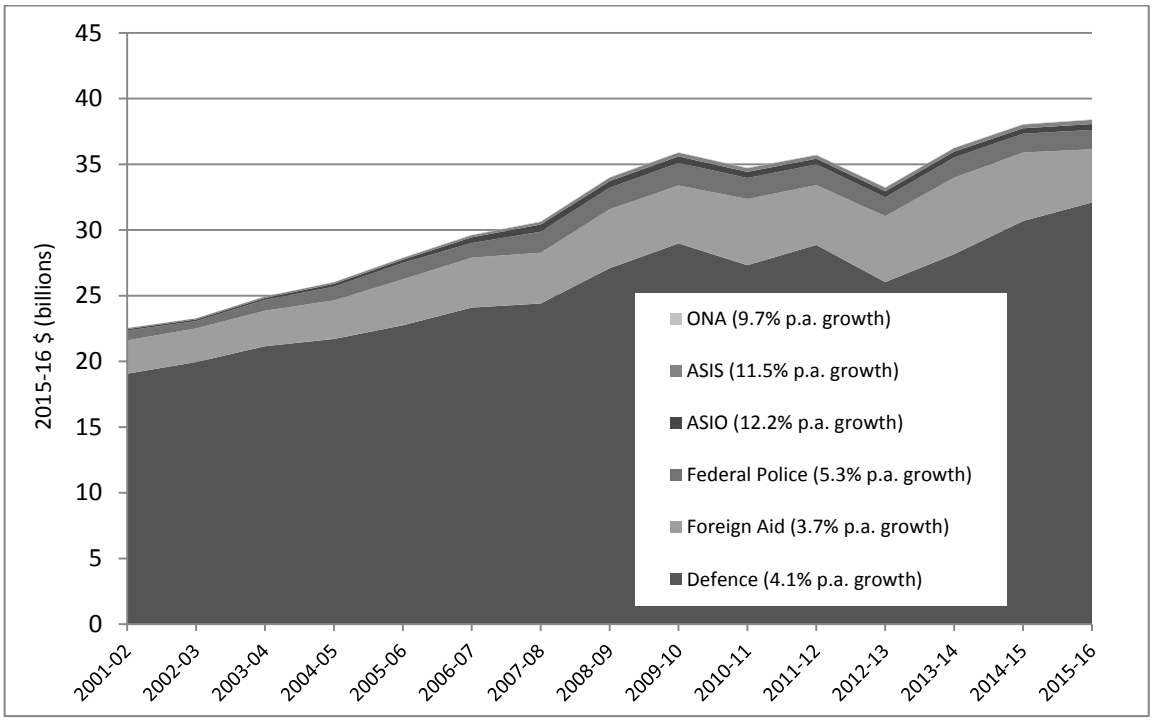
Figure 1.6.1: Federal national security spending



Source: 2015-16 Budget Paper No. 4 and ASPI calculation of Net Defence Funding

Figure 1.6.2 shows the real growth in spending by various national security agencies since 2000-01. Because changes in outputs and the presentation of budget figures make it difficult to extract precisely comparable figures from year to year, the numbers should be used with caution—though the broad trends are clear.

Figure 1.6.2: Federal national security appropriations 2001-02 to 2015-16



Source: 2002-03 to 2015-16 Budget Paper No. 4 and ASPI calculation of Net Defence Funding. [All growth rates compounding.]

1.7 Measuring Defence Spending

The amount a country spends on defence is a direct measure of its commitment to protect itself. Accordingly, a lot of attention is placed on comparing levels of defence spending between countries and on tracking the rates at which those levels are increasing or decreasing. For example, here in Australia, a lot of attention was placed on achieving 3% real growth in the Defence budget during the 2000s. It's important, therefore, that reporting of defence spending captures what's actually going on. As of 2015-16, transactions between DMO and Defence will cease to arise because DMO will cease to exist. However, these are explained below (for the last time) to show the difference with the new arrangement.

Table 1.7.1 sets out the presentation in the 2015-16 Portfolio Budget Statement (PBS) [Table 2, p.17] excluding the administered appropriations. (We ignore the administered appropriations for superannuation and housing because they aren't controlled by Defence and are appropriated through the organisation for convenience.) The bottom line is *Total Defence Funding* which, in the past, has been presented in the PBS as 'the most common way of presenting the Defence budget' [2008-09 PBS, p.119].

Table 1.7.1 Total Defence funding FY 2015-16

	2015-16 $'000
Departmental	
1. Output Appropriation	28,976,236
2. Equity Injection	2,875,209
3. Prior Year Appropriation	
4. Current year's appropriation (1+2+3)	**31,851,445**
5. Drawdown of appropriations carried forward	
6 Other appropriation receivable movements	
7. Returns to Official Public Account (OPA)	11,817
8 Funding to/from OPA (5+6+7)	**11,817**
9. Funding from Government (4+8)	**31,863,262**
9. Capital Receipts	226,974
10. Own-source Revenue	605,115
11. Funding from other sources (9+10)	**832,089**
12. Total Defence Funding (9+11)	**32,695,351**

Source: 2015-16 PBS

The easiest way to explore what a better approach might be is to examine each of the elements appearing in Table 1.7.1.

Current year's appropriations: This is the least ambiguous part of the problem. Each year the government formally appropriates money to Defence. The breakdown of the appropriation in terms of outputs and equity is an artefact of accrual accounting that needn't concern us. What matters is that this is the quantum of cold hard cash the government plans to make available to Defence for the financial year. As such, any credible measure of Defence funding must include this money.

Drawdown of appropriations carried forward: Because funding may either be spent or received in a year other than the appropriation year, an Appropriation Receivable account is utilised. This recognises that departmental Appropriations don't lapse unless specifically extinguished by the Minister for Finance and shifts to this account represent either the expenditure of additional public funds by Defence or the return of unspent funds. To properly track the funding employed by Defence, it makes good sense to take account of increases and decreases to the Appropriation Receivable account. However, if this is accepted, it follows that changes to Defence's cash holdings must also be accounted for (since that's where the money in the appropriation receivable came from originally).

Capital Receipts: As custodian of more than $50 billion of public assets including land, buildings and military equipment, Defence inevitably receives cash from the disposal of items that are no longer needed. Some of this money is returned to government via a Return to the OPA. The remainder is retained by Defence and is called Net Capital Receipts. Given that Net Capital Receipts are generated from the sales of public assets, it's correct to count this income as part of Defence funding.

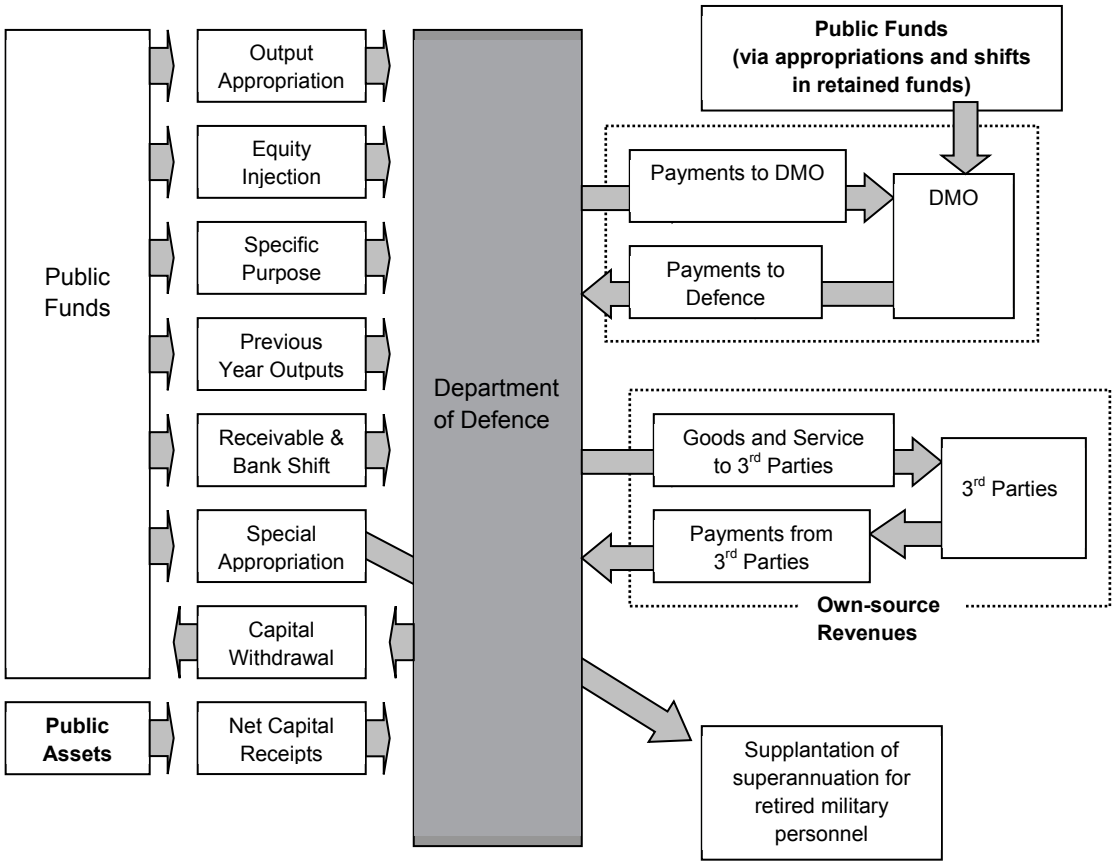
Own-source Revenues: Defence receives revenue from a number of sources. These include the supply of goods and services to third parties such as Defence personnel, who pay a share of the cost of their food and lodging provided by Defence, and foreign governments that purchase items like fuel. It makes little sense to include this as part of Defence funding. While it's perhaps reasonable to include revenue raised by using public assets (like Defence accommodation), the vast bulk of Own-source Revenue reflects Defence acting as an intermediary that transfers goods between third-party providers and third-party customers.

For example, the sale of fuel to a foreign government or rations to personnel delivers no revenue to Defence that's not at least equal to the cost of doing so. Or to put it another way, no one could seriously contend that Defence funding has risen by $50 million simply because, for example, an extra $50 million of fuel was purchased and sold on to the United States.

Up until 2015-16, Own-source Revenues also includes transfers from the Defence Materiel Organisation (DMO) to Defence. For example, DMO paid Defence $273 million in 2014-15 [PBS page 137] primarily for the cost of the military personnel provided by Defence to DMO. The DMO was appropriated for civilian and military personnel because it required the expertise of military personnel within its project delivery and equipment sustainment functions. The DMO then paid Defence to offset Defence's cost of providing the military expertise. This worked in a similar fashion to fuel sales where Defence 'sold' goods and services to DMO to offset the cost of providing those goods and services. This wasn't double counted in Table 2 (page 17) of the PBS as those figures were only those of Defence.

There used to be a number of tables that consolidate the Defence and DMO picture but another way of doing this was to combine Table 2 with DMO's direct appropriations and any revenue received by DMO from sources other than Defence. Figure 1.7.1 is our best attempt to depict the situation graphically, though some simplification has been necessary.

Figure 1.7.1: Defence Cash and Resource Flows



To complicate matters further the estimated actual figure for the current financial year in PBS Table 2 includes payments to DMO that may eventually remain unspent (noting that some underspends have been dealt with by extinguishing appropriations). Indeed, over a four-year period last decade, more than $927 million accumulated in the DMO Special Account, including $414 million from 2007-08. In some years, the Special Account is drawn down while in others it grows.

From a strict accounting perspective, no rules were broken. Defence reports its funding accurately, and DMO reports its cash flow properly. Yet there's something surreal about failing to reconcile the net impact of the two things to show what's actually going on, especially given the high prominence of Defence funding in recent years.

So what is the 'Defence budget'?

While there's an accounting distinction between Defence and DMO, any sensible calculation of the 'Defence budget' must reflect the total impost on the taxpayer in delivering defence capability. This is easily achieved by adding DMO funding to the calculation and ignoring the transfer back and forth of money in between.

In light of the foregoing discussion, it seems sensible to include Funding from Government, Net Capital Receipts (= Capital Receipts – Return to OPA), Net Bank Balance Shifts, Appropriation Receivable and Special Account Shifts, but to exclude Own-source Revenue. It is also sensible to do the same for DMO and then add the results together, safe in the knowledge that the accounting transfers between the two entities have been excluded.

Table 1.7.2 shows the calculation of Total Defence resourcing and ASPI Net Defence funding for 2014-15 (when DMO was in operation) and in 2015-16 after DMO ceased to exist.

Table 1.7.2: Total Defence resourcing FY 2014-15 and FY 2015-16

	2014-15		2015-16	
	Total Defence Funding	**ASPI Net Defence Spending**	**Total Defence Funding**	**ASPI Net Defence Spending**
Departmental				
1. Output Appropriation	26,349,322	26,349,322	28,976,236	28,976,236
2. Equity Injection	2,758,491	2,758,491	2,875,209	2,875,209
3. Prior Year Appropriation				
4. Current year's appropriation	**29,107,813**	**29,107,813**	**31,851,445**	**31,851,445**
5. Drawdown of appropriations carried forward	-71,357	-71,357		
6 Other appropriation receivable movements				
7. Returns to OPA	-853	-853	11,817	11,817
8. Funding from Government	**29,035,603**	**29,035,603**	**31,863,262**	**31,863,262**
7. Capital Receipts	128,153	128,153	226,974	226,974
8. Own-source Revenue	933,314		605,115	
9. Funding from other sources	1,061,467	128,153	832,089	226,974
10. DMO Appropriation		879,683		
11. DMO drawdown of Special Account		-4,088		
12. Total Defence Funding	**30,097,070**		**32,695,351**	
13. ASPI Net Defence Funding		**30,039,351**		**32,090,236**

The difference isn't large for 2014-15. Our calculation of Net Defence Funding yields a figure only 0.02% higher than Total Defence Funding. The difference would be larger if not for the almost complete (but entirely coincidental) cancellation of Own-source Revenues and direct appropriation to DMO. Nonetheless, we believe *ASPI Net Defence Funding* is a better measure of the 'Defence budget' than *Total Defence Funding.* For 2014-15, the difference is substantial.

Chapter 2 – Defence Budget 2015-16 PBS Explained

The 247 pages of the 2015–16 Defence Portfolio Budget Statements (PBS) set out the government's plan for the expenditure of around $32.1 billion by Defence in the coming financial year.

This guide explains and where possible analyses the information in the PBS. In doing so, we skim over those parts of the PBS that are relatively clear, and focus on those areas where explanation might be useful.

Some of the material that follows is unavoidably technical due to the disciplines and complexities of accounting. However, it is not necessary to read this chapter as a whole, or in sequence, to gain insight. Every attempt has been made to enable the reader to jump in and look at those items of most interest.

This Brief does not cover in any detail the funds administered by Defence on behalf of the government for superannuation and housing support services for current and retired Defence personnel.

Most parts of the guide are best read with the PBS at hand. Copies can be downloaded from the web at <http://www.defence.gov.au/budget/>.

As a result of the First Principles Review, there are major organisational changes planned for Defence—including the reabsorption of DMO into Defence. The PBS anticipates these changes but largely retains the structure of the existing organisation.

The PBS begins with something akin to an executive summary [PBS p. 1–13] that provides a useful snapshot of governance arrangements, resources and portfolio structure for Defence plus DMO. Rather than recount this material, we turn now to examine the main body of the document.

2.1: Strategic Direction Statement [PBS Section 1.1]

The overview chapter of the PBS begins with a discussion of Defence's role; 'to protect and advance Australia's strategic interests through the provision of appropriately prepared and equipped armed forces'. It goes on to discuss the forthcoming 2015 Defence White Paper and details current initiatives, including operations, force development and international defence engagement. Specific issues noted include continuing operations in the Middle East and Afghanistan, the introduction of new C-27J Spartan aircraft into service, the reorganisation of the Army under Plan BEERSHEEBA and the continuing delivery of 24 MH-60R Seahawk Romeo helicopters.

2.2: Resourcing [PBS Section 1.2 & 1.3]

The 'rubber hits the road' in Sections 1.2 and 1.3 of the PBS, in terms of allocating money to get things done. It contains the resource statements, new budget measures and the funding bottom line.

How much money will Defence get?

On page 17 of the PBS, we get to the heart of the issue. Table 2 gives three key figures for the Defence budget:

- **Funding from Government,** being those funds formally *appropriated* to Defence by the government for departmental purposes along with shifts in appropriations receivable (unspent money from previous years). In 2015-16 this will amount to $31,863,262,000.
- **Total Defence Funding,** being those funds actually *available* to Defence including appropriations and revenue from other sources and Returns to/from the Official Public Account. In 2015-16 this will amount to $32,695,351,000.
- **Total Defence Resourcing,** being Total Defence Funding plus those funds appropriated administratively through Defence for superannuation and defence housing subsidies. In 2015-16 this will amount to $37,925,743,000.

Of these three figures, *Total Defence Funding* is the one most usually quoted as the Defence budget. It represents the funds expended by Defence to deliver the departmental outcomes and maintain the ongoing program of investment in new equipment and facilities. Note, *Total Defence Funding* does not include administered funds for superannuation and defence housing subsidies.

However, as explained in the last chapter, *Total Defence Funding* is inflated by a churning of money that delivers no military capability or outcome, and ignores funds appropriated directly to DMO. What's more, Total Departmental Funding ignores the money which has at times accumulated or been drawn out of the DMO Special Account—in effect transferring money from one year to another. (Although DMO will cease to exist in 2015-16, there's a transfer of $301 million to Defence that still needs to be included.) We believe that the *ASPI Net Defence Spending* figure accounts for these issues properly and therefore gives a more accurate picture of how much is being spent on delivering defence capability and outcomes. Henceforth, we will only present the *ASPI Net Defence Funding* figure.

How much money will Defence receive?

Table 2.2.1 displays Defence funding for the past thirteen, and next four, financial years. Also shown are both the nominal and real year-to-year percentage growth rates.

Table 2.2.1: ASPI Net Defence Funding – real (2015-16$) and nominal

	Funds (nominal)	Growth (nominal)	Funds (real)	Growth (real)
01-02	13,191	7.08%	19,069	4.11%
02-03	14,216	7.78%	19,953	4.63%
03-04	15,439	8.60%	21,159	6.05%
04-05	16,224	5.09%	21,712	2.61%
05-06	17,547	8.15%	22,752	4.79%
06-07	19,140	9.08%	24,104	5.94%
07-08	20,038	4.69%	24,413	1.28%
08-09	22,933	14.45%	27,096	10.99%
09-10	25,104	9.46%	28,987	6.98%
10-11	24,403	-2.79%	27,328	-5.73%
11-12	26,381	8.10%	28,877	5.67%
12-13	24,417	-7.44%	26,133	-9.50%
13-14	26,487	8.48%	27,600	5.61%
14-15	30,039	13.41%	30,707	11.26%
15-16	32,090	6.83%	32,090	4.50%
16-17	31,066	-3.19%	30,309	-5.55%
17-18	33,615	8.21%	31,996	5.57%
18-19	36,030	7.18%	33,458	4.57%

Source: 2015-16 PBS, and *earlier Defence Annual Reports (DAR).*

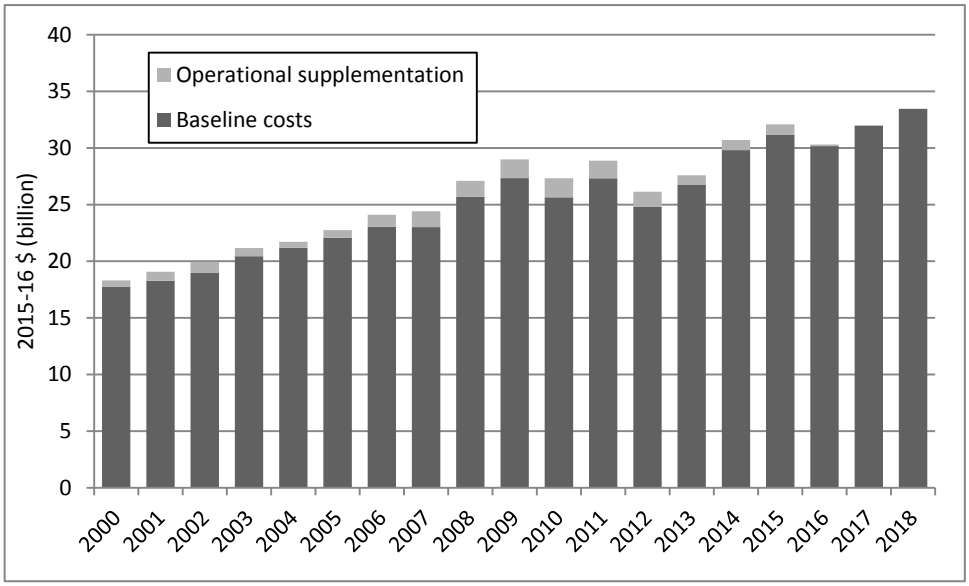
When calculating the real growth rate, the nominal dollar values of the individual years have been converted to a single base year using the Consumer Price Index (CPI) so as to reflect the opportunity cost incurred by the taxpayer. Note that this is not the deflator used within government to adjust the defence budget from year to year. From 2001-02 until 2009-10 this was the implicit Non-Farm GDP Deflator (NFGDPD) and from 2009-10 onwards it has been fixed at 2.5% in accord with the funding model introduced in the 2009 Defence White Paper.

Those who believe that 3% is somehow a magic benchmark of merit for defence spending should be pleased. The average *arithmetic* annual rate of real growth in the budget since 2000-01 (the last year prior to the 2000 White Paper) to 2014-15 is 5.0%. Over the same period, the effective *compounding* annual rate of real growth is 3.8%.

Looking forward, things are not so encouraging. Over the four years covered by the budget and estimates, the average *arithmetic* annual rate of real growth in the budget from 2015-16 to 2018-19 comes out to be 1.4%. Over the same period, the effective *compounding* annual rate of real growth is the same.

These calculated growth figures should be viewed with some caution due to the perturbing effect of operational supplementation, see Figure 2.2.1. A fuller analysis of trends in defence spending appears in Chapter 3 of this brief, including the prospects for the government achieving its promise of 2% of GDP by 2023-24.

Figure 2.2.1: Real Net Defence Funding – 2000 to 2018



Source: 2015-16 PBS, 2014-15 PAES and earlier DAR. 2005 = 2005-06 etc.

What is the Defence share of GDP?

Table 2.2.2 gives Net Defence Funding as a percentage of GDP for recent and future years. As shown, the share of GDP will rise from 1.87% in 2014-15 to 1.93% in 2015-16. (Last year's estimate has gone up due to shifts in both foreign exchange, spending and GDP.) Over the following three years, restrained real spending growth and a rising economy will depress the GDP share. Note that, current and recent spending is boosted by high levels of operational supplementation that are not reflected in the latter years of the forward estimates.

Table 2.2.2: ASPI Net Defence Funding as a percentage of GDP

00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
1.74	1.75	1.77	1.79	1.76	1.76	1.77	1.70	1.83	1.94	1.74	1.78	1.60	1.68	1.87	1.93	1.78	1.83	1.86

Source: Analysis of data from 2015-16 Budget Overview, 2015-16 PBS and earlier DAR

What is the Defence share of Commonwealth payments?

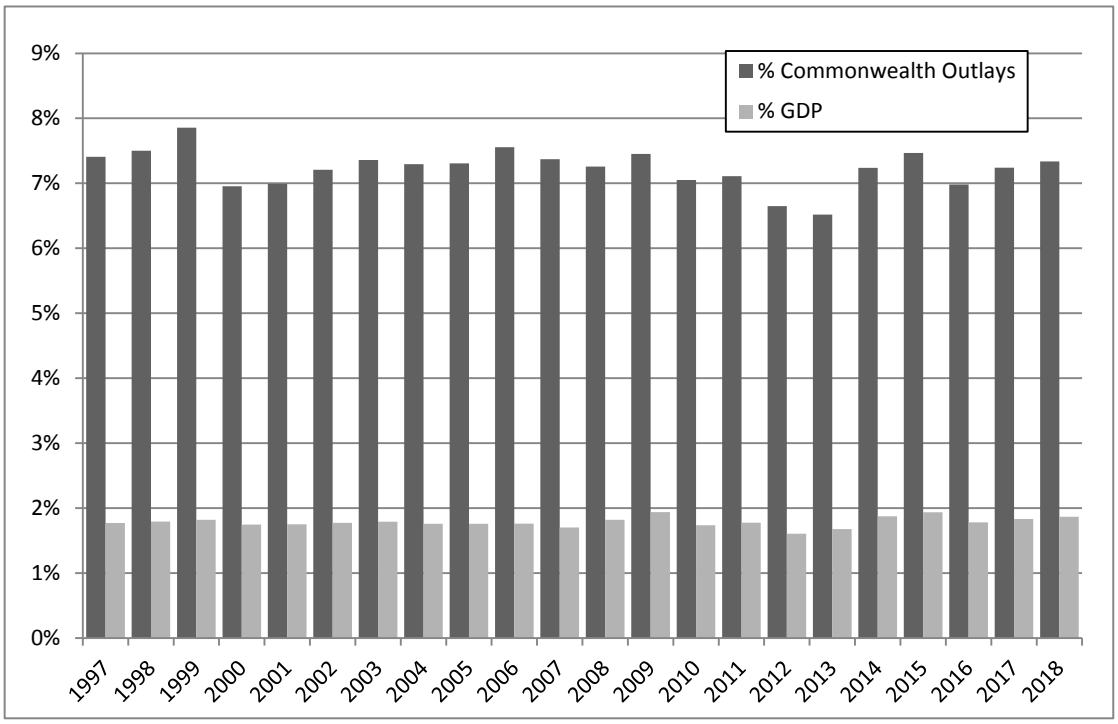
Defence spending as a percentage of total Commonwealth payments is shown in Table 2.2.3. On current plans, Defence's share of payments will rise slowly over the forward estimates period. Figure 2.2.2 graphs the percentage GDP and share of Commonwealth payments from 1997 to 2017.

Table 2.2.3: ASPI Net Defence Funding as a percentage of Commonwealth payments

00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19
6.96	6.99	7.21	7.36	7.29	7.31	7.56	7.37	7.26	7.45	7.05	7.11	6.65	6.52	7.24	7.47	6.98	7.24	7.33

Source: Analysis of data from 2015-16 Budget Overview, 2015-16 PBS and earlier DAR

Figure 2.2.2: Net Defence Funding as a Percentage of payments and GDP



Source: Analysis of data from Budget Overview, 2015-16 PBS and earlier, DAR 2005 = 2005-06 etc.

Changes since the last budget

Since the last budget, measures and adjustments have been undertaken that provide context for this year's budget. Table 2.2.4 shows the key items from the 2014-15 Portfolio Additional Estimates Statement (PAES) [Table 7, p.17].

Table 2.2.4: Key measures and adjustments from the 2014-15 PAES (million $)

	14-15	15-16	16-17	17-18	4 year total
Operation Slipper	26.7				26.7
Operation Highroad	82.4				82.4
Operation Accordion - extension	63.2				63.2
Operation Okra	260.8	30.9	5.8		297.5
DMO appropriation adjustment	1.5	1.5	1.6	1.7	6.3
Foreign exchange movements	6.3	74.4	23.8	-30.4	74.1
Carried Forward Appropriation	-71.4				-71.4
TOTAL	**369.5**	**106.9**	**31.2**	**-28.7**	**478.9**

Source: 2014-15PAES. Note: Ten-year totals were not disclosed.

Operational supplementation

Defence is funded on a no-loss/no-win basis for the net additional cost of operational deployments. Additional funding was provided for Operation Slipper ($26.7 million) and Operation Highroad ($82.4 million) in Afghanistan, Operation Accordion ($63.2 million) in the Middle East Region, and Operation Okra ($297.5 million) in Iraq.

Foreign exchange adjustment

Defence is funded on a no-win/no-loss basis for foreign exchange movements. Depending on how the Australian dollar moves relative to currencies that Defence plans to make purchases in, adjustments are made to maintain the buying power of the Defence budget. As a result of depreciation in the value of the Australian dollar during 2014-15, Defence received $6.3 million in 2014-15 and $74.1 million over the budget and forward estimates.

DMO appropriation adjustment and Carried Forward Appropriation

Due to functions and staff movements between Defence and DMO, DMO received $1.5 million in the budget year and $6.3 million across the Budget and Forward Estimates. The Carried Forward Appropriation relates to the drawdown of previous years' appropriations that have been carried forward.

2.3: Funding from Government [PBS Section 1.3]

The 2015-16 Budget Measures and Adjustments [PBS p. 18 – 19]

Each year, changes to the Defence budget are set out in the PBS. Usually the changes fall into three categories: budget measures, savings measures and budget adjustments. The distinction between the three is variable, with identical items classified differently from one year to the next. There are also so-called 'absorbed measures', these are unfunded initiatives that must be funded from within existing Defence resources. Inevitably, this means that either other activities have to be foregone or efficiency savings created. For ease of reference, the individual measures and adjustments have been detailed in Table 2.3.1.

Table 2.3.1: 2015-16 Budget Measures and Adjustments (million $)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Measures						
Operation Okra—continued		359.8	11.8	10		381.6
Operation Accordion—extension		189.3	1.4	0.6		191.3
Operation Highroad		115.1	11.3	7.9		134.4
Operation Manitou		40.3	0.5	0.5		41.3
Operation Resolute—extension		48.1	5.7			53.8
Sir John Monash Centre*						88.6
Digital Transformation Agenda		-1.4	-1.4	-1.4	-1.4	-5.8
Smaller Government—DMO						
Adjustments						
Foreign Exchange adjustment	320.3	732.2	681.0	688.7	696.6	2,798.5
Total Variation to Funding	**320.3**	**1,483.4**	**710.3**	**706.3**	**695.2**	**3,595.2**

Source: 2015-16 PBS and Budget Paper #2. Numbers may not add due to rounding. *Absorbed measure, not included in total.

The budget initiatives in detail

In the past, the PBS contained detailed explanations of the various measures. However, the PBS has been silent on such matters for several years now. Fortunately, further information is available in Treasury's Budget Paper Number 2 regarding Defence measures. This

information is reproduced below—often verbatim—along with supporting data where available. See Chapter 6 of this Brief for more on the cost and composition of ADF deployments.

Measures

Operation Okra — continued support (Iraq)
The Government will provide $403.2 million over four years for the net additional cost of Australia's contribution to the international coalition against ISIL, or Daesh, in Iraq in 2015-16. The cost will be reduced by the recovery of $11.0 million from other Coalition forces for logistic support provided by the ADF. This measure includes $10.7 million in 2014-15, which will be met from within funding already provided for Operation Okra.

Operation Accordion — continuation (Middle East Area of Operations—Support)
The Government will provide $191.3 million over three years for the net additional cost to extend Operation Accordion in 2015-16. The cost will be reduced by the recovery of $3.1 million from other Coalition forces for logistic support provided by the ADF.

Operation Highroad — extension (Afghanistan—NATO Training mission)
The Government will provide $216.8 million over four years (including $82.4 million provided mid-year) for the net additional cost of Operation Highroad. The cost will be reduced by the recovery of $0.6 million from other Coalition forces for logistic support provided by the ADF.

Operation Manitou — extension (Middle East—Maritime)
The Government will provide $41.3 million over three years for the net additional cost (including remediation costs) to extend Operation Manitou in 2015-16. Operation Manitou is the ADF contribution to the international Combined Maritime Forces' operations to counter terrorism, piracy and related illegal activities in the maritime Middle East Region.

Operation Resolute — extension
The Government will provide $53.8 million over two years for the net additional cost (including remediation costs) to extend Operation Resolute in 2015-16. Operation Resolute is the Australian Defence Force contribution to the whole-of-government effort to protect Australia's borders and offshore maritime interests.

Smaller Government — Defence Materiel Organisation reintegration
As part of its implementation of recommendations of the First Principles Review of Defence, the government has agreed to disband the DMO and to transfer its core responsibilities and funding to Defence. Any savings from the reintegration will be retained by Defence.

Sir John Monash Centre — Villers-Bretonneux, France
The Government will provide $99.5 million over four years to construct the Sir John Monash Centre at Villers-Bretonneux in France as a legacy of the Centenary of Anzac. The Centre will be an interpretive centre explaining Australia's role on the Western Front during the First World War. The capital cost of this measure (≈$88.6 million) will be met from within the existing resources of the Department of Defence. The operational costs (≈$10.9 million) of this measure will be met by the Department of Veterans' Affairs.

Digital Transformation Agenda — Defence contribution
The Government will direct savings of $120.0 million over five years from 2014-15 from a range of portfolios to support the implementation of the Digital Transformation Agenda.

Adjustments

Foreign exchange adjustment
As a result of depreciation in the value of the Australian dollar in 2014-15, Defence received $320 million in 2014-15 and $2,798.5 million over the budget and forward estimates.

So what happened?

This year's Defence budget is easy to understand. Three things have happened:

- Defence received $802.4 million over four years to cover the net additional cost of operations.
- Defence received $2.8 billion over four years in foreign exchange supplementation.
- Defence absorbed around $89 million to cover the capital cost of the Sir John Monash Centre in Villers-Bretonneux, France.

2.4: Capital Investment Program [PBS Section 1.4]

Information on the Capital Budget is spread across several areas of the PBS. The Capital Budget represents Defence's plans for capital investment in new equipment, upgrades, facilities and other non-military capital items. It's formally described in accounting terms in the Capital Budget Statement in Table 58 on page 108 of the PBS, although that is not very revealing.

Capital Investment Program [PBS p.20]

The Capital Investment Program is detailed in Table 5 page 20 of the PBS, which we have reproduced in part in Table 2.4.1. Unfortunately, the projected result for 2014-15 has not been included in this year's PBS so we have been forced to use the revised estimate from the 2014-15 PAES. Similarly, because the Defence Annual Report no longer reports on the capital investment program, we've had to use the revised estimates from the 2012-13 and 2013-14 PAES for those years.

Table 2.4.1: The Capital Investment Program (million $)

	Unapproved Major Capital Investment (DCP)	Approved Major Capital Investment	Subtotal	Minors Program	ICT Investment Plan	Other Capital	Capital Facilities Programme	Total
	a	b	a+b	c	d	e	f	a+b+c+d+e+f
2006-07		4,019	4,019			925	653	5,598
2007-08		4,030	4,030			829	570	5,429
2008-09		3,943	3,943			742	963	5,648
2009-10		5,150	5,150			626	1,504	7,280
2010-11		4,838	4,838			883	1,211	6,932
2011-12		4,208	4,208			739	997	5,944
2012-13	30	3,327	3,357			276	1,019	4,652
2013-14	14	3,544	3,558			1,482	1,222	6,262
2014-15	328	5,753	6,081	101	400	754	1,303	8,638
2015-16	885	6,158	7,043	164	415	894	1,279	9,795
2016-17	1,897	4,586	6,483	170	250	1,103	1,577	9,583
2017-18	3,078	4,894	7,972	160	20	1,166	2,152	11,471
2018-19	6,376	4,559	10,935	175	9	1,313	2,197	14,628

Source: 2012-13 & 2013-14 PAES, 2014-15 PAES and 2015-16 PBS and various DAR. The AMCIP figure for 2011-12 does not take into account the additional $825 million booked in 2010-11 by DMO and paid for by Defence in 2011-12. Where possible, large shifts due to accumulation and drawdown of the DMO special account have been accounted for.

There are four components to the Capital Investment Program:

Unapproved Major Capital Investment Program or Defence Capability Plan (DCP): This represents Major Capital Investment projects that have not yet received second-pass approval from government. Major Capital Investment projects are generally of more than $20 million value and predominantly involve the purchase of military equipment, (previously

called ‘Pink Book’ projects). The preparation of these projects for approval is the responsibility of the Chief of the Capability Development Group. Once approved, projects generally pass to the DMO for delivery.

Approved Major Capital Investment Program: Projects already approved by government and under way, previously called the ‘White Book’. Once approved, projects generally pass to the DMO for delivery.

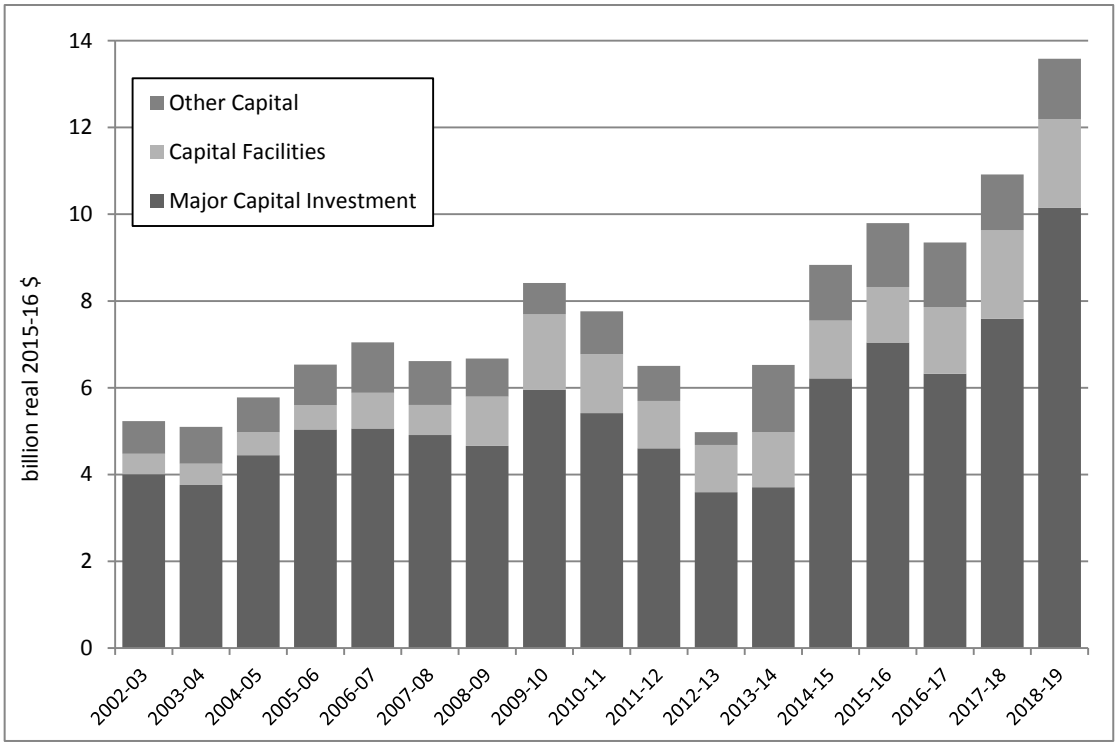
Capital Facilities: Approved and Unapproved Capital Facilities Projects, including everything from new barracks to upgrades of existing facilities. These projects are the responsibility of the Infrastructure Division in the Defence Support and Reform Group.

Other Capital: including Minor Capital Investment (projects costing less than $20 million), repairable items, non-capital facilities, plant and equipment, and software and intangibles. In recent years, minor capital and ICT investment has been listed separately.

What are the trends in the Capital Investment Program?

Recent actual and projected real spending in the Capital Investment Program is shown in Figure 2.4.1 in terms of 2015-16 dollars. Note that the figures for 2012-13 and 2013-14 are uncertain because no official figures have been released for the anticipated outcome for those years. Minors and ICT investment have been group in with ‘Other Capital’. The gap in funding around 2012-13 is a hangover from the attempt to get back to surplus that year. Further discussion of the capital investment program appears in Chapter 3.

Figure 2.4.1: Recent and planned trends in the Capital Investment Program



Source: 2012-13 & 2013-14 PAES, 2014-15 PAES and 2015-16 PBS and various DAR. The AMCIP figure for 2011-12 does not take account of an additional $825 million booked in 2010-11 by DMO and paid for by Defence in 2011-12.

Unapproved Major Capital Investment Program [PBS page 129]

Because of the impending White Paper the PBS only lists a 'sample' of DCP projects planned for first- (2) and second-pass (8) approval in the forthcoming year. The PBS says that additional projects to be considered in 2015-16 will be announced in the 2015 Defence White Paper.

Approved Major Capital Investment Program [PBS page 156]

The approved Capital Investment Program is mainly, but not exclusively, the responsibility of DMO. As a result, most of the information on approved projects can be found in the DMO section of the PBS, including details of the top 30 projects. We examine the Capital Investment Program more closely in Chapter 2.7 of this Brief.

Capital Facilities Program [PBS page 130]

The PBS lists 63 approved Capital Facilities projects at various locations with a total value $6.2 billion. In the 2015-16 Budget the government has foreshadowed 33 new major and medium capital works projects for parliamentary consideration. These are listed in Table 79 of the PBS. Expenditure on facilities projects in 2015-16 is planned at $905 million.

Table 78 of the PBS lists the approved facilities projects. The largest such projects are the Facilities in support of the New Air combat Capability at Williamtown and Tindal ($1,477 million), Enhanced Land Force Phase 2 facilities at various locations ($1,458 million), Defence Logistics Transformation Program ($753 million), Maritime Patrol Aircraft facilities ($708 million) at Edinburgh, Moorebank Units Relocation ($353 million), Albatross Redevelopment Stage 3 ($192 million), MH-60R facilities ($189 million), and the redevelopment of East Sale ($186 million).

Other Capital Purchases

Other capital purchases include Repairable Items and Other Plant and Equipment. Defence plans to spend $894 million on other capital purchases in 2015-16. The year-to-year volatility in this category is difficult to understand.

Retained Capital Receipts [PBS page 21]

The Capital Budget is funded in part through the proceeds from sales of property, plant and equipment and other capital receipts (see Table 7 on page 21 of the PBS). On a year-by-year basis some or all of this money is returned to the government through a capital withdrawal. This is taken into account in determining the appropriations to Defence. Table 2.4.2 shows recently planned and achieved assets sales (including both property and other assets).

Capability Sustainment Program [PBS page 21]

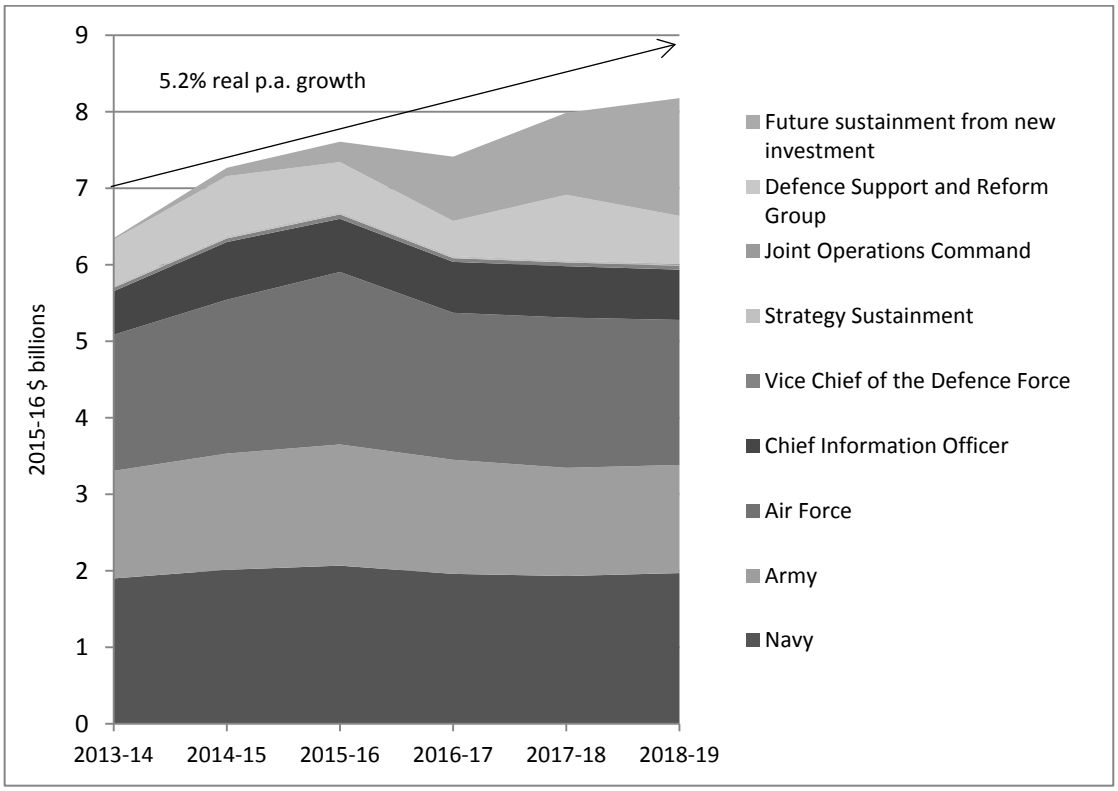
Since 2013-14 the PBS has listed the Capability Sustainment Program by group. This year, the figures appear in Table 6. As data accumulates, an interesting time series will become available. Figure 2.4.2 plots the six years of data that is available. Note that sustainment costs are rising in real terms by 5.2% p.a. compounding (or 2.4% p.a. across the forward estimates).

Table 2.4.2: Proceeds from the sale of assets ($ million)

	Budgeted	Achieved	Shortfall		Budgeted	Achieved	Shortfall
pre 2000	–	77	–	**2010-11**	156	138	18
2000–01	820	87	733	**2011-12**	118	134	-16
2001–02	1023	199	824	**2012-13**	127	undisclosed	
2002–03	700	632	68	**2013-14**	102	undisclosed	
2003–04	306	184	122	**2014-15**	73	undisclosed	
2004-05	231	143	88	**2015-16**	201		
2005-06	95	108	-13	**2016-17**	-44		
2006-07	38	134	-96	**2017-18**	-34		
2007-08	99	65	-34	**2018-19**	42		
2008-09	285	5	280				
2009-10	287	61	226				

Source: DAR and PBS

Figure 2.4.2: The Capability Sustainment Program



Source: 2015-16 PBS and 2014-15 PAES

2.5: People

Overview

Over the past fifteen years, Defence's military and civilian workforces have been on a roller coaster ride. There have been periods of unplanned and planned growth and periods of unplanned and planned reductions in both workforces. Over the same period, the long-term target strength of the ADF has slowly but surely grown from around 50,000 to around 59,600, while the long-term target size of the civilian workforce grew to a peak in excess of 22,000 around 2009 before being repeatedly cut to 17,800 today.

Since 2000, there have been a range of initiatives to improve the management of personnel from a business and planning perspective, and to enhance the development, care, recruitment and retention of personnel. The most substantial changes arose in late 2006, when the then-government allocated another $1 billion for recruitment and retention over ten years, with a further $2.1 billion made available the next year. The 2006 and 2007 funding initiatives were a response to unplanned reductions in the preceding years. In the late 2000s, ADF numbers grew more quickly than planned (after the GFC) but then fell three years in a row despite plans to grow the force.

At the same time, the change of government saw the target strength of the ADF grow by 570 positions above the level set out in the 2013 Defence White Paper. It's curious that the new government did not taken credit for this boost to planned numbers, most of which are planned for Army. At present, Defence is battling headwinds to build the force to targeted levels. Over the next four years, permanent ADF numbers are planned to increase by 3,020 above 2013-14 levels.

On the civilian side, numbers are being driven down by wave after wave of efficiency measures, the latest of which will result in an overall reduction of 1,560 positions over the next four years. Further adjustment may come through the forthcoming White Paper and implementation of the First Principles Review.

How big is the workforce?

According to the PBS, in 2015–16 Defence will be funded to maintain an average of:

- 57,982 full-time military personnel
- 18,380 APS civilians
- 18,860 Reservists

In addition, there will be 484 Professional Service Providers or 'contractors'.

Over the next four years, military numbers are planned to rise to 59,382, beginning with an additional 1,394 people in 2016-17. Reserve days are planned to remain static over the next four years. Civilian APS personnel numbers will fall by around 980 in 2015-16 compared with 2014-15. Historical and planned workforce numbers are detail in Table 2.5.1

Table 2.5.1: Workforce summary for Defence plus DMO (average funded strength)

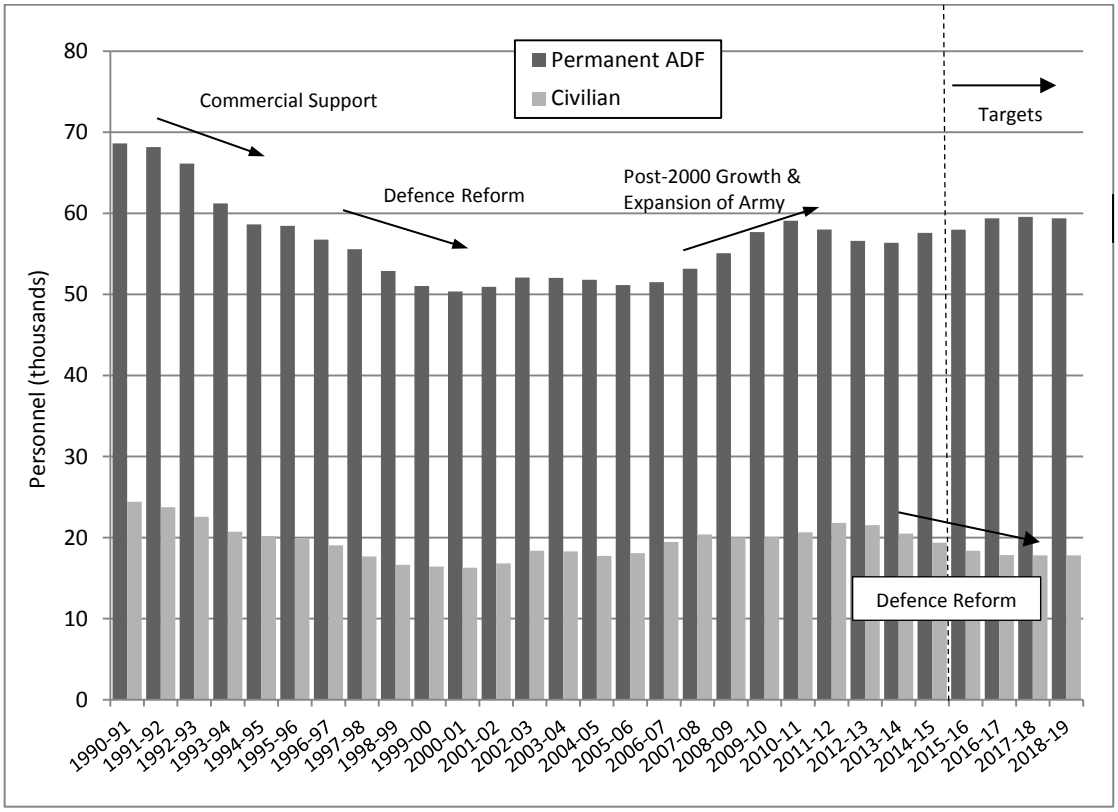
	2001-02 actual	2002-03 actual	2003-04 actual	2004-05 actual	2005-06 actual	2006-07 actual	2007-08 actual	2008-09 actual	2009-10 actual	2010-11 actual	2011-12 actual	2012-13 actual	2013-14 actual	2014-15 proj.	2015-16 budget	2016-17 est.	2017-18 est.	2018-19 est.
Navy	12,598	12,847	13,133	13,089	12,767	12,690	12,935	13,182	13,828	14,207	14,054	13,760	13,862	14,061	14,238	14,368	14,416	14,350
Army	25,012	25,587	25,446	25,356	25,241	25,525	26,611	27,833	29,339	30,253	29,697	28,928	28,568	29,433	29,528	30,774	31,018	31,018
Air Force	13,322	13,646	13,455	13,368	13,143	13,289	13,621	14,066	14,530	14,624	14,243	13,919	13,934	14,094	14,216	14,236	14,125	14,014
TOTAL	**50,932**	**52,080**	**52,034**	**51,813**	**51,151**	**51,504**	**53,167**	**55,081**	**57,697**	**59,084**	**57,994**	**56,607**	**56,364**	**57,588**	**57,982**	**59,378**	**59,559**	**59,382**
Active Reserve	**18,868**	**19,620**	**20,488**	**19,275**	**19,464**	**19,562**	**20,340**	**20,277**	**21,248**	**21,339**	**22,072**	**20,708**	**20,450**	**19,025**	**18,590**	**18,538**	**18,485**	**18,433**
High Readiness	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**235**	**270**	**328**	**386**	**444**
Total Reserve	**18,868**	**19,620**	**20,488**	**19,275**	**19,464**	**19,562**	**20,340**	**20,277**	**21,248**	**21,339**	**22,072**	**20,708**	**20,450**	**19,260**	**18,860**	**18,865**	**18,871**	**18,876**
Civilians																		
Defence	16,819	18,385	18,303	13,390	13,577	14,516	15,087	14,489	14,532	15,115	15,829	15,786	15,280	14,415	**18,380**	**17,850**	**17,800**	**17,800**
DMO	-	-	-	4,363	4,502	4,951	5,304	5,552	5,526	5,533	5,989	5,748	5,216	4,945				
Total Civilian	**16,819**	**18,385**	**18,303**	**17,753**	**18,079**	**19,467**	**20,391**	**20,041**	**20,058**	**20,648**	**21,818**	**21,534**	**20,496**	**19,360**	**18,380**	**17,850**	**17,800**	**17,800**
PSP																		
Defence	-	2,311	1,880	1,913	1,277	810	620	1,008	700	581	467	358	340	304	484	490	488	494
DMO	-	-	-	-	374	298	181	176	120	24	45	33	18	48				
Total PSP	-	2,311	1,880	1,913	1,651	1,099	801	1,184	820	605	512	391	**358**	**352**	484	490	488	494
PSP & Civilian	-	**20,696**	**20,183**	**19,666**	**19,730**	**20,575**	**21,192**	**21,225**	**20,878**	**21,253**	**22,330**	**21,925**	**20,854**	**19,712**	**18,864**	**18,340**	**18,288**	**18,294**

*Source: DAR, PBS, PAES. *Reserve numbers post 2015-16 estimated on the basis of days of Reserve activity in PBS and days/reservist for 2015-16.*

Historical background

During the 1990s ADF numbers dropped from around 70,000 to 50,000 permanent personnel, as shown in Figure 2.5.1.

Figure 2.5.1 Historical and Planned Defence Workforce



Source: Various DAR, 2001-02 Defence Budget Brief and 2015-16 PBS

The bulk of these reductions were due to outsourcing under the Commercial Support and Defence Reform programs (although around 5,600 permanent ADF positions had already been transferred to the Reserves by the 1991 Force Structure Review). In fact, the initial goal of the Defence Reform Program (DRP) was to reduce the strength of the ADF to 43,500 but this was soon revised up to 50,000, thereby arresting the decline. This was done by re-directing DRP savings to buy-back the ADF positions, the goal being to redirect personnel from support areas to the combat force—though there is little evidence of this occurring.

The 2000 White Paper then set permanent ADF numbers on a growth path towards 53,000 to 54,000 personnel. Subsequent budgets added additional personnel for a range of initiatives including, most especially, the expansion of the Army. By 2009 the target had grown to around 57,000.

The 2009 Defence White Paper revised the full-time ADF target up to approximately 57,800 and the civilian workforce up to 21,900 over the decade. Subsequent reductions in planned savings under the Strategic Reform Program saw the targets grow to around 59,000 and 23,000 for the military and civilian workforces respectively. The 2013 Defence White Paper said that permanent ADF would be maintained at around 59,000 and that civilian number will fall by 1,000 to around 20,500, effectively the targets existing prior at that time.

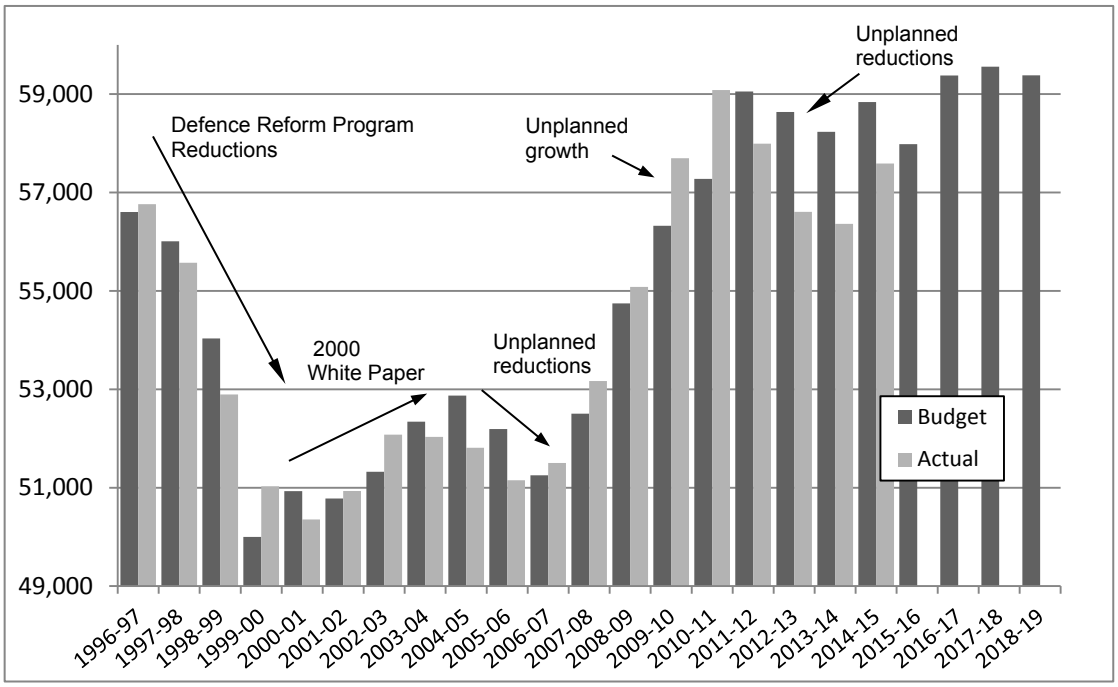
Permanent ADF Numbers

The changing size of the permanent ADF is captured in Figure 2.5.2. In the initial years following the 2000 White Paper, permanent ADF numbers grew steadily until 2003-04 when poor recruiting outcomes saw numbers fall for three years in a row—notwithstanding budgeting for growth in each instance. Then, in 2006-07, numbers began to rise to the extent that budget estimates were exceeded three years in a row. All signs being that the revamp of recruiting and retention policy (and a lot of extra money) slowly but steadily turned around the personnel situation.

Then, for two years commencing in 2009-10 military numbers grew much more quickly than planned as a result of better than expected recruitment and retention. In 2009-10 military personnel exceeded planned levels by 1,372. To redress this unplanned growth, the permanent ADF was supposed to *decrease* by around 400 people in 2010-11. Instead, the ADF grew by a further 1,387 positions, exceeding planned levels by 1,808. During 2011-12, action was taken to get military numbers back to planned levels with more success than planned so that actual numbers fell to around 1,000 below what was planned. The trend continued over the next two years with numbers falling 2,000 and 1,800 below target in 2012-13 and 2013-14 respectively. The projected result for 2014-15 is a shortfall of 1,250, although for the first time in four years, number actually grew.

According to earlier PBS, the unplanned shrinkage of the permanent force reflected several factors including reduced recruiting targets and higher than anticipated separations. In the case of Navy, recruiting targets were reduced due to training pipeline constraints. Defence also advised that it had developed a Defence Employment Offer framework to stem the separation rate and that Navy had addressed many of the training pipeline issues. Recruiting targets have been increased for Navy and Army with the aim of a 59,000 plus permanent force.

Figure 2.5.2 Permanent ADF personnel: 1996-97 to 2018-19 (average funded strength)



Source: DAR, 2001-02 Defence Budget Brief, 2015-16 PBS

Recruitment and retention

The annual change in ADF strength is the difference between the numbers of people recruited into and separated from the force (historically around 5,000 in each case). Since the planned change in strength is usually no more than 1,000, the outcome is finely balanced. With this in mind, we turn now to examine ADF recruitment and separations.

Recruitment

Table 2.5.2 shows the percentages of recruitment targets that have been met over the last fifteen years. Following solid improvements earlier this decade, which saw the rate grow from 76% to 93% in 2001-02, performance dropped back to the mid-80% in 2002-03 and 2003-04 before deteriorating to 80% in 2004-05 and then recovering to 84% for the next two years. In 2007-08 and 2008-09 the result fell to around a 15-year low before recovering strongly in 2009-10 and 2010-11. The result for 2011-12 is good by historical precedents.

Table 2.5.2: Percentage of recruitment targets met (per cent)

	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Navy	98	92	98	76	57	74	85	84	86	73	72	78	73	72	91	87	88	88	92
Army	99	98	94	78.5	83	79	100	79	84	81	98	86	76	76	90	90	87	85	93
Air Force	86	93	101	90.5	83	88	87	94	90	91	88	86	85	86	92	93	86	81	88
ADF	**96**	**94**	**97**	**80**	**76**	**80**	**93**	**84**	**86**	**80**	**84**	**84**	**77**	**76**	**91**	**89**	**87**	**85**	**92**

Source: Various DAR and Defence submission to the FAD&T Committee inquiry into ADF recruitment and retention, May 2001

It is important to note that recruitment results vary from Service to Service, and that within each Service skilled personnel (like technicians and tradespeople) are particularly hard to recruit. In recent times, this has no doubt reflected the buoyant labour market and the national skilled labour shortage that Australia has experienced. As the data shows, Navy has until recently tended to have the most trouble.

Retention

Table 2.5.3 shows the percentages of ADF personnel who separated from full-time military service over the last fifteen years. Some care must be taken with this data because figures for earlier years were impacted by the deliberate reduction in the size of the ADF between 1997 and 2001 under the Defence Reform Program. Still, separation rates from 2001-02 to 2004-05 were better than in 1995-96 before the cuts to personnel commenced. Note that the separation rates for 2009-10 and 2010-11 are the lowest of all the years examined by a fair margin. Unfortunately, this favourable trend did not continue into 2011-12.

To put recent ADF separation rates in context, Figure 2.5.3 plots the separation rate over the past thirty years. The key point to notice is that recent separation rates are commensurate with or better than rates achieved over the past three decades—the last year being an exception. Given that a number of factors have arisen in that time to make long-term ADF service more difficult—growing numbers of employed spouses, greater geographical dispersal of the ADF and the trend in society to shorter-term employment—the fact that the

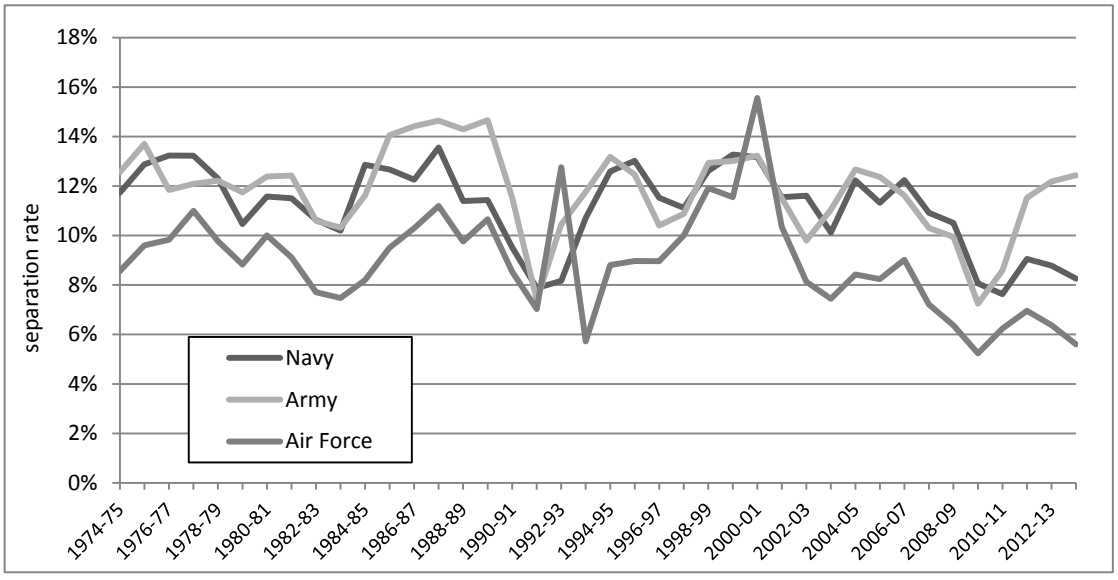
ADF had been able (at least until last year) to keep people on average for longer than in the 1970s is a real achievement.

Table 2.5.3: ADF separation rates %

	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Navy	13.0	11.5	11.1	12.6	13.3	13.2	11.5	11.6	10.1	12.2	11.3	12.2	10.9	10.5	8.1	7.6	9.2	8.9	8.4
Army	12.5	10.4	10.9	12.9	13.0	13.2	11.5	9.8	11.0	12.7	12.4	11.6	10.3	9.9	7.2	8.6	11.9	12.3	12.4
Air Force	9.0	9.0	10.0	11.9	11.6	15.6	10.4	8.1	7.4	8.4	8.5	9.0	7.2	6.3	5.2	6.2	6.9	6.3	5.5
ADF	**11.6**	**10.3**	**10.7**	**12.6**	**12.**	**13.8**	**11.2**	**9.8**	**9.9**	**11.5**	**10.7**	**11.1**	**9.7**	**9.2**	**6.9**	**7.8**	**9.9**	**10.0**	**9.7**

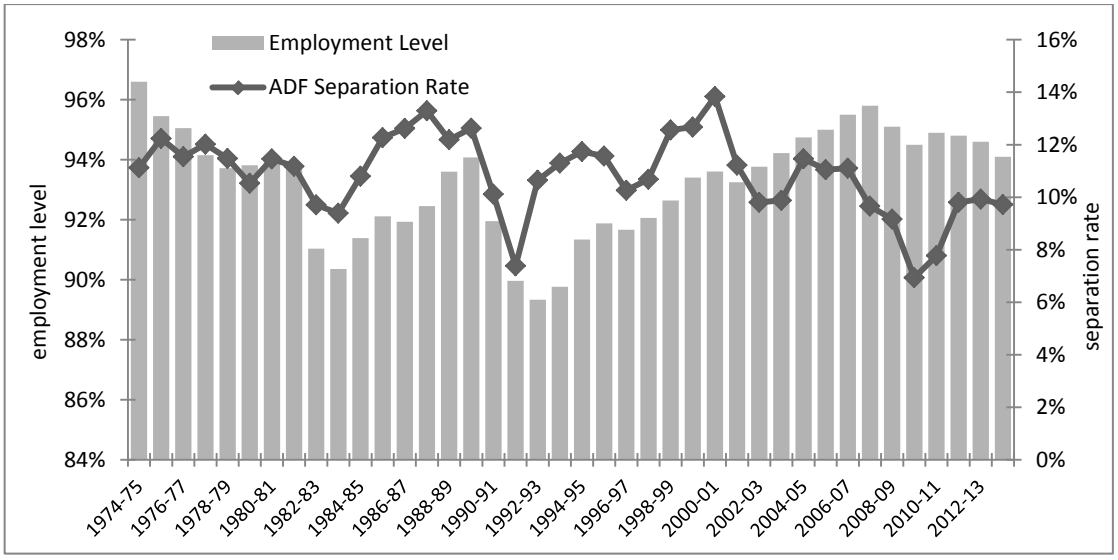
Source: DAR and Defence submission to the FAD&T Committee inquiry into ADF recruitment and retention, May 2001

Figure 2.5.3: Permanent ADF separation rate: 1974-75 to 2013-14



Source: DAR 1974-75 to 2011-12 and advice from Defence

Figure 2.5.4: Employment and ADF separation rates: 1974-75 to 2013-14



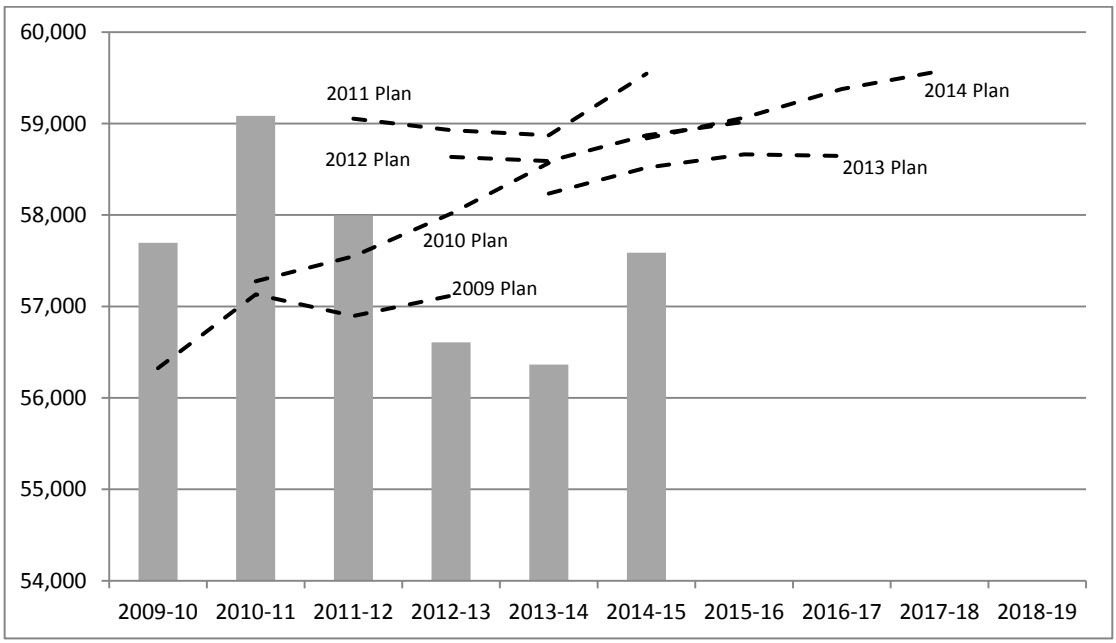
Source: DAR 1974-75 to 2011-12 and advice from Defence

As Figure 2.5.4 shows, the Global Financial Crisis pushed separation rates to historical lows in 2009-10 and 2010-11. Since then, separations have increased but remain below long-term average levels. Note that the correlation between unemployment and separations has been less than clear in recent years.

What's going on?

Questions remain about the recent shortfalls in ADF numbers. As Figure 2.5.5 shows, successive plans have not been fulfilled by a wide margin.

Figure 2.5.5: Planned and actual permanent ADF numbers



Source: DAR and PBS

For four years in a row, permanent ADF numbers have fallen substantially below target; 1,059 persons in 2011-12, 2,029 persons in 2012-13, 1,871 persons in 2013-14 and 1,251 persons in 2014-15. Yet for the three years we have data, separation rates were *below* the historical average for the preceding years (10.5%), and recruitment relative to target was *around or above* the historical average for the preceding years (85.4%); see Tables 2.5.3 and 2.5.4.

Looking more closely, in 2011-12 separation rates increased from 7.9% to 9.9%, resulting in the loss of an additional 1,000 persons. This more-or-less explains the poor result in that year if planning was based on separations from the preceding year. But for the next two years, separation rates stabilised (10% and 9.7%) while, on the recruitment side, the percentage of target met was at or above the long-term average. Yet numbers were about 2,000 below target in each year.

Although variations in transfers from the Reserve may have also had an effect (they are not counted as recruitment), the simplest explanation is that Defence set their recruitment targets too low. That's not only true in retrospect; it's difficult to see how they could have reasonably expected to achieve their targets for the size of the permanent ADF with the recruitment numbers adopted.

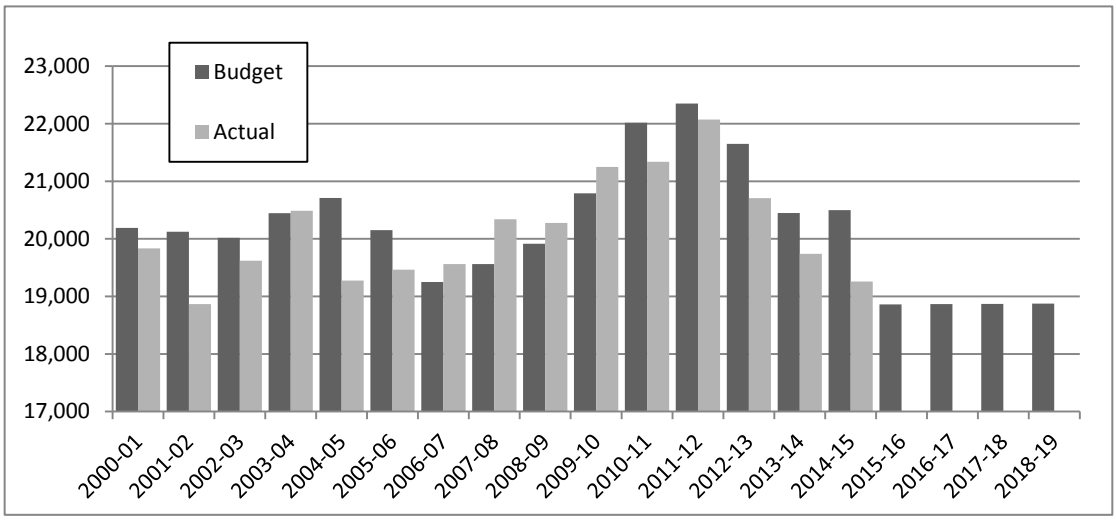
No doubt it's dangerous to draw conclusions about the efficacy of Defence's workforce planning on the basis of aggregate annual data. Perhaps things were happening on a month-to-month basis that explains the seemingly low recruitment targets and shortfalls. Perhaps everything that could be done was done to achieve the targets. If so, then we probably have a much more serious problem. It's relatively easy to improve poor planning, but it can be very expensive to provide effective requirement and retention incentives.

The last time that ADF numbers were proving difficult to maintain back in the middle of the 2000s, it cost the Howard government $3 billion to turn things around. With a parsimonious 2% p.a. pay increase for the ADF, we'll be starting from a lower base this time around.

Reserve numbers

Reserve numbers have fallen short for five years in a row, most especially in 2012-13. Consistent with this, and perhaps as a consequence, the long-term target for the size of the Reserve has fallen from 23,000 in 2011-12 to around 19,000 today.

Figure 2.5.6: Active Reserve personnel: 2000-01 to 2018-19



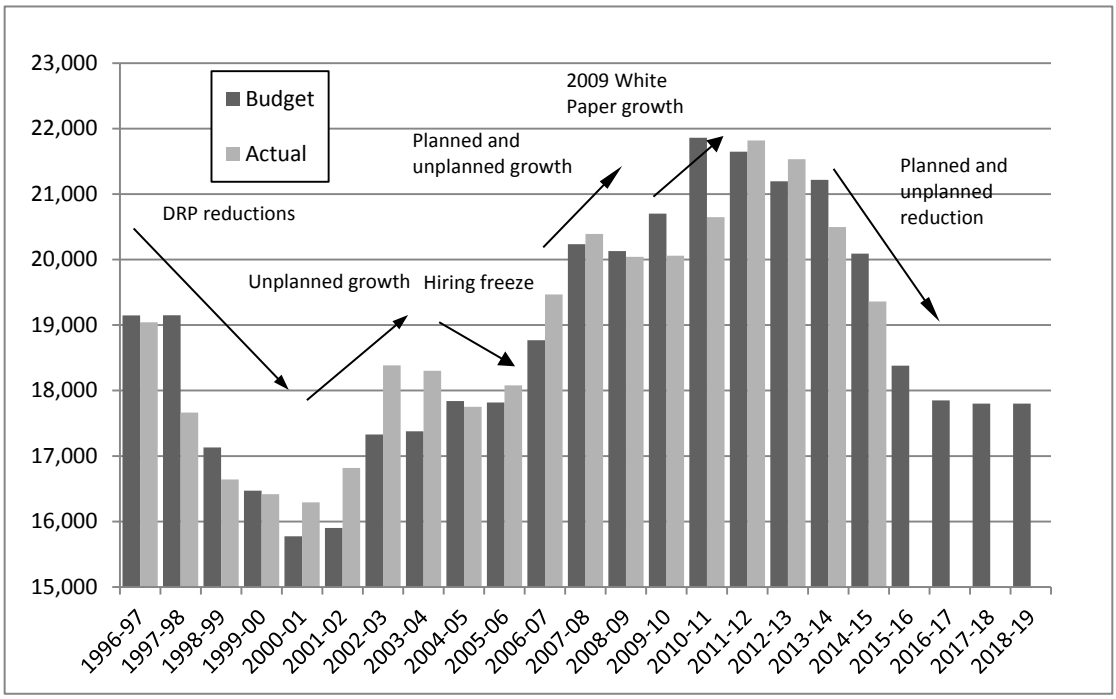
Source: Defence Annual Reports and 2015-16 PBS

Civilian Numbers

The situation with civilian numbers is captured in Figure 2.5.7 which plots budgeted and actual civilian numbers from 1996-07 onwards. Although civilian numbers fell quickly under the Defence Reform Program, they grew back very rapidly in the first two years of the 2000 White Paper implementation—three times more quickly than military numbers grew. What is more, the growth was largely unplanned, with the size of the civilian workforce in 2001-02 exceeding budget estimates by 5.8% and similarly in 2002-03 (6.1% in excess). However, in January 2003 a civilian hiring freeze was imposed within Defence after it became clear that the projected number of civilian personnel would exceed the revised estimate given less than two months earlier. In April 2003, the freeze was lifted but direction was given to maintain civilian numbers at current levels. In the 2003-04 Budget, a programmed reduction plan was set in place to reduce civilian numbers by 1,008, from 18,385 to 17,377.

However, the actual result for 2003-04 (18,303) was only 82 positions below the previous year's figure due, mainly, to a series of government initiatives but also because of an extra unplanned 349 new civilian positions.

Figure 2.5.7: Civilian personnel: 1996-97 to 2018-19



Source: Defence Annual Reports, 2001-02 Defence Budget Brief and 2015-16 PBS

For a while, in 2004-05 and 2005-06, civilian numbers were largely under control resulting in a close alignment of budgeted and actual figures. In 2006-07, civilian personnel numbers were set to rise by 950. Most, but not all, of these positions were related directly to either new government initiatives or the creation of a more efficient workforce. However, the actual result for 2006-07 was an increase of 1,388 personnel, more than 450 above the estimate. Then, in 2007-08, civilian numbers grew by another 1,468, fully 155 above the initial budget estimate. Clearly, whatever constraints were imposed in 2004-05 and 2005-06 were no longer effective.

The plan for 2008-09 was for civilian numbers to fall to around 20,000 and then remain largely static across the forward estimates. However, following the 2009 White Paper civilian personnel numbers were set a target of around 21,900 which was subsequently revised upwards to around 23,000 after Defence abandoned many of the efficiency savings originally planned from the civilian workforce.

In 2009-10 and 2010-11 civilian numbers failed to grow to planned levels. Specifically, in 2009-10 the number of civilians grew by only 17, fully 645 below the updated budget estimate. Attempts to regain lost progress in 2010-11 largely failed with civilian numbers falling 1,213 below target (though still 590 above the level for the previous year).

Presumably, the shortfalls reflected an overestimate by the 2009 White Paper of the number of civilians needed. Accordingly, budgeted civilian workforce numbers were cut by 1,000 in the 2011-12 budget. In each of 2012 and 2013, civilian numbers were cut by a further 1,000. Despite a notional reduction of 3,000 positions, some of the cuts were against planned growth. Last year, a further 1,200 position were cut. As at May 2014, APS personnel in Defence were slated to fall from 20,092 in 2014-15 to 18,105.

During 2014-15, civilian numbers fell to 19,360—fully 732 positions below the budgeted level. Over the next four years, civilian numbers are planned to fall to 17,800. Thus, the medium-term target for the civilian workforce has fallen by 305 compared to this time last year. This is unlikely to be the last word on the matter. The White Paper may adjust civilian numbers further, and the workforce implications of the First Principles Review are still being worked through, see Chapter 4.

What are the long-term targets for the Defence workforce?

The evolution of personnel targets is contained in Tables 2.5.4 and 2.5.5. We cannot account for the changes over the past two years.

Table 2.5.4: Long-term target (circa 2018) for the Defence civilians & contractors

	Civilian	Contractors	Total
Estimated pre-2009 White Paper Target	**20,000**	**-**	**-**
Baseline (May 2009)			**21,672**
Extra White Paper Positions			2,290
SRP impact			-2,015
2018-19 target strength (May 2009)			**21,937**
Baseline (April 2010)			**21,620**
Extra White Paper Positions			2,290
SRP impact			-1,191
2018-19 target strength (April 2010)			**22,719**
Baseline (April 2011)*			**22,397**
Reduction of 1,000 positions			-1,000
2018-19 target strength (May 2011)			**21,397**
Baseline (July 2011)			**21,397**
Reduction of 1,000 positions			-1,000
2018-19 target strength (May 2012)			**20,397**
2013 Defence White Paper			
Baseline (April 2013)			**21,700**
Reduction of 'around 1,000 positions'			-700
Target strength (May 2013)			**20,000**
Baseline (unknown)			**-**
Reduction of 1,200			-1,200
Target strength (May 2014)			**18,100**
Target strength (May 2015)			**17,800**

*Source: Budget Papers and the May 2009 and April 2010 SRP Booklets, 2015-16 PBS. *Advice from Defence May 2011.*

Table 2.5.5: Long-term target (circa 2018) for the permanent ADF

	Navy	Army	Air Force	Total
Post-Defence Reform Program Baseline	**13,800**	**23,000**	**13,000**	**50,000**
East Timor Boost 1999		+3,000	+555	+3,555
2000 White Paper Target	**13,800**	**26,000**	**13,555**	**53,555**
Changes made 2000 to 2009	-311	+4,538	+500	+4,721
Estimated pre-2009 White Paper Target	**13,689**	**30,538**	**14,055**	**58,282**
Baseline (May 2009)				**58,648**
Extra White Paper Positions				1,979
SRP impact				-2,813
2018-19 target strength (May 2009)				**57,812**
Baseline (April 2010)				**58,276**
Extra White Paper Positions				1,979
SRP impact				-1,376
2018-19 target strength (April 2010)				**58,879**
Baseline (July 2011)				**58,277**
Extra White Paper Positions				1,979
SRP impact				-1,629
2018-19 target strength (July 2011)				**58,627**
2013 Defence White Paper				**59,000**
Target for 2017-18 (May 2014)				**59,570**
Target for 2018-19 (May 2015)				**59,380**

Source: 2010-11 DAR, Budget Papers and the May 2009 and April 2010 SRP Booklets, 2015-16 PBS

How much do personnel cost?

Personnel costs for Defence including DMO in 2015-16 will be around $11.7 billion falling to $11.6 billion in 2018-19. The recent per-capita cost of civilian and military personnel appears in Tables 2.5.6 to 2.5.8. Unfortunately, the PBS does not provide enough information to calculate budgeted per-capita costs.

Table 2.5.6: Per-capita permanent ADF personnel expenses

	Military Numbers	Expense $ 000's	Per Capita	Nominal Growth
00-01	50,355	4,151,801	$82,451	
01-02	50,932	4,377,827	$85,954	4.2%
02-03	52,080	4,568,493	$87,721	2.1%
03-04	52,034	4,890,100	$93,979	7.1%
04-05	51,813	4,757,900	$91,828	-2.3%
05-06	51,151	5,093,100	$99,570	8.4%
06-07	51,504	5,515,651	$107,092	7.6%
07-08	53,109	6,062,882	$114,159	6.6%
08-09	54,748	6,751,456	$123,319	8.0%
09-10	57,697	7,456,595	$129,237	4.8%
10-11	59,084	7,834,680	$132,602	2.6%
11-12	57,994	7,989,786	$137,769	3.9%
12-13	56,607	8,054,390	$142,286	3.3%
13-14	56,364	8,435,711	$149,665	5.2%
			Average	**4.7%**

Source: Defence Annual Reports, expenses adjusted to take account of Reserve component.

Table 2.5.7: Per-capita DMO civilian personnel expenses

	DMO Civilians	DMO Expenses '000s	DMO Per Capita	Nominal Growth
05-06	4,502	$353,892	$78,608	
06-07	4,951	$409,262	$82,662	5.2%
07-08	5,304	$458,992	$86,537	4.7%
08-09	5,552	$493,611	$88,908	2.7%
09-10	5,526	$507,900	$91,914	3.4%
10-11	5,533	$531,619	$98,216	4.5%
11-12	5,989	$592,265	$98,892	2.9%
12-13	5,748	$591,070	$109,680	4.0%
13-14	5,216	$558,919	$116,151	4.2%
			Average	**3.95%**

Source: Defence Annual Reports. Note that figure for 2012-13 is inflated due to redundancies paid and timing of DECA payments in 2012-13.

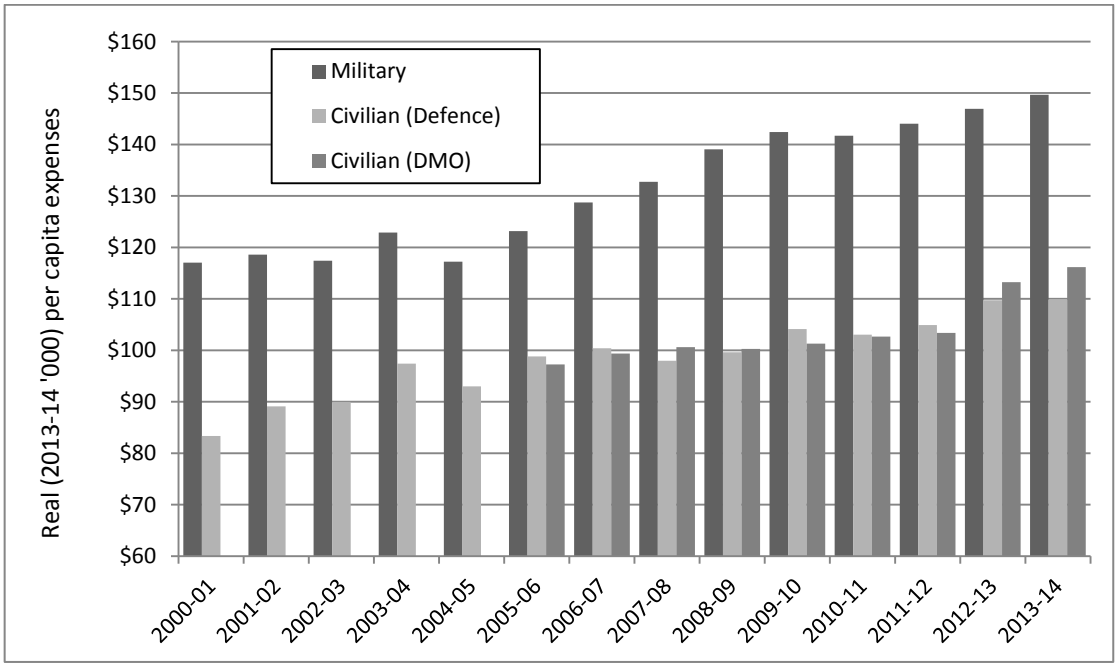
Table 2.5.8: Per-capita Defence civilian personnel expenses

	Civilian Numbers	Expense $ 000's	Per Capita	Nominal Growth
00-01	16,292	$956,661	$58,720	
01-02	16,819	$1,086,116	$64,577	10.0%
02-03	18,385	$1,235,752	$67,215	4.1%
03-04	18,303	$1,363,205	$74,480	10.8%
04-05	17,753	$1,293,100	$72,838	-2.2%
05-06	13,577	$1,084,382	$79,869	9.7%
06-07	14,516	$1,212,393	$83,521	4.6%
07-08	15,087	$1,271,223	$84,259	0.9%
08-09	14,815	$1,308,445	$88,319	4.8%
09-10	14,532	$1,373,377	$94,507	7.0%
10-11	15,115	$1,457,279	$96,413	2.0%
11-12	15,829	$1,588,389	$100,347	4.1%
12-13	15,786	$1,677,674	$106,276	5.1%
13-14	15,208	$1,680,069	$109,952	4.6%
			Average	**5.0%**

Source: Defence Annual Reports. Note: excludes DMO past 2005-06.

The per-capita expenses include salaries, allowances, superannuation, health, redundancies, housing and fringe benefits tax. We've done our best (on the basis of incomplete information) to account for the cost of Reserve personnel in the estimate for the permanent ADF. In addition, the transfer of military compensation to Veterans Affairs in 2004-05 has been adjusted for. Historical per capita costs are depicted graphically in Figure 2.5.8.

Figure 2.5.8: Historical per-capita personnel costs



Source: Defence Annual Reports.

Personnel structures

To facilitate understanding of the structure of the Defence workforce, it is useful to understand the nominal equivalence between different levels in the APS and ADF and between the three Services. For a comparison of relative ranks/levels, see Table 2.5.9.

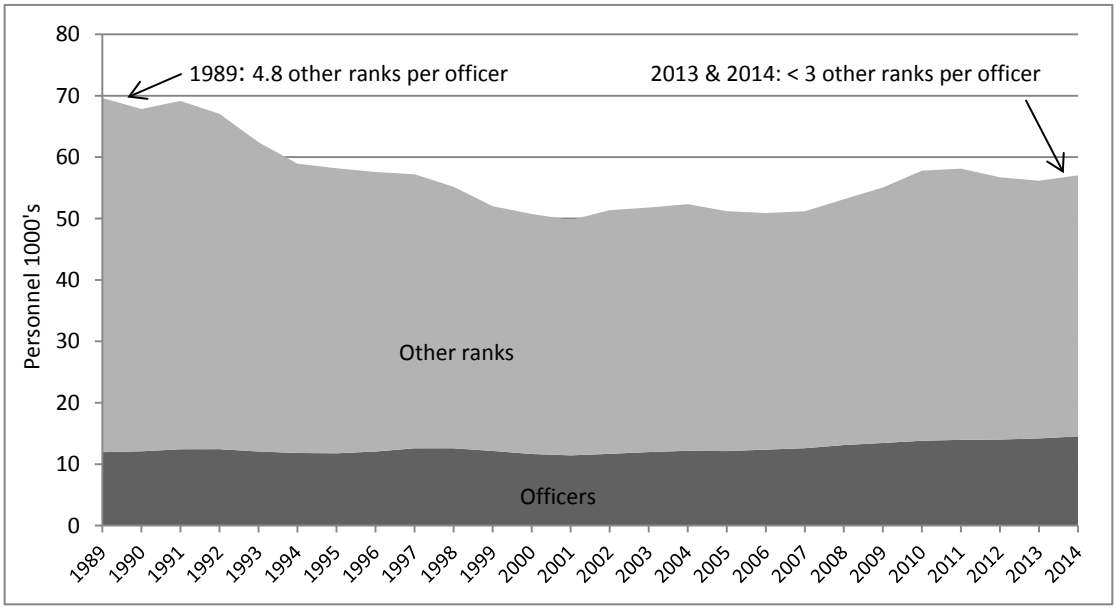
Table 2.5.9: Rank/level comparison:

Civilian	Navy	Army	Air Force	
APS-4	Sub-Lieutenant	Lieutenant	Flying Officer	Officers
APS-5	Lieutenant	Captain	Flight Lieutenant	
APS-6	Lt-Commander	Major	Squadron Leader	
EL-1	Commander	Lt-Colonel	Wing Commander	Senior Officers
EL-2	Captain	Colonel	Group Captain	
SES-1	Commodore	Brigadier	Air Commodore	Star-ranked and Senior Executive Service
SES-2	Rear Admiral	Major General	Air Vice-Marshal	
SES-3	Vice Admiral	Lt General	Air Marshal	

The breakdown of ADF personnel by rank, and civilians by level, appears in Table 11 on page 27 of the PBS. As the ADF contracted during the 1990s, the number of officers remained more or less constant. Then, as the size as the ADF grew over the past few years, the number of officers grew more quickly (see Figure 2.5.9). As a result, the percentage of officers in the ADF has grown from 17.2% in 1989 to 25.5% in 2010. This means that there are now less than three enlisted personnel for every officer. To a large extent, the rising proportion of officers probably reflects the outsourcing of activities during the 1990s which

saw more enlisted personnel than officers discharged. However, the recent expansion of the army has marginally reversed the trend.

Figure 2.5.9: Permanent ADF Numbers 1989 – 2014 as at 30 June



Source: Defence Annual Reports.

Generals and Mandarins

The trends in star rank, senior executive, and senior officer numbers are shown in Table 2.5.10; the most recent data is taken from the 2015-16 PBS. Changes in reporting account for the gaps and lack of earlier data. As can be seen, over the past seventeen years the number of civilian senior executives has increased by 55% and military star-rank officers by 71%. Base on the information available, the civilian workforce grew by only 4% and the military workforce by only 9%. Over a similar time frame, the numbers of civilian and military senior officers have grown by 81% and 55% respectively.

Some care is needed looking at the apparent levelling off in the budget year in Table 2.5.10. In most years the plan is to slightly reduce the number of senior military and civilian managers in Defence, but the opposite usually occurs. That said; there appears to be a downward trend in the number of civilian senior officers and executives. The same cannot be said for the corresponding senior military numbers.

Over the long term, at every senior level in the civilian and military workforce the number of managers and executives has increased at a rate well in excess of the growth in the size of the overall workforce. However, as might be expected, the fastest rate of increase has occurred at the level of Deputy Secretary and 3-star military officer (Table 2.5.11) where much of the growth is very recent, including as a result of the 2007 Defence Management Review.

As a result of the First Principles Review, it's anticipated that the number of civilian senior executives and senior managers will decline further over the next 24 months. Key reductions include one fewer military three-star and seven fewer civilian deputy secretaries.

Table 2.5.10: Numbers of Senior Ranks and Executive Levels; average funded strength

	Civilian						Military	
	Defence Executives	DMO Executives	Total Executives	Defence Senior Officers	DMO Senior Officers	Total Senior Officers	Star Rank Officers	Senior Military Officers
1998-99	100		100	0	0	0	110	1,360
1999-00	106		106	0	0	0	0	0
2000-01	103		103	3,317	0	3,317	120	1,415
2001-02	117		117	3,844	0	3,844	119	1,467
2002-03	130		130	3,824	0	3,824	120	1,507
2003-04	123		123	3,889	0	3,889	119	1,528
2004-05	96	30	126	3,081	995	4,076	125	1,551
2005-06	102	29	131	3,385	1064	4,449	135	1,594
2006-07	108	29	137	3,656	1225	4,881	149	1,684
2007-08	121	32	153	3,911	1388	5,299	176	1,768
2008-09	126	35	161	3,970	1502	5,472	169	1,852
2009-10	128	36	164	4,192	1579	5,771	173	1,937
2010-11	undisclosed	undisclosed	172	undisclosed	undisclosed	6,250	181	1,941
2011-12	undisclosed	undisclosed	175	undisclosed	undisclosed	6,796	184	1,850
2012-13	133	35	168	5,010	1,757	6,767	188	1,983
2013-14	133	35	168	4,934	1,590	6,524	189	2,101
2014-15	125	35	160	4,785	1,458	6,243	189	2,124
2015-16	155		155	6,012		6,012	188	2,114
Growth			**55%**			**81%**	**71%**	**55%**

Source: Defence Annual Reports, 2014-15 estimated actual from PBS, 2015-16 planned.

Table 2.5.11: Band 3 and 3-Star officers (equiv. Chief of Service - Deputy Secretary)

	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Per cent
Assoc. Sec														1	1	1	1	1	
Band-3 (Defence)	3	4	7	5	5	5	5	5	5	7	8	8	8	8	8	7	7	7	133
Band 3 (DMO)	1	1	1	1	1	1	1	1	1	4	4	5	5	5	5	5	5	5	400
Band-3 (DSTO)	2	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	50
subtotal	**6**	**8**	**10**	**9**	**9**	**9**	**9**	**9**	**9**	**14**	**15**	**16**	**16**	**17**	**17**	**16**	**16**	**16**	**183**
3-Star	4	4	4	4	4	5	5	5	5	6	6	6	6	6	6	6	6	6	50
Total	**10**	**12**	**14**	**13**	**13**	**14**	**14**	**14**	**14**	**20**	**21**	**22**	**22**	**23**	**23**	**22**	**22**	**22**	**120**

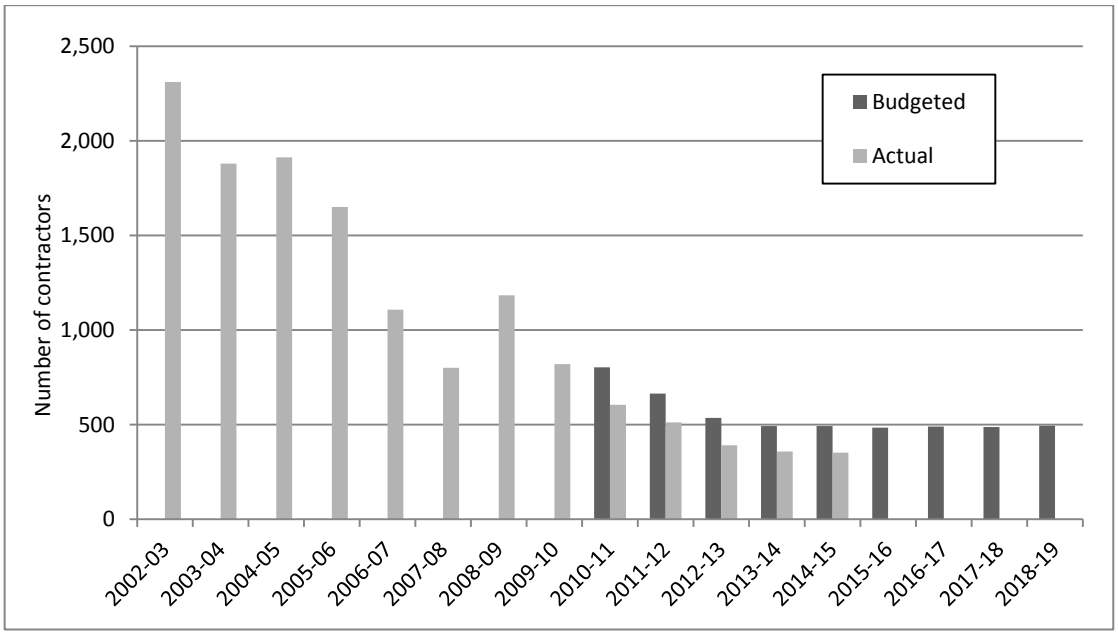
Source: DAR and 2015-16 PBS. Includes Chief of Division Grade 3 in DSTO. CEO of DMO counted as a Deputy Secretary.

Professional Service Providers

The Defence workforce includes a limited number of Professional Service Providers (PSP), sometimes called simply 'contractors' in line positions within the organisation. For most of the past decade, there was a concerted effort underway to reduce the number of PSP

employed by Defence and DMO. In fact, Defence has claimed successive reductions in the number of PSP as an internal efficiency. Note the temporary increase in 2008-09 against which savings were calculated in 2009.

Figure 2.5.10: Professional Service Providers



Source: Defence Annual Reports and 2015-16 PBS.

The number of contractors has fallen three years in a row and done so more quickly than budgeted for. However, these reduction need to be viewed with some caution. Over the past couple of years Defence has begun 'capability partners' to provide skills and expertise not available within their own workforce. Because of the contractual arrangements under which capability partnerships are managed, the personnel they supply are not technically counted as PSP or contractors under Defence's definition. Nonetheless, people employed by the private sector are providing skills and capacity within Defence very much akin to that previously done by PSP/contractors. The Chief Financial Officer, Capability Development and Chief Information Officer Groups are believed to make extensive use of 'capability partners' and other external contractors to perform core roles.

In an answer to a Question on Notice from the Foreign Affairs Defence and Trade Committee on 17 October 2012 regarding the use of office space (Q86) Defence advise that 2,720 contractors were resident and working on Defence property. The largest concentration of contractors is in Canberra, including 547 on Russell Hill, 310 at Campbell Park, 303 at Deakin, 280 at Anzac Park West, 269 at Brindabella Park, and 264 at Fairbairn. And yet we are told that there are only 377 contractors employed across the organisation as a whole.

No doubt most of the people reported as contractors in the Defence response are external providers employed by firms contracted by Defence to perform a service such as facility security, IT delivery or administrative functions that has been outsourced. However, it's the taxpayer that's ultimately paying the bill for everyone in the building (and some beyond). Clearly, greater transparency of the effective workforce capacity delivered by collocated service providers (including capability partners) should be disclosed. Otherwise, we cannot

take seriously either the reported size of the Defence workforce or claims of savings due to the reduction in the size of the workforce.

Demographics of the ADF

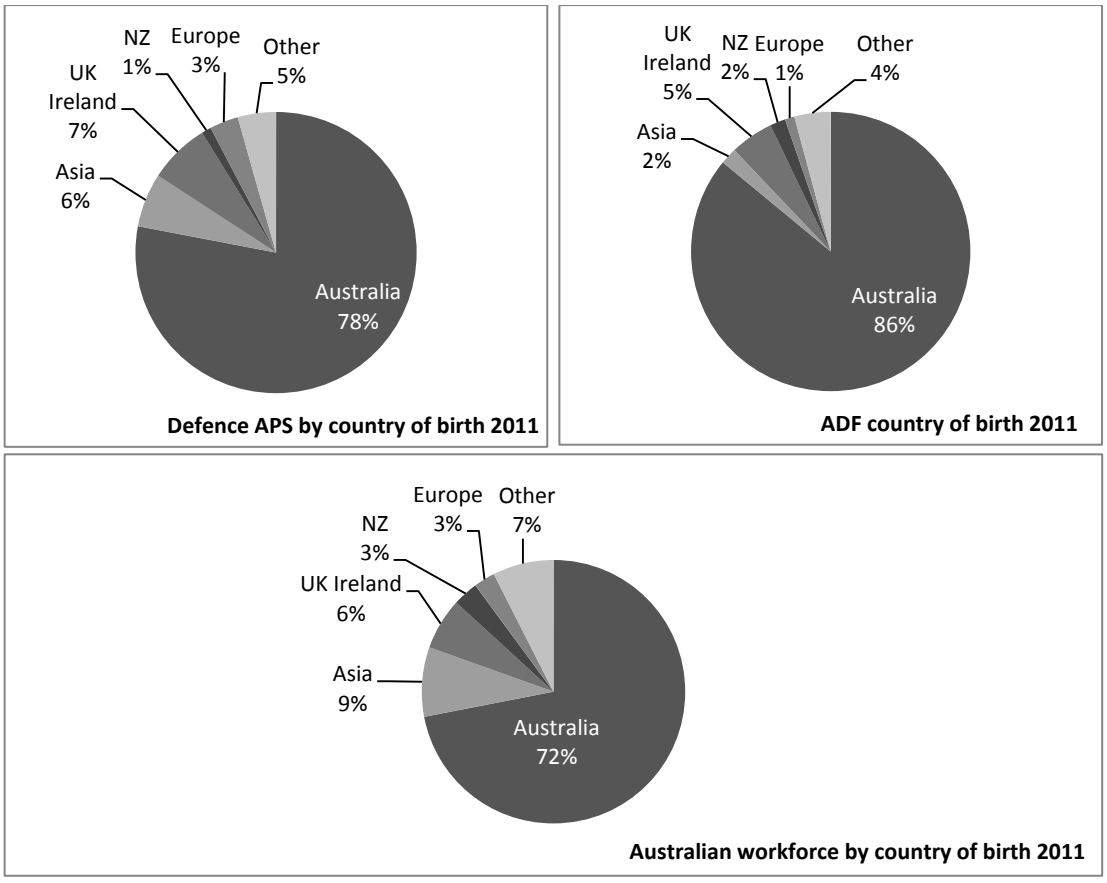
The defence force is disproportionately drawn from the Anglo-Celtic part of the Australian population. The extent of over-representation is difficult to fully assess because the only available data concerns country of birth and not family background. Even so, as Table 2.5.12 shows, there are significant differences between the defence force and the community. The essential results are reproduced graphically in Figure 2.5.11. The figures are similar for the part-time Reserve force. Note that the over-representation of Anglo-Celtic born individuals extends to the civilian workforce of the Department of Defence.

Table 2.5.13: Ethnic composition of the Australian Defence Force

Place of Birth	Defence Force 2011	Defence Civilians 2011	Australian Workforce 2011
Australia	86%	78%	71.9%
UK and Ireland	5%	7%	6.4%
New Zealand	1.8%	1.1%	3.1%
Europe	1.1%	3.3%	2.6%
Asia	1.9%	6.2%	8.5%
Other	4.2%	4.4%	7.5%

Sources: Defence military and civilian figures from the 2011 Defence Census; all other figures from Census 2011 conducted by the Australian Bureau of Statistics.

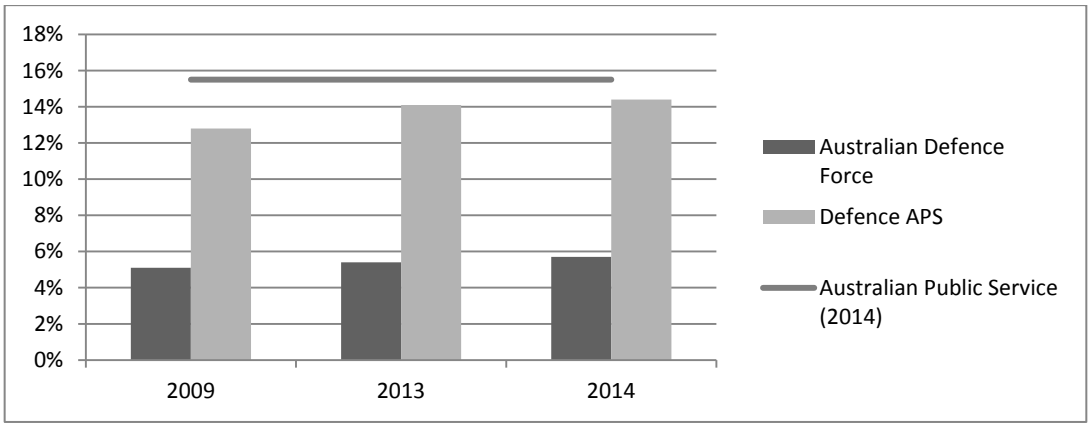
Figure 2.5.11: Composition of the ADF, Defence APS and Australian workforce by birth



Sources: as per Table 2.5.13

Another perspective on Defence's cultural diversity can be gained by looking at the proportion of persons from non-English speaking background in comparison with those in the broader APS, Figure 2.5.12.

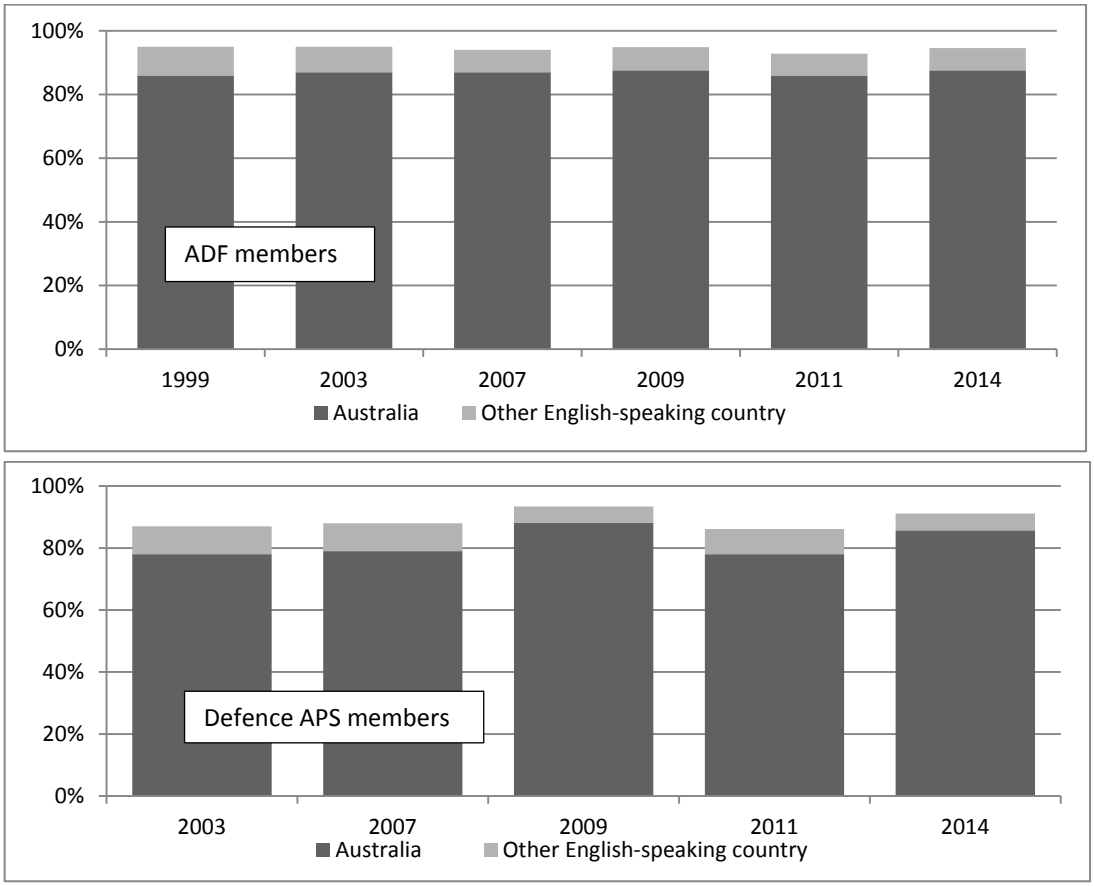
Figure 2.5.12: Percentage non-English speaking background



Sources: Defence Census 1999, 2003, 2007, 2011; Australian Public Service Commission 2014

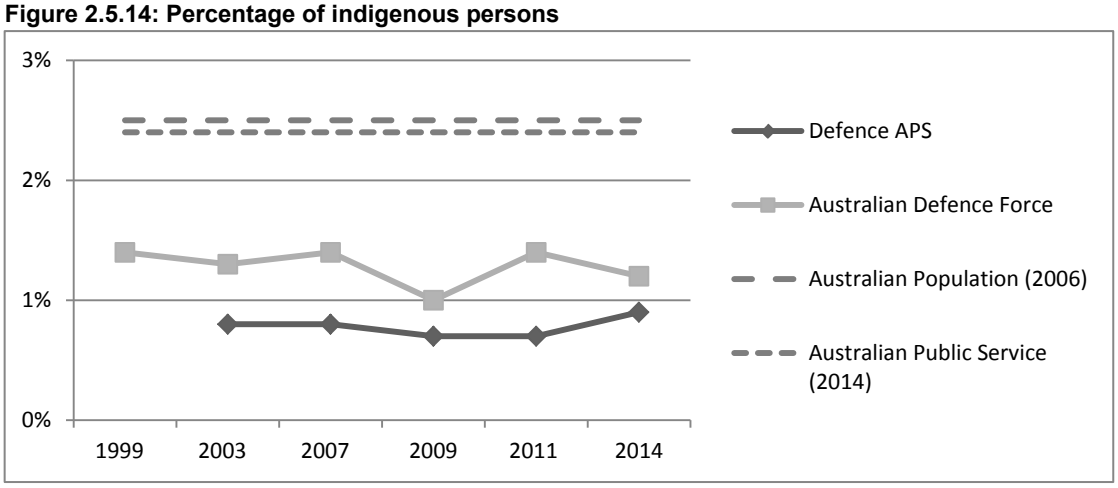
The difference between the ADF/Defence and broader Australian society is not a new issue, as Figure 2.5.13 demonstrates. And, as Figure 2.5.14 shows, the ADF and Defence APS have a smaller share of indigenous Australians than either the population in general or the broader APS.

Figure 2.5.13: ADF and APS members by country of birth 1999-2014



Sources: Defence Census 2003, 2007, 2011; Defence HR 2009, 2014 (from 2013-14 DAR); Other English speaking country = UK, NZ, Ireland in Defence Census; Other English speaking country = UK, NZ, US, Canada in Defence HR System.

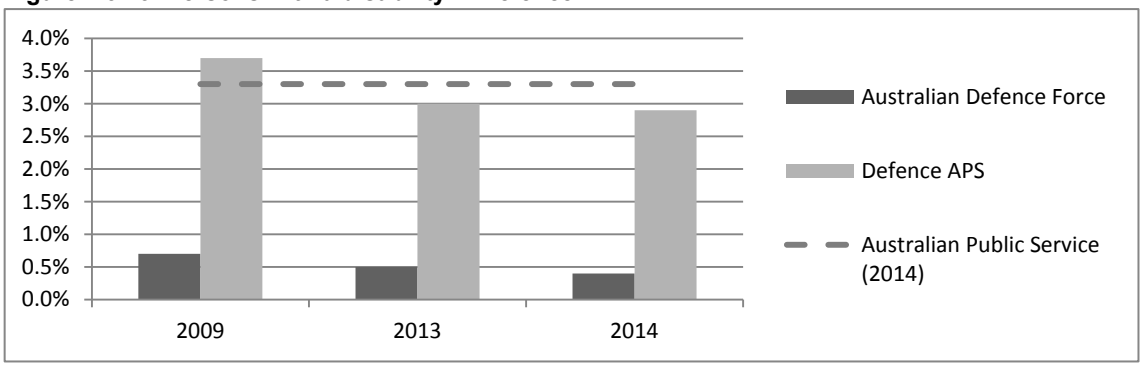
Figure 2.5.14: Percentage of indigenous persons



Sources: Defence Census 1999, 2003, 2007, 2011; Defence HR 2009, 2014 (from 2013-14 DAR).

Defence employment of people with a disability is compared with the broader APS in Figure 2.5.15. Although the relatively low proportion of disabled persons in the ADF is unsurprising, and the result for the Defence APS is only slightly below the APS comparator, the trends are downwards in each instance.

Figure 2.5.15: Persons with a disability in Defence



Source: Defence HR 2009, 2013, 2014 (from 2013-14 DAR).

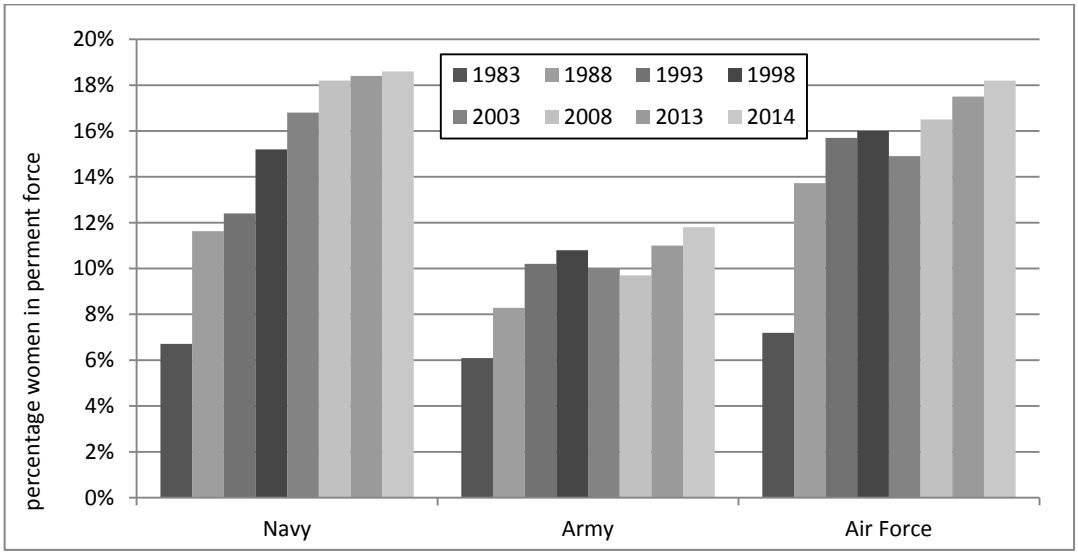
Another area where the demographics of the Australian defence force and the society differ is gender.

It is not that the defence force has ignored the issue in the past. Over at least the past fifteen years a serious effort has been mounted to recruit and retain women in the force. A zero-tolerance policy towards sexual harassment is now in place across the entire force. Recruiting advertisements depict women as integral members of the defence force and highlight the opportunities available to them (and the same has more recently become true for persons from diverse ethnic backgrounds). The number of positions open to women has been expanded in all three Services and an increasing number of women are reaching the higher ranks. More flexible arrangements are now in place to help female members manage the dual demands of career and family, and childcare facilities have been established in and around most military bases.

Yet, the proportion of women in the force has grown from only 12.8% to 14.4% over the decade, see Figures 2.5.16 and 2.5.17. Although the proportion of women in allied forces is similarly low that does not mean that the defence force should relax its effort to attract

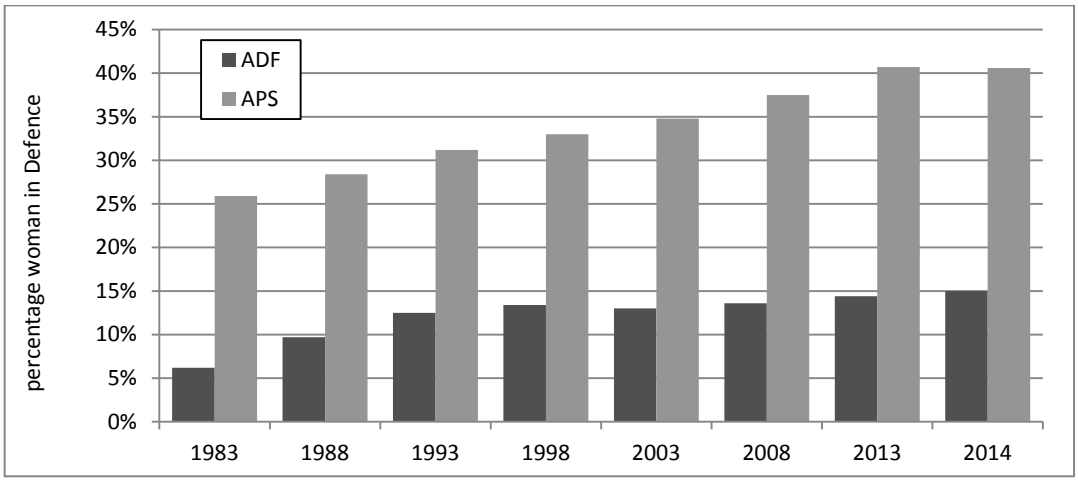
women to serve. The defence force needs the best people it can find and women represent the largest under-utilised pool of potential recruits in the community.

Figure 2.5.16: Women in the defence force



Source: 1982-82 to 2013-14DAR

Figure 2.5.17: Women in Defence



Source: 1982-82 to 2013-14 DAR

2.6 Outcomes and planned performance

The Cost of Outcomes and Programs

Under the framework explained in Chapter 1.3 of this Brief, the government funds Defence to achieve designated outcomes via a series of programs. The core of the Defence Budget is a statement of the costs and planned performance of outcomes and programs on p.28–90 of the PBS. Unfortunately the 2008-09 transition from 'output groups' to 'programs' was accompanied by the abandonment of 'outputs' that contained a more granular explanation of capabilities held by the three Services. Specifically, twenty-two capability related outputs were coalesced into a mere three programs resulting in a seven-fold reduction. The current departmental expense of outcomes and programs appear in Table 2.6.1.

Table 2.6.1: Departmental outcome and program expenses ($m)

Outcome 1: The protection and advancement of Australia's national interests through the provision of military capabilities and the promotion of security and stability	**Net Cost 08-09 actual**	**Net Cost 09-10 actual**	**Net Cost 10-11 actual**	**Net Cost 11-12 actual**	**Net Cost 12-13 actual**	**Net Cost 13-14 actual**	**Net Cost 14-15 project**	**Net Cost 15-16 budget**
Program 1.1: Strategy (prior CDF/SEC)	207	196	146	180	150	162	169	
Program 1.1: Strategy								175
Program 1.2: Navy Capabilities	3,979	3,745	4,045	3,991	4,187	4,401	5,103	5,209
Program 1.3: Army Capabilities	5,015	5,093	5,306	5,290	5,196	5,685	6,498	6,775
Program 1.4: Air Force Capabilities	3,906	3,699	3,908	4,223	4,278	4,384	5,164	5,505
Program 1.5: Joint Operations Comd.	95	103	37	38	32	45	43	50
Program 1.6: Intelligence Capabilities	501	562	572	544	539	550	558	642
Program 1.7: VCDF	1,318	1,012	1,103	1,383	1,337	1,403	1,165	1,197
Program 1.8: COO—Executive Support								119
Program 1.9: COO—Support and Reform	3,169	3,319	3,429	3,844	3,660	3,624	3,977	3,956
Program 1.10: COO—CIO	697	806	842	1,076	908	970	1,254	1,147
Program 1.11: COO—Defence People	257	286	269	305	351	427	444	446
Program 1.12: DSTO	375	403	418	450	434	426	416	432
Program 1.13: Capability Development	130	365	482	258	-50	444	589	1,434
Program 1.14: Chief Finance Officer	819	317	402	465	458	541	111	976
Outcome 1	**20,468**	**19,906**	**20,959**	**22,047**	**21,480**	**23,063**	**25,493**	**28,063**
Outcome 2*:* The advancement of Australia's strategic interests through the conduct of military operations and other tasks as directed								
Program 2.1: Immediate neighbourhood	173	161	182	176	133	21	4	
Program 2.2: Wider interests	557	892	889	783	798	598	785	864
Outcome 3: Support for the Australian community and civilian authorities as requested by Government								
Program 3.1: Defence Contribution to National Support Tasks in Australia	15	11	11	118	15	29	68	49
Total net cost (non-administered)	**21,211**	**20,970**	**22,041**	**23,124**	**22,426**	**23,711**	**26,348**	**28,976**

Source: 2015-16 PBS and various DAR (Note: Programs were re-enumerated in the 2013-14 and 2015-16 PBS))

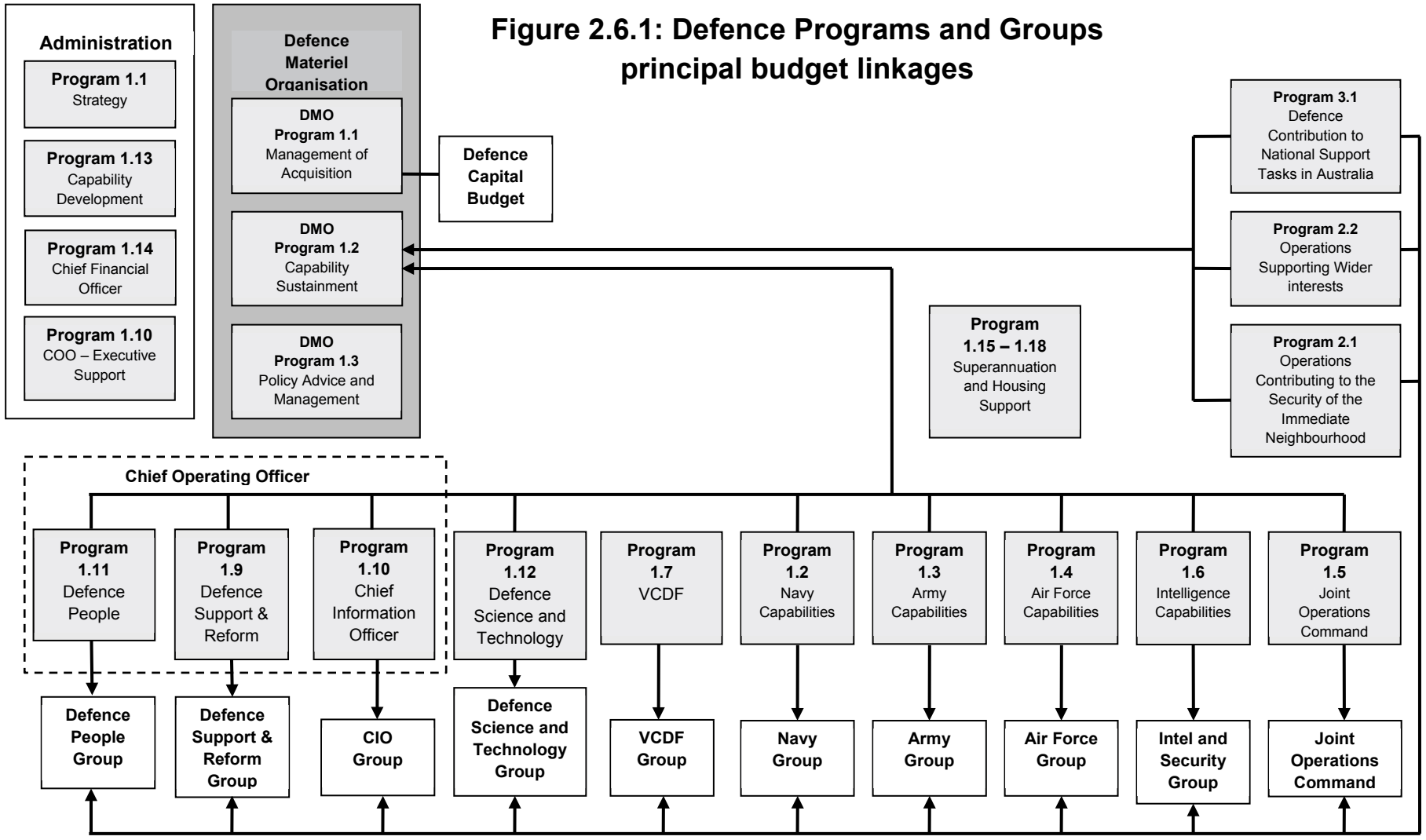
Note that, in order to capture the overall cost of delivering programs, non-cash expenses due to the depreciation of equipment are included in the net cost in Table 2.6.1. Also funds appropriated for administered programs (which are not controlled by Defence) for home-loan assistance and military superannuation and retirement benefits have been omitted.

While one might expect that Outcome 2 would include the net additional cost of operations undertaken by the ADF, to the extent that operational supplementation does not have a large capital investment component, this tends to be the case.

As mentioned in Chapter 1, the new outcomes and programs are much more closely aligned with the actual organisation of Defence than were those employed from 1999-00 to 2007-08. Nonetheless, there are significant linkages between certain elements. We have tried to capture the situation in Figure 2.6.1. The essential points are as follows. The programs under Outcome 2 and 3 do not align with any single organisational entity. Instead they capture the net additional cost of operations that is apportioned to those groups that actually support and deliver the operations including DMO. At the same time, the DMO sustainment budget is reflected in the costs attributed to the various programs, principally Navy, Army and Air Force.

Cleary there will be a number of organisational changes following the First Principle Review (see Chapter 4), but these have not yet flowed through into the 2015-16 PBS. Thus, Figure 2.6.1—much like the PBS—is a snapshot of an interim arrangement. It's likely that the programs and groups will change further. It remains to be seen how things are managed when the new Capability Acquisition and Sustainment Group takes the place of DMO.

Figure 2.6.1: Defence Programs and Groups principal budget linkages



Program Statements

For each of the programs, the PBS contains an entry detailing the objectives, deliverable and key performance indicators and a cost summary. In many cases, the key performance indicators read like the entries in a corporate plan. For example, the Office of the Secretary and CDF has twelve deliverables including;

Ensure Defence strategic policy objectives aligns with Government direction and priorities, including fiscal policy.

and two performance indicators, including;

Staff skills are developed and personnel management practices successfully balance competing priorities.

Little would be gained by repeating the very large number of equally sensible (and largely anodyne) key performance indicators that appear in the PBS. The interested reader can pursue them at leisure. Of more interest are the concrete performance measures set out for the military capability outputs.

Capability Performance

There are three overarching key performance measures for the capability related programs; preparedness, core skills and quantity. These same performance measures have been employed in Defence Annual Reports and PBS in one way or another since 1999. We explore these three measures below. In doing so, it's important to remember that many capability programs have additional specific performance measures.

Preparedness refers to the readiness and sustainability of the ADF to undertake operations, be it national support tasks, peacekeeping or war. The process by which preparedness targets are set is worth recounting.

To begin with, the government's White Paper sets out the broad strategic tasks that the ADF needs to be prepared to undertake—for example 'contributing to the security of our immediate neighbourhood'. Using this as a basis, Defence develops what is called *Australia's Military Strategy* which includes for each strategic task a series of *Military Response Options* which define the broad operational objectives without specifying how they are to be accomplished—for example 'maintain sea lines of communication to the north of Australia'. These Military Response Options then form the basis of the annual *Chief of the Defence Force's Preparedness Directive*. The final result is a series of specific targets for each output. They are classified. But, for example, the Army might be required to 'be prepared to deploy a battalion at 90 days' notice to assist in a regional peacekeeping operation and to maintain the deployment for 12 months' (this example is purely illustrative).

Core Skills: Preparedness targets are driven by Military Response Options with an anticipated warning time of less than 12 months. To take account of possible longer-term tasks and the requirement to retain broad expertise in the three Services, an enduring performance target for the capability programs is to 'achieve a level of training that maintains core skills and professional standards across all warfare areas'. The assessment of

what is to be achieved, and whether it has been achieved, is ultimately based on the professional military judgement of the Service Chiefs.

Quantity: All of the capability programs include one or more 'quantity' measures that try to capture some aspect of how much capability will be delivered. Each of the three Services uses a different type of measure.

Army: With the exception of Army Aviation, the quantity measure used by Army is the presence of adequate quantities of trained personnel and equipment within an Output. No quantified targets are released publicly.

Navy: The basic measure of quantity used by Navy relates in some sense to the availability of ships and their crew to undertake a mission. Since 2005-06, the measure used has been the planned number of Unit Ready Days (URD), defined as follows: Unit Ready Days are the number of days that a force element is available for tasking, by the Maritime Commander, within planned readiness requirements. A new indicator, Unit Availability Days, (UAD) has been introduced this year. A Unit Availability Day (UAD) is a day when a unit is materially ready and its personnel state and level of competence enables the unit to safely perform tasks in the unit's normal operating environment, immediately.

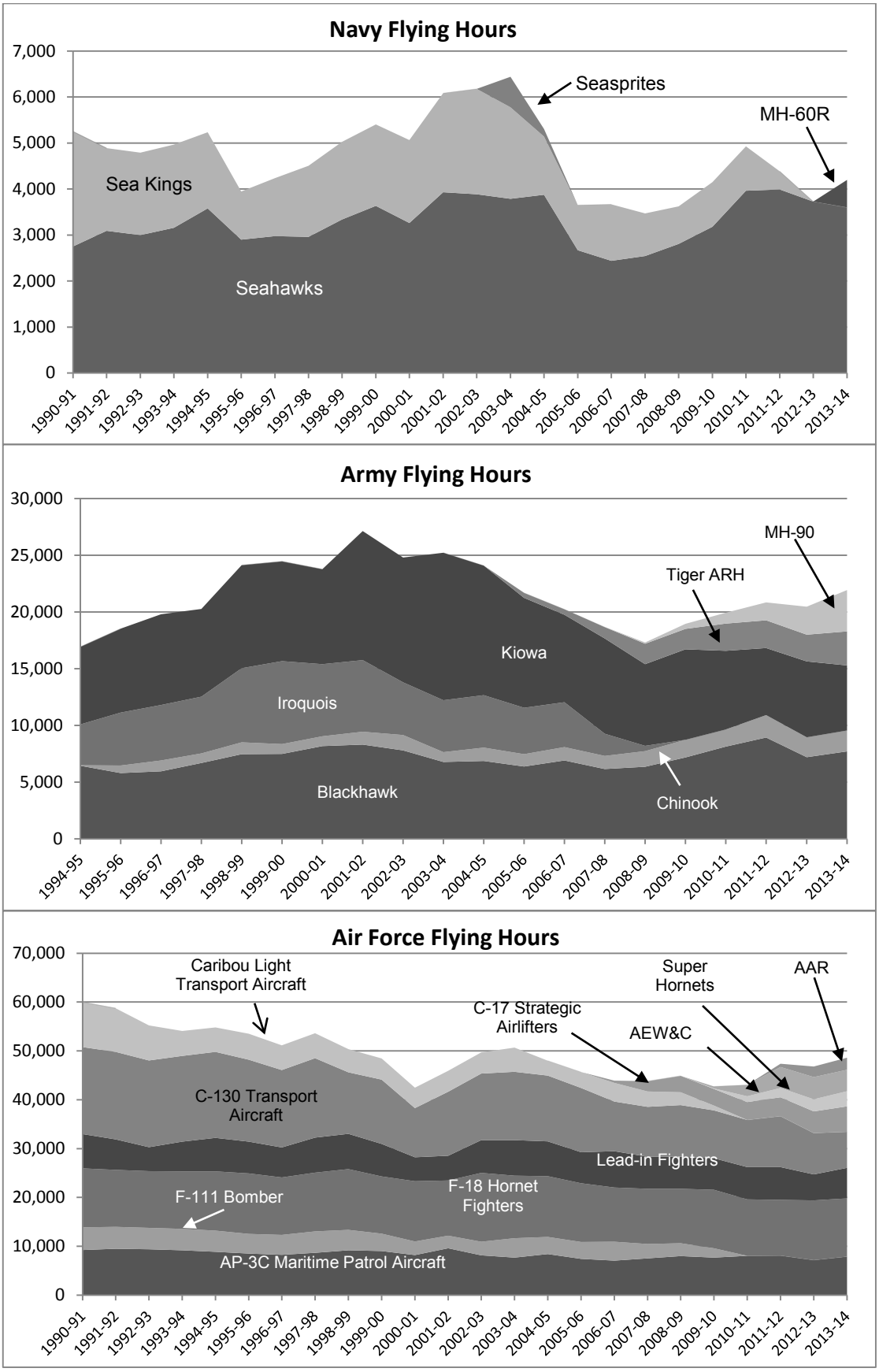
Air Force: The quantity measure used by Air Force and Naval and Army Aviation is the number of flying hours undertaken by the Program. These measures have been applied consistently for over a decade and constitute a useful diagnostic tool given the established baseline. (It would be useful if Navy's steaming-days and Army's track-miles were disclosed as they were in the past). Short- and long-term trends in ADF flying hours can be found in Table 2.6.2 and Figure 2.6.2.

Table 2.6.2: Planned (budgted) ADF flying hours 2014-15 and 2015-16

Platform	2014-15	2015-16	Change	Remarks
F/A-18 fighter	13,000	12,000	-1,000	To be replaced at decade's end
F/A-18 Super Hornet	5,050	5,200	150	
C-130 transport	7,350	7,350	0	
AP-3C Orion	7,900	6,770	-1,130	To be replaced at decade's end
C-17 transport	5,200	6,200	1,000	Fleet expanding
Hawk Lead-in fighter	7,500	7,000	-500	
AEW&C	3,600	3,600	0	Fleet entering service
Chinook helicopter	1,700	1,700	0	Transitioning out of service
Black Hawk helicopter	5,090	4,230	-860	Transitioning out of service
Kiowa helicopter	6,150	6,000	-150	Service life extended to 2019
Armed recon helicopter	4,726	5,846	+1,120	Fleet entering service
MH-60 Romeo	2,400	3,400	+1,000	Fleet entering service
MRH-90 helicopter	5,400	7,100	+1,700	Fleet entering service
Seahawk helicopter	2,800	2,250	-550	Transitioning out of service

Source: 2014-15 and 2015-16 PBS

Figure 2.6.2: Long-term trends in ADF flying hours



Recent Performance

Table 2.6.3 summarises the non-quantity key performance indicators from the 2013-14 Annual Report. Defence uses a four-point performance scale of 'not met', partially met', 'substantially met' and 'met'. For simplicity of presentation, the scale is expressed as 0 to 3 ticks in the table below. The 'overall' assessment in Table 2.6.3 is the percentage of ticks received out of those possible for all performance indicators and deliverables. The arrows indicate movement relative to previous year results.

Table 2.6.3: Output Performance/Deliverables from the 2013-14 Defence Annual Report

Output	Advice	Preparedness	Core Skills	Overall
1.1 CDF Secretary	✓✓✓			98% ↑
1.2 Navy	✓✓✓	✓✓ ↓	✓✓	89% ↑
1.3 Army	✓✓✓	✓✓✓	✓✓✓	90% ↑
1.4 Air Force	✓✓✓	✓✓	✓✓	80% ↓
1.5 Intelligence	✓✓✓			94% ↑
Chief Operating Officer	✓✓			93% ↓
1.6 Defence Support	✓✓			77% ↓
1.7 Chief Information Officer				67% ↑
1.8 People	✓✓			95% ↑
1.9 Science & Technology	✓✓✓			94% ↑
1.10 VCDF	✓✓ ↓			89% ↑
1.11 Joint Operations Command				89% ↓
1.12 Capability Development	✓✓			83%
1.13 CFO	✓✓✓			100%
2.1 Operations - neighbourhood				100%
2.2 Operations - wider interests				100%
3.0 National Tasks				100%

Source: 2013-14 DAR

Table 2.6.4 shows the planned and actual key performance indicators for quantity (URD and flying hours) for the major platforms operated by the three services. The results have been rated on the four-level scheme as follows; above 95% =✓✓✓, 95% to 75% =✓✓, below 75% =✓. Note that Navy drastically reduced the information it discloses in 2009-10.

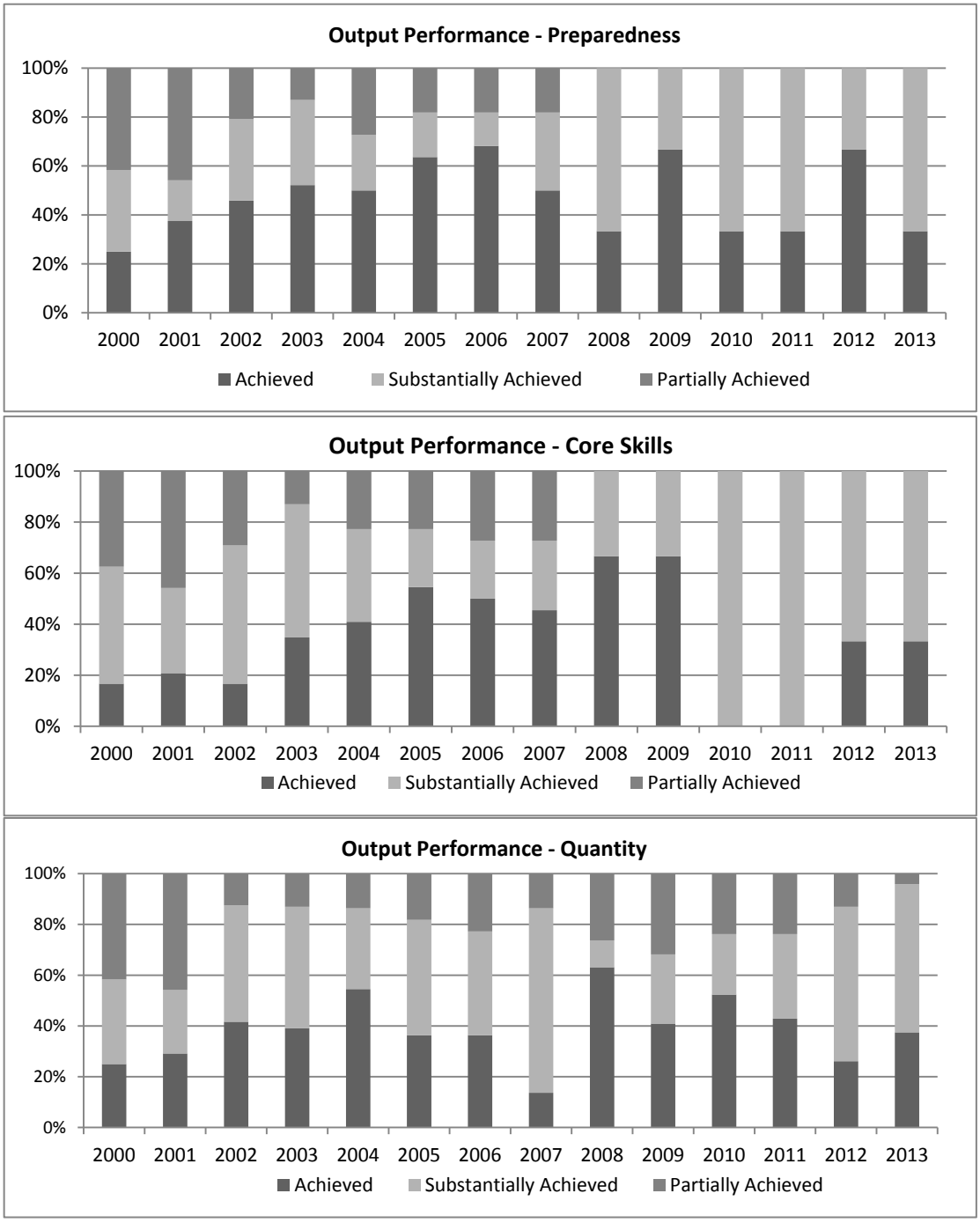
Table 2.6.4: Capability quantity planned (PBS) and delivered (Annual Report) 2013-14

Output	Planned	Reported	Percentage	Assessment
Navy fleets				
Frigates (FFG)	3,501 days	3,522 days	101%	✓✓✓
Frigates (FFH)				
Submarines				
Oil Tanker	2,186 days	2,047 days	94%	✓✓
Replenishment Ship				
Amphibious Ships				
Heavy Landing Ship				
Landing Craft Heavy				
Coastal Mine Hunters	4,581 days	4,253 days	93%	✓✓
Auxiliary Mine Sweepers				
Patrol Boats				
Clearance Diver Teams	2,555 days	2,555 days	100%	✓✓✓
Mobile Met Team				
Geospatial Team				
Hydrographic Ships	2,819 days	2,819days	100%	✓✓✓
Survey Motor Launches				
Met Centre/Support				
Seahawks	3,600 hours	3,600 hours	100%	✓✓✓
Squirrels	4,000 hours	3,600 hours	90%	✓✓
LADS aircraft	980 hours	6,399 hours	92%	✓✓
Army fleets				
Black Hawk	6,200 hours	7,710 hours	103%	✓✓✓
Chinook	1,850 hours	1,850 hours	100%	✓✓✓
Kiowa	6,400 hours	5,722 hours	89%	✓✓
Armed Recon	3,360 hours	3,019 hours	90%	✓
MH-90	4,000 hours	3,641 hours	91%	✓✓
Air Force fleets				
F/A-18 Hornets	13,000 hours	11,942 hours	92%	✓✓
F/A-18 Super Hornet	4,800 hours	4,369 hours	91%	✓✓
Lead-in fighter	7,500 hours	6,242 hours	83%	✓✓
KC-30A (refuelling)	3,100 hours	2,505 hours	81%	✓✓
C-130 transports	7,350 hours	7,350 hours	100%	✓✓✓
AEW&C	3,600 hours	3,108 hours	86%	✓✓
C-17 Transports	5,200 hours	5,200 hours	100%	✓✓✓
AP-3C Maritime Patrol	7,900 hours	7,900 hours	100%	✓✓✓
B737 BJ VIP Transport	1,600 hours	1,370 hours	86%	✓✓
PC-9 aircraft	17,852 hours	15,003 hours	84%	✓✓
B300 King Air 350	11,400 hours	10,023 hours	88%	✓✓

Source: 2013-14 PBS and Annual Report

Figures 2.6.3 plots the delivery of Defence capability programs (previously outputs) as reported in the Defence annual reports between 2000-01 and 2013-14. Some care needs to be exercised in comparing the results from 2008-09 onwards with that from earlier years due to the substantial reduction in detail that arose in that year. The move from twenty-two capability sub-programs to a mere three (one for each Service) inevitably results in a reporting regime constrained to a smaller number of possible outcomes for preparedness and core skills. Nonetheless, note the recent erosion in the maintenance of core skills.

Figure 2.6.3: Output performance



Source: 2000-01 to 2013-14 DAR

Program Summaries

To augment the information provided in the PBS, we have prepared short program summaries containing background and historical performance information. In doing so, we have not sought to reproduce the material in the PBS but to complement it. Given the acute paucity of information provided in the PBS on what is to be delivered at the sub-program level, only a limited picture is possible. Information has been drawn from a variety of sources, including the Defence website.

Because the program structure more or less aligns with the actual organisational structure of Defence, we've sketched out the key elements in each of the programs. However, because of the interim state of Defence's programs and organisational structure, there's not been time to update the organisational diagrams this year. Indeed, in many instances the structure is pending the implementation plan for the recommendations of the First Principles Review. Thus, we've largely retained the presentation from last year pending the finalisation of the new structure.

For those readers not familiar with the senior military and civilian levels, Table 2.6.5 details the correspondence of executive levels across the three services and civilian Senior Executive Service (SES).

Table 2.6.5: Executive comparison

Civilian	Navy	Army	Air Force	Star Rank
Assistant Secretary (SES-1)	Commodore	Brigadier	Air Commodore	*
First Assistant Secretary (SES-2)	Rear Admiral	Major General	Air Vice-Marshal	**
Deputy Secretary (SES-3)	Vice Admiral	Lt General	Air Marshall	***
Secretary	Admiral	General	Chief Air Marshal	****

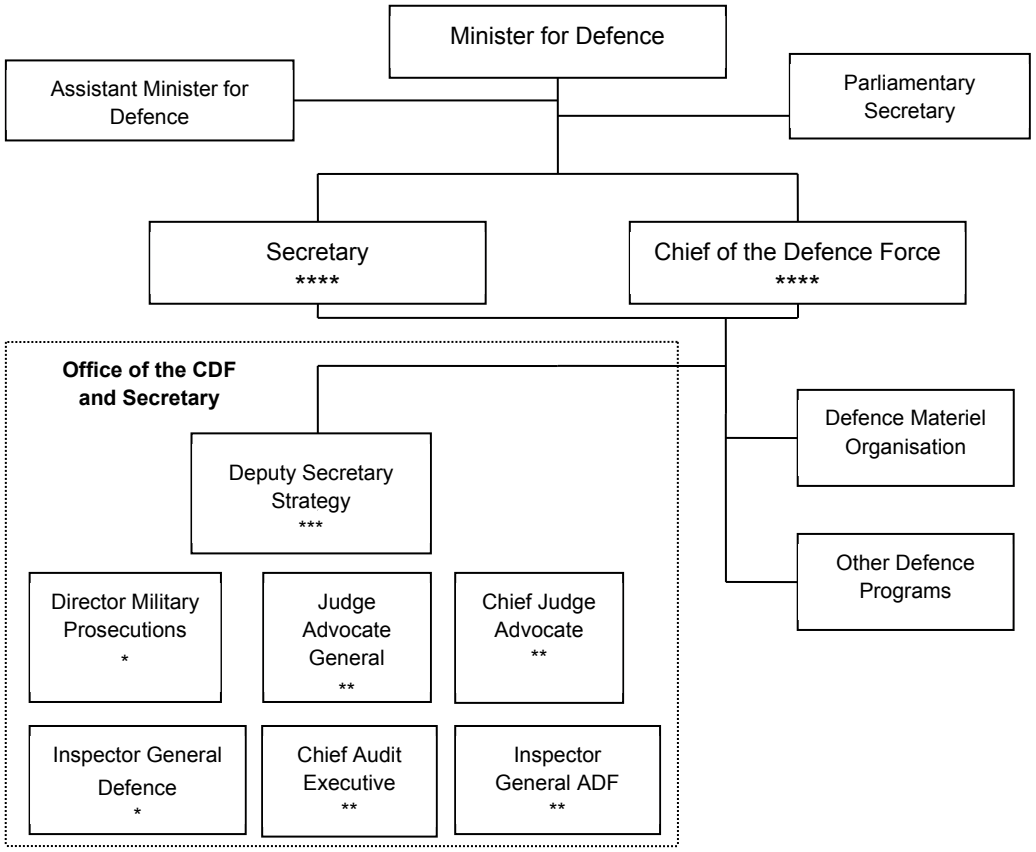
Program 1.1 – Office of the Secretary and CDF (pre 2015-16)

Program 1.1 – Strategy (post 2015-16)

Department outputs 2015-16: $434 million

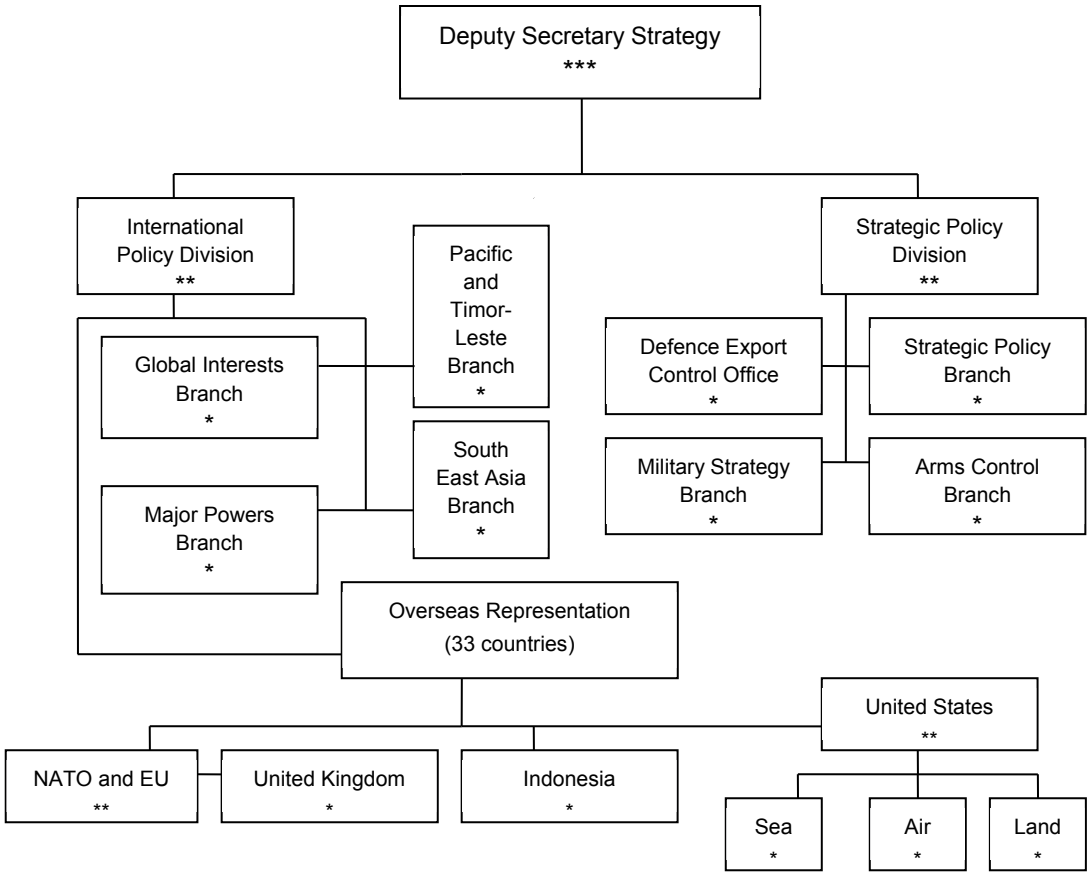
The Office of the Secretary and CDF was created as a result of the 2007 Defence Management Review. It combines the Deputy Secretary Strategy Group and the personal offices of the Secretary and CDF, the Audit and Fraud Control Division and a number of Military Justice agencies.

Within the Defence portfolio there are a number of independent military justice statutory offices. The offices the Judge Advocate General, the Chief Judge Advocate, the Director of Military Prosecutions and the Registrar of Military Justice are created by the *Defence Force Discipline Act 1982*. The Judge Advocate General and Director of Military Prosecutions report annually on the functions of their offices to the Parliament through the Minister for Defence. The Inspector General of the ADF is a statutory appointment created by the *Defence Act 1903* which reports directly to the CDF outside of the military chain of command.



Deputy Secretary Strategy manages two divisions. International Policy Division provides policy advice on international issues (including current and prospective operations) and manages Defence's day to day international relationships. Responsibilities include the oversight of Defence's overseas representatives in 33 countries around the world (mostly within Australian diplomatic missions) with cross-accreditations to a further 31 countries. Strategic Policy Division's role is to provide strategic policy guidance to support Government decision-making. This guidance supports decisions in relation to Defence International Relationships and Defence's strategic policy, posture and capability development. The Division also manages Australia's arms and export controls.

Audit and Fraud Control Division, Inspector General ADF, Office of the Judge Advocate General and the Office of the Director of Military Prosecutions sit in OSCDF Group. They report to the Chief Operating Officer for administrative purposes as the Administrative Head of OSCDF Group.



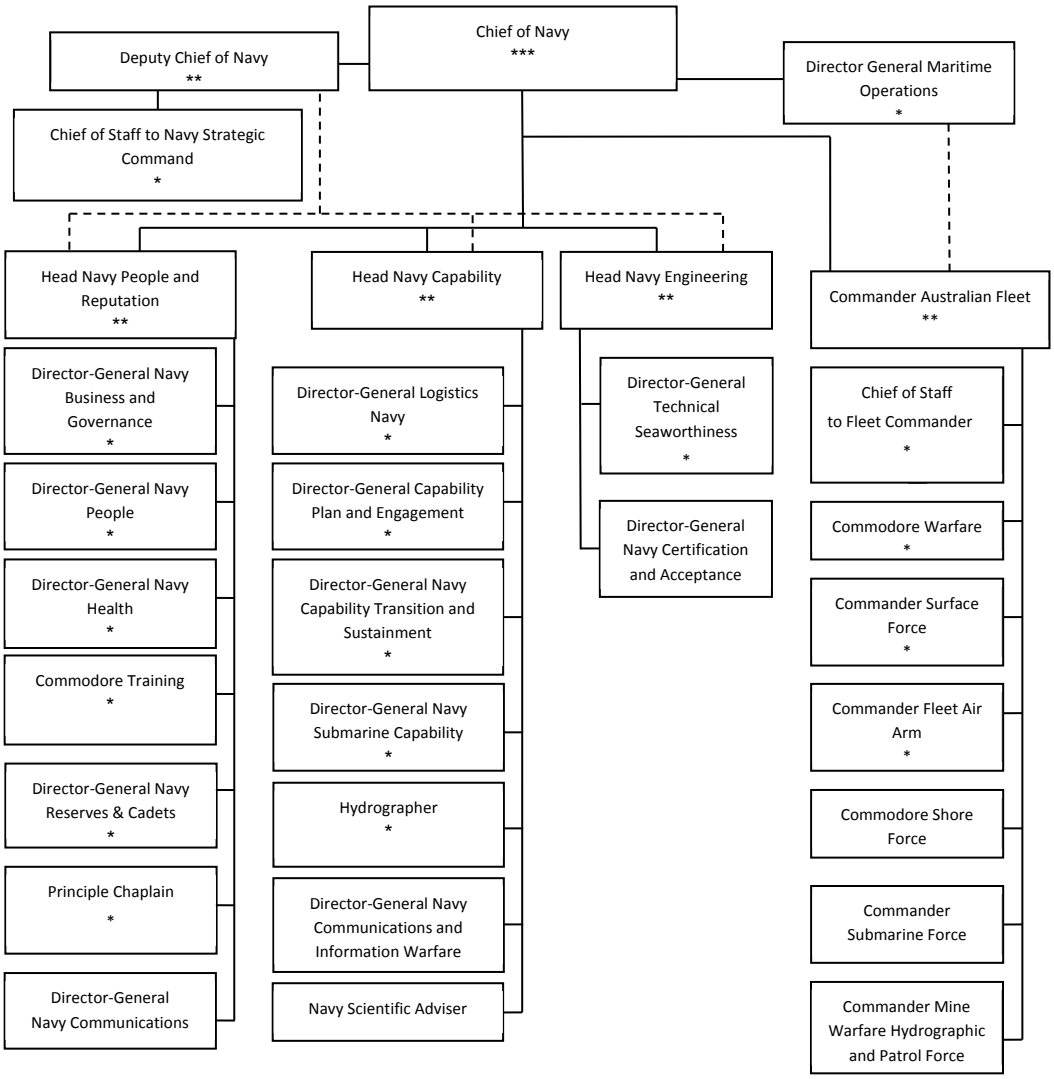
Program 1.2 – Navy Capabilities

Department outputs 2015-16: $5,209 million

The Navy's organisational structure comprises Navy Strategic Command and the subordinate Fleet Command. To a good approximation, Strategic Command is responsible for capability plans, personnel, administration and technical regulation, while Fleet Command is responsible for the day-to-day operation of the fleet and 'cradle to grave' training for all RAN personnel.

Structure and performance

The structure and performance of the Navy is set out below and overleaf. Because of the reduction in disclosure, it has not been possible to provide as detailed information as in the past.



Major combatants

Surface combatants

The Navy has three 1980s Adelaide class (US Oliver Hazard Perry class) Guided missile frigates (FFG) plus eight newer German-designed and Australian-built Anzac class frigates (FFH). Both vessels carry Harpoon anti-shipping missiles, anti-submarine torpedoes and Evolved Sea Sparrow surface-to-air missiles. Only the FFG are equipped with the more capable Standard SM-2 surface-to-air missile.

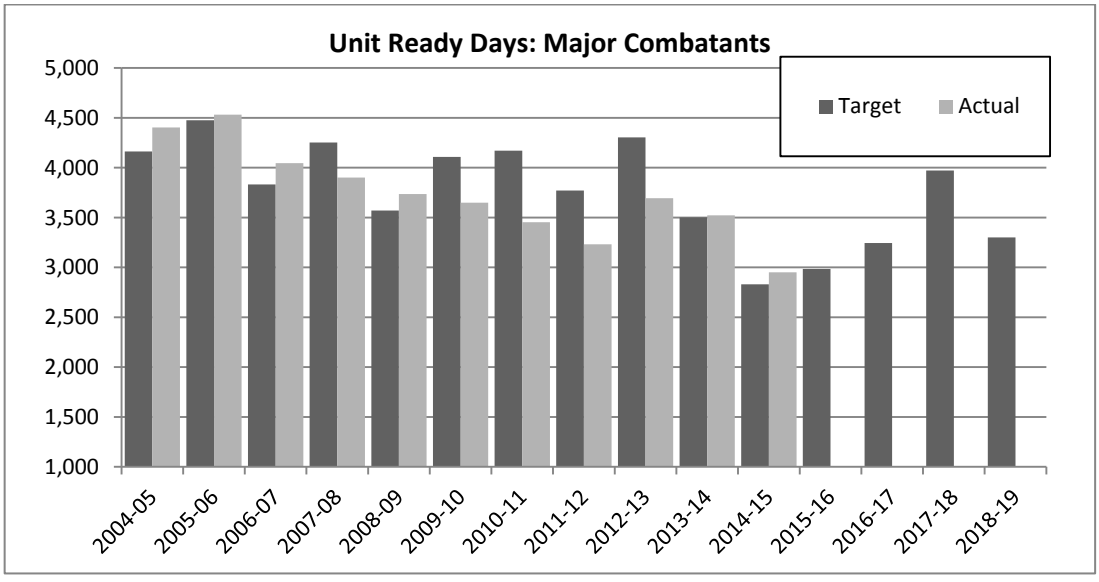
The Anzac class have a 5" gun useful for shore bombardment (as seen in the Gulf in 2003) while the FFG has a less capable 3" gun. Both classes of vessel can embark a Seahawk anti-submarine helicopter, although the recent availability and current capability of these aircraft is less than desired.

The FFH are progressively being fitted with a range of new systems including an anti-ship missile defence (ASMD) suite. In addition, three new Air Warfare Destroyers are presently under construction. One FFG was withdrawn from operational service in March 2015. It and another FFG will be withdrawn from service in December 2015 and March 2017 respectively resulting in a capability gap due to delays in the AWD program.

Submarines

The RAN has six Collins Class submarines. Their primary roles are to attack enemy shipping and to counter the threat of adversary submarines. In addition, they can collect intelligence and insert and extract Special Forces.

The delay in the introduction of the Collins class into service as the Oberon class left service disrupted both submariner training and the retention of skilled personnel. The resulting shortage of submariners reduced the delivery of capability. Longer than expected maintenance periods coupled with mechanical problems further compromised the availability of boats. Following the Coles review of Collins sustainment, steps have been taken to improve vessel availability with encouraging early success. Moreover, Navy has been successful in growing the numbers of trained submariners.



Minor combatants

Patrol boats

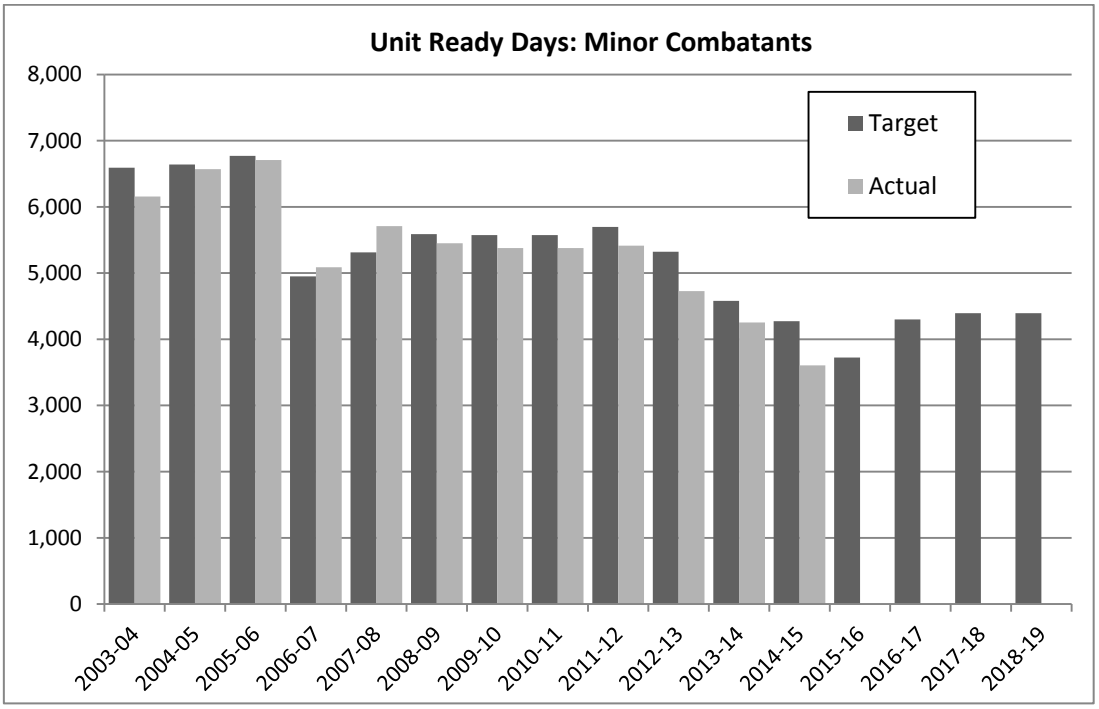
The Navy has thirteen Armidale Class Patrol Boats (ACPB). There used to be fourteen boats but one vessel was decommissioned in December 2014. These vessels are mainly tasked in support of the civil surveillance program through Border Protection Command. They can also be used for the insertion and extraction of army patrols on the coast, including Special Forces.

Through an innovative program, the Navy multi-crews the Armidale class vessels, thereby reducing the burden on sailors and their families while maintaining a high utilisation of the assets. There were 21 crews spread across 14 vessels. In recent times maintenance issues have challenged the fleet.

Mine warfare vessels

6 Huon Class Coastal Mine Hunters (MHC) – 720 tonnes displacement, glass-reinforced plastic hulled, Italian-designed and built in Australia in the late 1990's. The ships employ sonar to search for mines, which can then be destroyed using a remote-controlled mine disposal vehicle or otherwise. There are also two auxiliary minesweepers, but according to the 2010-11 DAR, they were 'placed on *short-term reactive notice for sea* from October 2010 until procurement of a replacement capability is undertaken.' There are also two Clearance Diving Teams, one on each coast at Sydney and Perth, capable of clearing mines and other ordinance, clandestine survey and obstacle clearance, and battle damage repairs.

The health of the RAN minesweeping capability is under question. Training has been interrupted by the use of two of the Huon class vessels for border patrol duties, and since 2009 two of the Huon class have been placed in extended readiness. It's been estimated that it will take five years to get the full fleet operational again.



Amphibious and afloat support

Amphibious lift

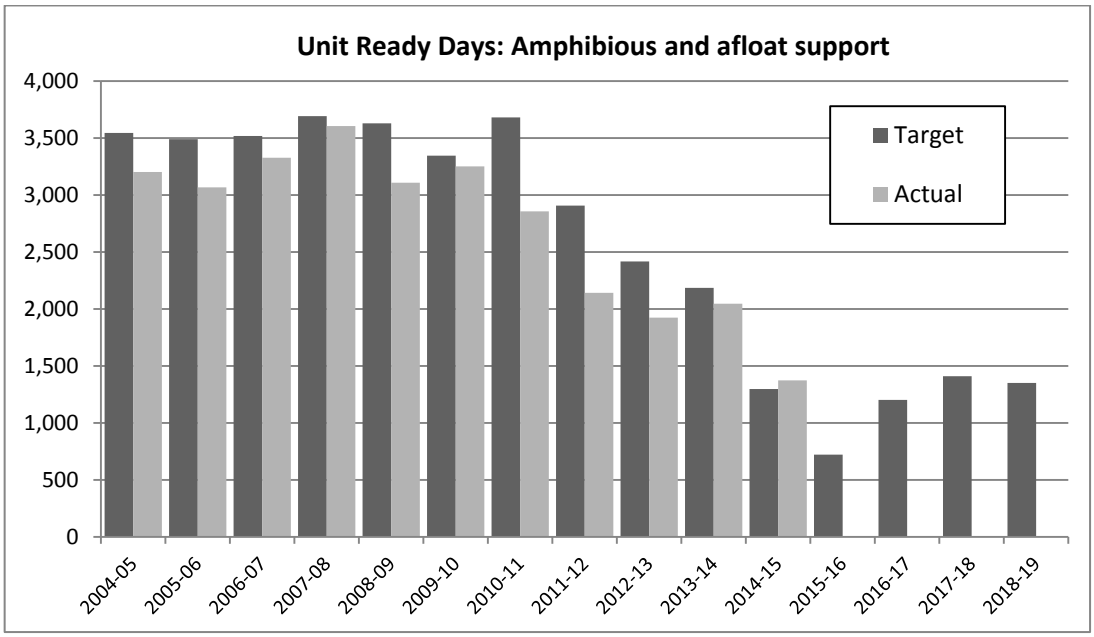
Until 2012, the fleet included two Kanimbla Class Landing Platforms Amphibious (LPA), HMAS *Manoora* and HMAS *Kanimbla,* refurbished in the mid-to-late 1990's from two second-hand 1970's US Newport Class Landing Ship Tank vessels, and one Heavy Landing Ship (HLS), HMAS *Tobruk*, a 1980's UK-designed and Australian-built vessel. In February 2011 the amphibious fleet suffered a critical and unexpected failure of availability and HMAS *Manoora* and HMAS *Kanimbla* were subsequently decommissioned. Amphibious heavy lift capability will be maintained through the recently acquired second-hand vessel from the United Kingdom, HMAS *Choules*. *Tobruk* is planned to be withdrawn from service in June 2015.

Two new large amphibious (Landing Helicopter Dock) vessels have been purchased, the first, HMAS *Canberra,* has been commissioned and is providing an 'Initial Operating Capability'. These vessels will each displace around 27,000 tonnes and carry 1,000 troops plus helicopters and vehicles. Navy had three Landing Craft Heavy (LCH) which were decommissioned in November 2014.

Afloat support

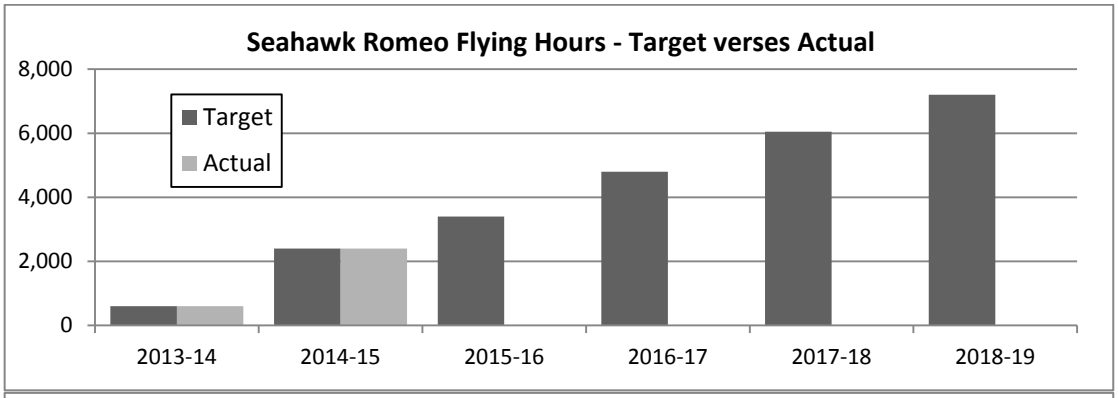
The afloat support force refuels and re-supplies Navy vessels and embarked helicopters at sea and provides logistics support to land operations. The fleet comprises two vessels: HMAS *Sirius:* a South Korean-built 46,017 tonne full displacement commercial vessel which was refitted to Navy specifications as an Auxiliary Tanker (AO) and HMAS *Success:* a 1980s French-designed, Australian-built 17,900 tonnes full displacement Auxiliary Replenishment Tanker (AOR). Amada Ship *Cantabria* commenced a year-long deployment with the RAN in 2013.

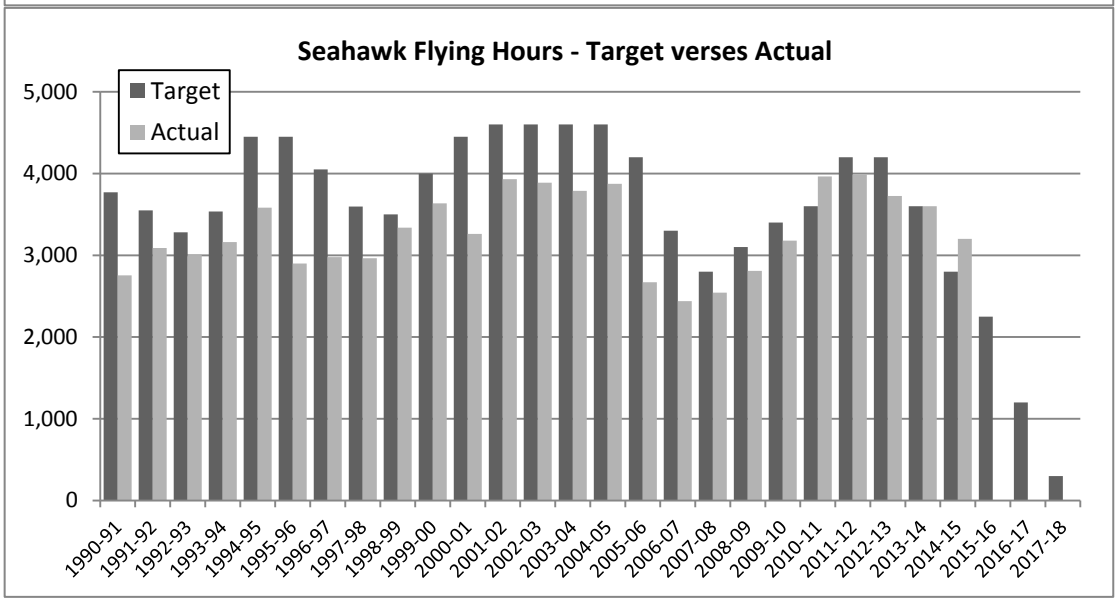
Although HMAS *Sirius* has been touted as an example of how commercial-off-the-shelf equipment can meet ADF requirements quickly and at reduced cost, the ship does not have the full range of capabilities and operational flexibility of a purpose build ship.



Naval aviation

The RAN has sixteen 1980s US-designed Seahawk helicopters that can be embarked on the FFH and FFG class frigates. They are configured for anti-submarine and surface search/targeting. A project to deliver eleven Super-Seasprite helicopters for the Anzac frigates was cancelled in early 2008. Thirteen new Seahawk MH-60R aircraft are replacing both the Seahawk and the capability sought from the Super-Seasprite from 2014. Six MRH-90 aircraft have replaced the retired UK-built Sea King helicopters (reported under Army outputs). Thirteen Squirrel light helicopters are used for training and short-term operations at sea.





Hydrographic, meteorological & oceanographic fleet

The Navy produces maritime military geospatial information for the ADF and undertakes hydrographic surveying and charting for civil use. The hydrographic component is supported by the Australian Hydrographic Office in Wollongong, NSW, and also comprises the Hydrographic Office deployable survey unit. The fleet includes:

2 Leeuwin Class Hydrographic Ships (AGHS): 2,250 tonne Australian-built hydrographic ships.

4 Paluma Class Survey Motor Launches (SML): 320 tonne Australian-built survey launches.

1 Laser Airborne Depth Sounder (LADS) aircraft: an airborne depth sounder capability used in shallow water.

Program 1.3 – Army Capabilities

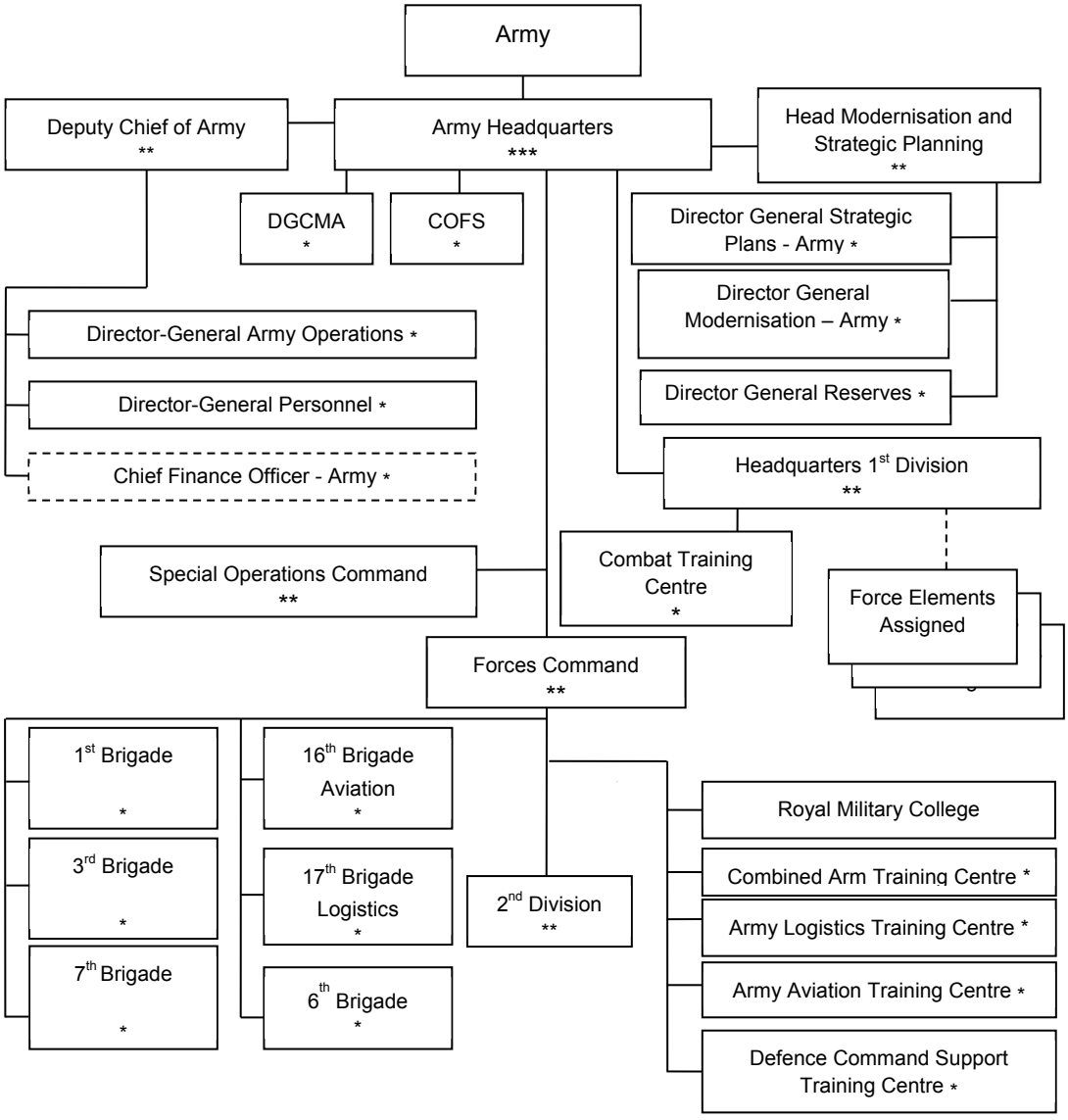
Department outputs 2015-16: $6,775 million

In 2009, the Australian Army was restructured to ensure it is more effective and efficient in its conduct of force generation and force preparation—for current operations and potential operations of the future. The Army was structured around three functional commands. The three functional commands and their roles are as follows:

Special Operations Command commanding Army's Special Forces units.

Forces Command is *responsible* for the force generation of Army individual and collective conventional capabilities based on Foundation Warfighting skills.

1st Division focuses on the force preparation of conventional Army force elements for specified operations and contingencies. It also forms the basis of the Deployable Joint Force Headquarters, capable of providing Command and Control to Australian and coalition forces at short notice.



Headquarters 1st Division

Headquarters 1st Division is based in Brisbane, and prepares and certifies Army conventional force elements, as assigned by Chief of Army, in order to meet the specific operational and contingency requirements directed by Chief Joint Operations.

Headquarters 1st Division also commands a number of specialist units which support its role and prepare and certify forces for operations. These include the 1st Signals Regiment (Brisbane), the Combat Training Centre (Townsville), the 39th Operational Support Battalion (Randwick, Sydney) and the 2nd/30th Training Group (Butterworth, Malaysia).

Special Operations Command

The Special Air Services Regiment (SASR) in Western Australia provides special recovery (including domestic and overseas counter-terrorism by the west coast Tactical Assault Group (TAG)), long-range reconnaissance and offensive operations. The 2nd Commando Regiment (2 Cdo Regt) in Sydney (including east coast TAG) and the 1st Commando Regiment (a reserve unit split between Sydney and Melbourne) are the Army's two commando regiments. Commando roles include special recovery and land, sea- and air-borne offensive raids. The 126 Signals Squadron in Sydney provides a Special Forces signals capability to 2 Cdo Regt and 152 Signals Squadron in Perth provides a signals capability to the SASR. There is also a Special Operations Engineer Regiment based in Sydney, a Special Forces Logistics Squadron in Sydney, a Special Forces Training Centre in Sydney and Parachute Training School in Nowra.

Forces Command

1st, 3rd and 7th Brigades

Forces Command includes three combat brigades. Each Brigade contains two Infantry Battalions of the Royal Australian Regiment, and Armoured Cavalry Regiment equipped with M113AS4 armoured personnel carriers and Australian modified ASLAV light armoured vehicles. Each Brigade also contains an Artillery Regiment equipped with towed M777 155mm Lightweight Towed Howitzers. Additionally, each Brigade includes command and control, combat support and combat service support elements based in a Brigade Headquarters, Signals Regiment, Combat Engineer Regiment and Combat Service Support Battalion.

1st Brigade The 1st Brigade is headquartered in Darwin and has units located in both Darwin and Adelaide. The 1st Armoured Regiment is the Brigades Armoured Cavalry Regiment and also currently contains Army's armoured capability, equipped with reconditioned US-made M1A1 Abrams tanks. The 7th Battalion, The Royal Austrlian Regiment is based in Adelaide.

3rd Brigade The 3rd Brigade headquartered in Townsville. In addition to its two standard Infantry Battalions, 3rd Brigade also commands the 2nd Battalion Royal Australian Regiment, which is Army's dedicated unit supporting the ADF Amphibious Capability.

7th Brigade The 7th Brigade is headquartered in Brisbane.

6th Brigade

Headquartered at Victoria Barracks in Sydney, the 6th Brigade commands a diverse collection of units including:

- 1st Intelligence Battalion (Brisbane)
- 16th Air Land Regiment (Woodside SA) equipped with the Swedish RBS 70 shoulder launched, optically guided, surface-to-air missiles, as well as Giraffe sense and warn Agile Multi-Beam (GAMB) radars.
- 20th Surveillance and Target Acquisition Regiment (Brisbane)
- 7th Signals Regiment - Electronic Warfare (Carbalah, Queensland)
- 19th Chief Engineer Works (Sydney)
- 6th Engineer Support Regiment (Brisbane) comprising:
    - 17th Construction Squadron (Sydney)
    - 21st Construction Squadron (Brisbane)
    - 20th Explosive Ordnance Disposal Squadron (Enoggera, Queensland).

17th Brigade

The 17th Brigade, headquartered at Randwick Barracks in Sydney, is a brigade-sized grouping of reserve, integrated and permanent Army units which can sustain a brigade on operations for extended periods while concurrently maintaining a battalion group elsewhere. The Brigade provides supply, fuel, communications, transport (surface vehicle and small watercraft), repair, and health and psychology capabilities. The Brigade is headquartered in Sydney and comprises of the following units:

- 2nd Force Support Battalion (Glenorchy, Tasmania)
- 9th Force Support Battalion (Amberley, Queensland)
- 10th Force Support Battalion (Townsville)
- 1st Close Health Battalion (headquartered in Sydney)
- 2nd General Health Battalion (Brisbane)
- 3rd Health Support Battalion (headquartered in Adelaide)
- 1st Psychology Unit (Sydney).
- 146th Signals Squadron (Sydney)
- 1st Military Police Battalion (Brisbane)

2nd Division

The 2nd Division commands all those Reserve units not integrated into other formations. It is structured around six infantry brigades, each of which has a HQ, two/three infantry battalions, a cavalry unit in some cases, and combat and combat service support units. These brigades are:

- 4th Brigade (Melbourne and Victoria)
- 5th Brigades (Sydney and southern New South Wales)
- 8th Brigade (Sydney and northern New South Wales)
- 9th Brigade (South Australia and Tasmania)
- 11th Brigade (Townsville and Queensland)
- 13th Brigade (southern Western Australia and Perth).

The Division also includes three regional surveillance units predominately manned by reserve personnel. These are:

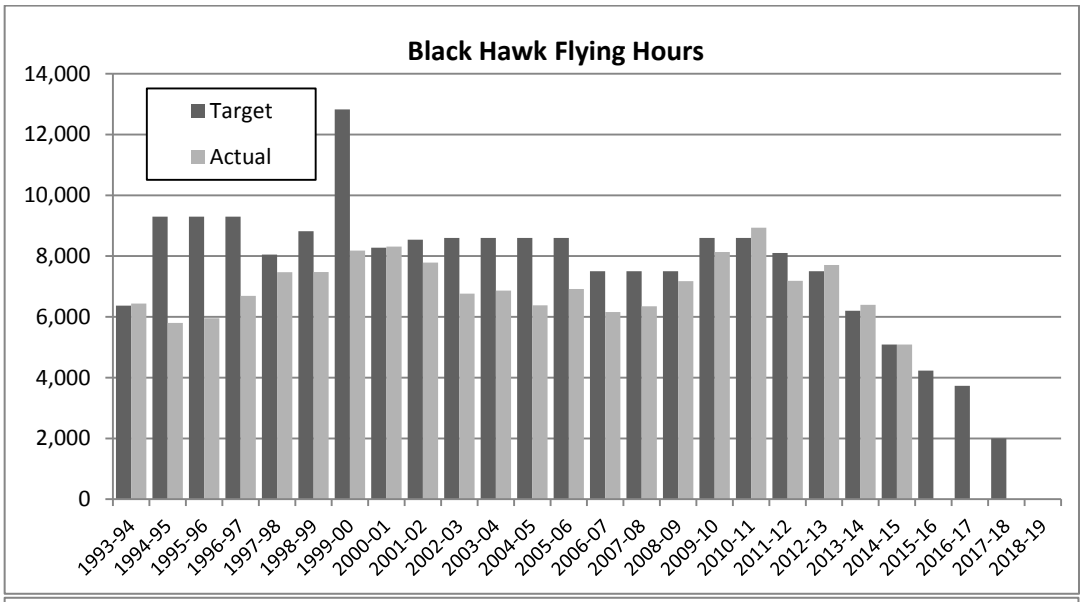
- 51st Battalion Far North Queensland Regiment responsible for conducting reconnaissance and surveillance over 640,000 square km in Far North Queensland and the Gulf country.
- The Pilbara Regiment (Karratha, WA) with 1.3 million square km to cover from the Kimberley boundary in the north, to Shark Bay in the south, then east to the NT/SA/WA border.
- North West Mobile Force (NORFORCE) which covers the Northern Territory and the Kimberly region of northern Western Australia, an area of operations covering nearly one quarter of Australia's land mass—1.8 million square kilometres.

16th Brigade

Army aviation support is generated by 16th Aviation Brigade, headquartered in Brisbane. The Brigade commands the 1st Aviation Regiment (Tiger) in Darwin, the 5th Aviation Regiment (Black Hawk, MRH-90 Taipan and CH-47 Chinook) in Townsville, and the 6th Aviation Regiment (Black Hawk) in Sydney, 16th Aviation Brigade provides the following capability in support of Joint Land Combat and Amphibious Operations: Reconnaissance, Escort, Attack, Airmobile Operations, Aero Medical Evacuation, Combat Service Support, and support to Special Operations.

22 Tiger Armed Reconnaissance Helicopters, and 40 MRH-90 Taipan Troop-Lift Helicopters, are being introduced into service with Full Operational Capability expected in 2016 and 2019 respectively, while the Black Hawk fleet will be retired commensurate with MRH-90 introduction. The CH-47D Medium-Lift Helicopter fleet is due to be replaced by seven CH-47F Chinooks in the period 2015-2016 under project AIR 9000 Phase 5C.

Assets include: 34 Black Hawk troop-lift helicopters, 41 Kiowa light observation & training helicopters, 6 Chinook medium-lift helicopters. All these helicopters are of US design. There are also 22 of an eventual fleet of 24 European-designed Tiger Armed Reconnaissance Helicopters (ARH) and 47 MRH-90 troop-lift helicopters are being progressively brought into service.


Black Hawk Flying Hours
Target
Actual
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1993-94
1994-95
1995-96
1996-97
1997-98
1998-99
1999-00
2000-01
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07
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2017-18
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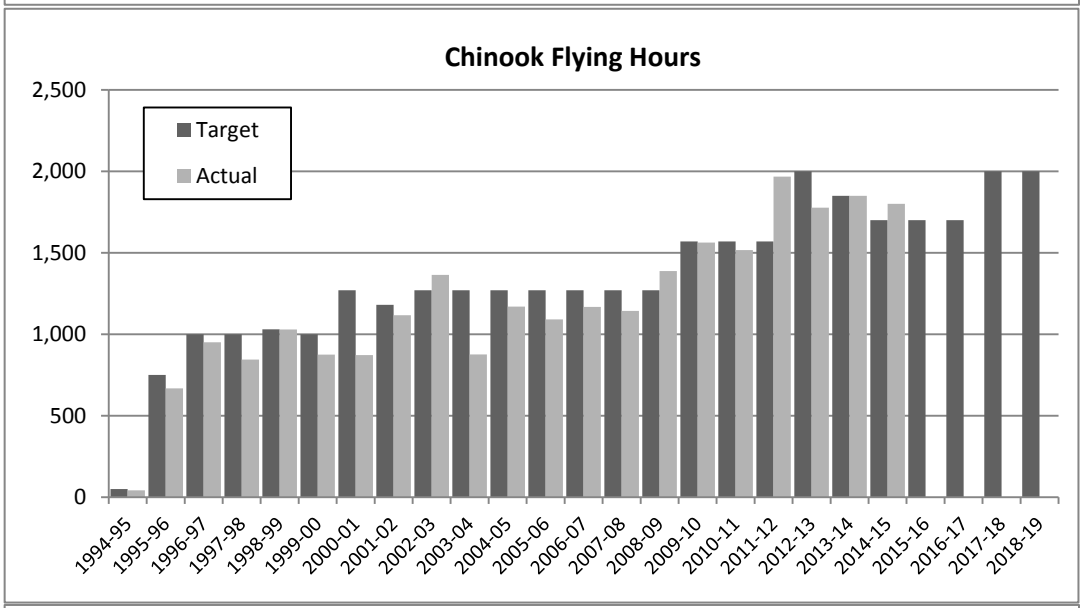
Chinook Flying Hours
Target
Actual
2,500
2,000
1,500
1,000
500
0
1994-95
1995-96
1996-97
1997-98
1998-99
1999-00
2000-01
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07
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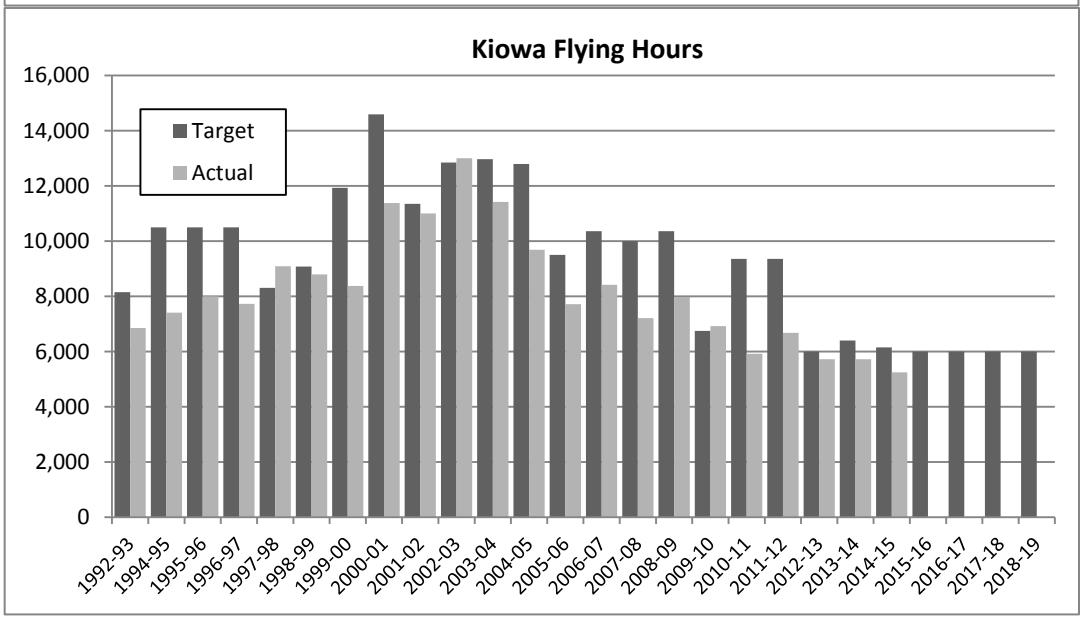
Kiowa Flying Hours
Target
Actual
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1992-93
1994-95
1995-96
1996-97
1997-98
1998-99
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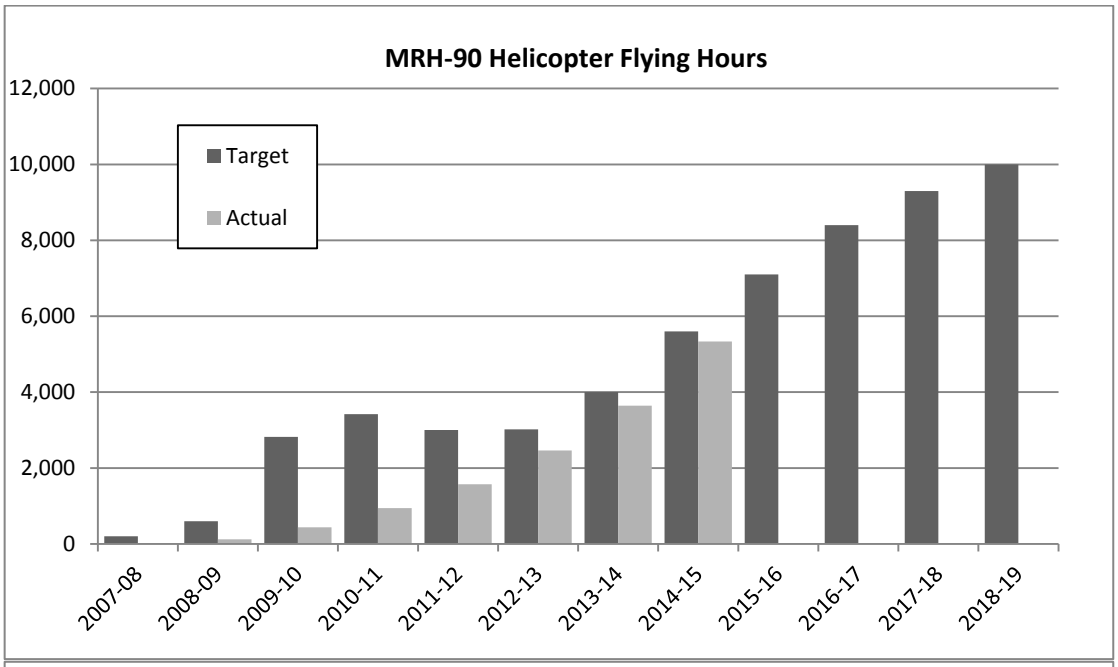
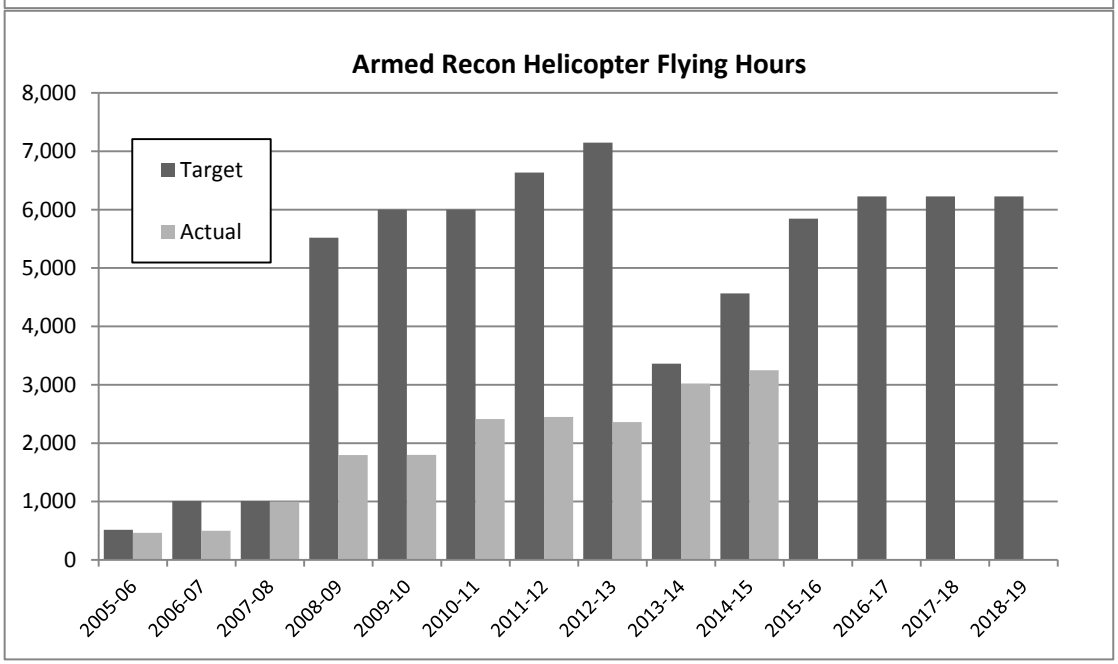




Royal Military College of Australia (RMC-A)

The Royal Military College of Australia is headquartered in Canberra and is responsible for the delivery of individual foundation training for Officers and Soldiers, including the first Appointment Course, Recruit Training and Promotion courses. RMC-A consists of the following units:

- Royal Military College – Duntroon (Canberra)
- Army Recruit Training Centre (Wagga Wagga)
- Land Warfare Centre (Headquartered at Canungra, Queensland with presence in all states and territories).

Army Logistic Training Centre (ALTC)

The Army Logistic Training Centre (ALTC) is principally centred in Albury-Wodonga, however

conducts training in Darwin, Townsville, Brisbane, Sydney and Puckapunyal through two training wings and four On-the-Job Training cells. ALTC delivers training in logistics, ordnance, road and maritime transport, medical, health and electrical and mechanical engineering. ALTC consists of the following schools:

- Army School of Logistics Operations (Albury-Wodonga)
- Army School of Ordnance (Albury-Wodonga)
- Army School of Transport (Albury-Wodonga, Townsville and Puckapunyal)
- Army School of Health (Albury-Wodonga)
- Army School of Electrical and Mechanical Engineers (Albury-Wodonga).

Combined Arms Training Centre (CATC)
The Combined Arms Training Centre is headquartered at Puckapunyal and is the Australian Army's centre of excellence for individual combined arms training. The force structure includes:

- School of Armour (Puckapunyal)
- School of Artillery (Puckapunyal)
- School of Infantry (Singleton)
- School of Military Engineering (Sydney).

Army Aviation Training Centre (AAVNTC)
The Army Aviation Training Centre is located in Oakey and is responsible for the effective instruction of Pilot, Aircrewmen and Groundcrewmen courses as well as the training of Aircraft Technicians for employment within Army Aviation. AAVNTC also contributes to the development of doctrine and materiel plans for Army Aviation. The training centre includes:

- The Army Helicopter School
- The RAEME Aircraft Maintenance School
- The School of Army Aviation.

Defence Command Support Training Centre (DCSTC)
The Defence Command Support Training Centre is headquartered at Simpson Barracks in Melbourne and it is a training formation within Army responsible for the conduct of Intelligence, Signals, Police and Music training, training design and trade management for members of the Australian Defence Force. The training centre also provides training for selected members of the Australian Public Service and nominated students from Defence forces of other nations. DCSTC comprises the following Units:

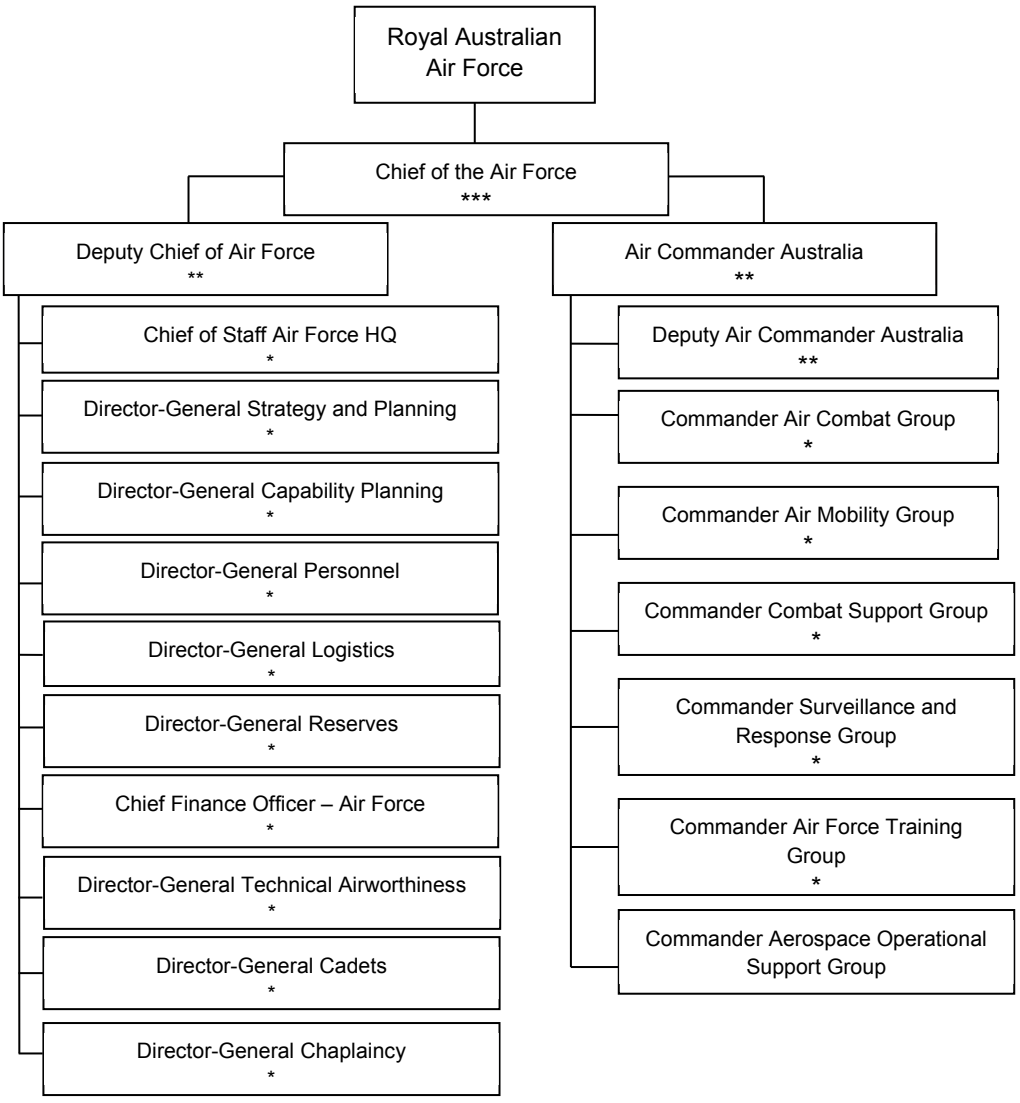
- Defence Intelligence Training Centre (Canungra)
- Defence Force School of Music (Melbourne)
- Defence Force School of Signals (Melbourne)
- Defence Police Training Centre (Sydney).

Program 1.4 – Air Force Capabilities

Department outputs 2015-16: $5,505 million

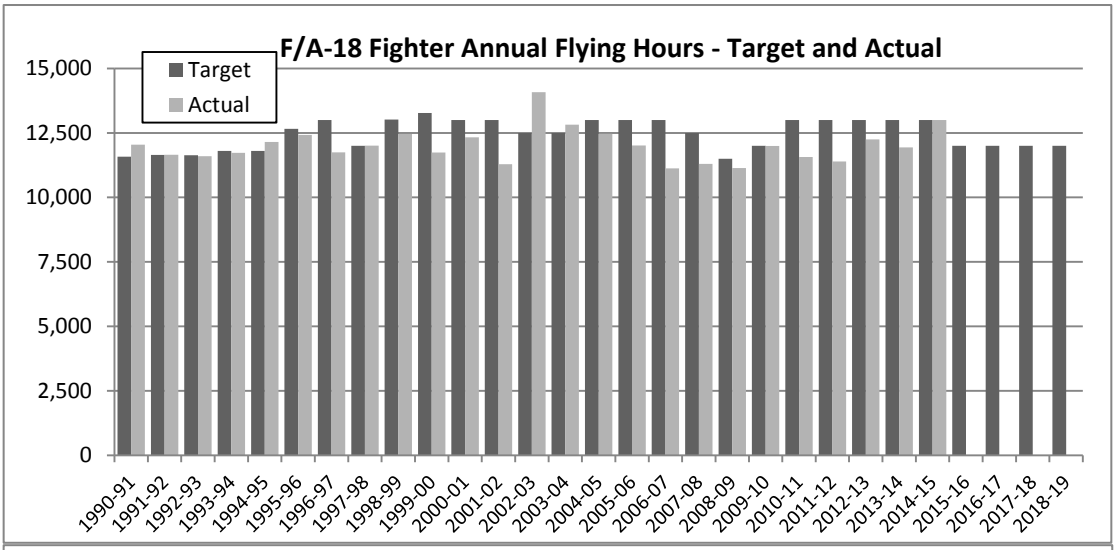
Of the three military services, the Air Force has the leanest and most streamlined organisational structure. The organisation is split into two parts. Corporate planning and administration occurs under the direction of the Deputy Chief of Air Force within Air Force Headquarters while Air Commander Australia takes care of Headquarters Air Command, the Air and Space Operations Centre and the six training, support and flying groups.

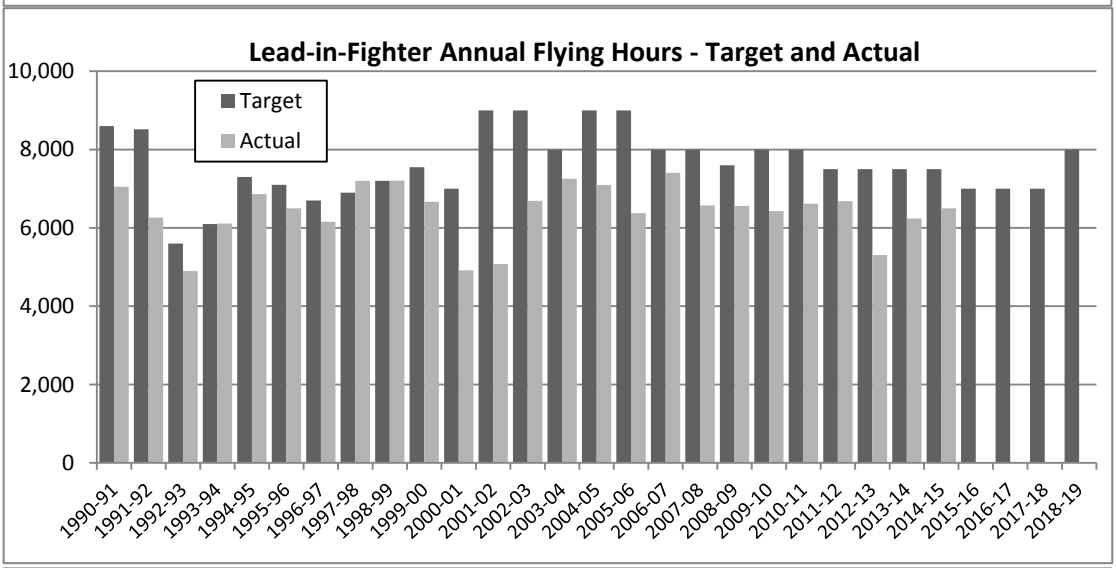
Air Force has recently introduced, or is preparing to introduce, several new fleets of aircraft into service. These include the 6 new Wedgetail Airborne Early Warning and Control Aircraft (AEW&C), 5 replacement Air-to-Air Refuelling (AAR) aircraft, 24 F/A-18F Super Hornet, 10 C-27J Spartan battlefield airlifters, 8 P-8A Poseidon maritime intelligence, surveillance, reconnaissance and response aircraft and 12 E/A-18G Growler electronic warfare and attack aircraft. By the end of the decade, the Air Force plans to be operating F-35A Lightning II Joint Strike Fighter aircraft.

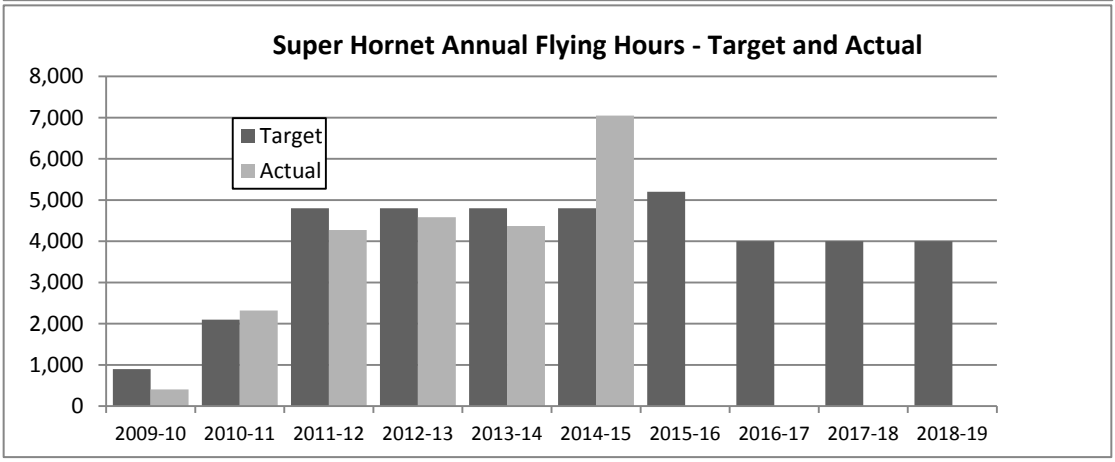


Air Combat Group

Air Combat Group comprises 71 F/A-18 A/B Hornet fighter aircraft and 24 F/A-18F Super Hornets with 12 E/A-18G Growler expected to be delivered from 2016-17. In addition, 33 Hawk Lead-in Fighters (LIF) provide a training capability while 4 PC-9(F) forward air control aircraft are used to designate ground targets and train Joint Terminal Attack Controllers. Air Combat Group also supports and operates the leased Heron Remotely Piloted Aircraft which were deployed to Afghanistan.

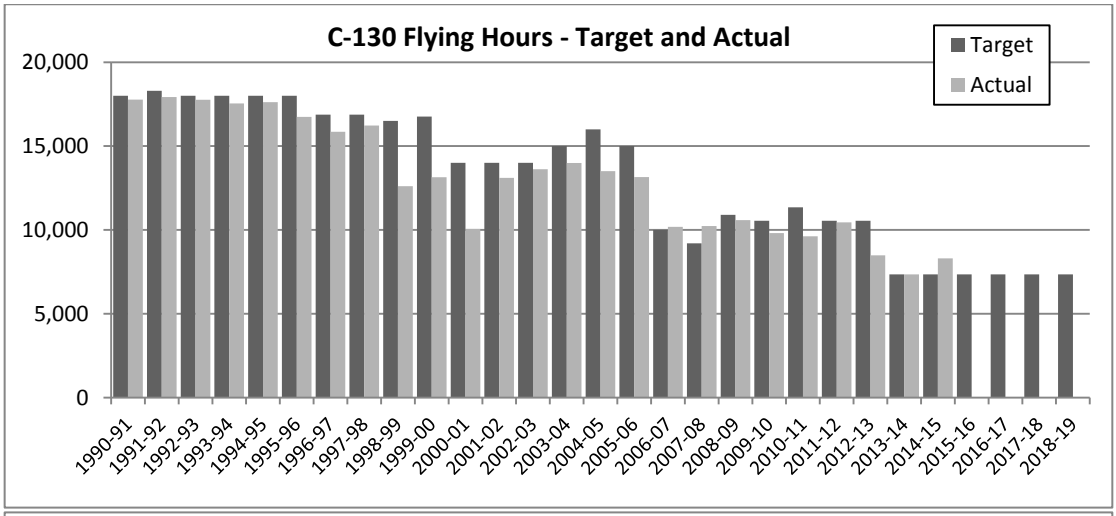


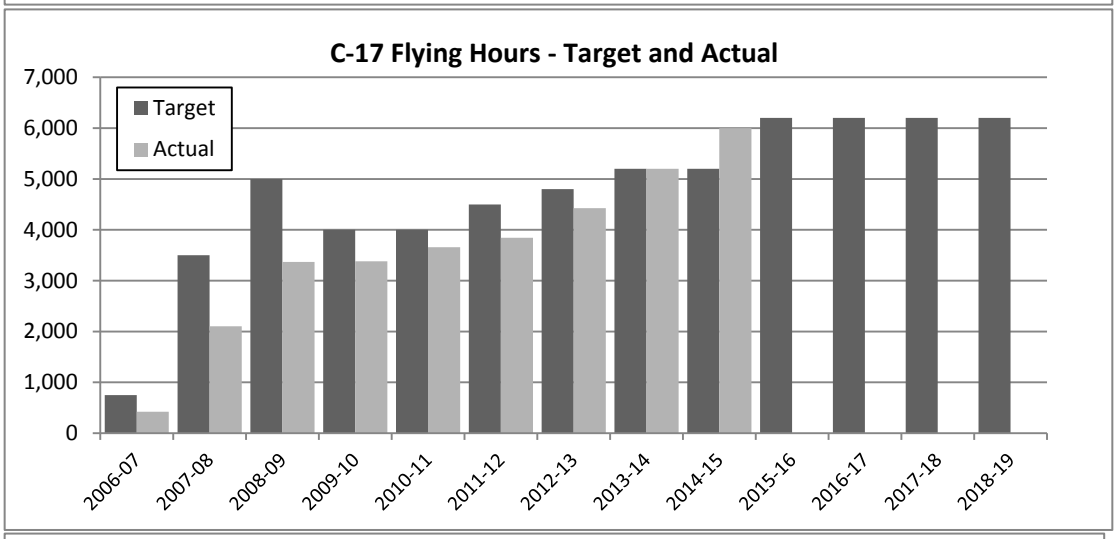


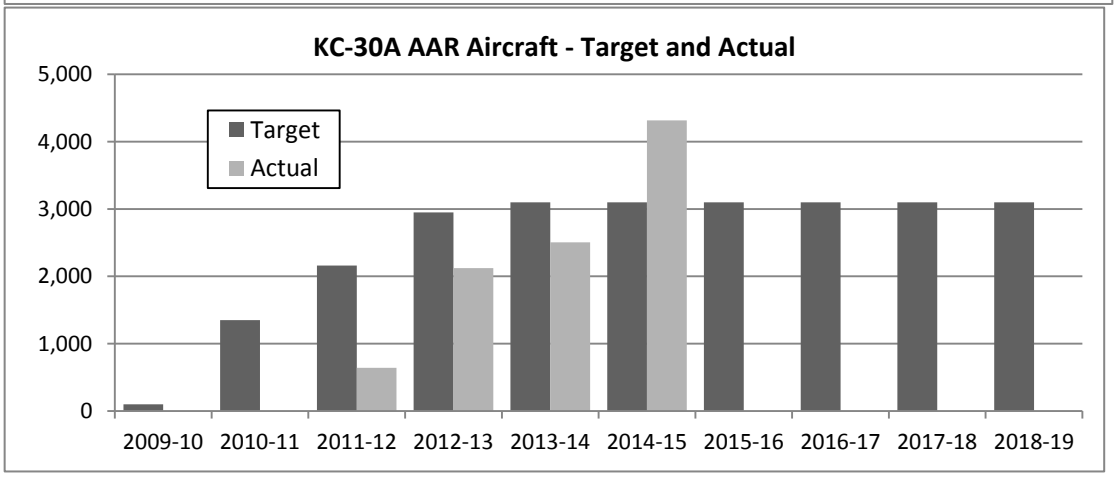


Air Mobility Group

The Air Force has 12 C-130J Hercules transport aircraft which are capable of a wide range of strategic and tactical airborne roles. The ongoing acquisition of 8 Boeing C-17 Globemaster IIIs provides the capability to transport large and heavy loads over long ranges whilst retaining tactical capabilities. Two Boeing 737 BBJ and 3 CL604 Challenger aircraft provide VIP transport for the government. Sixteen B-350 King Air aircraft, provide a light air transport role as an interim capability prior to the full introduction of 10 C-27J Spartan aircraft. Five KC-30A Multi-Role Tanker Transport aircraft perform a duel tanker and transport role.





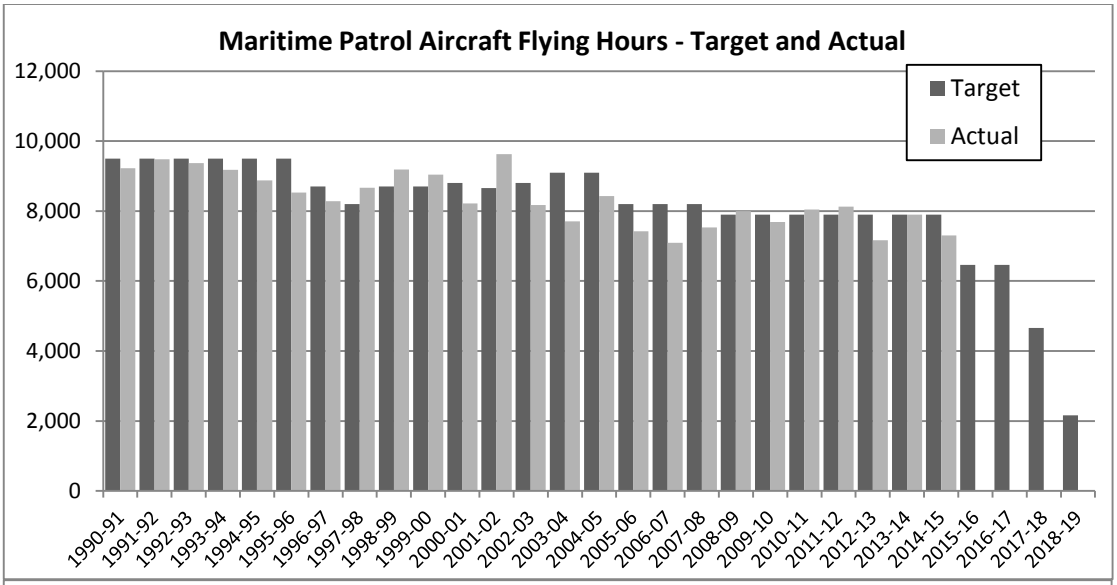


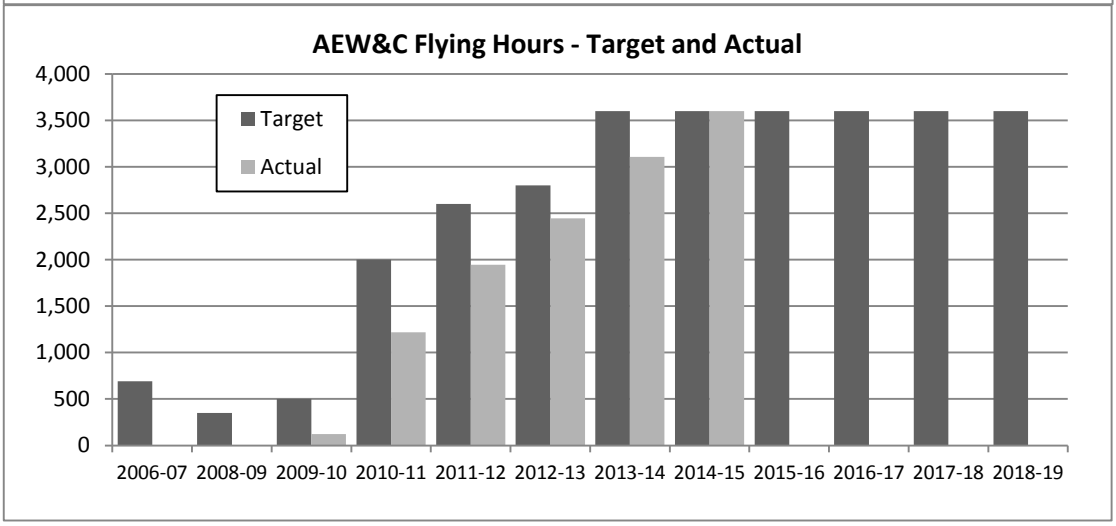
Surveillance and Response Group

The Surveillance and Response Group comprises a diverse range of capabilities including:

Fifteen 1970s vintage AP-3C Orion maritime patrol aircraft which undertake maritime patrol, maritime surveillance, reconnaissance, offensive air support, surface & sub-surface strike, and search and survivor supply. All 15 aircraft have been upgraded to AP-3C standard through an Australian-unique upgrade program. They will be progressively replaced by the P-8A Poseidon from 2016-17 onwards.

Ten Air Traffic Radars, including 9 fixed radar and 1 mobile for the control of ADF air traffic. Four Tactical Air Defence Radars: ground-based radar to detect hostile and own aircraft. The JORN Over-the-Horizon-Radar network, including radar sites in Laverton WA and Longreach Qld, and 17 coastal beacons in the north of Australia and Christmas Island. The network is run from the Jindalee Operational Radar Network Coordination Centre in Edinburgh, SA, and can detect both sea and air-borne moving objects. The Jindalee facility Alice Springs serves a research and development function. JORN is operated by No. 1 Radar Surveillance Unit. Six Wedgetail AEW&C aircraft based on Boeing 737-700 platform whose entry into service was delayed by more than four years are now fully in service.





Aerospace Operational Support Group

The Aerospace Operational Support Group provides a broad range of operational and technical support services to Defence in general and Air Force in particular. Key components of the Group include:

Information Warfare Wing which provides electronic warfare, aeronautical information, intelligence and information operation products and services for Air Force air operations and the other Services.

Development and Test Wing which provides flight test, system engineering and aviation medicine products and services for extant and emerging ADF aviation capability.

Woomera Test Range which provides an instrumented weapons test and evaluation range for Defence.

Combat Support Group

The Combat Support Group is the largest of the Air Forces force element groups. The role of Combat Support Group (CSG) is to provide combat support services to all Air Force operational formations and when applicable ADF and Coalition Aviation formations. CSG must be able to deploy a Main Operating Base and two Forward Operating Bases.

The capability for combat support of air operations provides for deployable tactical air base support. It encompasses Bare Base activation including the provision of engineering infrastructure (facilities, water, power and sewerage systems), aircraft arrestor barriers and airfield services, navigation aid and tactical communications, air movement, airfield defence, health support including AME, combat logistics and personnel support capabilities.

CSG provides deployed combat support, excluding aircraft technical maintenance, to ADF contingency air operations at main operating bases, forward operating bases and point of entry airfields in Areas of Operations (AO) either in Australia or overseas. It also provides command and cadre staff for RAAF fixed bases in northern Australia and management of the prepared Bare Bases at RAAF Learmonth (LMO), Curtin (CIN), and Scherger (SGR). The provision of secure airfields and combat support arrangements for the deployment of air assets will continue to be critical to the support of ADF operations.

CSG comprises of a HQ, a Combat Support Coordination Centre, 95 and 96 Wings and a Health Services Wing.

Air Force Training Group

The Air Force Training Group is made up of a headquarters and Air Training Wing, Ground Training Wing, RAAF College and Reserve Training Wing. The headquarters of the Air Training Group is located at RAAF Base Williams inLaverton, Victoria.

Air Training Wing conducts basic and instructor air training for ADF personnel including pilots, air combat officers and air traffic controllers. Basic pilot training employs PC-9/A aircraft while aircraft and navigator training occurs on B350 aircraft. Air Training Wing also includes the RAAF Roulettes, who provide fly pasts and displays, the RAAF Museum and the RAAF Balloon. The Air Training Wing is also responsible for air crew combat survival training.

The RAAF College provides induction and professional military training for the Air Force. The RAAF College also maintains the RAAF Band.

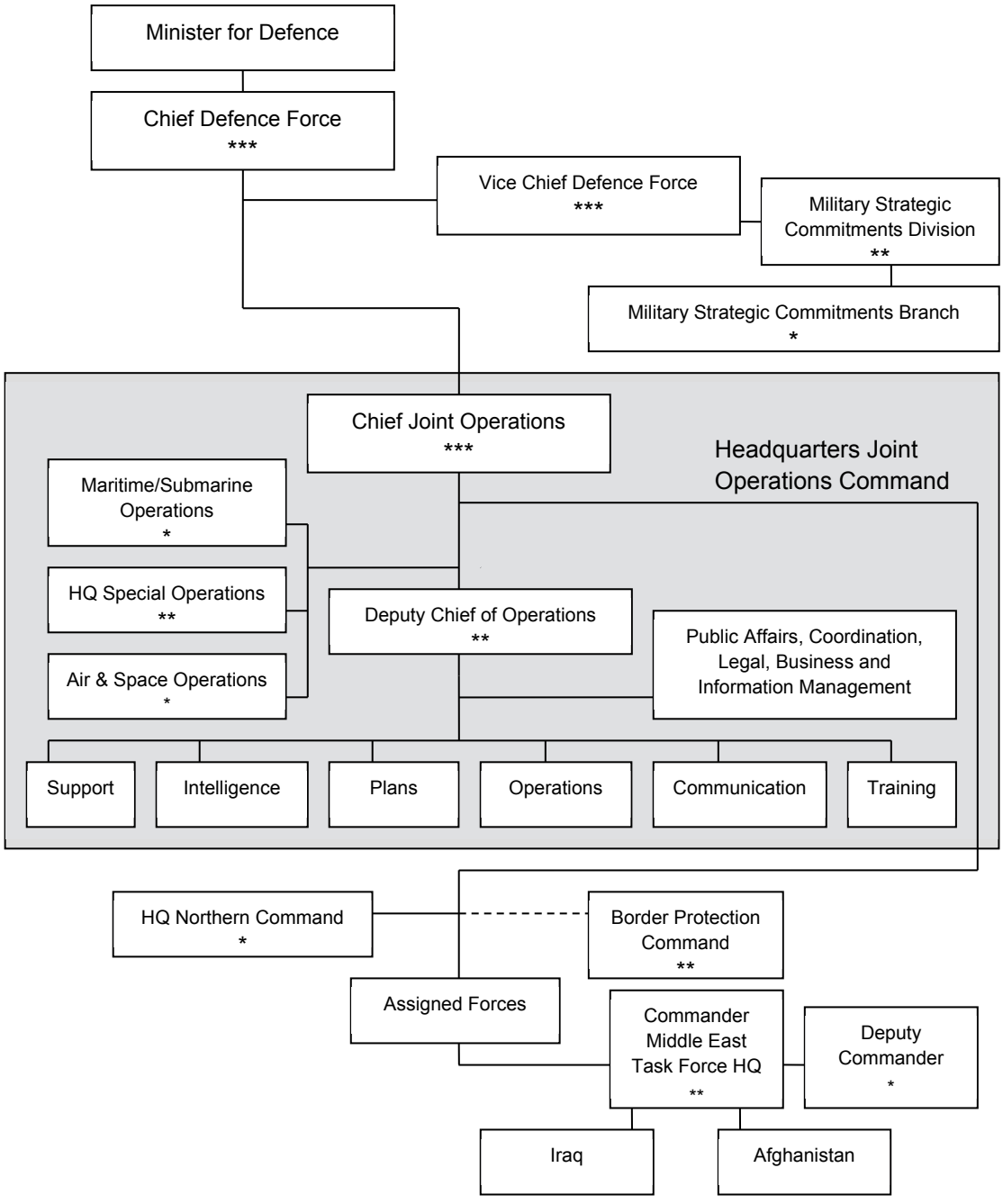
Ground Training Wing provides initial and ongoing training for non-aircrew personnel, including security, fire and ground defence, administration and logistics, technical trades, and explosive ordnance.

Reserve Training Wing provides ground training to Air Force Reserve members at a number of locations around Australia.

Program 1.5 – Joint Operations Command

Department outputs 2015-16: $50 million

Joint Operations Command (JOC) is responsible for the command of all ADF operations and joint exercises on behalf of the Chief of the Defence Force. Located in a purpose-built command facility in Bungendore NSW, JOC is assigned forces for operations from the three Services. The total ADF command arrangement is outlined below. At present, there are approximately 3,300 ADF personnel deployed on operations and somewhere around 750 personnel involved in planning, advising and commanding operations, of which around 750 (including contractors) reside in JOC and SOCOMD.

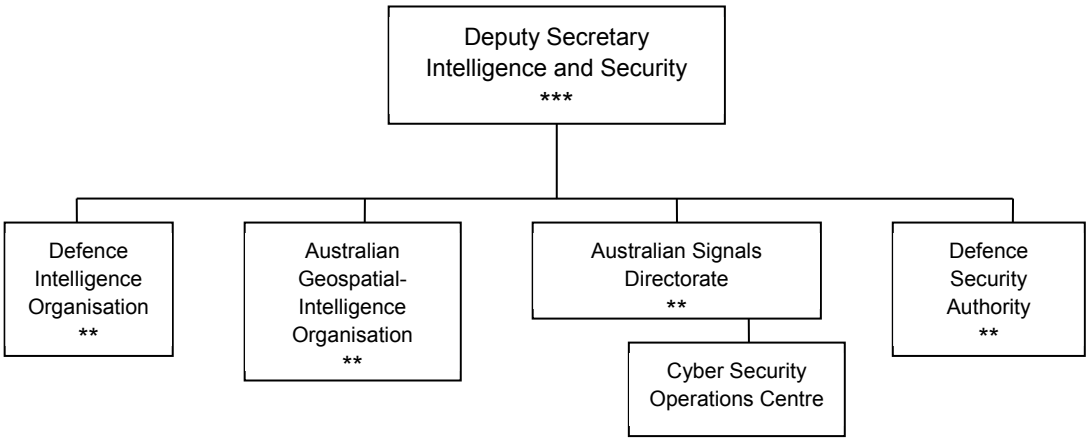


Program 1.6 – Intelligence Capabilities

Department outputs 2015-16: $642 million

Overview

The Intelligence and Security (I&S) Group comprises the Defence Intelligence Organisation, the Australian Geospatial-Intelligence Organisation (AGO), the Australian Signals Directorate (ASD) and the Defence Security Authority. The I&S Group is responsible for the management and oversight of the collection and assessment of intelligence in support of Australia's strategic and national interests, including support to ADF operations. The I&S Group also provides policy and security advice to Government, including security vetting functions for the whole-of-government.



Australian Signals Directorate (ASD) collects and analyses foreign signals intelligence for the Australian Government and the ADF in support of military and strategic decision-making. ASD also provides information security advice and services, predominantly to Commonwealth and state government agencies, as well as working closely with industry to develop and deploy secure cryptographic products. The Cyber Security Operations Centre is also located within ASD headquarters in Canberra.

Australian Geospatial-Intelligence Organisation (AGO) includes HQ at Russell Offices in Canberra and the Geospatial Analysis Centre in Bendigo. AGO obtains and produces geospatial intelligence about the capabilities, intentions or activities of people or organisations outside Australia. It supports ADF operations, targeting and training, as well as Commonwealth and State authorities in carrying out national security functions. AGO also sets technical standards for imagery and geospatial products, and provides Commonwealth and state authorities, and other bodies approved by the Minister, with non-intelligence products, technical assistance and support to carry out their emergency response functions.

Defence Intelligence Organisation (DIO) at Russell Offices in Canberra provides all-source intelligence assessments focusing on global security trends, foreign military capabilities, transnational terrorism, defence economics, and science and technologies with military applications. DIO produces timely assessments and advice on current and emerging threats

to Australia's security and strategic environment in support of Defence and whole-of-government decision-making—including the planning and conduct of ADF operations.

The Defence Security Authority (DSA) is responsible for the developing and promulgating security policy, providing security threat advice, conducting complex security investigations, monitoring Defence's security performance and assisting the Secretary, Chief of Defence Force, Group Heads and Service Chiefs to manage security risks. The Australian Government Security Vetting Agency (AGSVA) is also located within DSA and is responsible for security vetting of personnel across government, except for a small number of exempt agencies, for access to classified information. DSA also manages the Defence Industry Security Program.

Program 1.7 – Vice Chief of the Defence Force

Department outputs 2015-16: $1,197 million

The Vice Chief of the Defence Force (VCDF) is the military deputy to the CDF. In addition, the VCDF is the Joint Capability Authority as well as being responsible for the following:

Military Strategic Commitments Division provides the strategic level advice and support in the planning and execution of ADF's current operations and future commitments that enables the government to continuously review its national strategic interests. These responsibilities encompass; the strategic coordination of current and future ADF commitments, development and synchronization of strategic communication, the development and review of the nature of service for ADF commitments, and the provision of an investigative service to support the CDF and Service Chiefs.

Joint Logistics Command provides logistics support to the Australian Defence Force including, management of warehouses, maintenance, and distribution facilities.

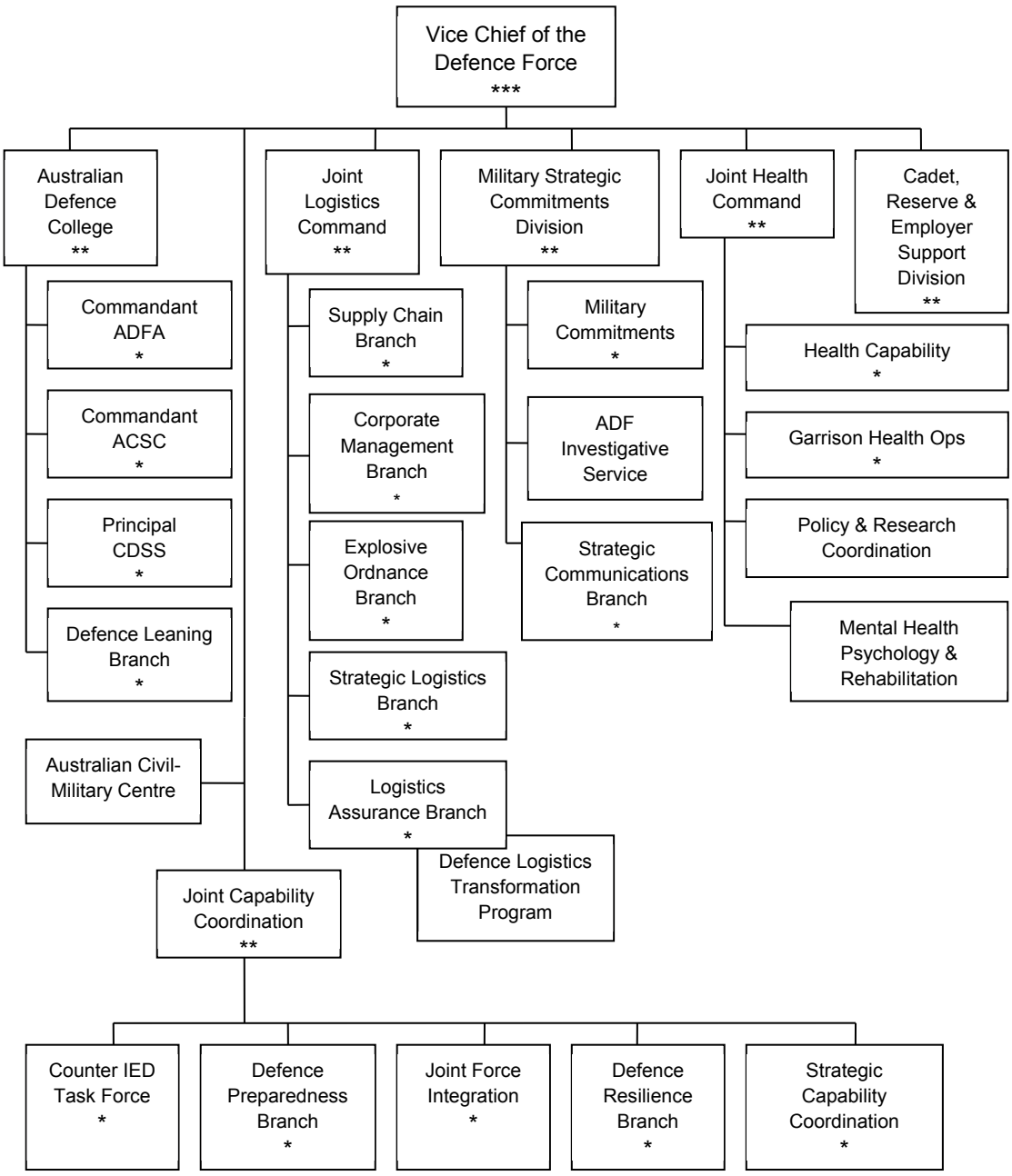
Joint Health Command is responsible for the delivery of all garrison health care to the ADF and exercises technical control through the Surgeon General Australian Defence Force.

Australian Defence College was established to develop the skills and knowledge of Defence's future leaders with an emphasis on joint professional military education and the delivery of joint training programs. Learning is offered through several learning centres providing an education continuum from the Australian Defence Force Academy, to the Australian Command and Staff College and the Centre for Defence and Strategic Studies. Through the Defence Learning Branch, the Australian Defence College also provides strategic direction and coordination for Defence's joint, common and APS training and education.

Joint Capability Coordination supports VCDF as the Joint Capability Authority responsible for ensuring that new and extant capabilities are developed in accordance with joint concepts and doctrine. Core functions of JCCD are to develop and provide the conceptual basis for the future joint force, advise on the state of ADF preparedness to meet Defence output of a prepared Joint Force in Being, and establish interoperability/integration requirements.

Cadet, Reserve and Employer Support Division works to enhance the capacity of Reserves to support ADF capability and provides a governance and accountability framework for the ADF Cadet Scheme.

Australian Civil-Military Centre is a whole-of-government initiative to improve Australia's effectiveness in civil-military collaboration for conflict and disaster management overseas.



Chief Operating Officer – Overview

The Chief Operating Officer (COO) organisation was created as a result of the Black Review of the Defence Accountability Framework. The organisation came into effect on 17 February 2012 and comprises Programs 1.8 Defence Executive Support, 1.9 Defence Support and Reform, 1.10 Chief Information Officer (CIO) and 1.11 Defence People.

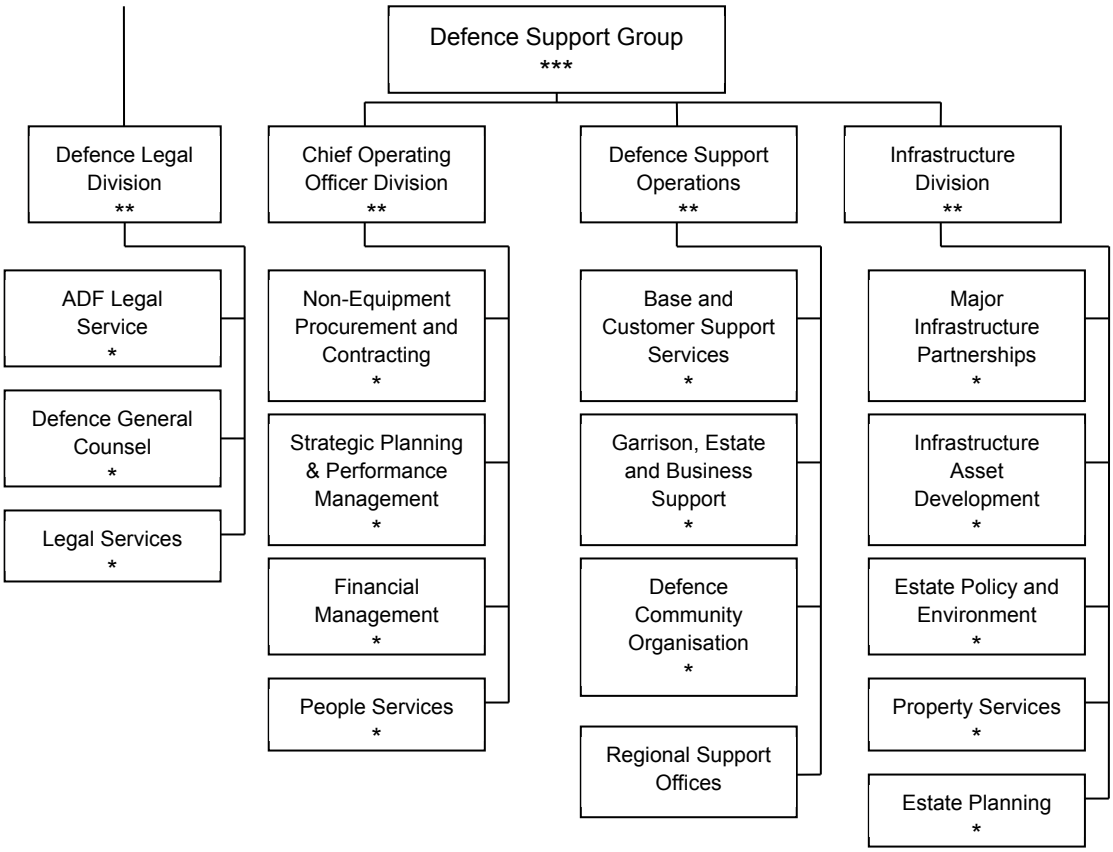
Program 1.8 – Defence Executive Support

Department outputs 2015-16: $119 million

Program 1.9 – Defence Support and Reform

Department outputs 2015-16: $3,956 million

The Defence Support Group provides a range of administrative, garrison, personnel and estate services to Defence. The Group is divided into three divisions. Infrastructure Division plans, builds and upgrades the Defence estate. Defence Support Operations Division provides on-the-ground services and support to Defence personnel throughout Australia including facilities maintenance and garrison support, including grounds maintenance, hospitality, training area management, base security, transport, air support and fire-fighting and rescue services. The Reform and Corporate Services Division is responsible for managing a range of whole-of-Defence shared services including payroll, simple procurement, accounts processing and debt management along with business management, strategic planning and policy support services to the Group.



Program 1.10 – Chief Information Officer

Department outputs 2015-16: $1,147 million

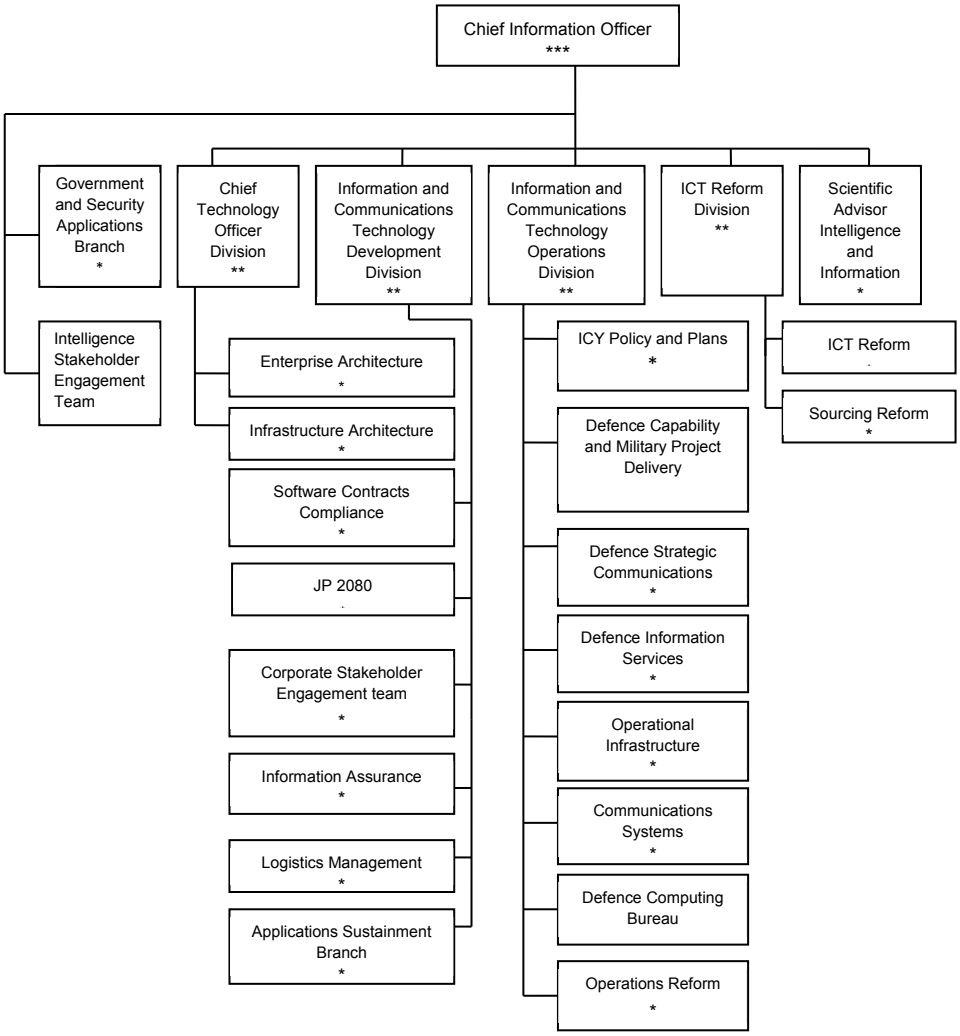
The Chief Information Officer Group is responsible for providing Information and Communications Technology (ICT) to Defence. The bulk of the Group resides in four divisions.

Chief Technology Officer Division develops and documents Defence's ICT architecture, identifies relevant systems and defines ICT standards for Defence.

Information and Communications Technology Development Division designs and develops Software Systems for the Defence information environment.

Information and Communications Technology Operations Division delivers and supports the Defence Information and Communication infrastructure.

Information and Communications Technology Reform Division delivers ICT reform and associated savings across the Defence Portfolio.

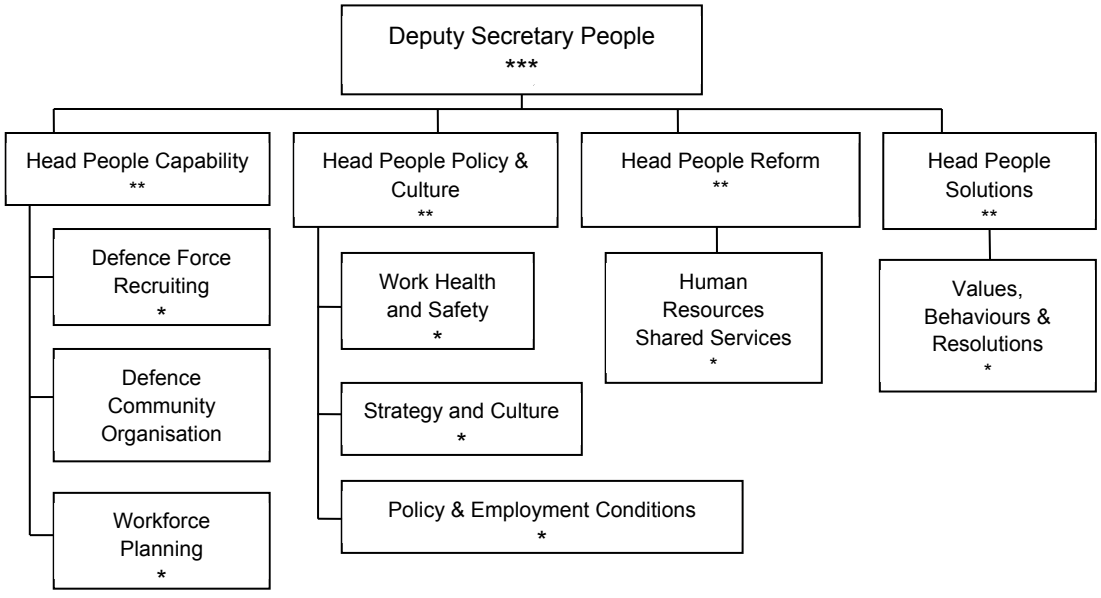


Program 1.11– Defence People

Department outputs 2015-16: $446 million

A new Defence People Group has been in operation since 2012-13 within the Chief Operating Officer Group structure to ensure the effective integration of People functions across the Defence organisation. The new structure is designed to better respond to key People priorities and service the needs of key stakeholders more effectively. The new Defence People Group brings together the former People Strategies & Policy Group and elements of the Defence Support Group, including the Defence Community Organisation, People Services Division, Defence People Solutions and the Directorate of Honours & Awards.

The Defence People Group's key role is the formulation of personnel policy for Defence's workforce. Key priorities for the Group include the provision of a compelling employment offer to assist in attraction and retention, the implementation of *Pathway to Change*— Defence's response to the culture reviews conducted during 2011-12—through the establishment of an Organisational Development Unit, continuation of the human resources reforms identified as part of Defence's strategic reform and the development of tools to enable better decision-making through a better understanding of the Defence workforce and the implications of changes to key drivers of workforce cost.

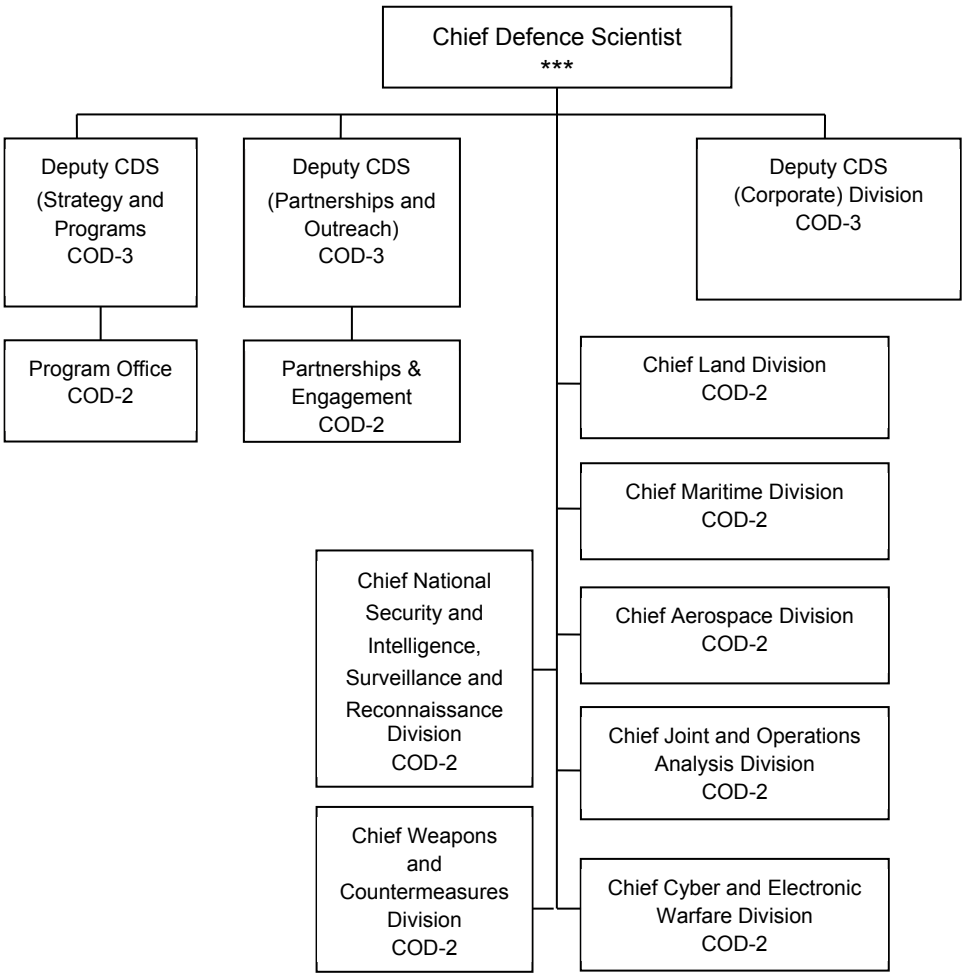


Program 1.12 – Defence Science & Technology

Department outputs 2015-16: $432 million

The Defence Science and Technology Organisation (DSTO) provides scientific advice and innovative technology solutions to the Government, Defence and Australia's national security agencies. This includes supporting operations, sustaining and enhancing current capability, supporting the development and acquisition of future capability and investigating client-focussed future proofing concepts, contexts and capabilities. DSTO also has whole-of-government responsibility for coordinating scientific and technical support to national security.

The organisation is led by the Chief Defence Scientist, who answers to the Secretary and is supported by three deputies. DSTO was restructured in July 2013 in accordance with its Strategic Plan 2013-18 and is reshaping its science and technology capabilities to meet future challenges. The headquarters and one research division are located in Canberra, while remaining research divisions are concentrated in Adelaide and Melbourne. Below the level of Chief of Division, branch level entities in DSTO are led by Research Leaders. Scientific Advisers from the Program Office are outposted to Navy, Army, Air Force, Vice Chief of the Defence Force, Joint Operations Command, Capability Development Group, Defence Materiel Organisation, Intelligence & Security Group and Chief Information Officer Group.



Program 1.13 – Capability Development

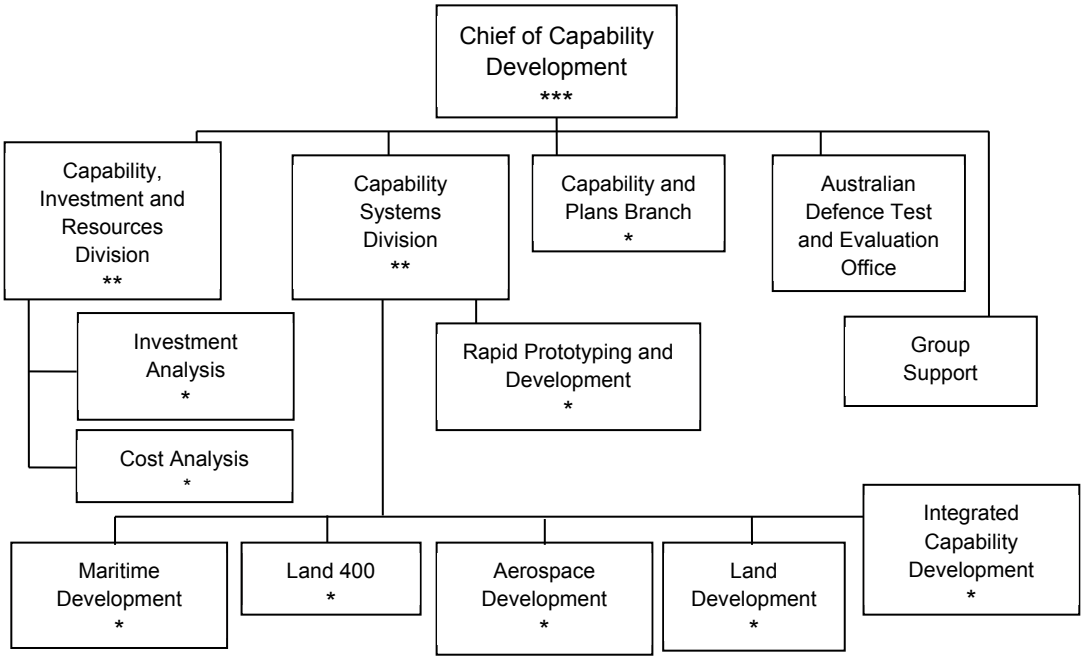
Department outputs 2015-16: $1,434 million

The Capability Development Group develops and manages the Defence Capability Plan (DCP) and prepares Defence capability investment approval proposals for Government consideration. Two divisions, Capability Systems and Capability Investment and Resources, constitute the core of the Group.

Capability Systems Division is largely staffed by military personnel and manages the development of future capability options for Government consideration. It is divided into four branches; three environmentally-based (land, sea and air), and one dealing with integrated capabilities that cross environmental lines. Another element is the Rapid Prototyping Development and Evaluation organisation, which works collaboratively with Australia's defence industry to develop innovative solutions to complex issues affecting capability and current operations.

Capability Investment and Resources Division is largely staffed by civilian personnel and provides independent analysis and contestability of capability proposals as their core function. The Division is responsible for management of the DCP, including conducting the regular review of the capital and Net Personnel and Operating Costs (NPOC) estimates of DCP projects and gaining Government approval for updates to the DCP. It is divided into two core branches; Investment Analysis and Cost Analysis.

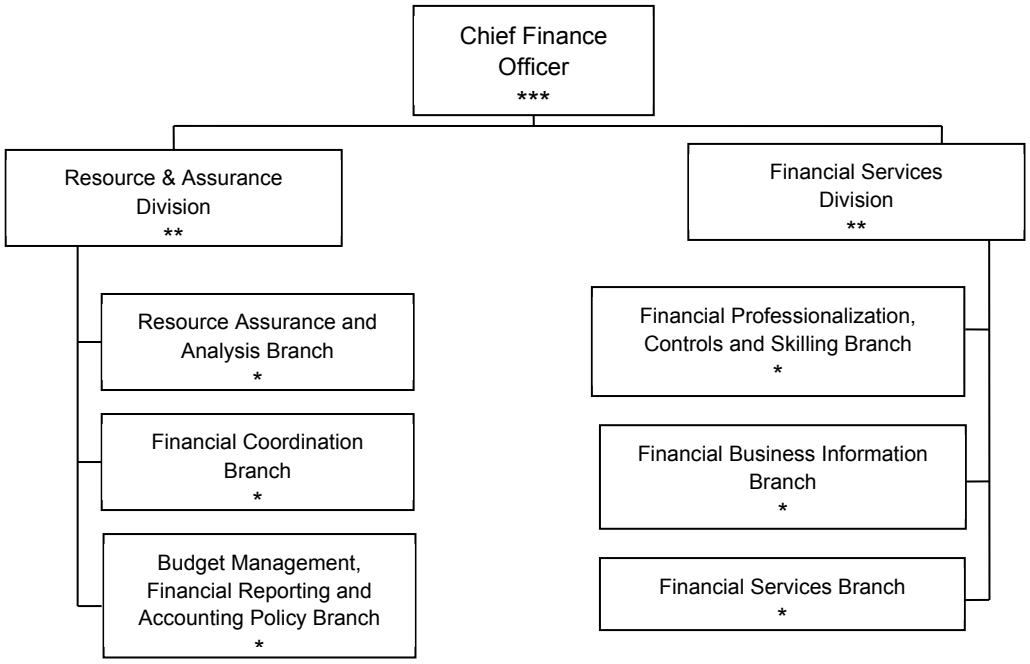
Four other elements within the Group are: the Capability and Plans Branch provides policy services on the capability process, portfolio management office functions and coordinates CDG links to industry and international partners.; the Australian Defence Test and Evaluation Office provides independent T&E support, trials and demonstrations to Defence throughout the capability systems life cycle; Group Support Branch provides a range of corporate services across the Group; and an embedded DSTO support cell that links CDG to DSTO services.



Program 1.14 – Chief Finance Officer

Department outputs 2015-16: $976 million

The Chief Finance Officer Group is responsible for Defence's financial planning, budgeting and reporting.



Program 2.1 – Ops in the immediate neighbourhood

Department outputs 2015-16: -

- Op *Gateway*: Indian Ocean and South China Sea maritime patrols (since 1981)
- Op *Solania*: Conduct South West Pacific maritime surveillance patrols (since 1988)
- Op *Render Safe*: Provide enduring explosive ordnance disposal support to the nations of the South West Pacific. (since 2011)
- Op *Saville*: Responses to foreign military activity in Australia's maritime approaches. (since 2014)
- Op *Pacific Assist*: ADF's contribution to the DFAT led Australian Government response providing disaster relief to Vanuatu in the wake of Cyclone Pam (since 2015).

Program 2.2 – Ops supporting wider interests

Department outputs 2015-16: $879 million

- Op *Paladin*: Contribute to the UN Truce Supervisory Mission in the Middle East (since 1956)
- Op *Mazurka*: Contribute to Multinational Force and Observers in the Sinai (since 1982)
- Op *Palate II*: Liaison Officer to UN Mission in Afghanistan (since 2005)
- Op *Aslan*: Contribute to the United Nations mission to the South Sudan (since 2011)
- Op *Manitou*: Contribute to international maritime security operations in the Middle East Area of Operations (since 2014)
- Op *Accordion*: Provide support to Operations SLIPPER and MANITOU from within the Gulf States. (since 2014)
- Op *Okra*: Operations in support of coalition response to the Iraq crisis. (since 2014)
- Op *Highroad*: Ongoing contribution to the NATO-led mission in Afghanistan. (since 2015).

Program 3.1 – National support tasks

Department outputs 2015-16: $49 million

- Op *Resolute*: Contribute to whole-of-government maritime enforcement effort (since 2006)
- Op *Southern Indian Ocean*: Search for Malaysian Airlines Flight MH370 (since 2014)
- Op *Hawick*: search and recovery effort for Malaysian Airlines Flight MH17 (since 2014).

Defence's contribution to national support tasks ranges from the ongoing routine allocation of Patrol Boat and AP-3C Maritime Patrol Aircraft time, to the allocation of specific capabilities at short notice in a national support emergency. National support tasks include security, ceremonial, civil maritime surveillance, search and rescue, bush fire response and support to the Army / ATSIC community assistance program.

2.7: Budgeted Financial Statements
[PBS Section 3: pp. 91 – 123]

The budgeted financial statements for Defence appear in Section 3 of the PBS. Once again consolidated financial statements for Defence and DMO have been included.

2.8: Defence Materiel Organisation PBS
[Defence Materiel Organisation PBS: pp. 143 – 222]

On 1 July 2005, DMO became a prescribed agency under the *Financial Management and Accountability Act 1997* and henceforth had its own independent part in the Defence portfolio PBS. On 1 July 2015, DMO will cease to exist and its functions will be reabsorbed into Defence within the Capability Acquisition and Sustainment Group (CASG).

Organisational structure

At the moment, DMO contains fourteen divisions (or similar), each headed by a band-2 SES civilian or 2-star military officer, as shown in Figure 2.8.1. Four deputy-secretary level General Managers oversee the clusters of divisions.

The divisions fall into three categories:

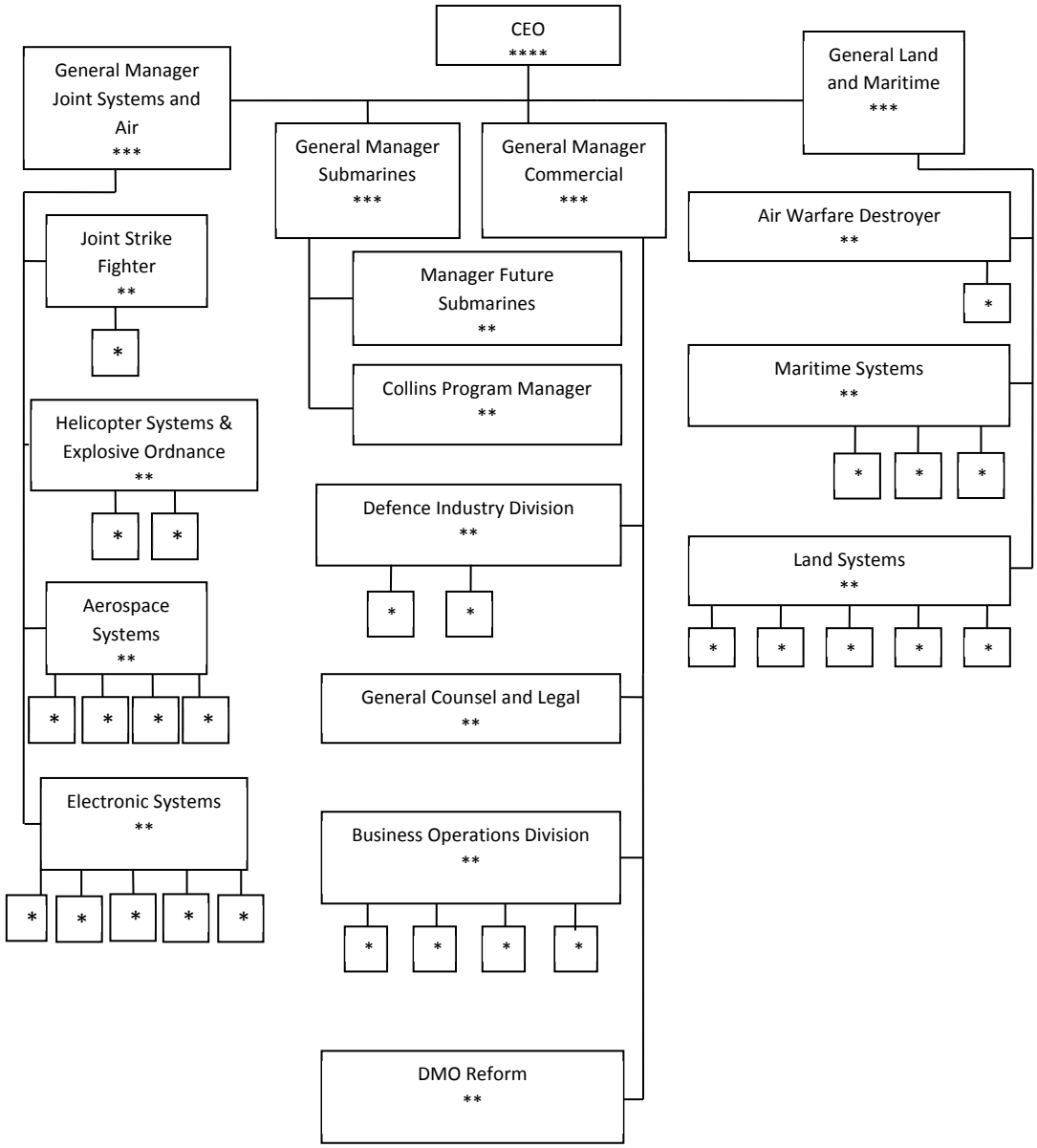
Systems divisions are set up on the traditional environmental domains of land, sea, and air, plus divisions dealing with helicopters and electronics. They manage and deliver the vast bulk of the 180 major equipment acquisition projects (and more than 70 minor acquisition projects) that DMO is responsible for, and take care of the materiel support of existing capabilities—some 110 major fleet groupings—across all domains.

Programs divisions acquire high profile capabilities of strategic significance. That is, if a project is big, important (and politically sensitive) enough it gets its own dedicated division. At the moment there are four such programs: Air Warfare Destroyer, Collins, New Air Combat Capability (Joint Strike Fighter) and Future Submarine project. There was an Australian Shipbuilding Industry Planning division but it no longer appears to be in operation.

Three *'Commercial'* divisions provide business support services and take care of specific areas. These are: Business Operations, Procurement, Contracting and Legal (Commercial) and Defence Industry. There is also a DMO Reform division.

Initially at least, CASG will organised on similar lines. That said, CASG will also absorb personnel and responsibilities from the to-be-disbanded Capability Development Group.

Figure 2.8.1: DMO organisational structure



Source: 2015-16 PBS

Resources for 2015-16

Because DMO will cease to exist on 1 July, it requires no resources. The $301 million dollars in its special account (representing unspent funds from prior years) will be transferred to Defence's 'appropriation carried forward' account.

Management of Capability Acquisition and Sustainment

The PBS (Table 83, page 150) lists the acquisition and sustainment expenses that the new Capability and Acquisition Group (CASG) will undertake on behalf of other Defence Groups, including the corresponding figures for 2014-15 undertaken by DMO, see Table 2.8.1.

Table 2.8.1: Expenditure on behalf of other Defence Groups

	2014-15	2015-16	2016-17	2017-18	2018-19
Acquisition					
Capital	5,689,729	6,246,331	5,551,692	6,699,344	9,008,773
Operating	408,928	672,653	628,274	654,746	829,648
Total	**6,098,657**	**6,918,984**	**6,179,966**	**7,354,090**	**9,838,421**
Sustainment					
Capital	1,029,091	995,055	1,032,693	1,003,358	1,001,277
Operating	4,437,082	4,745,621	4,738,877	5,091,591	5,540,977
Total	**5,466,173**	**5,740,676**	**5,771,570**	**6,094,949**	**6,542,254**
Total Expenses	**11,564,830**	**12,659,660**	**11,951,536**	**13,449,039**	**16,380,675**

Source: 2015-16 PBS

Each of the major acquisition projects undertaken by DMO/CASG has a Materiel Acquisition Agreement with Defence that specifies scope, schedule and budget. The PBS summarises the top 30 acquisition projects by expenditure in 2015-16 (see top 30 projects below). Agreements also exist to cover the minor acquisition projects. Similarly, sustainment activities are covered by Materiel Sustainment Agreements.

The 'Top Thirty' projects

The PBS lists the top 30 major capital investment projects by 2015–16 expenditure [PBS Table 87, page 158] and provides a description of each. We reproduce the top 30 projects in Table 2.8.2 below. The PBS also includes a listing of previously approved top 30 projects that is useful [Table 89, p. 171]. The estimated slippage in the gross program is 8%—the same as last year. Note that the reliance on a relatively small number of large projects makes the outcome sensitive to how each of these large projects performs.

Table 2.8.2: Top 30 Defence Major Capital Investment Projects (million $)

Project	Project Number	Approved Project Expenditure	Spend to 30 June 2015	2015-16 Budget Estimate
Aerospace Systems				
Growler Airborne Electronic Attack Capability	AIR 5349 Phase 3	3,569	1,189	890
Maritime Patrol and Response Aircraft System	AIR 7000 Phase 2	3,968	606	717
Heavy Airlift - Additional C-17A	AIR 8000 Phase 4	1,375	790	261
Battlefield Airlift - Caribou Replacement	AIR 8000 Phase 2	1,369	696	230
Lead-In Fighter Capability Assurance Program	AIR 5438 Phase 1A	270	116	68
Air to Air Refuelling Capability	AIR 5402	1,823	1,695	67
AEW&C Interoperability Compliance Upgrade	AIR 5077 Phase 5A	106	36	51
Electronic Systems				
Battlefield Command Systems	LAND 75 Phase 4	354	178	102
Wideband Transportable Land Terminals	JP 3008 Phase 5B1	197	24	81
Maritime Communication Modernisation	SEA 1442 Phase 4	442	44	71
Anzac Electronic Support System Improvements	SEA 1448 Phase 4A	278	69	69
Civil Military Air Traffic Management System (CMATS)	AIR 5431 Phase 3	731	25	63
C-130J Large Aircraft Infrared Countermeasures (LAIRCM)	AIR 5416 Phase 4B2	222	33	46
Deployable Defence Air Traffic Management and Control System (DDATMCS)	AIR 5431 Phase 2	191	29	41
Helicopter Systems				
Future Naval Aviation Combat System Helicopter	AIR 9000 Phase 8	3,419	1,469	546
Multi Role Helicopter	AIR 9000 Phase 2	3,748	2,698	212
Evolved Seasparrow Missile (ESSM) Upgrade	SEA 1352 Phase 1	374	58	97
Helicopter Aircrew Training System	AIR 9000 Phase 7	474	52	67
Medium Lift Helicopter	AIR 9000 Phase 5C	634	388	63
New Air Combat				
Joint Strike Fighter Aircraft	AIR 6000 Phase 2A/B	15,181	748	463
Air Warfare Destroyer				
Air Warfare Destroyer Build	SEA 4000 Phase 3	7,891	5,987	746
Land Systems				

Overlander - Medium Heavy Capability, Field Vehicles, Modules and Trailers	LAND 121 Phase 3B	3,388	149	205
Redfin - Phase 1B	JP 2097 Phase 1B	335	100	122
Field Vehicles and Trailers - Overlander Program	LAND 121 Phase 3A/5A	1,016	736	120
Mounted Combat Reconnaissance Capability	LAND 4000 Phase 2	117	1	73
Soldier Enhancement Version 2 - Survivability	LAND 125 Phase 3B	183	25	62
Bushmaster Protected Mobility Vehicles	LAND 116 Phase 3	1,251	985	49
Maritime Systems				
Amphibious Deployment and Sustainment	JP 2048 Phase 4A/B	3,091	2,725	146
Anzac Ship Anti-Ship Missile Defence	SEA 1448 Phase 2B	679	548	59
Future Submarine - Acquisition	SEA 1000 Phase 1A	297	132	87
TOTAL TOP 30 APPROVED PROJECTS		**56,972**	**22,332**	**5,873**
Other Approved Project Estimate		66,161	60,535	832
Total Program		123,133	82,867	6,705
Management Margin (8% slippage)				-548
Net from existing projects				6,158
Projects Planned for Government Approval				625
Total Funds Available				**6,782**

Source: 2015-16 PBS

The 'Top Thirty' sustainment products

The top 30 sustainment activities by forecast expenditure from Table 94 in the PBS are listed in Table 2.8.3, 2.8.4, 2.8.5 and 2.8.6 along with derived figures based on planned rates of effort. These include per-platform and per-flying-hour costs.

Table 2.8.3: Top 30 sustainment products – aerospace and helicopters

	Number	Cost ($m)	Hours flown	Annual cost per platform ($ million)	Cost per flying hour ($ '000)
F/A-18 Hornet	71	243	12,000	3.32	20.25
AEW&C	6	214	3,600	35.67	59.44
Super Hornet	24	180	5,200	7.50	34.62
Multi Role Helicopter - MRH90	47	161	7,100	3.43	22.68
C-130J	12	125	7,350	10.42	17.01
AP-3C Orion	18	120	6,770	6.67	17.73
ARH Tiger	22	119	5,846	5.41	20.36
Seahawk MH-60R	13	97	3,400	7.46	28.53
Hawk LIF 127	33	89	7,000	2.70	12.71
C-17	6	79	6,200	13.17	12.74
KC-30A MRTT	5	67	3,100	13.40	21.61
PC-9/A trainers	62	51	16,352	0.82	3.12
Seahawk S-70B-2	16	52	2,250	3.25	23.11
Special Purpose Aircraft*	-	50	4,003	n/a	n/a

*Source 2015-16 PBS *mixed fleet of BBJ and CL604*

Table 2.8.4: Top 30 sustainment products – maritime

	Number	2007-08 ($m)	2008-09 ($m)	2009-10 ($m)	2010-11 ($m)	2011-12 ($m)	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)
Collins submarines	6	322	324	325	416	479	507	590	560	521
Anzac frigate	8	219	301	206	151	189	227	263	294	343
FFG frigate	4	103	115	113	111	127	126	110	134	138
LHD									69	92
Mine Hunter Coastal	6	61	61				60	75	67	53
Armidale PB	14							39		
Auxiliary Oiler	1						68		45	75

Source: DAR, 2014-15 PAES, 2015-16 PBS

Table 2.8.5: Recent budgeted sustainment costs per unit – aerospace and helicopters

	Cost per aircraft ($ million)								
	07-08	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**	**13-14**	**14-15**	**15-16**
Super Hornet	-	-	0.67	2.58	4.58	4.63	5.13	6.75	7.50
AP-3C Orion	6.37	6.90	6.16	6.32	5.84	5.53	6.11	6.94	6.67
F/A-18 Hornet	1.68	1.61	1.70	1.75	2.63	2.15	2.23	2.23	3.42
Hawk LIF 127	2.88	2.70	2.64	2.70	2.70	2.21	2.36	2.76	2.70
C-130J	5.42	9.42	9.25	6.17	6.50	6.75	7.92	8.17	10.42
C-130 H	-	6.25	-	4.50	4.75	-	-	-	
C-17	13.75	9.75	10.75	-	14.25	-	-	10.17	13.17
MRH-90	-	47.50	4.27	5.20	6.93	2.09	2.63	3.34	3.43
Seahawk-R								4.77	7.46
Seahawk	4.94	-	4.94	4.56	3.94	3.88	4.06	3.50	3.25
Black Hawk	1.97	2.15	3.03	2.91	2.82	2.53	2.53	2.09	
ARM Tiger	-	-	3.77	3.91	4.36	4.36	4.73	5.18	5.41
AEW&C	-	-	-	23.5	28.5	26.83	27.17	27.17	35.67
	Cost per flying hour ($ '000)								
	07-08	**08-09**	**09-10**	**10-11**	**11-12**	**12-13**	**13-14**	**14-15**	**15-16**
Super Hornet			39.3	29.5	22.9	23.13	25.63	32.08	34.62
AP-3C Orion	16.1	16.4	15.2	15.2	14.1	13.29	13.92	15.82	17.73
F/A-18 Hornet	10.5	10.2	10.1	9.5	14.4	11.77	12.15	12.15	20.25
Hawk LIF 127	15.2	13.6	13.5	11.1	11.9	9.73	10.40	12.13	12.71
C-130J	14.1	15.7	16.2	10.1	10.6	11.02	12.93	13.33	17.01
C-130 H	-	22.2	-	16.9	17.8	-	-	-	
C-17	26.2	11.6	12.7	-	12.7	-	-	11.73	12.74
MRH-90	-	780.1	146.8	52.0	34.7	31.79	30.25	29.07	22.68
Seahawk	31.1		23.2	20.3	15.0	14.76	15.48	13.33	23.11
Seahawk-R								25.83	28.53
Black Hawk	10.6	10.2	12.7	11.5	11.9	11.47	13.87	13.95	
ARM Tiger	-	-	46.2	20.7	14.5	13.43	30.95	24.12	20.36
AEW&C	-	-	-	70.5	65.8	57.50	45.28	45.28	59.44

Source: PBS

The above figures need to be treated with caution. Various fleets enjoy different amounts of contracted support (the cost of which is included) and manpower support from Defence's own workforce (which is not included). More generally, there are usually other costs (like fuel) that are not included separately for each platform. Also, one-off costs can heavily influence the results, including when platforms are first being brought into service. It will be some years before useful trends emerge.

Table 2.8.6: Top 30 sustainment products – miscellaneous

	2007-08 ($m)	2008-09 ($m)	2009-10 ($m)	2010-11 ($m)	2011-12 ($m)	2012-13 ($m)	2013-14 ($m)	2014-15 ($m)	2015-16 ($m)
ADF Clothing and Equipment	117	89	84	70		37	51	51	79
ADO Commercial Fleet	73	75	59		54		55	69	68
B Vehicles	117	127	115	83	84	66	66	66	61
Explosive ordnance	357	360	324	251	291	296	241	313	304
Wide Area Surveillance	77	79	76	88	87	84	94	101	101
Battlespace Communications	32	51					26	20	55
Tactical Electronic Warfare								52	51
Fuels and Lubricants	422	419	318	378	419	388	520	524	
Guided Munitions							125	101	201
Protected Mobility Fleet				22					
Command and Intelligence							76	66	
Air Traffic Control							43		
Health Systems							44		
Naval Communications							39		

Source: DAR, 2013-14 PAES, 2015-16 PBS

Chapter 3 – Defence Funding

This chapter deals with defence funding in four parts: (1) a brief survey of Australian defence funding from the mid-1980s through to 2009; (2) an analysis of defence funding from 2009 until 2013; (3) an examination of the Abbott government's 2014 and 2015 defence budgets; (4) a survey of the risks and challenges facing the government's commitment to spend 2% of GDP on defence by the end of the decade commencing 2013-14.

For ease of reference, we'll refer to the 2000, 2009 and 2013 Defence White Papers as *Defence 2000, Defence 2009* and *Defence 2013* respectively. Readers interested in a more detailed historical survey should consult the obituary for *Defence 2000* in Chapter 3 of the 2009-10 ASPI Budget Brief.

Defence funding from the 1980s to 2009

The late 1980s and 1990s were lean years for Defence. Apart from fluctuations due to foreign exchange movements and operational supplementation, defence spending was kept more-or-less constant in real terms across the period. In fact, the Defence budget was higher in 1985-86 ($14.5 billion) than it was eleven years later in 1996-97 ($13.7 billion), as measured in real 2008-09 dollars.

Because the cost of maintaining military capability exceeds inflation by 2–3%, the Defence budget came under growing pressure as the years went by. To try to close the gap between means and ends, successive governments pursued 'efficiency' programs of one sort or another through the 1990s (see Chapter 4 of the 2009-10 ASPI Budget Brief for further details).

Nonetheless, by the end of the decade Defence was in a sad state: the permanent force had shrunk by more than 20,000 positions compared with the mid-1980s; a 'train wreck' of block obsolescence was looming with no money in sight for modernisation; the preparedness of the force was poor with many 'fitted-for-but-not-with' platforms and others badly in need of upgrade; and logistics was hollow and underfunded. It was against this background that the then government decided in 1999 to develop a White Paper with the aim of putting Defence planning and funding on a sustainable footing.

The tumultuous events in East Timor in 1999 delayed the White Paper until the end of 2000. But it was perhaps a delay worth having. East Timor was the largest Australian operation since Vietnam and it stretched parts of the defence force severely. In the process, serious shortcomings in equipment, logistics and preparedness were exposed. It's unlikely that the government would have been as generous in 2000 without the experience of the East Timor operation.

The 2000 White Paper

The only Defence White Paper produced by the Howard government, *Defence 2000* sought to achieve a coherent package of strategy, capability and funding for Australia's defence for the decade 2001-02 to 2010-11. On the capability side, a *Defence Capability Plan* (DCP) was published that detailed 165 separate phases of 88 capability proposals planned for the forthcoming decade, valued at around $50 billion.

The entire package, including new and pre-existing capability, was funded through a decade-long funding envelope that roughly equated to 3% average annual real growth. Although earlier White Papers had suggested near-term funding levels, never before had a decade-long funding commitment been made—let alone one with a talisman-like goal of '3% real growth'.

Defence 2000 provided more than $30 billion spread across four categories, including: $21 billion for the purchase of major capital equipment; $3.2 billion to cover the through-life support costs of new capabilities planned to enter service as a result of the DCP; $5 billion to cover an expected annual 2% growth (above inflation) in personnel costs and $1 billion to augment the operating cost baseline in the Defence budget. In addition, Defence was allowed to retain around $450 million of unspent operational supplementation from East Timor within its annual funding base.

The 3% funding commitment was extended out to 2017-18 in the 2006 and 2008 budgets. Before turning to these and other funding measures from the last decade, it's worth pausing to look back at *Defence 2000* and ask how far Defence has got in delivering the goals set for it.

At the risk of oversimplification, *Defence 2000* sought to achieve four things: (1) modernise the ADF by replacing or upgrading ageing assets and introducing new capabilities in select areas; (2) improve the preparedness of the ADF so that it was made up of 'fully developed capability' rather than hollow units and fitted-for-but-not-with platforms; (3) boost the capability of the ADF to undertake expeditionary operations in the immediate region; and (4) sustainably align Defence plans and funding.

Of the four goals, the modernisation of the ADF was the least successful. Persistent and widespread delays in the approval and execution of defence acquisitions delayed the delivery of many capabilities, with delays of 4-5 years not uncommon. In part, this reflected a systematic underestimation of costs that ensured there was never going to be enough money to deliver all that was planned—which caused unapproved projects to be shifted to the right. Further delays arose due to insufficient industry capacity, tardy approval of new acquisitions and all too frequent technical problems with equipment under development. In fact, the combination of delayed approvals and delayed projects saw Defence unable to spend all the money it had been given to buy new equipment. Over the period covered by *Defence 2000*, we estimate at least $4.4 billion of planned investment was deferred. The actual figures are probably higher but we can't be sure because the full extent of the deferrals wasn't disclosed in the 2009-10 Budget.

One area where Defence succeeded was improving the preparedness of the defence force. While problems remained in some areas such as the submarine and amphibious forces, the trend over the 2000s and beyond was favourable. The ADF is now more ready and able to mount and sustain deployments—as evidenced by its operational tempo. Moreover, the capacity of the ADF to conduct expeditionary operations in our immediate region is better now than at any time since the Vietnam conflict. Or at least it will be once the Navy's new amphibious lift capacity is fully in service. The unexpected collapse of the amphibious fleet in 2011 showed that the management and internal reporting of preparedness remained poor

at least until that point. Of course, we don't know what we don't know; there may be problems lurking in areas that haven't been tested of late.

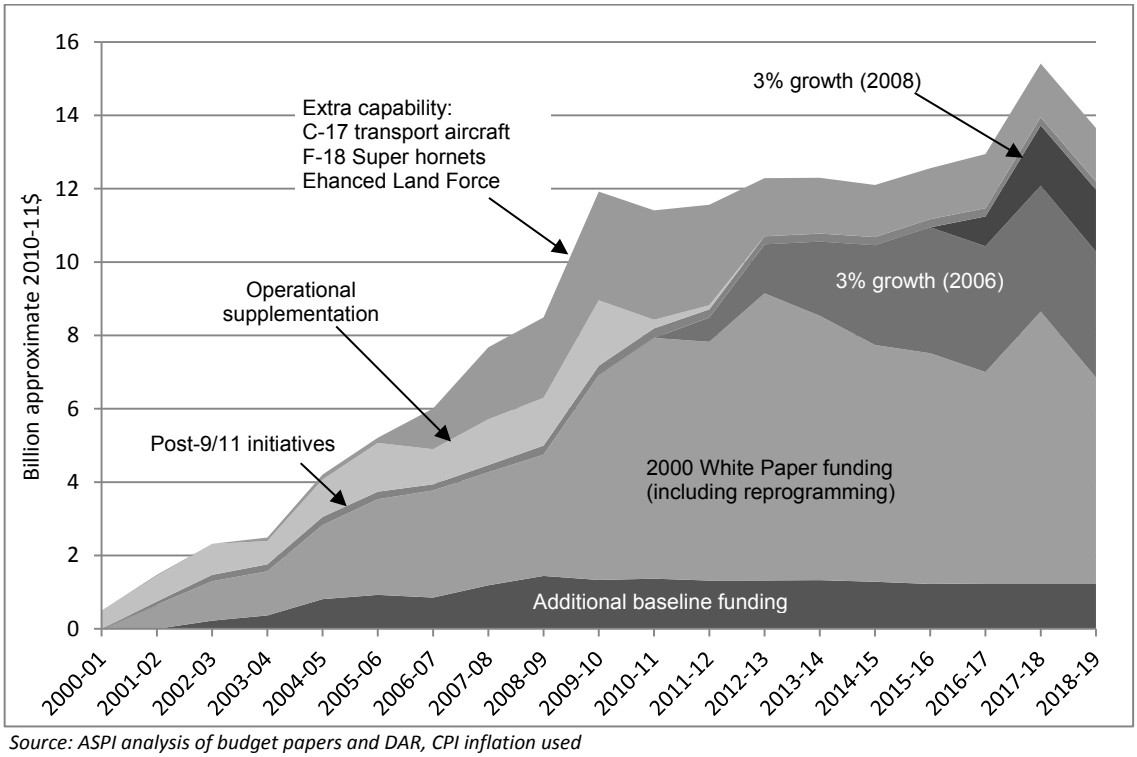
As for putting Defence finances on a sustainable footing, it wasn't long before Defence was struggling to deliver the outcomes sought by *Defence 2000* within the funding provided. In 2003, an internal Defence Capability Review recommended cuts to the force structure to contain costs, including the decommissioning of two FFG frigates, the early retirement of the F-111 fleet and the laying up of two mine-hunting vessels. But these cuts failed to bring the books into balance and from 2005 onwards additional funds (amounting ultimately to around a $1 billion a year) were made available to Defence to manage the baseline cost of personnel, estate and logistics. At the same time, savings measures of $200 million a year were imposed on Defence to redirect money towards combat capability.

Boom times: 2002-2008

Bridging the gap between the means and ends of *Defence 2000* was only the start of the government's generosity to Defence. From around 2006, the Howard government provided additional money for a range of new capability initiatives, including four C-17 transport aircraft ($3.2 billion), 24 F/A-18F Super Hornet strike fighters ($6 billion), and the Enhanced Land Force initiative, which included adding two infantry battalions to the Army at a cost of $10 billion over a decade. This additional funding came on top of that provided for new and expanded capabilities in the aftermath of 9/11 and the deployments that followed.

Because official budget figures are invariably given in 'out-turn' format that anticipates future inflation and foreign exchange rates, it's difficult to give a definitive figure for the value of additional funds provided post-2000. The best we can do is to capture the scale of funding using the historical values that appeared in the budget papers at the time, converted to 2010-11 dollars. The result appears in Figure 3.1.

Figure 3.1: Additional funding 2000 to 2008



Source: ASPI analysis of budget papers and DAR, CPI inflation used

Despite all the money flowing into Defence, it remained unclear whether adequate funds were available pre-*Defence 2009* to deliver the capabilities sought at that time. On one hand, it looked like not enough money had been set aside to crew and operate the raft of new capabilities under development—hence the $10 billion savings program announced in early 2008. On the other hand, Defence was unable to spend the money it had for both investment and recurrent spending. So much so, that it was directed to absorb $1.1 billion of measures in 2008-09 following an abnormally large windfall from price supplementation (and the embarrassing hand back of $830 million of unspent funds from 2007-08). This was the confusing state of Defence funding prior to the release of *Defence 2009.*

From *Defence 2009* to *Defence 2013*

On 3 May 2009, the then Prime Minister released the long-awaited 2009 Defence White Paper. Entitled *Defending Australia in the Asia Pacific Century: Force 2030,* the 138-page document included one and half pages—585 words to be precise—on how the government planned to fund Defence over the next 21 years. The plan had two parts.

First, a funding model with the following elements:

- 3% real growth in the Defence budget to 2017-18
- 2.2% real growth in the Defence budget from 2018-19 to 2030
- 2.5% fixed indexation to the Defence budget from 2009-10 to 2030
- Defence to reinvest savings from its [$20 billion, decade-long] Strategic Reform Program back into priority Defence capabilities as agreed by the Government
- shortfalls against the White Paper funding plan will be offset by Defence.

Second, 'Defence [will] undertake a substantial program of reform, efficiencies and savings to underpin the achievement of White Paper objectives... [and] correct long-term hollowness and remediate the enabling functions of the Australian Defence Force'. This is, of course, the aforementioned $20 billion Strategic Reform Program.

Further detail was provided eight days later in the 2009-10 Budget. And, while the wording of the funding commitment in *Defence 2009* was retained, the government stopped short of handing over the money. Instead, a substantial wedge of promised funding was deferred into the future. As best we can work out (the 2009-10 budget was less clear than it could've been) the net result was an $8.8 billion reduction in funding across the forthcoming decade. In addition, Defence was directed to 'absorb' additional new budget measures amounting to $585 million over four years and $1.7 billion over the decade in the 2009-10 Budget.

The initial deferral of funds in 2009 was only the start of the steady erosion of the money available to Defence to deliver *Force 2030*. Table 3.1 collects together the key measures. Each of the categories has a different impact on the availability of funds.

The $10.6 billion of **deferrals** didn't necessarily represent lost money, but rather money that was shifted (reprogrammed) to mostly unknown points in time in the second half of the 2010s or beyond.

Table 3.1: Key budget actions impacting the Defence budget 2009-2012

Year	Initiative	Cost
Deferrals		
2009 Budget	Deferral of funding to beyond 2015-16	$8,810 million
2010 Budget	Deferral of investment funding to beyond 2015-16	$521 million
2011 Budget	Deferral of investment funding to beyond 2014-15	$1,281 million
	Total	**$10,612 million**
Savings		
2011 Budget	Increased efficiencies and savings (over 10 years)	$3,837 million
2011 mid-year	Efficiency dividend (over 10 years)	$670 million
2012 Budget	Expenditure reduction measures (over 10 years)	$5,455 million
	Total	**$9,962 million**
Absorbed costs		
2009 Budget	Costs absorbed 2009-10 to 2018-19	$1,680 million
2010 Budget	Cost of force protection ($912 m) – Cost of existing projects ($402 m)*	$510 million
2012 Budget	Cost of Moorebank-Holsworthy relocation	$332 million
	Total	**$2,522 million**
Hand backs		
2009-10**	$131 million unspecified	$131 million
2010-11	$1.1 billion in capital investment	$1,100 million
2010-11	$400 million in recurrent expenses	$400 million
	Total	**$1,631 million**

*Source: DAR and PBS. *Senate question on notice #140, September 2010. **SLC Hansard 30 May 2011.*

The $10 billion dollars of **savings** represented cuts to defence funding for which there was no suggestion of the money ever being returned at some point in the future. Around $4.5 billion of the savings were supposedly the result of efficiencies, the remainder were outright cuts. Defence has no one to blame but itself for most of the former, having handed back money in 2010-11 and advised the government of additional savings available from shared services reform (an area that subsequently had to be supplemented with additional funds in the 2012-13 budget).

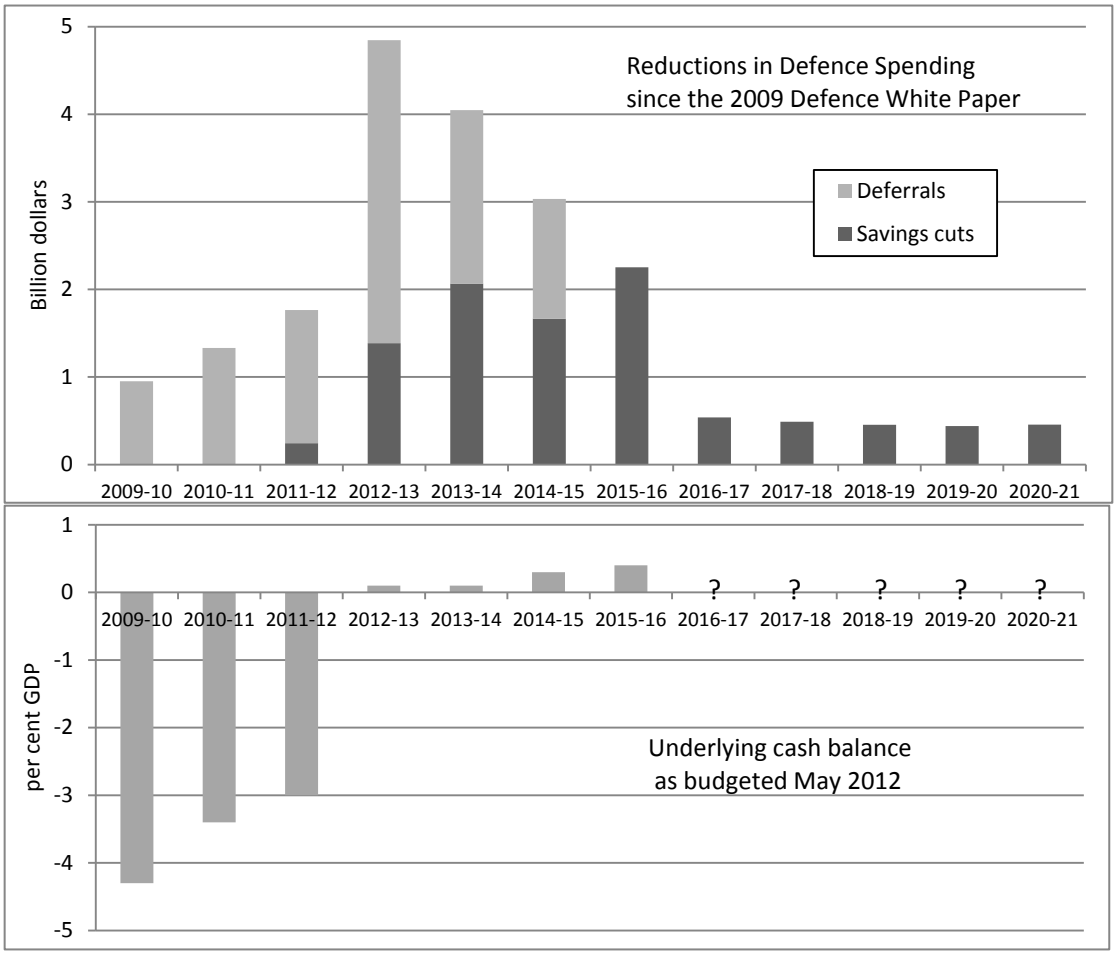
Absorbed costs are an additional impost put on Defence to deliver something extra without additional funding. The figure we've used is actually only a subset of the measures that have technically been absorbed for reasons explained in Chapter 3 of last year's Brief. Similarly, the hand back of money in 2010-11 is complicated by the inter-year shift we also explained last year.

In summary, over the life of the 2009 Defence White paper (May 2009 to April 2013) Defence handed back $1.6 billion, of which it was unable to spend $780 million. $10.6 billion of planned investment was deferred and $10 billion of promised funding was returned to Treasury, including from areas that were supposed to be delivering efficiencies but which subsequently encountered cost pressures exacerbated by the need to absorb $2.5 billion worth of unfunded measures.

Setting aside the hand backs, Defence's financial bottom line was impacted by two categories of government decision; deferrals and savings cuts. The aggregate effect of these

measures is plotted in Figure 3.2 atop the underlying cash balance for the Commonwealth as estimated at the time of the 2012-13 Budget. Note that if Defence spending had been held at the levels promised in *Defence 2009*, in May 2012 the Commonwealth would have been projected to remain in deficit for two additional years until 2014-15.

Figure 3.2: Reduced Defence funding and the underlying cash balance



Source: DAR, PBS and the 2012-13 Budget Overview.

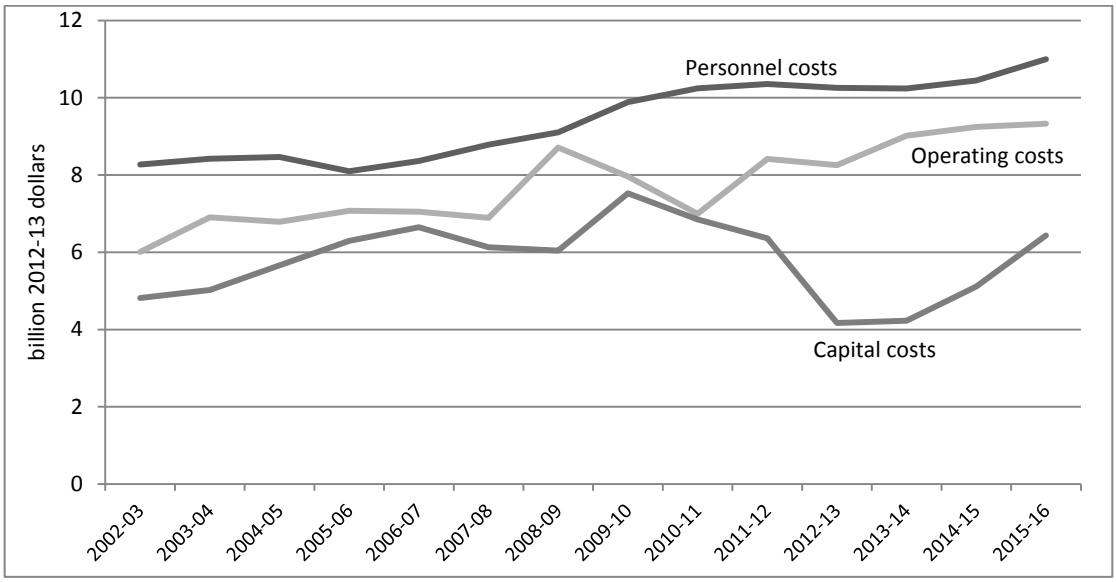
The clear correlation between reduced defence expenditure and the return to surplus isn't a surprise. Back in 2007-08, the ASPI Budget Brief (p. 135) included a precautionary risk analysis of factors that could impede the progress of *Defence 2000*, including the risk posed by a recession. The conclusion at that time, based upon the experience of the recessions in the early 1980s and 1990s, was that the threat to defence funding occurred not at the outset of an economic downturn, but around the time when the government was striving to return to surplus. Events between 2009 and 2012 confirmed that analysis.

Figure 3.3 is our best attempt to isolate the underlying real trends in personnel costs, capital investment and operating costs resulting from the cuts and deferrals in the preceding three years at the time of the 2012-13 budget. (Supplementation for deployments has been accounted for via a methodology explained in Chapter 3 of last year's budget brief.) As is apparent, and as might be expected, capital investment bore the brunt of the cuts.

It's a matter of opinion whether the potential political gains of delivering a surplus in 2012-13 justified the cuts to defence funding. As it happened, the effort was for naught and the

Commonwealth fell into deficit by $19.5 billion that year due to a collapse in revenues resulting from deterioration in the terms of trade.

Figure 3.3: Underlying trends in defence costs circa May 2012



Source: ASPI analysis of 2012-13 PBS and earlier Annual Reports.

On 3 May 2013, the Prime Minister and Defence Minister released the 2013 Defence White Paper—four years to the day after its predecessor and one year earlier than planned. Entitled simply *Defence White Paper 2013,* the 132-page document includes one and a half pages—675 words to be precise—on how the government plans to fund Defence. Although it devoted 90 more words to the topic than its predecessor, it actually managed to say somewhat less. Key points include:

- The government 'remains committed to maintaining an ADF workforce of approximately 59,000 permanent members'.

- In addition to the annually updated four-year Forward Estimates funding model there'll also be a 'subsequent six-year general guidance [i.e. a single aggregate figure] for Defence planning purposes'. The 2013-14 PBS gave that figure as $220 billion.

- The 'Government is committed to increasing Defence funding towards a target of 2 per cent of GDP. This is a long-term objective that will be implemented in an economically responsible manner as and when fiscal circumstances allow'.

More importantly, by May 2013 the prospects of achieving a surplus were long gone and the way was open for the government to alleviate Defence's budget dilemma by providing additional funding. And it did. As best we could estimate using the fragmentary information available in May 2013, around $3 billion was brought forward from the then fourth year of the Forward Estimates and the years beyond, and around $10.7 billion of funding was cut from those same years. So while short-term pressures were partially addressed, the longer-term picture was made even less favourable. (The estimate of $10.7 billion being removed is based on the inadvertent disclosure of long-term funding in the *2010 Intergenerational Report*.)

Critically, the $10.7 billion taken away in 2013 was *in addition* to the roughly $10 billion taken away (as opposed to deferred) in 2011 and 2012. Moreover, it doesn't capture any funds deferred to beyond 2022 or the erosion of buying power due to absorbed costs. All up, this puts a lower limit of around $21 billion for the accumulated shortfall relative to 2009 promises.

Larger estimates of the shortfall between the promises of *Defence 2009* and funding in *Defence 2013* are possible (see last year's Budget Brief), but the details are not worth repeating again. When looking at the shortfall in funding—be it $20 or $30 billion—it's important to remember that the capability goals of *Defence 2009* largely survived through into the 2013 document, with some substantial new acquisitions added as well. With capability targets static and funding at least $2 billion a year less, the result was a yawning gap between means and ends.

It was hardly surprising therefore, that budget pressures emerged early. And in one of its last acts prior to the 2013 election, the outgoing Gillard government was forced to bring forward $750 billion from 2016-17 into the period 2013-14 to 2015-16 to address near-term funding shortfalls (see 2013-14 PAES).

Defence funding and the 2014-15 and 2015-16 budgets

Near-term budget pressures continued to emerge during 2013-14 and the incoming Abbott government used the Supplementary Estimates process in early 2014 to bring forward an additional $1.5 billion into the period 2013-14 to 2015-16. The funds came from $2 billion removed from 2017-18, with the remaining $520 million pushed back into 2019-20 and 2020-21. In doing so, immediate funding pressures were alleviated—especially in the capital investment program—and an impractical hump in funding for 2017-18 was removed. The shifting of funding into the 2020s was entirely notional, if the government wants to hit its 2% of GDP target in 2023-24 a lot more money is going to be needed around that time than is presently programmed with or without the deferred funds.

Deterioration in the value of the Australian dollar from its highs in 2011 and 2012 led to still further funding being provided in the near-term and beyond. The cumulative impact of the various funding shifts and forex adjustments is summarised in Table 3.2 below, excluding supplementation for operations. The only other major shifts over the period were $192 million to reinstate the ADF Gap-Year program, offset by savings of $231 million from changes to military superannuation (each over four years) in the 2014-15 budget. The May 2013 Budget has been chosen as the baseline because it corresponds to the funding situation immediately following *Defence 2013*. Consequently, Table 3.2 captures the changes to defence funding between *Defence 2013* and *Defence 2015* (assuming that the White Paper is delivered later this year as promised) exclusive of operational supplementation.

Although news that defence spending will reach 1.93% of GDP in 2015-16 elicited favourable commentary in the media, care is needed in intepreting the result. Table 3.3 lists the various factors contributing to the GDP share for 2014-15 to 2016-17 (later dates do not allow all post-2013 changes to be included). Note that in the absence of operational deployments and depreciation of the Australian dollar, the GDP share would have been significantly smaller than it is today; 1.79% verses 1.93%.

Compared with what was expected back in May 2013, the GDP share figures have been further boosted by slower than expected nominal economic growth. Table 3.4 shows what the defence share of GDP would have been had the May 2013 expectations for economic growth eventuated. Once again, the differences are significant.

Table 3.2: Key funding changes since the May 2013 budget

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Forex adjustment (2013-14 PAES)	382	428	481	528	-	-
Funding brought forward (2013-14 PAES)	359	304	-89	-1,000	-	-
Change of government						
Forex adjustment (2014-15 PBS)	91	224	126	117	163	-
Funding brought forward (2014-15 PBS)	500	300	550	1,500	-2,020	-
Forex adjustment (2014-15 PAES)	-	6	74	24	-30	-
Forex adjustment (2015-16 PBS)	-	320	732	681	689	697
Total	1,332	1,582	1,874	1,850	-1,198	697

Source: PAES & PBS

Table 3.3: Less than meets the eye—contributions to funding and GDP share post 2013

	2014-15		2015-16		2016-17	
	$ m	% GDP	$ m	% GDP	$ m	% GDP
Headline funding as at May 2015	30,039	1.87	32,090	1.93	31,066	1.78
Operational supplementation	870	0.05	911	0.05	142	0.01
Foreign exchange post May 2013	978	0.06	1,413	0.09	1,350	0.08
Baseline funding as at May 2015	28,191	1.76	29,766	1.79	29,574	1.69

Source: PAES, PBS and Treasury Budget Papers

Table 3.4: Even less than meets the eye—the impact of slower than anticipated growth

	2014-15		2015-16		2016-17	
	% GDP 2015 GDP estimate	% GDP 2013 GDP estimate	% GDP 2015 GDP estimate	% GDP 2013 GDP estimate	% GDP 2015 GDP estimate	% GDP 2013 GDP estimate
Headline funding as at May 2015	1.87	1.79	1.93	1.82	1.78	1.67
Baseline funding as at May 2015	1.76	1.68	1.79	1.68	1.69	1.59

Source: PAES, PBS and Treasury Budget Papers

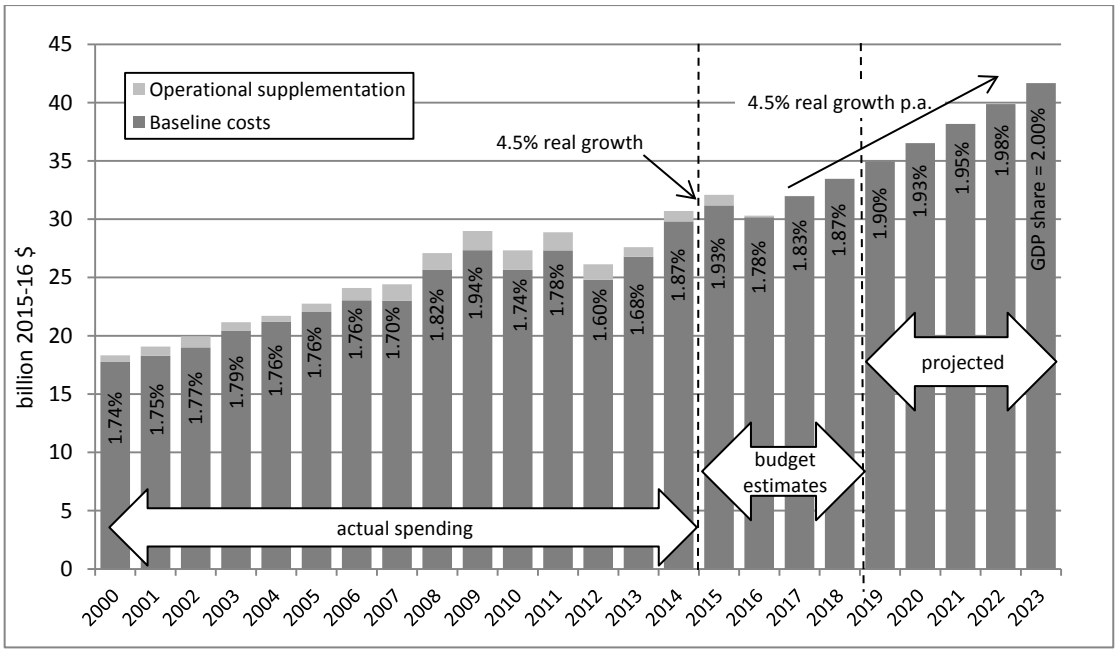
As the calcualtions here show, GDP share is both a poor measure of defence spending and an even poorer basis upon which to plan defence spending. If nothing else, this exercise

demonstrates that if GDP share becomes the determinant of Australia's defence spending, the ADF will carry the risk of fluctuations in both foreign exchange and nominal GDP growth. We return to this issue later in this chapter.

Achieving 2% of GDP by 2023-24

With a White Paper in preparation and the fiscal situation in flux, it's understandable that the government has not disclosed its plans for defence funding beyond the Forward Estimates. But if we assume, not unreasonably, that defence spending will rise steadily beyond the last year of the Forward Estimates (2018-19) to reach 2% of GDP in 2023-24, we can project defence funding a decade out. This is done in Figure 3.4 where we have assumed that GDP grows at the annual rates assumed in the National Commission of Audit's 2014 calculations beyond 2018-19. Note the seven-year period of 4.5% annual real growth commencing 2017-18 needed to reach the target. In theory, it is possible to delay the increase until later in the decade, but only by creating an unrealistic 'ski jump' in defence funding in the final few years. Last year, the required growth rate was 5.3% but slower-than-expected growth and foreign exchange supplmentation closed the gap.

Figure 3.4: Defence funding projected to 2023-24



Source: DAR, 2014-15 PAES, 2015-16 PBS

Also noteworthy is the plateau in defence spending that's been created from 2014-15 to 2016-17 by bringing money forward from latter years. Of course, it's entirely open to the government to commence growth towards its 2% of GDP target earlier; the earlier growth begins the less rapidly it has to occur.

Trends within the Defence budget

An informative way to view the Defence budget is to break it down into personnel, capital and operating costs, with the latter defined as the residual after the other two are subtracted from the total. Table 3.5 shows the nominal and real (relative to CPI) growth in the three components for 2015-16 to 2018-19. All growth rates are compounding.

Table 3.5: Trends within the Defence budget

Nominal $ (billion)					
	2015-16	2016-17	2017-18	2018-19	Annual growth rate
Personnel	11.66	11.32	11.40	11.60	-0.18%
Capital	9.65	9.47	10.95	12.67	9.52%
Operating	10.78	10.28	11.27	11.75	2.93%
Total	32.09	31.07	33.62	36.03	3.94%
Real 2015-16 $ (billion)					
	2015-16	2016-17	2017-18	2018-19	Annual growth rate
Personnel	11.66	11.04	10.85	10.77	-2.61%
Capital	9.65	9.24	10.42	11.77	6.85%
Operating	10.78	10.03	10.72	10.91	0.42%
Total	32.09	30.31	32.00	33.46	1.40%

Source: Capital & Personnel—Table 56, page 106, 2015-16 PBS. Total from Table 2.2.1 of this Brief.

The cost trends in Table 3.5 are perplexing. The total budget and capital investment are largely discretionary—as we saw during the period 2009 to 2013 when the total budget and capital investment were slashed. In contrast, personnel and operating expenses are dependent upon the physical state of the department—i.e. the number of people and the activities being undertaken.

Over the next four years, the number of permanent employees is planned to rise by 830 from 76,846 to 77,676. At the same time, the proportion of (relatively less expensive) civilian employees is planned to fall from 25% to 24%. Nonetheless, Defence is planning on reducing personnel spending by 2.6% *in real terms* each year across the forward estimates. Even given the low pay rise offers likely for the military and civilian workforce, this is a surprising result.

Similarly, operating cost will not rise appreciably in real terms across the four years, yet the sustainment program (PBS Table 6, page 20) has costs rising by 2.44% a year (though that will include some capital costs). Perhaps the new generation of equipment entering service is cheaper to operate that what it replaces. Note that with supplementation for deployment only amounts to $911 million in 2015-16 and $142 million in 2016-17, the absence of deployments in the latter part of the forward estimates is insufficient to explain the favourable trends in personnel and/or operating costs.

What sort of ADF will 2% of GDP give us?

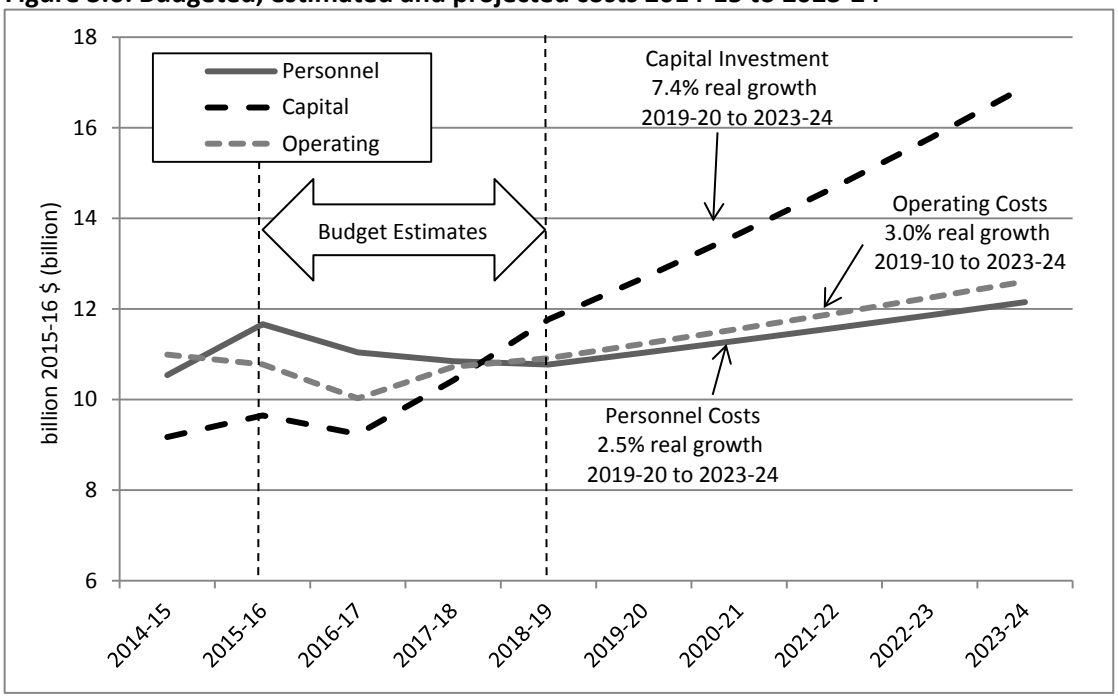
When the promise was made to increase defence spending to 2% of GDP (both by the government and opposition) neither would have had a clue what sort of defence force would be affordable with that much money. Last year, we had a look at what 2% of GDP in the decade commencing 2023-24 might allow. Given that 2% of GDP is a movable feast, we redo that calculation again this year. In this section, we again assume the nominal GDP growth rates from 2014 National Commission of Audit for the years beyond 2018-19. In the next section, we examine how volatility in economic growth and foreign exchange rates could change the effective buying power available to Defence.

Figure 3.6 shows the budgeted (2015-16 to 2018-19) and projected (2019-20 to 2023-14) shares of the defence budget going to personnel, capital investment and operating costs. For the period beyond 2018-19, personnel and operating costs have been projected out as explained below, while capital investment is estimated as the simple residual (= budget –

personnel costs –operating costs). This makes sense because personnel and operating costs are effectively a consequence of the size and shape of the ADF, whereas the level of capital investment is discretionary on a year-to-year basis.

Consistent with established per-capita trends in personnel expenses (see Chapter 2 of this Brief) and assuming that the ADF does not grow past 59,300 after 2018-19, personnel costs have been assumed to grow at 2.5% p.a. real (5% nominal) beyond the Forward Estimates. Similarly, operating costs are assumed to grow at 3.0% p.a. real (5.5% nominal) over the same period consistent with budgeted growth over the Forward Estimates last year. We have not used this year's figure because, as explained above, it curiously predicts little growth. In any case, if we used a smaller rate for the increase in operating costs, the resulting growth in capital investment would be even more extraordinary than shown in Figure 3.6.

Figure 3.6: Budgeted, estimated and projected costs 2014-15 to 2023-24



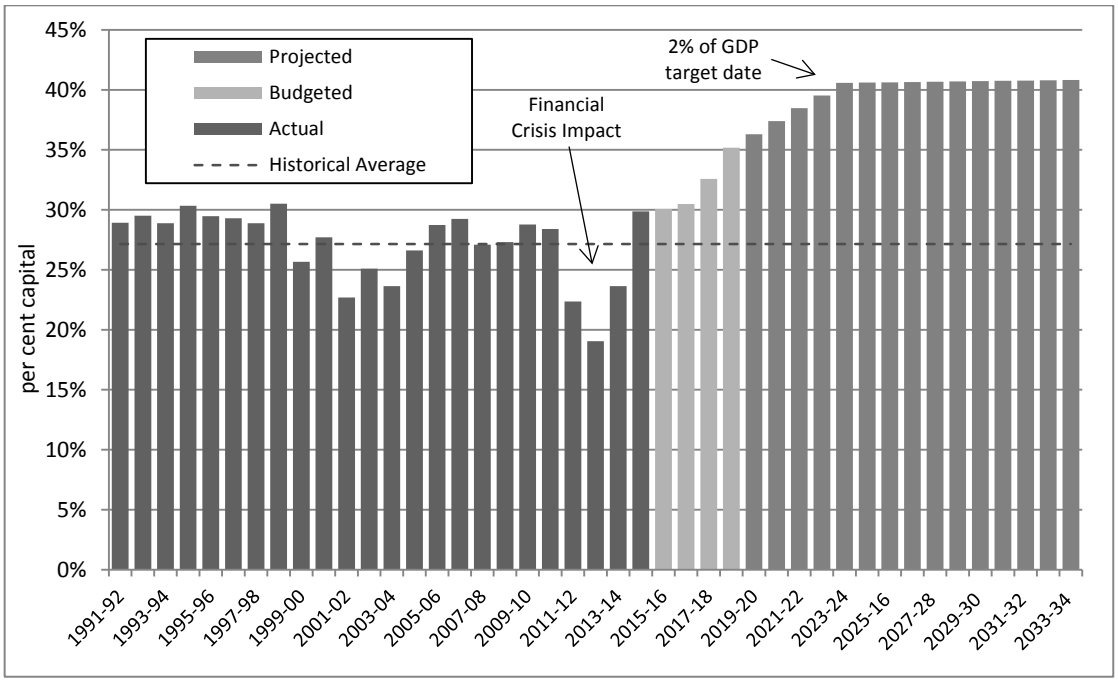
Source: DAR, PBS, PAES and ASPI analysis

If achieved, it would mean that capital investment over the decade commencing 2014-15 would amount to $124 billion, compared with a mere $67 billion over the preceding decade measured in 2015-16 dollars. Note that the scale of spending over the forthcoming decade has increased from last year's estimate ($112 billion). That's because personnel and operating costs are now budgeted to grow more slowly over the forward estimates.

What about the years beyond 2023-24? Presumably the government doesn't plan to increase defence spending to 2% of GDP and then let it fall? Figure 3.7 plots the historical and projected share of the defence budget out to 2033-34 assuming that the labour component of the ADF remains static post 2018-19. For GDP growth past 2023-24, we've used the 2.8% real GDP growth figure forecast in Treasury's 2015 Intergenerational Report and assumed that the GDP deflator averages out to 2.5% over time in correspondence with the CPI, hence nominal annual GDP growth of 5.3%.

Beyond 2023-24, the capital component of the budget levels off because personnel and operating cost growth (almost) match GDP growth. Nevertheless, the subsequent decade would see an eye watering further $197 billion in 2015-16 dollars go to capital investment. Given that we've managed to recapitalise a good share of the ADF during the 15 years immediately past, it's pretty clear that such high levels of capital investment are unnecessary for a defence force of the size presently planned.

Figure 3.7: A mountain of equipment



Source: DAR, 2013-14 PAES, 2015-16 PBS and ASPI analysis

One way to make sense of the situation outlined above would be if there was a plan to expand the size of the defence force. By doing so, personnel and operating costs would rise and less money would be left for capital investment. In theory at least, there exists a larger ADF for which 2% of GDP in 2023-24 and beyond would bring personnel, operating and investment spending into something like a sustainable balance. (In practice, there'll never be a 'steady state' apportionment of capital, personnel and operating costs because they each have slightly different intrinsic growth rates—notwithstanding the fluke result above).

However, to date, the government hasn't discussed any plans for expanding the size of the force. To the contrary, it has been hedging previous promises—most especially regarding 12 submarines. Perhaps they are still coming to grips with what they've promised.

The situation shouldn't come as a surprise. The promise of raising defence spending to 2% of GDP within ten years wasn't the result of detailed financial analysis. Rather, it was an artefact of our decimal counting system (hence the decade) and the unofficial NATO benchmark of 2% of GDP. A benchmark that is much more often honoured in the breach than in observance—in 2014 only five of 25 European NATO countries reached that level.

It would have been an extraordinary coincidence if spending 2% of GDP in 2023-24 and beyond was consistent with an ADF of the size and shape currently planned. It was always overwhelmingly likely there would be either too little or too much money.

I suspect that the estimate calculated above overestimates the amount of money available for capital investment. Not because of any omission or systematic error in the calculation, but because Defence's anticipated reduction in personnel and operating cost will not come about. Instead, personnel and operating costs will grow over the next four years and leave less money for investment than projected above. Nevertheless, even taking account of Defence's overoptimism; it looks as though there will be a massive chunk of money available for capital investment in the years ahead.

With this in mind, there are two things to expect from the forthcoming White Paper. First, the size of the force will grow. An extra battalion or two to crew the new LHD amphibious vessels would help bring things into balance, as would an expansion of the surface combatant fleet to meet South Australian demands for a continuous build program. Such possibilities aren't to be discounted.

Second, with so much money available, we should expect to see proposals of diminishing marginal worth brought forward (see preceding paragraph for examples). Even if prioritisation is done properly, every new initiative enabled by extra funding will be of less value than existing ones. But 2% of GDP will enable some especially marginal propositions to be seriously considered. By so greatly loosening the fiscal disciplines on Defence, the challenge for the government will be to contain the potential for far-reaching waste.

It looks as though we're firmly into the 'tail wagging the dog territory' wherein an arbitrary number is set to unleash a previously unplanned expansion of the ADF at enormous cost whithout consideration of what it will add to Australia's security beyond sending a message to allies and friends.

In case I've failed to be clear; *funding Defence as a proportion of GDP is poor policy*. As the national commission of audit observed:

> The Commission considers a sensible way of approaching this task is for the Government to use the White Paper process to consider the strategic risks and associated capability requirements that different levels of funding can address. As part of this process, the Government should also assess the balance of strategic and fiscal priorities and how this compares with the 2 per cent of GDP spending commitment. This should result in a better balance between risk and resourcing – and implies a force structure focused on the most important threats.

But if we must plan on the basis of 2% of GDP, there are some technical issues that need to be appreciated and managed.

The technical challenge of funding defence at 2% of GDP

Funding defence at 2% of GDP presents two technical challenges; planning under economic uncertainty and managing foreign exchange risk.

Economic growth and planning

The basic problem is simple; efficient defence planning requires medium- to long-term funding surety to avoid wasteful investments that then prove unaffordable, and to ensure that resources are available for required ADF capabilities when required.

A handful of years of sub-par economic growth can make a big difference to GDP-based funding due to the compounding of growth. For example, the 2010 Intergenerational Report (IGR) predicted 4% real growth from 2011-12 to 2014-15, which was not realised in practice. Table 3.6 is comparing the predicted to actual growth in the economy results in a 5% difference over the four years. All other things being equal, the result is that the economy will be 5.3% smaller than predicted, with means that 2% of GDP will be smaller in real dollar terms by the same margin. One might hope that accelerated growth following the slowdown would make up the difference. However, as shown in Chapter 1.3, the global economy has not bounced back to fill the output gap this time around. A funding regime based on GDP share is at the mercy of economic performance; in extremis, funding could be cut in a recession.

Table 3.6: The tyranny of compounding interest

	2011-12	2012-13	2013-14	2014-15	Compounded
2010 IGR	4%	4%	4%	4%	17.0%
Actual	3.70%	2.50%	2.50%	2.50%	11.7%
				Shortfall	5.3%

Source: 2010 IGR and RBA statistics for actual

Of course, it's possible to arrange a funding regime *based on* GDP share that avoids disruptive near-term fluctuations (more on how to do that later). But defence is a long-term enterprise, so shifting medium- to long-term economic expectations can make a substantial difference. Consider the evolving outlook as given in Treasury's four Intergenerational Reports this century, see Table 3.7. Although the first two IGR gave average growth rates per decade while the latter two offered only snapshots on selected years, it's clear that our economic outlook has changed substantially as projections of population, productivity and workforce participation have evolved.

Table 3.7: IGR growth projections 2003 to 2015

	2000s		2010s		2020s		2030s		2040s		
2002 IGR	3.10%		2.30%		2.00%		1.90%				
2007 IGR	3.00%		2.60%		2.30%		2.20%		2.00%		

		2009-10	2014-15	2019-20	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50	2054-55
2010 IGR		1.60%	4.00%	2.70%		2.60%		2.50%		2.30%	
2015 IGR			2.50%		2.80%		2.80%		2.60%		2.30%

Source: IGR 2003, 2007, 2010 and 2015.

Interpolating the projected growth and applying it to the extant estimate of GDP allows the size of the economy to be projected forward. This is done in Figure 3.8, which shows substantially divergent projections from 2003 to 2015. Note that the principle driver of the differences is the assumed rates of growth rather than the value of GDP at the starting points. The authors of the IGR are well aware of the sensitivity of their projections, and they appropriately highlight the uncertainties. But they cannot be wished away. Productivity growth, in particular, is poorly understood and difficult to anticipate. For a defence planner

trying to put together a plan for development of the ADF, the inherent uncertainty in medium- to long-term economic growth makes a GDP-based funding model problematic. Consider the substantial differences in the aggregate funding available for the decade commencing 2023-24 (when the government has promised 2% of GDP), see Figure 3.9.

Figure 3.8: IGR long-term projections for GDP

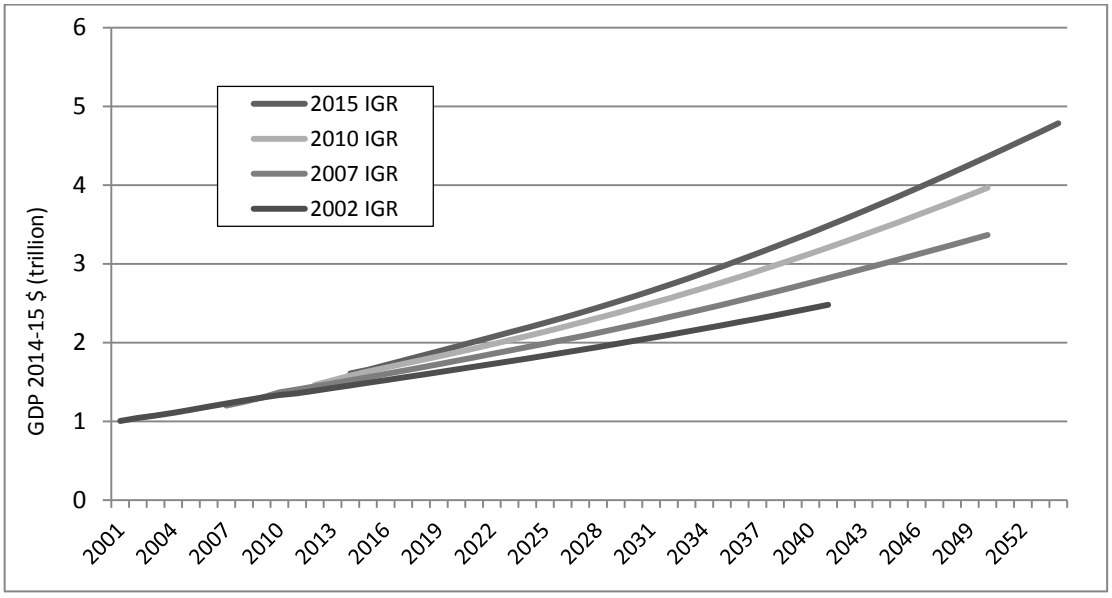
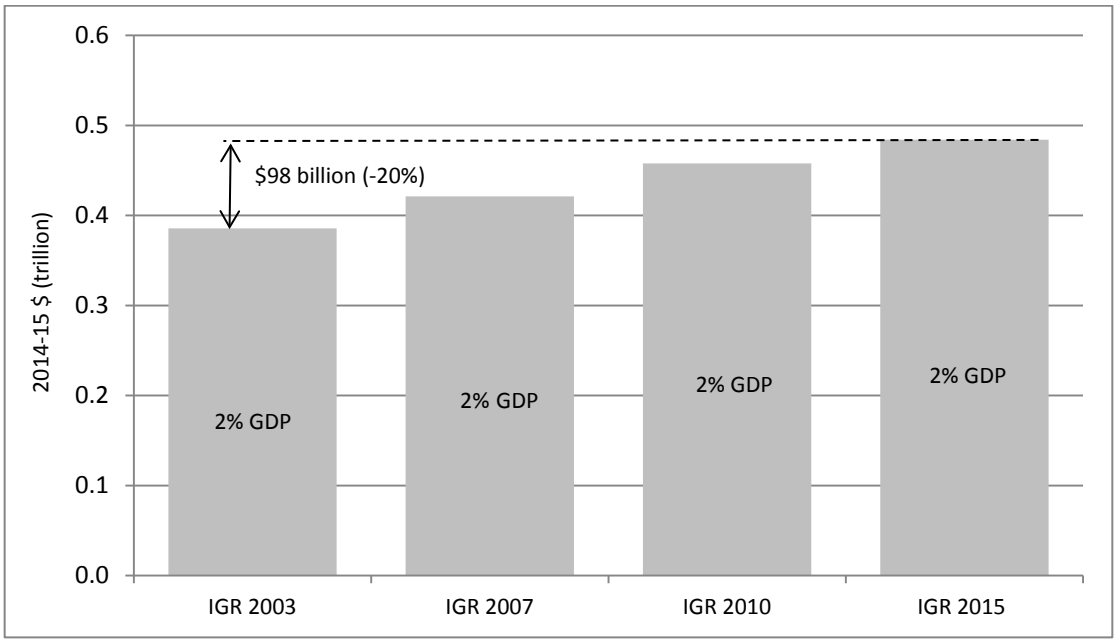


Figure 3.9: 2% of GDP as projected by successive IGR



With a substantial boost to defence funding delivered by each IGR, perhaps Defence is happy to take its chances with a GDP-based funding model. If so, they are brave souls. Not only is the Australian economy undergoing a structural change to a new regime where higher productivity jobs may be hard to find, but there is a body of economic opinion arguing that the waves of productivity-boosting technological development of the 20th century are unlikely to be repeated in the medium term at least.

With a White Paper nearing completion, it's natural to ask how large the uncertainties are for nominal GDP out into the next decade. In this year's Budget Papers, the Treasury provided confidence intervals around its nominal GDP forecasts out to 2016-17 using 2013-14 as the most recent measured base-year; see Table 3.8 where the 70% confidence intervals are given. Note that the confidence intervals come from historical forecasting performance rather than economic modelling. In any case, the uncertainties are appreciable.

Table 3.8: Treasury forecasts for nominal GDP growth

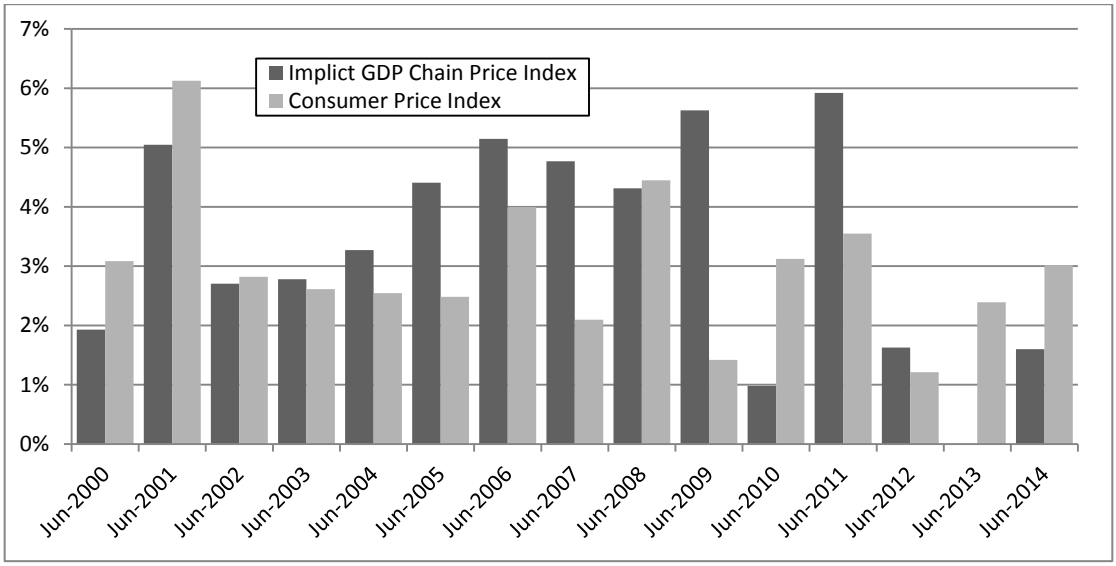
	Lower 70%	Central	Upper 70%
Average annualised growth 2013-14 to 2014-15	0.65%	1.55%	2.35%
Average annualised growth 2013-14 to 2015-16	1.05%	2.29%	3.64%
Average annualised growth 2013-14 to 2016-17	1.64%	3.24%	4.93%

Source: 2015-16 Budget Paper 1, Chart 4 page 7-7.

Nominal verses real GDP

Even if real GDP growth matches central projections, it does not guarantee that Defence will not be disadvantaged by economic externalities. Under a GDP-based funding regime, Defence funding will rise and fall in tandem with *nominal* rather than *real* GDP. In general, the prices faced by Defence from its domestic suppliers and labour force (reasonably approximated by the Consumer Price Index) move at a different rate from the prices of the goods and services that make up Australia's GDP (as measured by the Implicit GDP Chain Price Index)—especially the prices received for commodity exports. Over the past decade, the two indices have rarely moved in step, Figure 3.10.

Figure 3.10: Prices and product



Source: ABS 5204.0 and ABS 6401.0

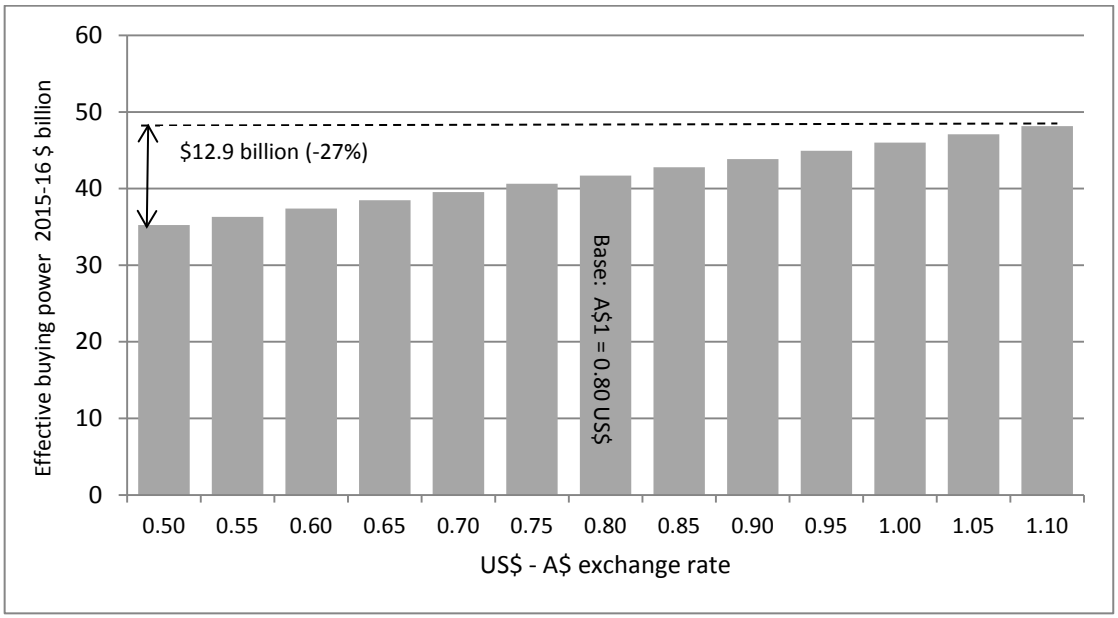
As a result, for a given share of GDP, Defence can either be advantaged or disadvantaged by the relative movements of the two indices. Note that during the 2000s, Defence funding was indexed relative to the non-farm GDP deflator which delivered a $1 billion plus windfall gain to defence on one occasion.

Even if the vagaries of economic growth and price indices can be managed, it remains to be seen how a GDP based funding regime will accommodate the substantial exposure of defence expenditure to foreign exchange movements.

Foreign exchange

Since 2000, the exchange rate between the Australian and US dollar has ranged from 1 A$ = 0.5 US$ (2001) to 1 A$ = 1.10 US$ (2011). This can have a substantial impact on the buying power of any fixed level of defence expenditure. For example, in 2013-14, more than 70% of defence acquisitions by cost came from foreign sources, along with 41.6% of materiel sustainment spending. Assuming these proportions apply to the defence budget in 2023-24 as indicatively structured in Figure 3.6, the effective buying power of 2% of GDP can be estimated assuming that all foreign spending goes to the United States (unrealistic in practice but adequate for demonstrating the sensitivity). Figure 3.11 shows the result.

Figure 3.11: Effective buying power of 2% of GDP in 2023-24 at various exchange rates



This is not a hypothetical issue. When the now Prime Minister promised 2% of GDP for defence on August 25 2013, the Australian dollar was worth 0.90 US$. At the time of writing, it was worth 0.80 US$ (and RBA would like to push it down further). The difference in buying power using the model described above is a fall of 5%. Thus, without any decision being taken by the government, promised defence funding has fallen substantially.

What happens if we maintain defence spending at 2% of GDP?

If it was decided to fix defence funding at 2% of GDP for a period of time, additional problems will arise. Defence costs tend to exceed inflation. Specifically, the unit cost of maintaining and crewing an up-to-date military capability exceeds inflation by 2% to 3% each year. Thus, for a static defence force to be sustainable on a fixed share of GDP, nominal GDP growth needs to exceed inflation plus 2% to 3%. As Table 3.7 shows, real GDP growth is projected to fall below the upper end of the range in the coming decades. To complicate matters further, as Figure 3.10 makes clear, there is no guarantee that the GDP-deflator and CPI will move in tandem, which could either exacerbate the problem or compensate for it.

If the 2015 White Paper sets out a significant expansion of the ADF—which appears likely—a fixed share of GDP may not be adequate for more than a short period of time. In that sense, a commitment to 2% of GDP in 2023-24 may mean having to exceed 2% of GDP subsequently. The possible exception would be if there was a temporary boost to capital spending which declined at the same rate as the additional personnel and operating costs grew. Such a strategy *might* be workable for a decade or so, but we would have to be fortuitously lucky.

Notwithstanding these serious problems, Treasury's 2015 IGR observes that the 2% GDP target for defence spending 'enables defence expenditure to reflect changes in national income without representing a significant change in policy.' Setting aside the technical point that GDP is not the same thing as income (that's why the ABS tracks Gross National Income), fluctuations in defence spending on the scales examined here most definitely have the same impact as *significant changes in policy*.

Making 2% of GDP workable

If we must have a GDP-based funding regime, a funding model needs to be formulated to support coherent long-term defence planning and prevent disruptive near-term fluctuations. Clearly, any model that explicitly ties defence funding to a share of GDP year-after-year will be problematic—it would be neither robust against the impact of foreign exchange nor immune to buffeting by the business cycle. Moreover, it may not be adequate to sustain an expanding or expanded defence force in the medium to long term.

A workable GDP-based funding regime could be constructed as follows:

- Defence funding should be based on a **rolling 10-year funding envelope**:
    - anticipating wage and domestic price inflation
    - updated completely every 4-5 years via a White Paper
    - extended by anticipated GDP growth in the final year between White Papers.
- The 2% of GDP figure should employed as a **benchmark** during the White Paper process rather than a mechanical driver of year-on-year defence expenditure.
- Each year, the 10-year funding envelope should be adjusted to maintain its buying power against price and exchange movements as follows:
    - foreign exchange movements for foreign spending
    - Consumer Price Index (CPI) for non-fuel domestic spending.

A more complex basket of deflators could be employed for indexation, but because the annual adjustments are just that, adjustments, CPI is a workable surrogate for near-term domestic price and wage movements. Naturally, Defence should continue to receive full supplementation for the next additional cost of deployments.

Of course, this is a second best option compared with jettisoning the 2% promise in favour of a regime that balances the strategic risks Australia faces against the opportunity costs that defence spending imposes on society.

The prospects of achieving 2% of GDP by 2023-24

This section examines the risks and challenges to the government's promise of spending 2% of GDP on defence by 2023-24 from both the supply (the government) and demand (Defence) sides.

In the longer term, the question is whether Defence (and defence industry) can absorb the six years of budget growth necessary to achieve 2% of GDP by 2023-24. In terms of raw spending, there's no reason why they couldn't. As Figure 3.4 shows, we have 3-4 years to plan and prepare for a ramp-up requiring 4.5% real growth each year. It would be learned helplessness in the extreme to throw up our hands and say we can't manage a boost in defence spending from 1.78% of GDP in 2016-17 to 2% of GDP in 2023-24. After all, we managed to mobilise, fight and win WWII in a shorter period of time.

The most pressing risk to defence funding over the next few years comes from the government's commitment to return the federal budget to surplus. The relatively generous near-term treatment of defence funding in the last three budgets (don't forget the previous government provided around $3 billion extra in near-term funding in 2013) owes much to the deficit being so large as to preclude a near-term return to surplus. Had a surplus been within reach, the story would likely have been very different. Past experience with the recessions of the early 80s and 90s confirms that Defence can't count on being spared when the time comes. If any proof is needed, the cuts in anticipation of 'the surplus that never was' in 2012-13 should settle the matter (see Figure 3.3).

On current fiscal projections, the federal balance will be close to surplus around 2019-20. On the standard electoral cycle, that corresponds to the third year of the next term of government and the start of the projected ramp-up to 2% of GDP. There's little point going into the myriad permutations of economic and electoral possibilities. The bottom line is that we have no assurance that medium-term defence funding will be immune from cuts if that's what it takes to get into surplus. Nor is that necessarily undesirable; if the gains from a (somewhat) speedier return to surplus outweigh the losses from a (somewhat) slower increase in defence spending.

Will the 2015 White Paper be affordable?

Assuming that the government makes good on its promise to fund Defence at 2% of GDP, and assuming moreover that economic circumstances mean that 2% of GDP in 2023-24 is commensurate with what Defence have been planning for, there is still no guarantee that the 2015 White Paper will be affordable. To varying extents, *Defence 2000* through to *Defence 2013* entailed costs beyond promised funding. Each and every White Paper comes with solemn promises that the planned ADF is 'fully costed'. This year's will be no different. The minister says that the 2015 document will be a 'costed, affordable and enduring plan to achieve Australia's defence and national security objectives'. It may actually be the case this time.

Defence has taken the task of developing a 'fully costed' White Paper very seriously. A number of top-tier consulting firms have been contracted to provide cost estimates to assist Defence to understand its costs, see Table 3.9. Note that we cannot say whether the

contracted amounts were realised in practice or not; they represent anticipated rather than actual costs.

Table 3.9: The cost of costing

Contractor	Subject matter	Amount of consideration $
AECOM AUSTRALIA PTY LTD	Cost assurance for the 2015 Defence White Paper	304,067
DELOITTE TOUCHE TOHMATSU	Cost assurance for the 2015 Defence White Paper	404,910
DELOITTE TOUCHE TOHMATSU	Cost assurance for the 2015 Defence White Paper	707,298
ERNST & YOUNG	Cost assurance for the 2015 Defence White Paper	1,001,638
ERNST & YOUNG	Cost assurance for the 2015 Defence White Paper	1,089,500
KPMG AUSTRALIA	Cost assurance for the 2015 Defence White Paper	397,289
KPMG AUSTRALIA	Cost assurance for the 2015 Defence White Paper	1,344,502
PRICEWATERHOUSE COOPERS LEGAL	Cost assurance for the 2015 Defence White Paper	438,955
PRICEWATERHOUSE COOPERS LEGAL	Cost assurance for the 2015 Defence White Paper	646,290
PRICEWATERHOUSE COOPERS LEGAL	Cost assurance for the 2015 Defence White Paper	1,087,336
QINETIQ PTY LTD	Cost assurance for the 2015 Defence White Paper	251,890
QINETIQ PTY LTD	Cost assurance for the 2015 Defence White Paper	837,760
QINETIQ PTY LTD	Cost assurance for the 2015 Defence White Paper	1,968,627
RAND CORPORATION	Cost assurance for the 2015 Defence White Paper	876,296
RAND CORPORATION	Cost assurance for the 2015 Defence White Paper	1,965,073
WILDE AND WOOLLARD	Cost assurance for the 2015 Defence White Paper	192,322
KPMG AUSTRALIA	Cost estimation for SEA1000	440,400
KPMG AUSTRALIA	Cost estimation for SEA1000	645,750
	Total	**14,599,903**

Source: Department of Defence – Senate Order 192 contracts listing

In addition, the government has sought advice from the six-person White Paper expert panel (at contracted rate of around $150,000 each) and Defence/DMO has sought expert advice on defence industry policy as shown in Table 3.10.

Table 3.10: Expert advice on Defence Industry Policy

Contractor	Subject matter	Amount of consideration
DELOITTE TOUCHE TOHMATSU	Study of Australian Defence Industry Issues	601,165
DELOITTE TOUCHE TOHMATSU	Prepare Industry Policy discussion paper	398,148
	Total	**999,313**

Source: Department of Defence – Senate Order 192 contracts listing

Hopefully, the substantial investment in external advice will be repaid through the greater efficiency available through a properly funded and planned White Paper.

Show us the money

The adjectives applied by the government to describe the forthcoming Defence White Paper and its accompanying plan for the ADF include ‘fully costed’, ‘externally assured’, ‘achievable’, ‘affordable’, ‘credible’, ‘realistic’, ‘properly funded’ and ‘enduring’. This is all well and good. But if—as the Minister says—the new White Paper is to ‘restore the compact that should rightly exist between the Government and its Defence Force’, there’ll need to be

another adjective put on the list; transparent. If the government wants to be taken seriously when it claims that its plan is 'credible, affordable and properly funded', it'll have to show us the money.

To varying extents, past White Papers has tried to do so. Without doubt, the Howard government's 2000 effort set the gold standard. It provided a decade's worth of overall funding guidance in the document, and backed it up with a detailed breakdown of new funding over the decade in the subsequent budget. The 2009 White Paper provided far less information and the 2013 document did even less. All we got was a single figure in the budget for the six years of funding following the four-year forward estimates period. The difference between the 2000 White Paper and its successors is easy to understand. The 2000 document had a great story to tell, whereas its successors had a lot to hide.

The argument within official circles (that I've been regaled many times with over the years) will be that funding transparency is undesirable because it limits the government's flexibility. Flexibility, in this context, is the ability to claim to be doing something while not actually doing it. But if the Abbott government is serious about having an 'affordable and long-term plan that aligns strategy, capability, and resources', it's time to put the money on the table.

There are two reasons why the government should be eager to disclose its defence funding plans. First, it would allow then to put the 2% of GDP issue back in the box once and for all. Disclose a funding envelope today that hits 2% of GDP in 2023-24 and be done with it. Otherwise, as we've seen, they could find themselves chasing their tail trying to adjust to the vagaries of the movable feast that's nominal GDP. Second, it would provide political momentum to defence funding that a future non-Coalition government would find more difficult than otherwise to overcome.

So when the government releases its 'vision for Australia's defence strategy over the next two decades in the new Defence White Paper', here's what it needs to do to justify the growing list of adjectives being applied to the document:

- The White Paper should include a two-decade long funding envelope (see page 122 of the 2000 White Paper to see a decade-long version), divided between personnel, capital and operating costs. The division between the three costs will allow a back of the envelope assessment of the internal feasibility of the plan.
- Update the funding envelope each year in the Budget for changes to foreign exchange, inflation, new budget measures and funding shifts between years.
- Provide a decade-long Defence Capability Plan (DCP) with dates for first- and second-pass approval and funding bands for each project. And I don't mean the ridiculously fuzzy information we've been served up in recent times, but something more like crisp transparency that the Howard government delivered back in its 2001 DCP.

Nothing I've suggested would compromise national security or the Commonwealth's commercial position, but it would allow the government to be held to account for its promises. The Howard government wasn't afraid of being held to account, let's hope the Abbot government isn't either.

Chapter 4 –Defence Reform

Key Points

The First Principle Review of Defence has been released and a new wave of reform is about to hit Russell Hill.

The Defence Materiel Organisation will be reabsorbed back into Defence.

Capability Development Group is being disbanded and a new capability development process is on the way.

Risks and opportunities lay ahead.

On the 1 April 2015, the government released the report of the independent First Principles Review of Defence. As a result, Defence is about to undergo a second major reform program only three years after the last one—the Strategic Reform Program (SRP)—was abandoned.

This chapter sets the scene for what's likely to come. There are four sections. The first surveys defence reform over the past 35 years. The second summarises the SRP. The third examines the First Principles Review. The fourth opines on the challenges and opportunities for the future.

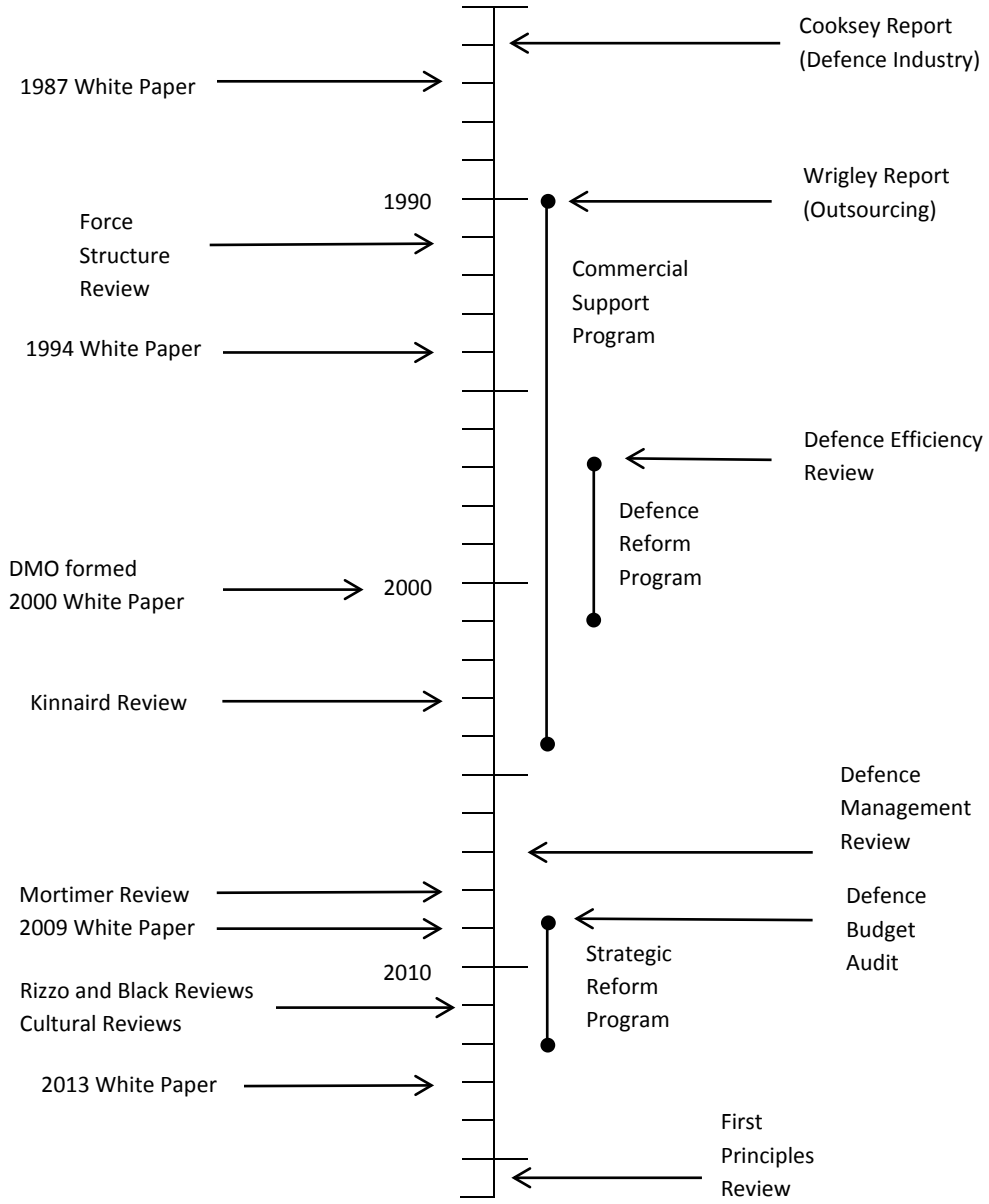
Some material in the third part of this chapter is taken from the recent ASPI Special Report *One Defence—one direction?* available from the ASPI website. While the emphasis here will be largely explanatory, the aforementioned publication provides a critical analysis of the forthcoming reform program. For further background on Defence reform, see previous editions of the Budget Brief and Ergas (*Agenda*, Volume 19, #1, 2012) and Ergas and Thomson (*Agenda*, Volume 18, #3, 2011). Consistent with the financial focus of the Budget Brief, Defence's cultural change program *Pathways to Change* is not examined.

Background

The Australian Department of Defence was created in 1976 by the amalgamation of the previously separate three services and civilian department. As with similar consolidations in the United States and United Kingdom, the goal was to achieve greater inter-service cooperation and, to an extent, impose closer civilian oversight. The resulting organisation was largely a federated structure with central execution of policy development, financial management, force structure planning, science and technology, and capital acquisition. Then, as now, a diarchy of the Secretary and Chief of the Defence Force (CDF) lead Defence with separate and overlapping responsibilities.

In the late 1980s, the Defence commenced a long-term program of systematically market testing non-core functions. Under the auspices of the Commercial Support Program, see Figure 4.1, civilian and military activities were compared with private sector alternatives. By the end of turn of the century around 16,000 positions had been market-tested with around 66% of activities examined transferred to the private sector. Activities included printing, repair and maintenance of equipment and facilities, medical services, technical training, corporate services, catering and information technology. Around the same time, the government divested itself of its shipyards, munitions plants and aircraft factories. By 2000 the civilian workforce had fallen from 40,000 to 16,300 positions and the military 70,000 to 50,300. These reductions were largely the result of outsourcing and privatisation, notwithstanding that several thousand military positions were also lost as a result of the 1991 Force Structure Review.

Figure 4.1 Defence reform: 1985 to 2015



In 1996, the newly elected Liberal–National government undertook a comprehensive Defence Efficiency Review involving a high-level private/public sector advisory team. The Review led to the Defence Reform Program (DRP), which ran between 1997 and 2001. The DRP:

- adopted a shared services model for a wide range of activities including personnel administration, materiel sustainment, training and education, base/facilities support and information technology
- geographically consolidated some activities and disposed of the resulting surplus property
- accelerated the outsourcing of activities, including many that had been recently consolidated.

The promised savings from the DRP were around $1 billion from a then budget of $10 billion. Although the DRP fundamentally restructured the organisation by embracing a shared services model, the long-term financial impact of the changes is difficult to discern. Most of the savings were used to 'buy-back' 7,000 military positions. But because there were no additional ships, planes or battalions raised as a consequence, the 'buy-back' was as much a 'roll-back' of reform.

In 1999, the Australian-led mission to East Timor heralded a decade of high operational tempo and rising defence funding. With money flowing and attention focused on operational matters, efficiency reforms were put on the back burner and the shared services model eroded by the migration (and in some cases the duplication) of many activities back into the individual services.

In one area, however, reform continued during the 2000s. Beginning in 2000, materiel sustainment and acquisitions were consolidated by the creation of the Defence Materiel Organisation. There followed a series of reforms to capability planning and acquisition precipitated by several embarrassing multi-billion dollar acquisition debacles. Key developments included:

- re-establishment of DMO as a quasi-independent 'prescribed agency' with separate financial accounts from Defence
- the introduction of a two-pass process of project approval that saw the National Security Committee of Cabinet directly involved in the approval of large defence acquisitions
- revamped project governance and professionalisation of the DMO workforce.

The merits of the reformed DMO are difficult to judge given the extended duration of major defence projects, but preliminary data shows some improvement in the delivery of projects on schedule and within budget. As for the two-pass process, it now takes much longer to conceive and approve projects than in the past, and alignment between strategic policy and capability development remains elusive.

Towards the end of the last decade, there emerged two (almost contradictory) propositions about Defence funding. First, that there was not enough money in projected Defence funding to afford all that was planned in terms of new equipment and attendant personnel and operating costs. Second, that Defence was not as efficient as it could be, having grown fat and complacent after close to a decade of escalating funding. Faced with this situation, in early 2008 the then government directed Defence to find $10 billion of savings over the next decade.

Then in May 2008, the government appointed George Pappas to audit the Defence budget. His report was delivered to the Minister in April 2009. The Budget Audit identified prospective savings of $1.3 billion to $1.8 billion a year based on 2007-08 spending, plus one-off savings of between $218 million and $398 million. On an out-turned basis (taking anticipated inflation into account), the prospective recurrent savings over the decade commencing 2009-10 were between $15 billion and $20.7 billion.

To the work of the Budget Audit were added (1) the initial work done by Defence to save $10 billion, (2) the results of the 2008 Defence Procurement and Sustainment Review and (3) the results of a series of internal 'companion reviews' conducted in parallel to the development of the 2009 Defence White Paper. The result was the SRP; a package of reforms and efficiency initiatives to improve Defence's performance and deliver $20.6 billion of savings over the following decade for reinvestment in capability.

The Strategic Reform Program

There were three key elements to the Strategic Reform Program (SRP); improved accountability, improved planning, and enhanced productivity. Planned reforms to accountability and planning were examined in detail in the 2009-10 Budget Brief.

Reporting against the $20 billion savings program central to the SRP was abandoned only three years into its planned ten-year life. Although it was not said directly, it is likely that the savings program became unviable because of deep cuts to Defence funding in the 2012-13 budget coupled with mounting budget pressures in areas that had supposedly been delivering savings.

This is no great loss. As previous editions of the Budget Brief showed in detail, the much lauded $20 billion savings program was implausible and exaggerated, with savings reported against inflated hypothetical business-as-usual baselines. In reality, there was no transferring of savings from one part of Defence to another. The notional savings were built into group budgets back in 2009.

Defence reporting of annual targets and achieved savings appears in Table 4.1. As explained in the 2010-11 and 2011-12 editions of the Budget Brief, the quanta of savings reported should not be accepted at face value. For example, the 2011-12 Defence Annual Report says that the reported savings were exclusive of $323 million in expenses 'outside the control of SRP management', which seems to imply that Defence was claiming savings while nonetheless spending beyond planned levels. In fairness; savings were achieved and worthwhile reform occurred, but not on the dollar scale claimed.

Table 4.1: Reported gross SRP savings for 2009-10, 2010-11 and 2011-12

	2009-10		***2010-11***		***2011-12***	
Reform stream	*Target ($m)*	*Claimed ($m)*	*Target ($m)*	*Claimed ($m)*	*Target ($m)*	*Claimed ($m)*
ITC	49	94	128	27	148	216
Smart Sustainment[1]	263	461	288	326	370	389
Non-equipment Procurement	172	343	177	318	207	148
Workforce & Shared Services	58	-131	171	103	238	156
Reserves			5	-4	28	47
Logistics			6	53	8	0.3
Other Savings	255	255	242	242	286	285
Total	***797***	***1,022***	***1,016***	***1,064***	***1,284***	***1,241***

Source: SLC Question 6, February 2012 and recent Defence Annual Reports

In 2011 and 2012, further savings efficiencies were announced in addition to the original SRP program. Unlike their predecessors, the new efficiencies represented cuts to defence funding rather than the freeing up of funds for redirection within Defence. As such, there is no question of whether the savings were delivered or not; the money was removed from the Defence budget and returned to the Treasury. Further cuts occurred in late 2013.

Table 4.2 lists the cuts made in 2011, 2012 and 2014. The tranches of savings made in the 2012 Budget and 2014 Additional Estimates are distinguished from their predecessors by the absence of any pretence of efficiencies or productivity gains. They are outright cuts to the Defence budget. The key savings under the SRP and subsequent initiatives are captured schematically in Figure 4.2.

With defence funding being cut repeatedly and deep, the notion of pursuing efficiency savings under the SRP became fanciful. So it was that the government abandoned the reporting of SRP savings in 2012.

Table 4.2: Further 'efficiencies' and cuts announced in 2011, 2012 and 2014

Initiative	Savings (over 10 years)	Comment
'second phase of SRP-related savings' (announced May 2011)	$2,948 million	Additional efficiencies in Defence's corporate and support functions, including constraining forecast APS workforce growth by 1000 positions (i.e. not employing extra people). A further $400 million was handed back by Defence in FY 2010-11.
'increased efficiency dividend' (announced May 2011)	$406 million	No details were provided on how this efficiency dividend would be delivered.
'buy C-17 instead of two C-130 aircraft' (announced May 2011)	$520 million	Rather than purchase two C-130 aircraft, a single (much larger) C-17 aircraft was purchased. Inexplicably, Defence had lost the funding for the C-130 option but fully funded the C-17 option. This represented a cut to the funding available to Defence.
'one-off 2.5% efficiency dividend' (announced February 2012)	$670 million	No details were provided on how this efficiency dividend would be delivered.
'expenditure reduction measures' (announced May 2012)	$5,454 million	These are cuts pure and simple, with no suggestion of efficiency gains or dividends.
'Defence Budget Rephasing' (announced January 2014)	$426 million	Although money was brought forward in the rephasing, the net result was a cut.
'Efficiency Dividend' (announced January 2014)	$203 million	No details were provided on how this efficiency dividend would be delivered.
'Efficiency Dividend' (announced May 2014)	$76 million	No details were provided on how this efficiency dividend would be delivered.
Total	**$10,277million**	

Source: Defence Annual Reports and Budget Papers.

As explained at length in last year's Budget Brief, worthwhile reform continued in Defence after the end of formal SRP reporting. In particular, good progress was made in rolling out 'smart sustainment' in DMO and the Services and progressive reform continued towards the consolidation of the shared services model.

The First Principles Review

Consistent with its election promise, the Abbott government initiated the First Principles Review on 5 August 2014. The five-person review panel was chaired by David Peever (former Rio Tinto managing director) and included Peter Leahy (former Chief of Army), Jim McDowell (former BAE Systems executive), Robert Hill (Defence Minister in the Howard government) and Lindsay Tanner (Finance Minister in the Rudd government). Panel members were engaged under seven-month contracts valued at $322,575 each.

The panel was assisted by the Boston Consulting Group and an in-house secretariat from Defence. The Boston Consulting Group was engaged under a six-month contract valued at $4,950,000 dollars.

In announcing the review, the Defence Minister said that it would 'make recommendations designed to ensure Defence's business structures support the Australian Defence Force's principal tasks out to 2030'. The review's lengthy terms of reference are reproduced in Appendix A of this ASPI report. They're a peculiar mix of the general and the specific. On the one hand, the review was given a wide remit to look at Defence's structure and business processes. On the other, it was tasked to report on a range of very specific issues, from the organisational arrangements for geospatial intelligence to improving cash-flow estimation for capital investment.

Background

According to the review, there have been over 35 significant reviews of Defence since the absorption of the three single services into the Department of Defence in 1973—and no fewer than 20 were undertaken between 2008 and 2011. In many cases, the reviews were direct responses to specific events. For example, the 2011 Rizzo review of naval sustainment followed the unexpected collapse of the RAN's amphibious lift capability just before a cyclone struck the coast of Queensland. Other reviews, such as the 2003 Kinnaird review of defence procurement, reflected long-term dissatisfaction with performance in a core function. The First Principles Review falls into a third category: a comprehensive review of the entire enterprise, in the manner of the 1996 Defence Efficiency Review, the 2006 Defence Management Review and the 2008 Defence Budget Audit.

There's no point paraphrasing the problem that the First Principles Review sought to address, because the report provides a concise and unflinching diagnosis:

The current organisational model and processes are complicated, slow and inefficient in an environment which requires simplicity, greater agility and timely delivery. Waste, inefficiency and rework are palpable.

Defence is suffering from a proliferation of structures, processes and systems with unclear accountabilities. These in turn cause institutionalised waste, delayed decisions, flawed

execution, duplication, a change-resistant bureaucracy, over-escalation of issues for decision and low engagement levels amongst employees.

Going back to first principles

The review team 'conducted an end-to-end holistic review based on the outcomes required of Defence and founded on the first principles agreed by the review team'. The outcome required of Defence was taken to be its Strategic Direction Statement from government:

Protect and advance Australia's strategic interests through the provision of appropriately prepared and equipped armed forces. To achieve this, Defence prepares for and conducts military operations and other tasks as directed by the Government.

The seven 'first principles' agreed by the team were:

- **Clear authorities and accountabilities that align with resources:** decision-makers are empowered and held responsible for delivering on strategies and plans within agreed resourcing.
- **Outcome orientation:** delivering what is required with processes, systems and tools being the 'means not the end'.
- **Simplicity:** eliminating complicated and unnecessary structures, processes, systems and tools.
- **Focus on core business:** Defence doing only for itself what no-one else can do more effectively and efficiently.
- **Professionalism:** committed people with the right skills in appropriate jobs.
- **Timely, contestable advice:** using internal and external expertise to provide the best advice so that the outcome is delivered in the most cost-effective and efficient manner.
- **Transparency:** honest and open behaviour which enables others to know exactly what Defence is doing and why.

Although it's doubtful that the seven principles apply in every circumstance, and even less clear that they include everything to be desired of Defence, they're a reasonable and non-contentious starting point. Certainly, a defence organisation that fully reflected the seven principles would be a good thing.

Notwithstanding the 'first principles' methodology, the review has also clearly been influenced by reforms to the UK Ministry of Defence following the 2011 Levene review.

The report

The review panel's report, *Creating One Defence* (henceforth *One Defence*), was released by the Defence Minister on 1 April 2015. 'One Defence' refers to the proposed end-state for Defence—'a more unified and integrated organisation that is more consistently linked to its strategy and clearly led by its centre'. Presumably, **One Defence** (which appears in bold text

throughout the report) is intended as a catch-cry for use in the forthcoming implementation period.

In releasing the report, the Defence Minister said that the government had agreed, or agreed in principle, to 75 of its 76 recommendations—the exception concerned the future of the Defence Science and Technology Organisation (DSTO). Implementation will commence immediately, and most of the changes are planned to be completed within two years. The review panel, along with Ms Erica Smyth, will form an Oversight Board to monitor implementation, provide regular reports to the government, and assist Defence in making annual progress reports to the government.

One Defence runs to 78 pages exclusive of appendixes, so there's roughly one recommendation per page. Although the report is fairly direct and to the point, a degree of familiarity with the Defence organisation is helpful in understanding its arguments and conclusions.

The review makes six key recommendations, which guide the structure of the report:

1. Establish a strong, strategic centre to strengthen accountability and top level decision-making.

2. Establish a single end-to-end capability development function within the Department to maximise the efficient, effective and professional delivery of military capability.

3. Fully implement an enterprise approach to the delivery of corporate and military enabling services to maximise their effectiveness and efficiency.

4. Ensure committed people with the right skills are in appropriate jobs to create the **One Defence** workforce.

5. Manage staff resources to deliver optimal use of funds and maximise efficiencies.

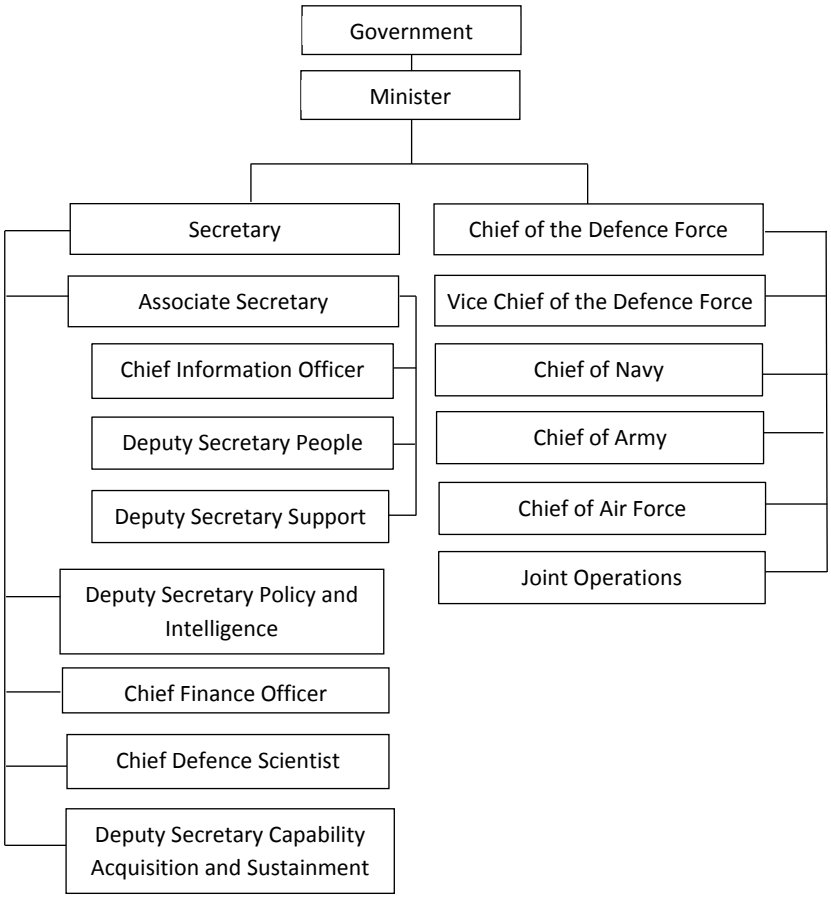
6. Commence implementation immediately with the changes required to deliver **One Defence** in place within two years.

The First Principles Review's numerous recommendations make a concise summary difficult. Consequently, what follows is only the 'big picture' impact on Defence.

Structure—One Defence in two parts

The One Defence model divides the existing unitary organisation into two halves: a mostly civilian part reporting to the Secretary of the Defence Department, and a mostly military part reporting to the Chief of the Defence Force (CDF). The resulting structure is shown in Figure 4.2. For comparison, the existing organisation structure is shown in Figure 4.3.

Figure 4.2: The One Defence structure



The main changes, which are summarised in Table 4.3, are as follows:

- The new Associate Secretary Group subsumes the current Chief Operating Officer Group and its subsidiary parts.

- A new Policy and Intelligence Group will be formed by combining the current Strategy Group and most of the existing Intelligence and Security Group.

- The Defence Materiel Organisation (DMO), which is currently a quasi-independent prescribed agency, will be disbanded and a new Capability Acquisition and Sustainment Group will take its place within Defence.

- The Capability Development Group will be disbanded and most of its functions divided between the services and Vice Chief of the Defence Force (VCDF) Group, with some additional elements going to the new Capability Acquisition and Sustainment Group and Policy and Intelligence Group.

Figure 4.3: The existing Defence structure

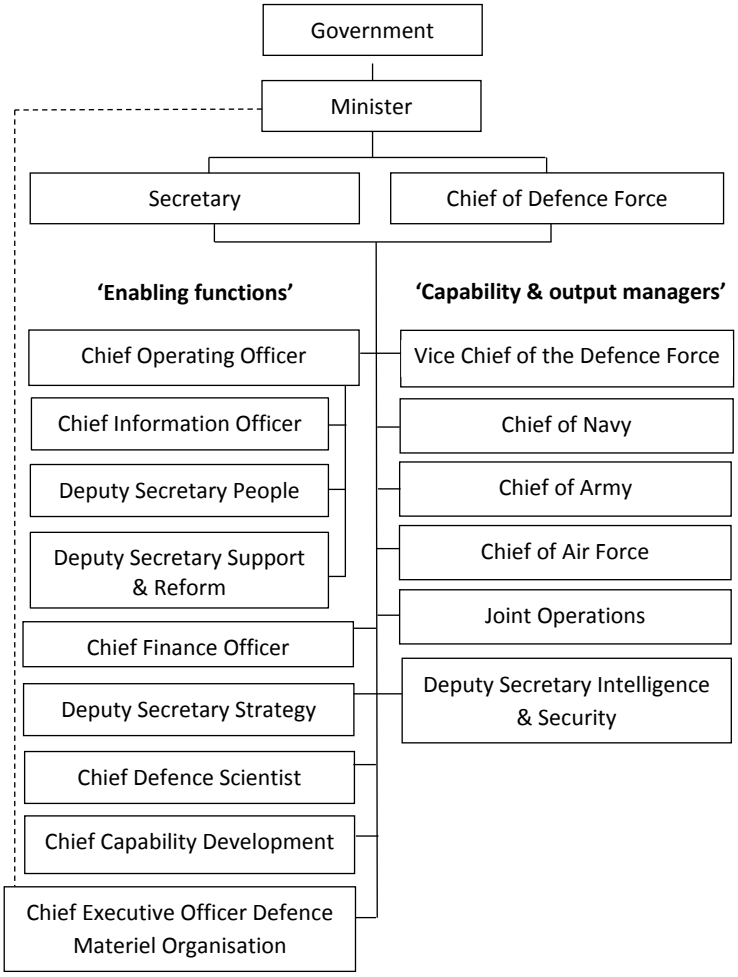


Table 4.3: The old and the new

Existing organisation	'One Defence' organisation
Chief Operating Officer	Associate Secretary
Deputy Secretary Strategy	Deputy Secretary Policy and Intelligence
Deputy Secretary Intelligence & Security	
Defence Materiel Organisation	Deputy Secretary Capability Acquisition and Sustainment
Chief of Capability Development	Disbanded and divided between VCDF, Navy, Army, Air Force, Capability Acquisition and Sustainment Group, and Policy and Intelligence Group.
Joint Logistics Command (non-policy)	Absorbed into Capability Acquisition and Sustainment Group

Just as the existing organisation is divided into *enabling functions* and *capability and output managers*, each of the new high-level organisational units is allocated into one or more of

five categories, as shown in Table 4.4. The *delivery* and *joint command* categories are self-explanatory. *Enablers* support the generation of capability, while *direction setting and contestability* perform headquarters functions. The Chief Finance Officer is a in a category all his own—*control*.

Table 4.4: Group and service categories under One Defence

	Direction setting and contestability	Defence capability: delivery	Defence capability: joint command	Enablers	Control
Associate Secretary	■			■	
Deputy Secretary Policy and Intelligence	■	■			
Chief Finance Officer					■
Deputy Secretary Capability Acquisition and Sustainment		■			
Chief Defence Scientist				■	
Vice Chief of the Defence Force	■			■	
Chiefs of Navy, Army and Air Force		■			
Joint Operations			■		

A new One Defence business model will be introduced with three key features:

- a stronger and more strategic centre
- an end-to-end approach for capability development, with capability managers assigned clear authority and accountability
- enablers that are integrated and customer-centric.

Governance—a stronger and more strategic centre

The diarchy has been retained, and new list of joint and separate accountabilities for the Secretary and the CDF has been drafted (see Table 4.5). Ministerial directives along the same lines have been promulgated in the past. Key changes from the last publicly disclosed ministerial directive (circa 2007) are as follows:

- The Secretary and CDF are now separately responsible for managing their respective parts of the organisation.
- The design of the defence force is now the sole responsibility of the CDF; the Secretary is responsible for contesting specific capability investment options. Previously, the Secretary and CDF were jointly responsible for the 'identification, development and provision of current and future capability'.

Responsibility for the department's key processes is divided between the Associate Secretary and the VCDF, who together form a sort of junior diarchy that mirrors the division of accountabilities between the Secretary and CDF. The Associate Secretary will be

responsible for enterprise planning, performance monitoring and risk management, and the VCDF will be responsible for force structure, preparedness and military strategy. The review envisages the Associate Secretary and VCDF as the 'integrators for the Defence enterprise and the future force and joint capabilities respectively'. As the central authority for alignment, the Associate Secretary will 'challenge' the subsidiary plans put forward by the Groups and Services to ensure alignment with strategy and priorities.

Table 4.5: Accountabilities of the Secretary and CDF

<table>
<tr><th colspan="2">Shared accountabilities</th></tr>
<tr><td colspan="2">• Provide integrated, timely policy and strategic advice to Government
• Set top level organisational goals and responsibilities, approve group and service plans and manage performance
• Manage and mitigate strategic and organisational risks</td></tr>
<tr><th>Accountabilities of the Secretary</th><th>Accountabilities of the CDF</th></tr>
<tr><td>• Coordinate the provision of timely advice to Government, including on Defence strategic missions, and the policy aspects of operational deployments
• Set and manage the Defence budget, ensuring Defence remains within the allocated budget
• Ensure that capability and capital investments options are appropriately contested for policy, financial and technical alignment
• Enable capability managers to deliver capability into service in accordance with plans agreed with Government
• Provide intelligence outputs including to whole of Government
• Set top level budgets and manage allocation of resources across Defence
• Provide enabling services to agreed service levels, including Defence science and research, human resources, information and communication technology, information management, facilities, estate, security and legal
• Manage the Defence organisation within your reporting line, including design, control and reform of structures, processes, and policies
• Ensure sound management of financial and other resources in accordance with the Public Governance, Performance and Accountability Act 2013
• Set workforce and employment framework for the public service
• Provide stewardship of the Australian Public Service workforce</td><td>• Command the Australian Defence Force
• Advise Government on the deployment of the Australian Defence Force to achieve Government objectives
• Propose force structures to meet Government objectives within the allocated resource envelope
• Deliver capability outcomes based on capability needs agreed with Government within budget and schedule
• Ensure preparedness of the force through development and sustainment of military capability consistent with Government requirements
• Manage the Defence organisation within your reporting line, including design, control and reform of structures and processes
• Set requirements for enabling functions that provide input to capability
• Manage within agreed budgets
• Set a workforce framework and conditions of service for the Australian Defence Force
• Provide stewardship of the military workforce</td></tr>
</table>

Source: First Principles Review, *Creating One Defence*.

A new Defence committee structure will be established, as set out in Figure 4.4, with memberships as listed in Table 4.6. The Defence Committee will focus 'on the major capability and resource trade-offs and the shared accountabilities of the Secretary and CDF'. The Enterprise Business Committee will be responsible for running the Defence enterprise, including 'planning, performance monitoring and reporting, enterprise risk management,

information management and service delivery reform'. The Investment Committee will consider the equipment and facilities investment programs along with individual projects.

Figure 4.4: The One Defence higher defence committee system

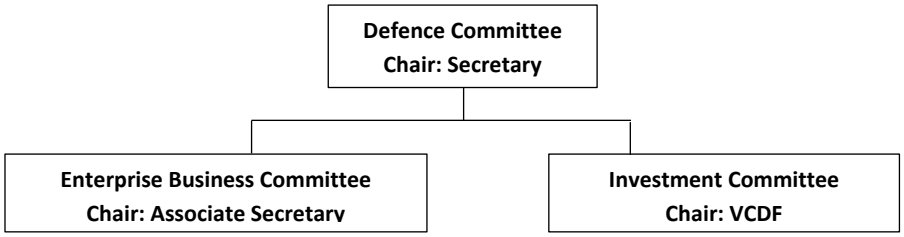


Table 4.6: The One Defence senior committee structure

Defence Committee	Enterprise Business Committee	Investment Committee
Secretary (Chair)	Associate Secretary (Chair)	Vice Chief of the Defence Force (Chair)
Chief of the Defence Force	Vice Chief of the Defence Force	Associate Secretary
Associate Secretary	Deputy Secretary Policy & Intelligence	Deputy Secretary Policy & Intelligence
Vice Chief of the Defence Force	Chief Finance Officer	Chief Finance Officer
Deputy Secretary Policy & Intelligence	Chiefs of Navy, Army and Air Force	Chiefs of Navy, Army and Air Force
Chief Finance Officer	Deputy Secretary Capability Acquisition and Sustainment	Deputy Secretary Capability Acquisition and Sustainment
	Heads of human resources, information and communication technology, facilities and estate	Finance Department representative

Note: The role of the Chief Defence Scientist on committees is yet to be made clear.

Other enterprise-wide committees will be reviewed with the aim of substantially reducing their number. It is noteworthy that the Service Chiefs and Deputy Secretary Capability and Sustainment are not members of the Defence Committee. In addition, legislative changes are planned to formally 'recognise the authority of the CDF and VCDF' and remove the statutory authority of the service chiefs.

Capability development—an end-to-end approach

The dissolution of the Capability Development Group will mean that requirements-setting will be transferred to the service chiefs (for land, sea and air proposals) and to the VCDF (for joint proposals). In addition, the current contestability function will go to the new Policy and Intelligence Group, along with responsibility for seeking project approval from government. The Australian Defence Test and Evaluation Office and the Project Management Office will move to the new Capability Acquisition and Sustainment Group.

Investment proposals will be considered by the Investment Committee chaired by the VCDF. A new Defence Investment Plan will be created, which will include all 'capital and related investments (such as materiel, estate and facilities, workforce and information and communications technology)'. In a new process for the initial entry of projects into the Defence Investment Plan—Gate Zero—the services will effectively bid to have new projects included. Following entry into the investment program, capability managers will have

‘authority and accountability as sponsors for the delivery of capability outcomes to time and budget’. Simultaneously, the new Capability Acquisition and Sustainment Group will project manage acquisitions ‘from Gate Zero through to Final Operating Capability, including the integration of all Fundamental Inputs to Capability’. In doing so, the group will support Gate zero considerations and prepare proposals for first- and second-pass approval. Not all projects will need to follow this process – ‘there should be a judicious use of a fast track path, subject to strong contestability that confirms delivery risks are acceptable’.

As proposals are brought forward in the Defence Investment Committee, the Policy and Intelligence Group will provide ‘significantly enhanced and strengthened’ contestability of the proposals—including ‘red card’ decision rights—on the basis of ‘consistency with financial, technical and strategic guidance’. To support this, Defence’s core policy functions (apart from force structure policy) will be consolidated into one unit under the Deputy Secretary Policy and Intelligence.

Although the essential features of the existing two-pass process for capability development will be retained, the investment approval process will be revised for large and complex projects to ensure that a wide range of options are considered initially for each proposal, as well as to reduce unnecessary documentation at each stage.

Under the ‘smart buyer’ construct, the Capability Acquisition and Sustainment Group will make greater use of industry in managing both sustainment and acquisition. The existing System Program Offices will be reviewed to determine the best procurement model in each instance, and outsourcing will occur where it offers best value for money. In a similar manner, DSTO will form closer partnerships with industry and academia.

Enabling services—an enterprise-wide approach

The review makes several recommendations to improve the efficiency and effectiveness of enabling services. As a first step, it says that all unnecessary estate holdings should be disposed of, beginning with 17 bases identified in the 2012 *Future Defence estate report*. The review says that the net present value of the disposal is $1.4 billion over 30 years. Neither the *Future Defence estate report* nor the list of bases has been made public.

The Associate Secretary will be the ultimate authority for information management, and the VCDF will be the design authority for C4ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance). Management information systems will be bolstered to provide better decision-making and military interoperability. Business and information processes will be standardised and ‘enterprise-wide frameworks for architecture standards and master data management’ will be established. The Chief Information Officer will have ‘red card’ decision rights to stop corporate or C4ISR projects that don’t comply with interoperability standards. All geospatial information functions will be consolidated into the Australian Geospatial Intelligence Organisation. The shared service model of centralised support will be fully implemented across Defence, including in the new Capability Acquisition and Sustainment Group. All corporate services (apart from finance) will be consolidated under the Associate Secretary.

Personnel—the right people in the right jobs

Several recommendations have been made with the goal of creating an appropriately skilled and cost-effective Defence workforce. As a first step, a strategic workforce plan will be developed for the civilians in enabling functions to guide recruitment, learning and development, performance and talent management. At the same time, the enabling and military corporate workforce will be reviewed to ensure 'the greatest overall economy, efficiency and effectiveness'. Where consistent with the maintenance of capability, military personnel in enabling and corporate functions will be replaced by public servants or the function will be outsourced if it is transactional.

The review found that Defence suffers from too many layers of management and anomalously narrow spans of management supervision. Accordingly, the number of organisational layers will be reduced and spans of control will be increased. Consistent with this, seven Band 3 (deputy secretary) and one 3 star positions will be cut, including six from DMO and DSTO. Finally, a new performance management system that 'rewards high performance and introduces consequences for underperformance and failure to deal with it' will be introduced.

De-layering of the organisation, along with other changes, will result in workforce efficiencies. Around 1,000 fewer civilians and 950 fewer military personnel will be required in the new Capability Acquisition and Sustainment Group, and around 650 fewer civilians and 100 fewer military personnel will be required elsewhere in Defence Defence (with the intent to return all military personnel to the Services).

Implementation

The review has provided an implementation plan and governance structure to guide the forthcoming reforms. It's planned that the bulk of changes will be complete within two years. The review team will stay on (augmented by Ms Erica Smyth) to provide external assurance. Regular reports will be made to the Defence Minister, and the government will receive yearly progress reports.

Challenges and opportunities

Reform programs come and go in Defence. Sometimes they fulfill their intent, sometimes not. The extent to which the changes sought by the First Principles Review occur will depend on the vigor with which implementation occurs. As to the improvements sought (which are not the same as mere organisational changes), only time will tell whether intended consequences outweigh the unintended.

If nothing else, Defence is going to be shaken up and some (but not all) of its managerial overheads are going to be cut. The planned changes will provide the opportunity to improve governance, accountability, corporate planning, management information, performance monitoring, risk management and budget discipline. Of course, we've been promised this time-and-time before and yet here we are again. You can lead a horse to water but you can't make it drink.

The merits of many of the substantial changes are far from self-evident—if they were they would have occurred a long time ago. The best that can be said is that they are new ideas

that might be worth a try. In the long run, defence reform is more an exercise in trial and error than intelligent design. With luck, we keep the things that work and reject those that don't. Sometimes we can't make up our mind. The in-again out-again routine with acquisition is an example. Anyone remember the Department of Supply?

You don't have to be a pessimist to see the risks in some of the changes ahead. Creating a 'stronger strategic centre' in two parts is a bold move. To succeed, the tensions from contestability will have to be held in check to avoid thwarting cooperation between the newly created civilian and military sub-empires. And even if relations remain cordial, it's far from clear why a headquarters divided into two parts will work better than a single integrated one.

There's no arguing that the new One Defence model is less ambiguous about accountabilities than its predecessor. But accountability is not an end in itself; it's a means to ensure that the things that need to happen, do. Nothing is gained by dividing a task into two artificial parts if they are tightly interdependent. For example, it's an illusion to think that a budget can be developed independent of the outcomes sought, and visa-versa. Many of the things ostensibly divided between the civilian and military sides of the house are in fact opposite side of the same coin. Reductionism has limits.

Nowhere are the risks greater than when it comes to the new 'end-to-end' approach to capability development. We are told that the new capability and acquisition group will prepare the business cases for first- and second-pass approval of projects, yet the people presently performing that role are slated to go back to the services. Has this been thought through? We'll find out soon enough, with two mega-projects to be decided over the next couple of years; the replacement submarines and future frigates. It won't help that the top layer of DMO's acquisition expertise is set to be shown the door.

Fortunately, continuity will be the order of the day throughout much of Defence. In fact, many of the recommendations simply reaffirm established practices. For example; the recommendation to 'fast-track' some projects, rather than automatically resort to process-heavy competition. Defence has been doing this for years (e.g. Superhornets, C-17, C-27 and Aegis combat system for the AWD etc.). Unfortunately, circumventing competition does not always work out well; the debacle of the lightweight torpedo project had its origin in a truncated process that avoided a formal tender evaluation.

On the positive side, the First Principles Review has avoided the errors of the past by not promising a treasure trove of implausible savings. To the contrary, although some modest personnel reductions are proposed, the review identifies a number of areas where additional investment will be required to build the corporate capacity to operate more effectively—both in term of human capital and information technology. It's entirely possible that the cost of additional investment will exceed any savings that might arise. That shouldn't be taken as a sign of failure, but of maturity.

On balance, it's hard to know what to say. Change brings risks and opportunities. It will be up to the senior folks in Defence to make of it what they can. With the largest boost to defence funding since the Menzies era on the horizon, let's hope they succeed.

Chapter 5 – International Defence Economics

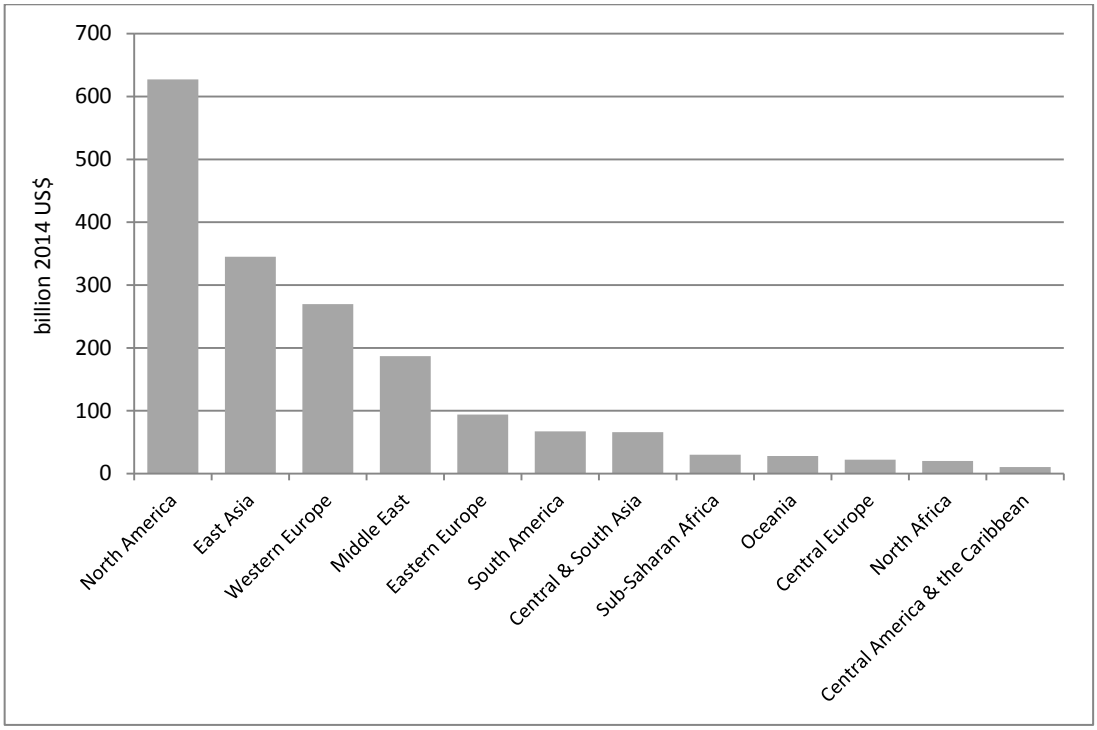
This chapter is divided into three parts. The first examines key international defence spending trends. The second explores Australian defence spending in an international and historical context, and the third explores the continuing impact of the Global Financial Crisis (GFC) on countries' abilities to spend on defence.

Throughout this chapter, defence spending statistics from a variety of source are used. Given the unresolvable questions of definition and reliability, one source is usually as good as another. For that reason, the most convenient source of data has been chosen to allow for a consistent comparison in each case.

International defence spending

According to the Stockholm International Peace Research Institute (SIPRI), the world expended a total of US$1,776 billion on defence in 2014, equivalent to around 2.3% of global GDP. With the exception of China, the bulk of the spending occurred in the developed economies of North America and Western Europe, with East Asia also figuring highly in the data, see Figure 5.1.

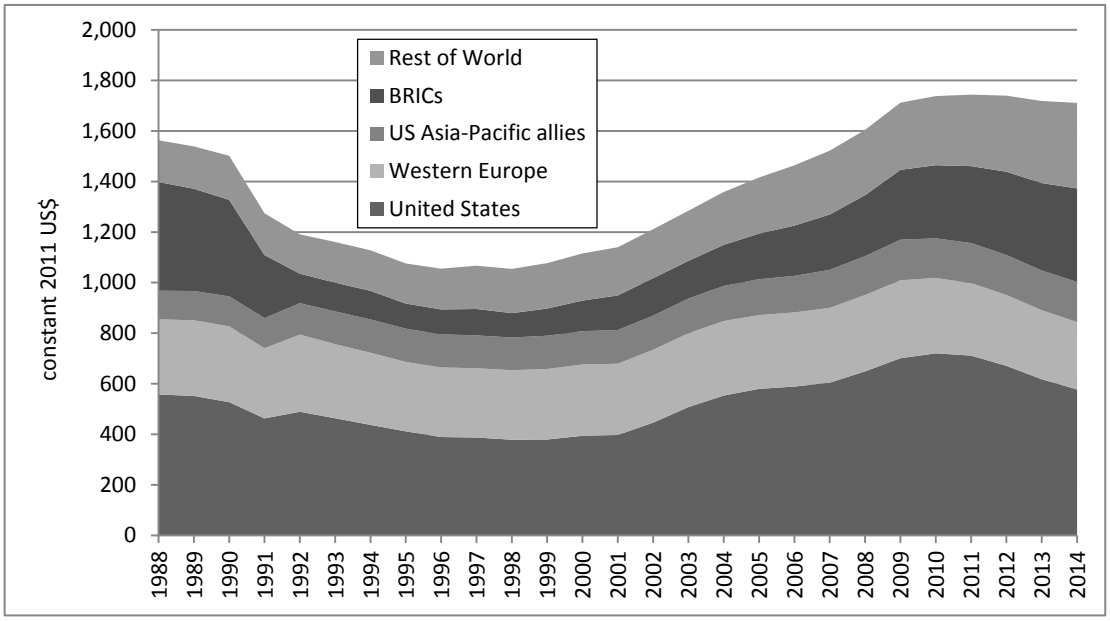
Figure 5.1: Geographic distribution of defence expenditure 2014



Source: Stockholm International Peace Research Institute (SIPRI) Military Expenditure Database 2015 edition, www.sipri.org.

Global defence spending from 1988 to 2014 is graphed in Figure 5.2, where 'BRIC' refers to the emerging powers of Brazil, Russia, India and China, and the US allies outside of Europe are Australia, Canada, Japan, Korea, New Zealand and Taiwan. As can be seen, the peace dividend following the end of the Cold War resulted in a contraction in global defence expenditure of around 30% over a decade. From 2001 to 2010, the trend reversed as the United States mobilised following the attacks 9/11.

Figure 5.2: Global defence spending 1988 to 2014



Source: Stockholm International Peace Research Institute (SIPRI) Military Expenditure Database 2015 edition, www.sipri.org. Russian spending interpolated for 1991. Chinese spending extrapolated for 1988. Soviet spending used for Russia pre 1992.

The United States dominates global defence spending, and the US-led invasions of Afghanistan and Iraq gave rise to a decade-long increase in the global figure. In 2014 the United States accounted for 33.7% of global defence spending, and once its friends and allies are taken into account the 'West' as a whole accounts for just over 58.6%. However, around 2010, global defence spending peaked as expenditure in the United States and other developed nations began to fall.

It is now clear that the world (or at least the developed world) is experiencing another downward swing in defence spending. The United States and most of the countries of Western Europe are projecting either insipid growth or declining defence expenditures into the second half of the decade. In part, this reflects a mini peace dividend from the drawdown of Western forces in Iraq and Afghanistan. At least as important, however, are the mounting fiscal pressures across developed economies.

A combination of rising social spending and the legacy of crippling debts due to the 2008 GFC are forcing many countries to reconsider the priority for defence spending. Western Europe in particular is facing a long-term fiscal crunch due its ageing population; with tax revenues falling and pension costs rising, something has to give. In the absence of a serious deterioration in the strategic situation in Europe—beyond the current ructions caused by Russia— it's likely that cuts to defence spending will be the most politically expedient course of action for many European countries in the years ahead.

But not all trends are downwards. Falling year-on-year defence spending by the United States (-6.5%) and Western Europe (-2.5%) was counterbalanced by growth in other US allies (1.1%), the BRICs (+7.0%) and the rest of the world (+4.2%). Across the past five years, spending by the US and its allies has declined by 14% while spending by the BRICs has grown by 21.8% and spending by the rest of the world has grown by 20%. Change is underway.

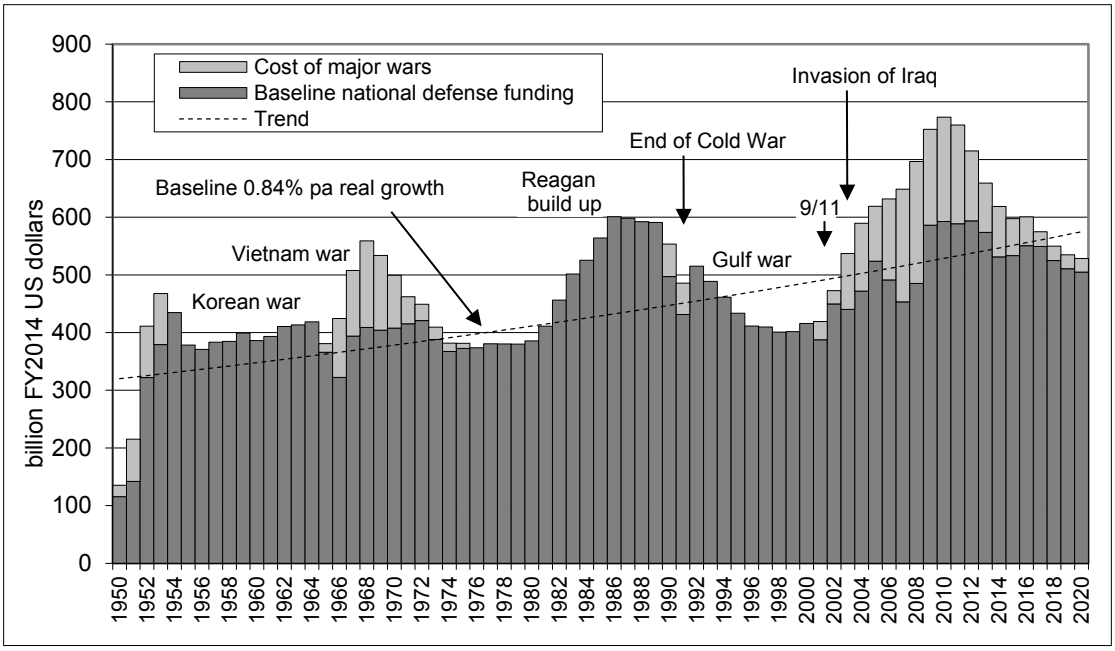
The United States

After a decade of strong growth, the US defence budget has moderated over the past seven years and is falling. The trend is likely to continue; until 2021 US defence spending is theoretically capped under the Budget Control Acts of 2011 and 2013 (sequestration) in response to mounting fiscal pressures—though some remission has occurred.

Over the past several years, the cuts have been accommodated through reduced personnel numbers (and remuneration), base closures, acquisition deferrals, and the early retirement of some assets. Since 2011, the US army has lost 98,000 active duty and reserve personnel. Sequestration has also put pressure on the readiness of the US military by reducing the money available for operations and maintenance.

Further cuts may be necessary. Figure 5.3 shows historical US defence spending and the National Defence Budget Estimates for FY2016 out to 2020. The actual level of defence spending post-2015 is uncertain, higher and lower levels of defence spending than depicted are possible.

Figure 5.3: US defence spending 1950 to 2020



Source: FY 2016 US budget papers (Tables 7.1 and 7.2) and various sources for the cost of major wars.

Even if US baseline defence spending returns to its long-term historical trend of 0.84% annual real growth (relative to the US CPI), the size of US armed forces will continue to decline. Over the past six decades, the annual cost of maintaining a US Navy vessel in service has risen by around 3% above inflation. Over the same period, the costs of aircraft and soldiers have risen in real terms by similar amounts. As a result, the strength of the army has more than halved and the numbers of aircraft and ships have been reduced four-fold since the 1950s (see ASPI Policy Analysis #56, *Trends in US defence spending: implications for Australia,* 2010). Consequently, although the United States remains the most powerful military force on earth, its ability to mount large-scale operations has been slowly eroding, along with its capacity for concurrent operations.

The People's Republic of China

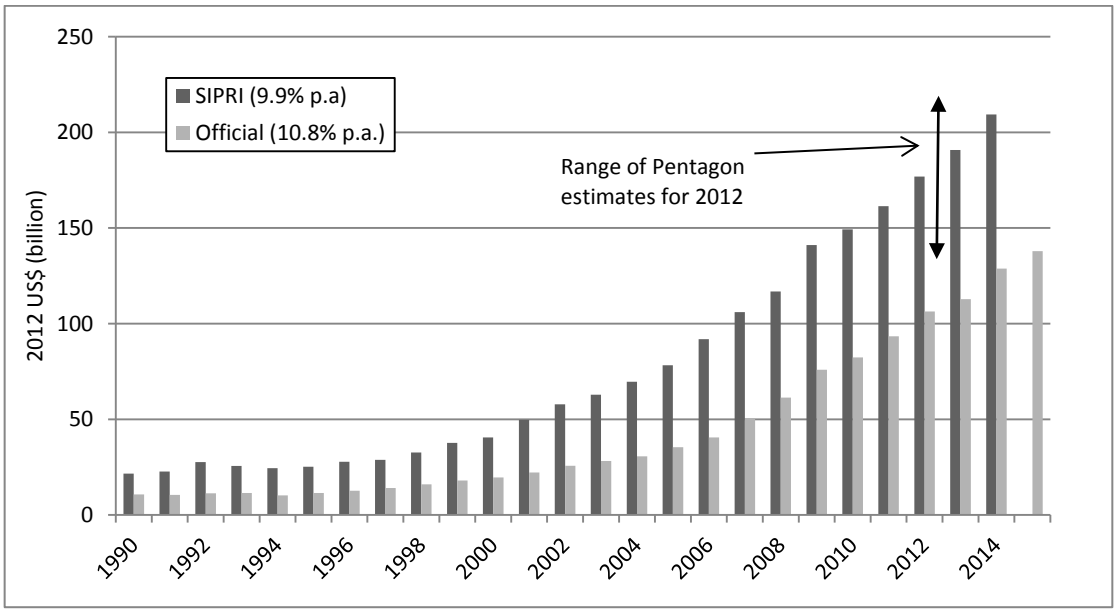
China has enjoyed rapid economic growth since the early 1990s. Over the same period, defence spending has grown apace. Controversy surrounds the scale of Chinese defence spending. US estimates of Chinese spending are substantially higher than the official figure. Independent estimates fall somewhere in between, see Figure 5.4.

By any estimate, Chinese defence spending is rising rapidly; by around 9% to 10% per year above inflation over the past decade, as measured in US$. In terms of Chinese currency, the growth rate averaged 12.7% between 2002 and 2011 (the ongoing appreciation of the RMB and differential inflation means that the growth rate differs from that calculated using US$). Because defence spending growth has been matched by strong growth in the Chinese economy, the defence share of GDP has remained below 2%—at least according to official figures.

Although China is often criticised (including by Australia) for not being transparent enough about its military build-up, its periodic defence white papers are reasonably clear and largely consistent with what can be observed; China is developing the military capability to exclude the United States and its allies from its maritime approaches with a particular focus on operations against Taiwan. This is reflected in a focus on developing and modernising what the US term 'anti-access/area denial capabilities'.

To a lesser extent, China is investing in power-projection assets—including an aircraft carrier—to protect its sea lines of communication and assert its interests further afield. By the end of the decade, China will have the ability to deploy and sustain a modest joint force, including several battalions on low-intensity operations far from China.

Figure 5.4: Chinese defence spending 1990 to 2015



Sources: Analysis of data from SIPRI Military Expenditure Database 2015, www.sipri.org; Pentagon Report to Congress on the Military Power of the People's Republic of China, FY2013, globalsecurity.org, and media sources.

Comparing the United States and China

Much speculation surrounds the changing economic and strategic balance between the United States and China. Here's some numbers to put things in perspective.

According to the World Bank, the United States economy (US$16.8 trillion) was 1.8 times larger than China's (US$9.2 trillion) at market exchange rates in 2013. If China's economy grows at 7% per annum and the US at 2.5% per annum, it will only take 12 years for economic parity to be reached in 2027.

The raw statistics for recent military expenditure by the United States and the People's Republic of China are shown in Table 5.1. Note that China's smaller GDP share gives it a relatively greater capacity to increase defence spending.

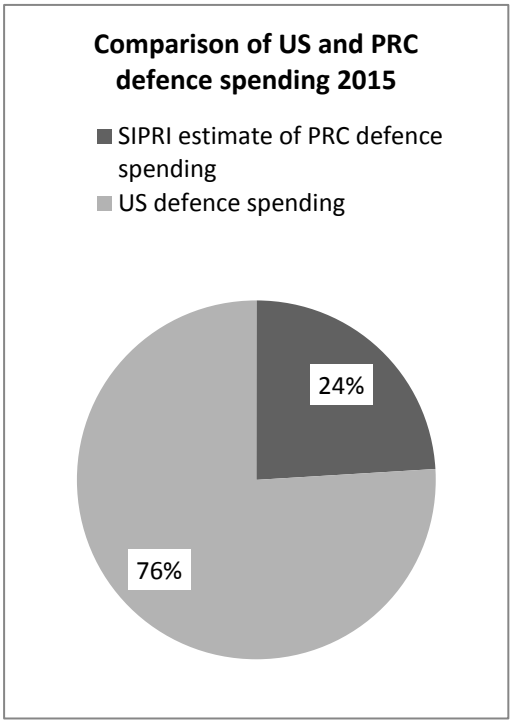
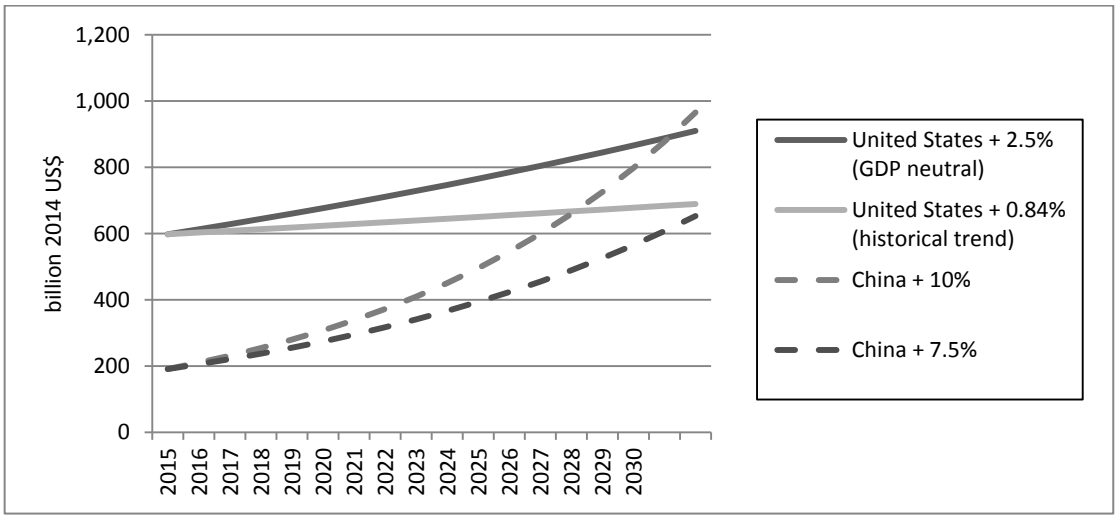


Table 5.1: United States and Chinese defence spending circa 2014/2015

	Baseline defence expenditure 2015 US$	Defence expenditure percentage of GDP	Rate of growth
United States (official 2015)	598 billion	3.3%	0.84%
China (official 2015)	145 billion	-	10.8%
China (SIPRI estimate 2014)	191 billion	2.0%	9.9%

Plausible defence spending trajectories for the United States and China are plotted in Figure 5.5 based on the latest SIPRI estimate of Chinese spending (2014), and using growth rates commensurate with historical trends. It shows that it is fully possible for Chinese defence spending to exceed that of the United States within the next two decades.

Figure 5.5: Plausible US and Chinese defence spending trajectories



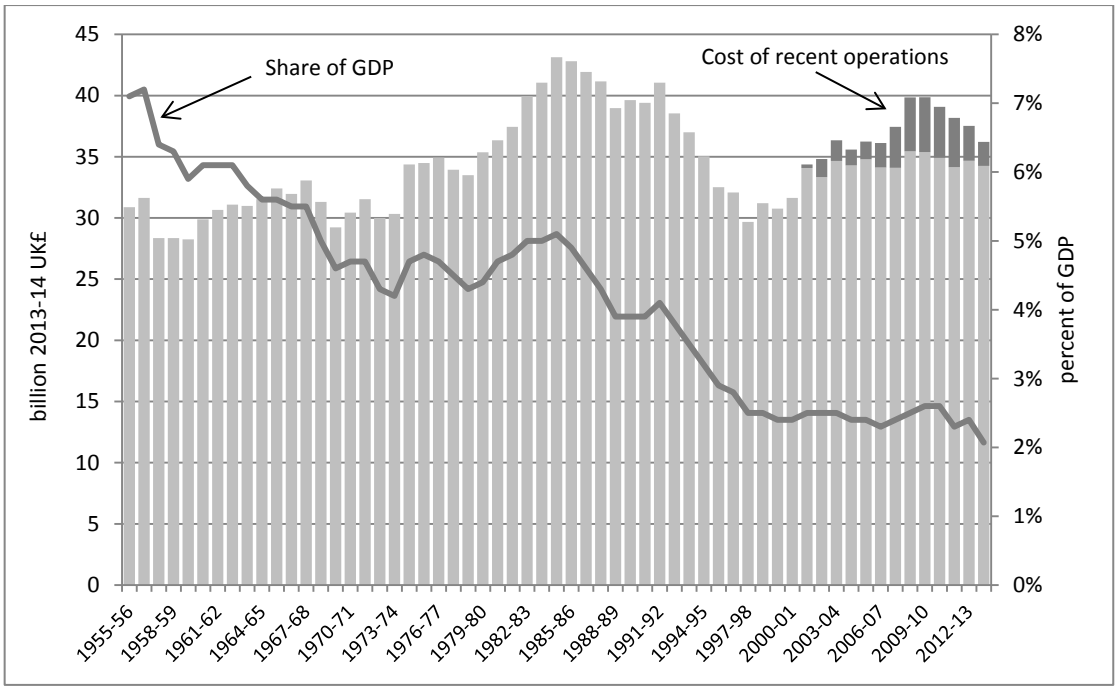
United Kingdom

Like the United States, the United Kingdom ramped up defence spending in the 2000s (though not to the same extent). This trend is now being reversed as part of fiscal consolidation. The 2011 UK defence budget set out real reductions in defence spending out to 2014-15. Subsequent decisions increased the reductions to 8.8% over four years. The initial moves to accommodate the budget cuts included:

- Military personnel reductions of 25,000 (from a base of 158,500) and civilian personnel cuts of 29,000 by 2015, plus the withdrawal of land forces from Germany by 2020. Reduction in tank and heavy artillery numbers by 40% and 35% respectively.
- Immediate decommissioning of an existing Aircraft Carrier, one Landing Platform Helicopter and one Land Ship Dock. Continuing with plans to build two new aircraft carriers but keeping one at 'extended readiness' (mothballing). Putting one existing Landing Platform Dock ship at 'extended readiness'.
- Scrapping of the *Nimrod* maritime patrol aircraft and *Harrier* jump-jet fleets and a reduction in the number of *Chinook* helicopters to be purchased from 22 to 12.
- Five year delay in the replacement of ballistic missile submarine fleet and reduction in the number of warheads from 160 to 120.

Spending for the remainder of the decade will depend on decisions to be taken by the newly elected UK government. Many UK commentators are pessimistic about the prospects for spending growth, and the US has expressed concern about the UK's future capacity to contribute to coalition operations. Even if funding stays steady, further capability reductions may be necessary if internal budget pressures are not held in check.

Figure 5.6: United Kingdom defence spending 1955 to 2012

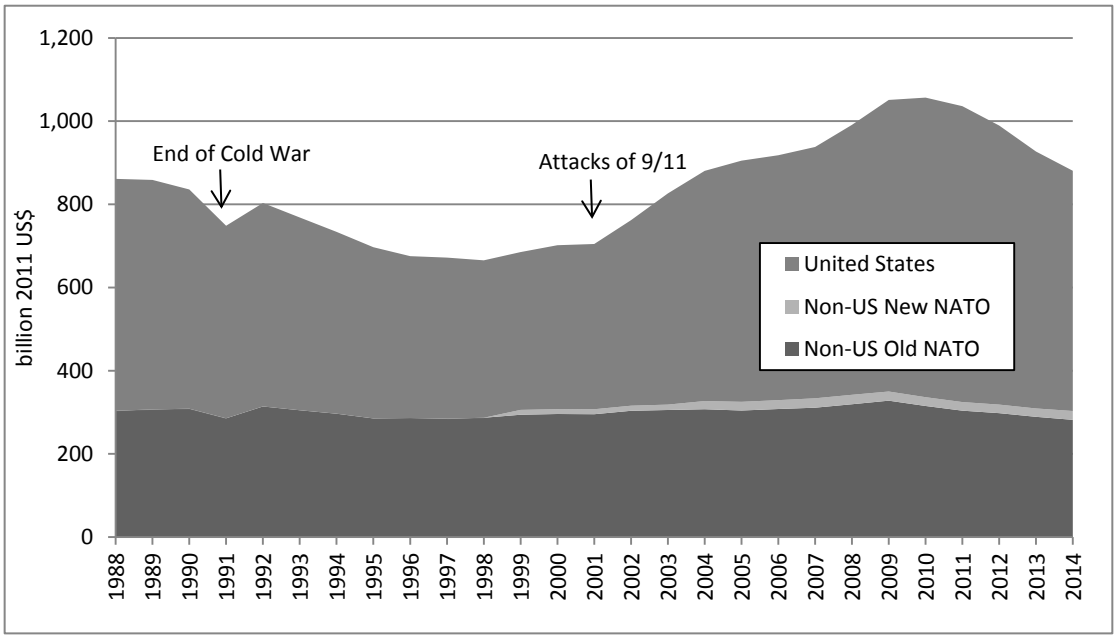


Source: UK House of Commons Library Report SN/SG/113, 2009 & SN/SG/3139, 2012, UK MoD, UK Defence Statistics 2014.

North Atlantic Treaty Organisation (NATO)

Until recently, NATO defence spending (exclusive of the United States) had been remarkably static in real terms since the end of the Cold War, with the subsequent expansion of NATO doing little to change the situation. However, in recent years spending has fallen.

Figure 5.7: NATO defence spending 1988 to 2014



Source: Analysis of data from SIPRI Military Expenditure Database 2015, www.sipri.org

The larger members of NATO and the scale of their present defence spending are given in Table 5.2. In addition to the United States and United Kingdom, many other NATO members are under pressure to reduce defence spending due to fiscal pressures—notwithstanding Russian adventurism. The resulting cuts are being accommodated in various ways. For example, in 2012 Italy announced plans to reduce its troop strength from 183,000 to 150,000 and reduce civilians from 30,000 to 20,000. Germany ended conscription in 2011, and since 2009 France has shed 54,000 military and civilian positions. Because these countries are subject to the same cost pressures as the United States, the scale of NATO forces will continue to decline in the years ahead making it even more difficult to undertake operations such as in Afghanistan.

Table 5.2: Key NATO members' defence spending 2014

	United States	United Kingdom	France	Germany	Italy	Canada	Spain	Netherlands
Defence spending as a share of GDP	3.34%	2.47%	1.90%	1.20%	1.16%	0.89%	1.07%	1.30%
Defence spending in 2014 US$ billions	581	61.8	53.0	43.9	24.3	15.9	15.1	10.8

Source: IISS, The Military Balance 2015.

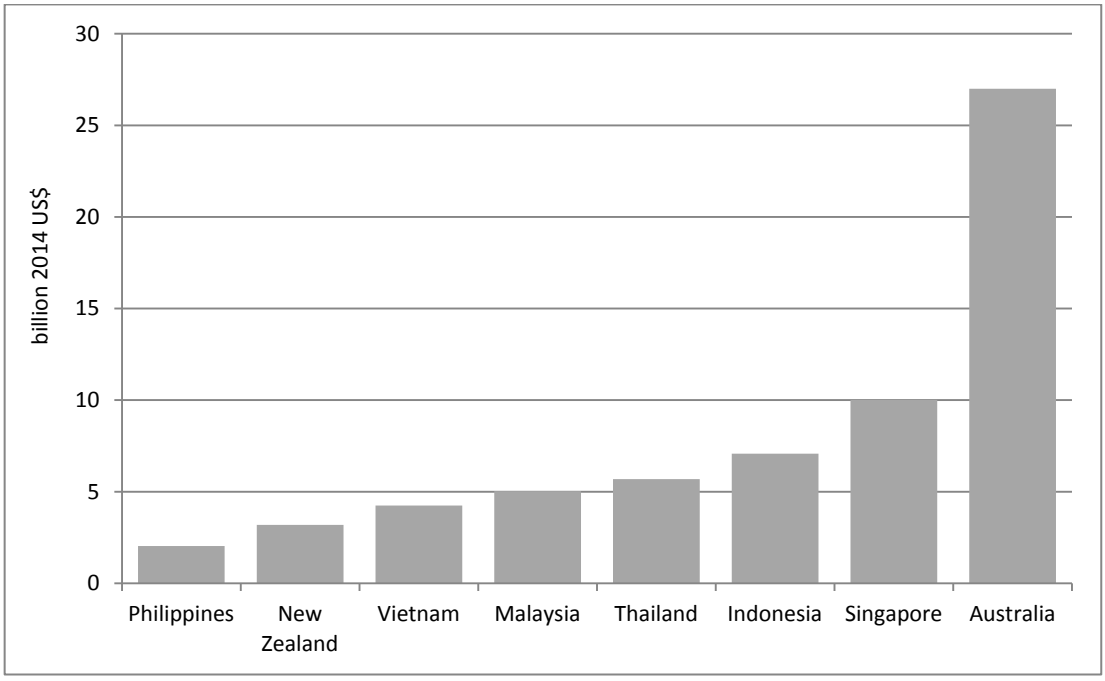
Regional trends

Defence spending trends in Maritime Southeast Asia and Greater Asia are summarised on the following two pages.

Maritime Southeast Asia

Defence spending for 2014 in the seven largest Southeast Asian states plus Australia is plotted in Figure 5.8 and further detailed in Table 5.3. Two points are worth making. (1) Australia outspends any of its neighbours by a comfortable margin. (2) Only Singapore shows any real sign of strategic angst, with a GDP share of 3.38%. Note that changes to reporting make New Zealand defence spending data difficult to track.

Figure 5.8: Defence spending 2014 in Maritime Southeast Asia



Source: IISS, The Military Balance 2015 (apart from Australia-ASPI estimate used).

Table 5.3: Defence spending 1990 to 2014; Maritime Southeast Asia

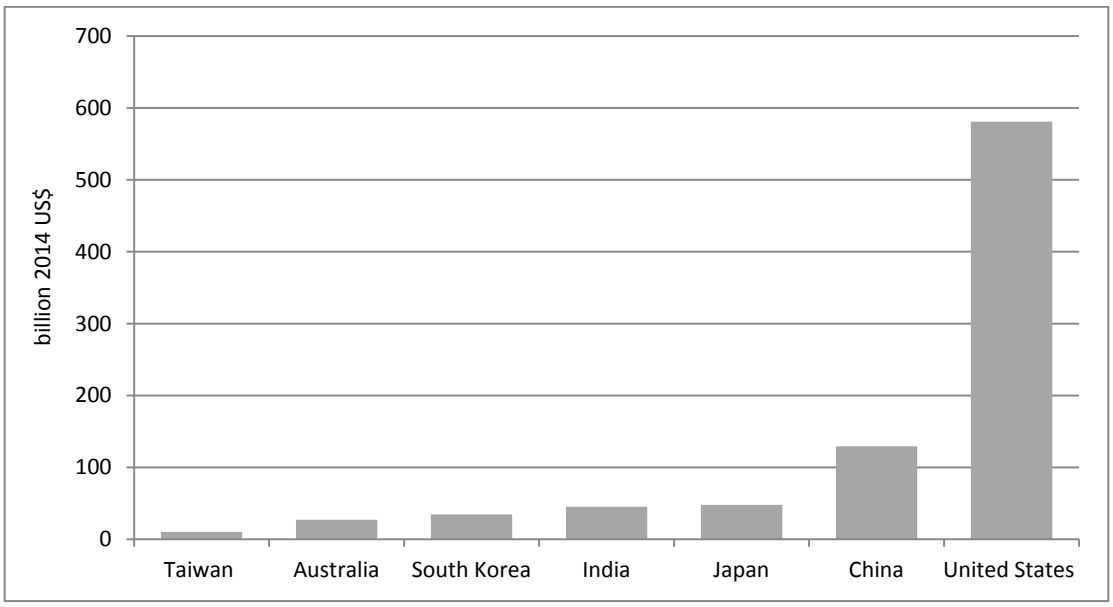
	New Zealand	Vietnam	Philippines	Malaysia	Indonesia	Thailand	Singapore	Australia
2014 defence spending as a share of GDP	1.69%	2.49%	0.65%	1.42%	0.69%	1.22%	3.38%	1.75%
Average annual defence spending growth 2000 to 2013	0.7%	-	2.4%	5.1%	8.4%	3.9%	1.6%	3.2%
Average annual defence spending growth 1990 to 2000	1.2%	-	1.4%	3.1%	-0.8%	-1.5%	6.8%	1.6%

Sources: GDP share taken from IISS, The Military Balance 2015, Growth rates in US$ from Stockholm International Peace Research Institute (SIPRI) Military Expenditure Database 2015 edition, www.sipri.org. Australian data from ASPI.

Greater Asia

Defence spending for 2014 in the six largest Greater Asian states plus Australia is plotted in Figure 5.9 and further detailed in Table 5.4. Several points are worth making. (1) Australia is a minnow in the tank of North Asian security. (2) Only India and South Korea shows any real sign of strategic concern with GDP shares of around 2.12% and 2.58% respectively. (3) Taiwan and Japan are allowing their defence capabilities to atrophy, notwithstanding that Taiwan's GDP share remains above 2%. (4) Although China devotes less than 1.3 % of GDP to Defence, it has been increasing its defence spending at an impressive rate over the past two decades. Note that estimates of Chinese defence spending vary, and that the number used in Figure 5.9 is at the lower end of the spectrum. Other estimates of Chinese defence spending put it at around one-third of the US effort.

Figure 5.9: Defence spending 2014 in Greater Asia



Source: IISS The Military Balance 2015

Table 5.4: Defence spending 1990 to 2014; Greater Asia

	Taiwan	Australia	South Korea	India	Japan	China	United States
2014 defence spending as a share of GDP	1.92%	1.75%	2.58%	2.12%	0.90%	1.30%	3.34%
Average annual defence spending growth 2000-2013	-0.2%	3.2%	3.7%	4.3%	-0.1%	12.4%	2.8%
Average annual defence spending growth 1990-2000	-0.9%	1.6%	2.9%	3.9%	2.3%	6.5%	-2.9%

Sources: GDP share taken from IISS, The Military Balance 2015, Growth rates in US$ from Stockholm International Peace Research Institute (SIPRI) Military Expenditure Database 2015 edition, www.sipri.org. Australian data from ASPI

Historical Defence Spending

Historical Australian defence spending

Real and nominal Australian defence spending from 1870 to the present appears in Figure 5.10. Although inflation dominates the nominal data and obscures much of the historical detail, the impact of the wars of the twentieth century is clearly visible in the 'real' data corrected for inflation.

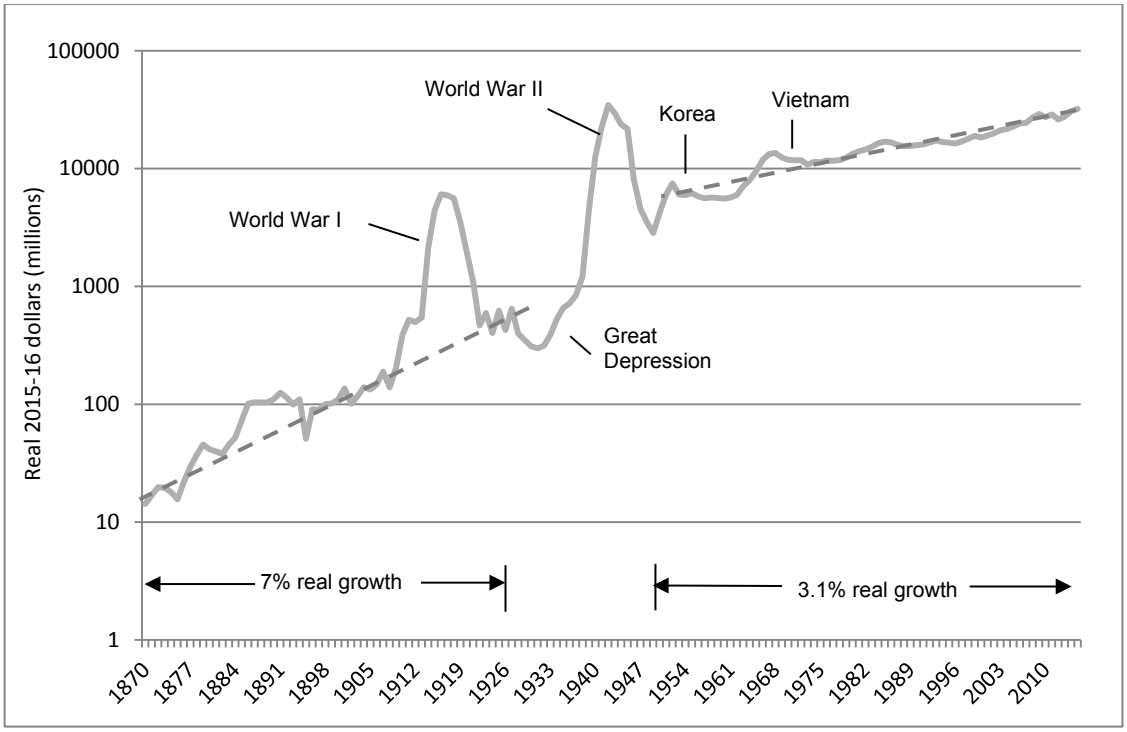
Figure 5.10: Australian defence spending, 1870–2014

Source: ASPI collation of data from various sources, real dollars calculated using retail/consumer price index.

An even more useful graph of historical spending appears in Figure 5.11 where real spending has been plotted on a logarithmic scale, on which exponential growth (which is close to compounding growth for small rates of increase) appears as a straight line. It shows there have been two epochs of underlying steady growth in defence spending; from 1870 to 1929 spending grew by around 7% per annum, and from 1945 to the present underlying spending grew by around 3.1% per annum.

None of this should be taken to imply that the defence force has expanded significantly during the post-war period—it has not. Rather, the observed growth in defence spending largely reflects the rising intrinsic cost of delivering modern military capability. The 2003 ASPI publication, *A Trillion Dollars and Counting,* estimated that real growth of around 2.65% per annum was necessary just to maintain the present scale and range of capabilities in the ADF. Comparable analysis of US defence spending and force structure trends leads to a similar conclusion. Thus, the recent rise of 3% per annum is more about maintaining than significantly expanding the defence force.

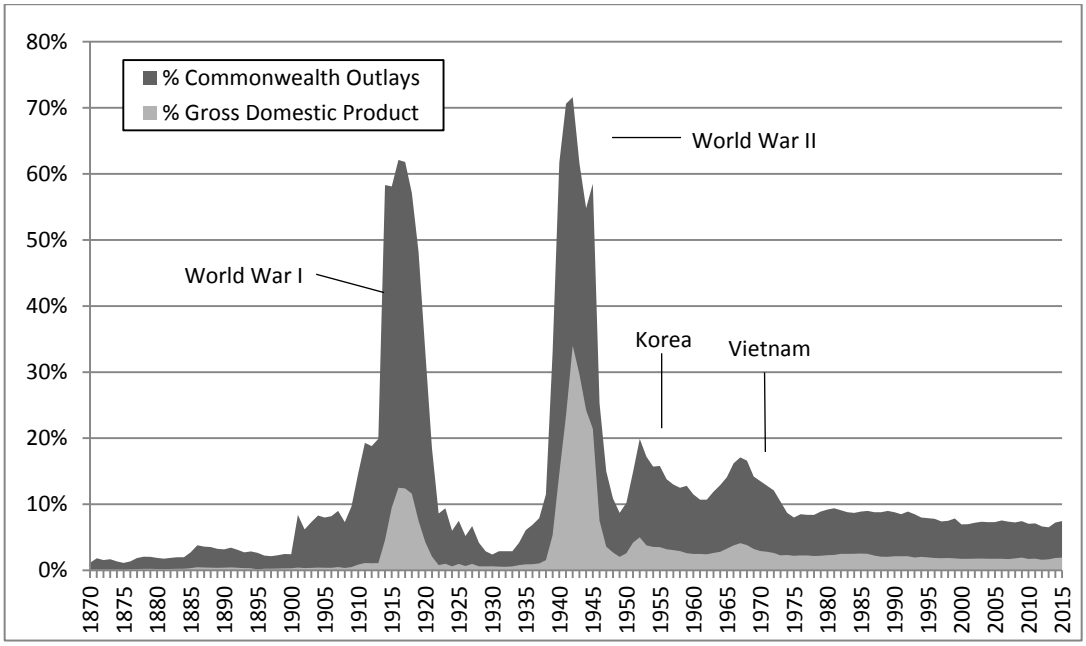
Figure 5.11: Australian defence spending, 1870–2015



Source: ASPI collation of data from various sources, real dollars calculated using retail/consumer price index.

The steady increase in real defence spending since the end of the World War II has been possible because of ongoing growth in the Australian economy over the same period. In fact, as a share of Gross Domestic Product (GDP) the longer-term trend has been for defence spending to account for a progressively smaller share of domestic output. Figure 5.12 plots defence spending as both a share of GDP and as a proportion of total Commonwealth outlays.

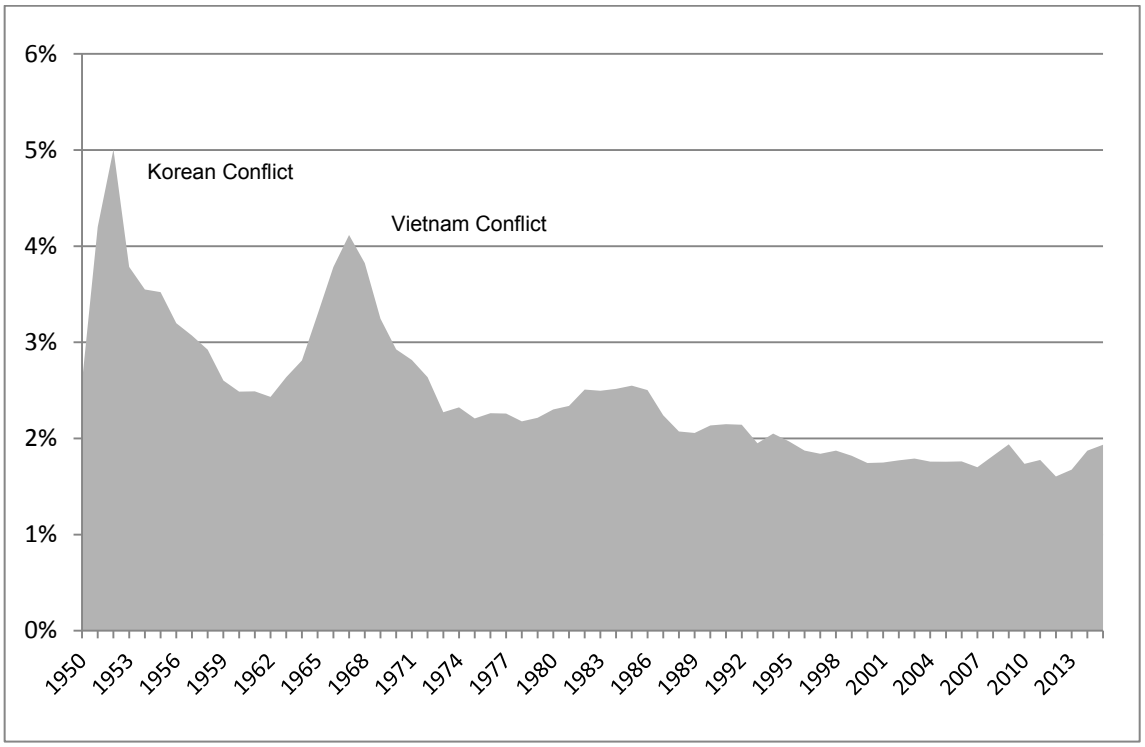
Figure 5.12: Australian defence spending as a share of GDP and Outlays.



Source: ASPI collation of data from various sources.

Given the importance of defence spending as a share of GDP, a magnification of the post-war period has been prepared in Figure 5.13.

Figure 5.13: Defence burden (per cent of Gross Domestic Product) 1946–2015



Source: ASPI collation of data from various sources.

GDP share is not a measure of the adequacy or otherwise of defence spending—that's something that depends on the task at hand. Rather, it measures the proportion of national wealth that a nation devotes to defence.

The planned growth in Australian defence spending will see share of GDP devoted to national defence grow to 2% by 2023-24. While this is high by recent standards, the United States has recently been expending more than 4.7% of GDP and the United Kingdom 2.5%.

Even taking account of the growing fiscal burden due to the ageing of the Australian population, there is no reason to conclude that a defence burden in the range of 2% to 3% is unsustainable. While it is true that health and ageing will steadily demand a growing share of GDP in the decades ahead, the concurrent rise in individual prosperity (as measured by GDP per capita) will allow living standards to grow appreciably even if a larger share of national product is diverted for public goods like health, aged care and defence.

A more detailed examination of the affordability of Australian defence spending can be found in the 2008 ASPI publication *Strategic choices: Defending Australia in the 21st century*.

Australia's defence effort in an international context

According to the World Bank, in 2013 Australia had the twelfth largest economy on earth measured at market exchange rates (and nineteenth using Purchasing Power Parity (PPP) according to the IMF in 2014). From this annual bounty of around 1.7 trillion dollars, Australia finds the money to fund its defence. Table 5.5 displays Australia's 2014 defence

spending (the latest year for which comprehensive data is available) along with that of a selection of countries including allies, regional neighbours and other developed industrial economies around the globe. All figures are given in US dollars calculated at prevailing market exchange rates.

Table 5.5: Defence spending and burden 2014

2014 GDP		2014 Defence expenditure		2014 % GDP	
Country	$US(b)	Country	$US(b)	Country	%
USA	17,395	USA	581.0	Israel	6.6
China	9,954	China	129.4	Russia	3.4
Japan	5,300	Russia	70.0	Singapore	3.38
Germany	3,658	United Kingdom	61.8	USA	3.34
France	2,789	France	53.0	Pakistan	2.58
United Kingdom	2,502	Japan	47.7	South Korea	2.53
India	2,132	India	45.2	Vietnam	2.49
Italy	2,095	Germany	43.9	United Kingdom	2.47
Russia	2,059	South Korea	34.4	India	2.12
Canada	1,787	Australia	29.3	Taiwan	1.92
Australia	1,628	Italy	24.3	France	1.9
Spain	1,411	Israel	20.1	Australia	1.8
South Korea	1,360	Canada	15.9	New Zealand	1.69
Indonesia	1,029	Spain	15.1	Malaysia	1.42
Turkey	877	Netherlands	10.7	Netherlands	1.3
Netherlands	823	Taiwan	10.1	China	1.3
Sweden	573	Singapore	10.0	Thailand	1.22
Taiwan	526	Turkey	10.0	Germany	1.2
Thailand	467	Indonesia	7.1	Sweden	1.17
Malaysia	352	Sweden	6.7	Italy	1.16
Philippines	308	Pakistan	5.9	Turkey	1.14
Israel	305	Thailand	5.7	Spain	1.07
Singapore	296	Malaysia	5.0	Japan	0.9
Pakistan	229	Vietnam	4.2	Canada	0.89
New Zealand	189	New Zealand	3.2	Indonesia	0.69
Vietnam	169	Philippines	2.0	Philippines	0.65
PNG	19	PNG	0.1	PNG	0.52

Source: IISS: The Military Balance 2015. Australian results from ASPI for 2014-15.

With the caveat that fluctuation in exchange rates can make a significant difference in relative ranking, there are three observations worth making. First, our level of defence spending gives us a budget broadly comparable with Spain and Canada, but far below heavy hitters such as Germany, UK, Japan, France and China. Second, we outspend all our Southeast Asian neighbours by a considerable margin. Third, the United States remains in a class of its own.

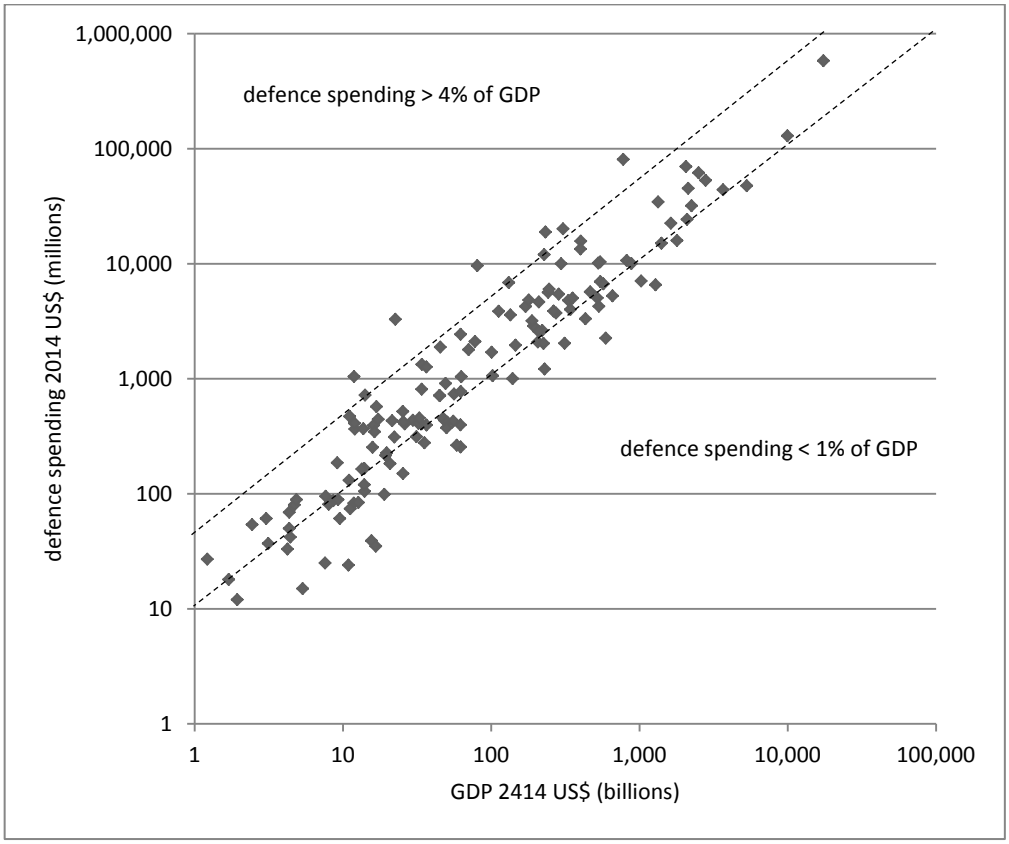
In terms of defence spending as a percentage of GDP, at 1.8%, we devote significantly more than the Netherlands (1.3%), Germany (1.2%), Spain (1.1%), Canada (0.9%) and Japan (0.9%). According to the data, the only fully developed Western countries to allocate a larger share of GDP than us are the (the nuclear-armed) United States (3.3%), France (1.9%) and the

United Kingdom (2.5%). Closer to home, we devote a smaller share of GDP than Vietnam (2.5%), India (2.1%), South Korea (2.5%), and Singapore (3.4%), but more than Indonesia (0.7%), Thailand (1.2%) and the Philippines (0.7%). And, perhaps surprisingly, New Zealand (1.7%) appears to be catching up (though NZ spending data can be hard to interpret).

To summarise, we spend a greater share than most developed Western nations but a lesser share than many of our significant regional neighbours. This probably reflects two things: (1) the synergy derived from collective defence in Western Europe, and (2) that some of our less prosperous neighbours have to spend a larger share of GDP to meet the demands of a more challenging strategic environment than that of Western Europe.

An alternative and often illuminating depiction of the economic resources a country allocates to defence can be achieved by plotting its position on a graph of GDP against defence spending along with other nations. We've done this in Figure 5.14 for 143 countries based on data collected by the International Institute of Strategic Studies (IISS). To properly capture the wide spread of GDP and defence spending values, the data has been plotted on a dual logarithmic scale.

Figure 5.14: GDP and defence spending for 143 countries 2014



Source: Compiled from data in The Military Balance 2015 (IISS).

A couple of things are immediately apparent. Most obviously, there is a clear correlation between defence spending and economic size; the larger a nation's economy the more it tends to spend on defence. In addition, the vast bulk of nations spend within the band of between 1 and 4% of GDP on defence. Not surprisingly, those countries that spend larger shares of GDP tend to have more challenging strategic circumstances than those that spend

less, or else they are impoverished nations that need to spend a greater share of their meagre resources to achieve a credible capability. Small shares of GDP spending tend to correlate with advantageous geography, strong alliances and benign neighbours. But another factor is also at play. Economically prosperous developed nations tend, understandably, to be able to provide for their defence with a smaller share of GDP.

Money is not the only resource that a nation has available to devote to its defence; there is also people. Table 5.6 lists population numbers, permanent defence force numbers and population percentage in the armed services for our selection of allies, neighbours and Western powers.

Table 5.6: Human resources circa 2015

Country	Population	Country	Armed Forces	Country	% of POP
China	1,355,692,576	China	2,333	North Korea	4.79%
India	1,236,344,631	United States	1,433	Israel	2.28%
United States	318,892,103	India	1,346	South Korea	1.35%
Indonesia	253,609,643	North Korea	1190	Singapore	1.31%
Pakistan	196,174,380	Russia	771	Taiwan	1.24%
Russia	142,470,272	South Korea	655	Turkey	0.63%
Japan	127,103,388	Pakistan	644	Russia	0.54%
Philippines	107,668,231	Turkey	511	Thailand	0.53%
Vietnam	93,421,835	Vietnam	482	Vietnam	0.52%
Turkey	81,619,392	Indonesia	396	United States	0.45%
Germany	80,996,685	Thailand	361	Malaysia	0.36%
Thailand	67,741,401	Taiwan	290	Pakistan	0.33%
France	66,259,012	Japan	247	France	0.32%
United Kingdom	63,742,977	France	215	Italy	0.29%
Italy	61,680,122	Germany	182	Spain	0.28%
South Korea	48,375,645	Israel	178	United Kingdom	0.25%
Spain	47,737,941	Italy	176	Australia	0.25%
Canada	34,834,841	United Kingdom	159	Germany	0.22%
Malaysia	30,073,353	Spain	133	Netherlands	0.22%
North Korea	24,851,627	Philippines	125	New Zealand	0.20%
Taiwan	23,359,928	Malaysia	109	Japan	0.19%
Australia	22,507,617	Singapore	73	Canada	0.19%
Netherlands	16,877,351	Canada	66	China	0.17%
Sweden	9,723,809	Australia	56	Indonesia	0.16%
Israel	7,821,850	Netherlands	37	Sweden	0.15%
PNG	6,552,730	Sweden	15	Philippines	0.12%
Singapore	5,567,301	New Zealand	9	India	0.11%
New Zealand	4,401,916	PNG	2	PNG	0.03%

Source: International Institute for Strategic Studies: The Military Balance, 2015. CIA Factbook.

Here Australia is less well endowed. According to the *CIA Factbook*, Australia ranked 56th in population in 2014; ahead of Sri Lanka and below Cote d'Ivoire. We have about one-third the population of the larger European powers and less than one-tenth that of the US. In regional terms, we're just a little smaller than Malaysia, North Korea and Taiwan, but only a quarter the size of Thailand and the Philippines. Indonesia has more than ten times our population, and we are but a drop in the ocean compared with India and China. The sobering fact is that we account for less than one-third of one per cent of the world's people.

Our permanent armed forces in 2014 amounted to around 56,000, which puts us near the bottom of the table in our selection of countries. Overall, there are around 56 countries with armed forces numerically superior to ours. As a proportion of population, we have around one-quarter of one per cent of our population engaged as full-time military personnel. This is less than European nations Spain (0.28%), Italy (0.29%) and France (0.32%), and behind the United States (0.45%). In fact, in our selection, the only Western countries we comfortably beat are those well-known strategic optimists, Canada and New Zealand (both of which have their strategic approaches covered by more powerful neighbours) and Sweden, which makes extensive use of reserve personnel. That said; we do come ahead of Germany (0.22%) and the Netherlands (0.22%). In regional terms, we fall well behind Singapore (1.31%), Malaysia (0.36%) and Thailand (0.53%). Ranking in terms of proportion of population needs to be seen in the context of our avowed 'maritime strategy'. With the exception of a short period in the 1960s which saw conscription boost the Army to over 40,000, Australia has never maintained a large peacetime standing Army. As a country with no land borders and no prospective adversaries with an amphibious capability, the imperative to develop a manpower-intensive land force is slight.

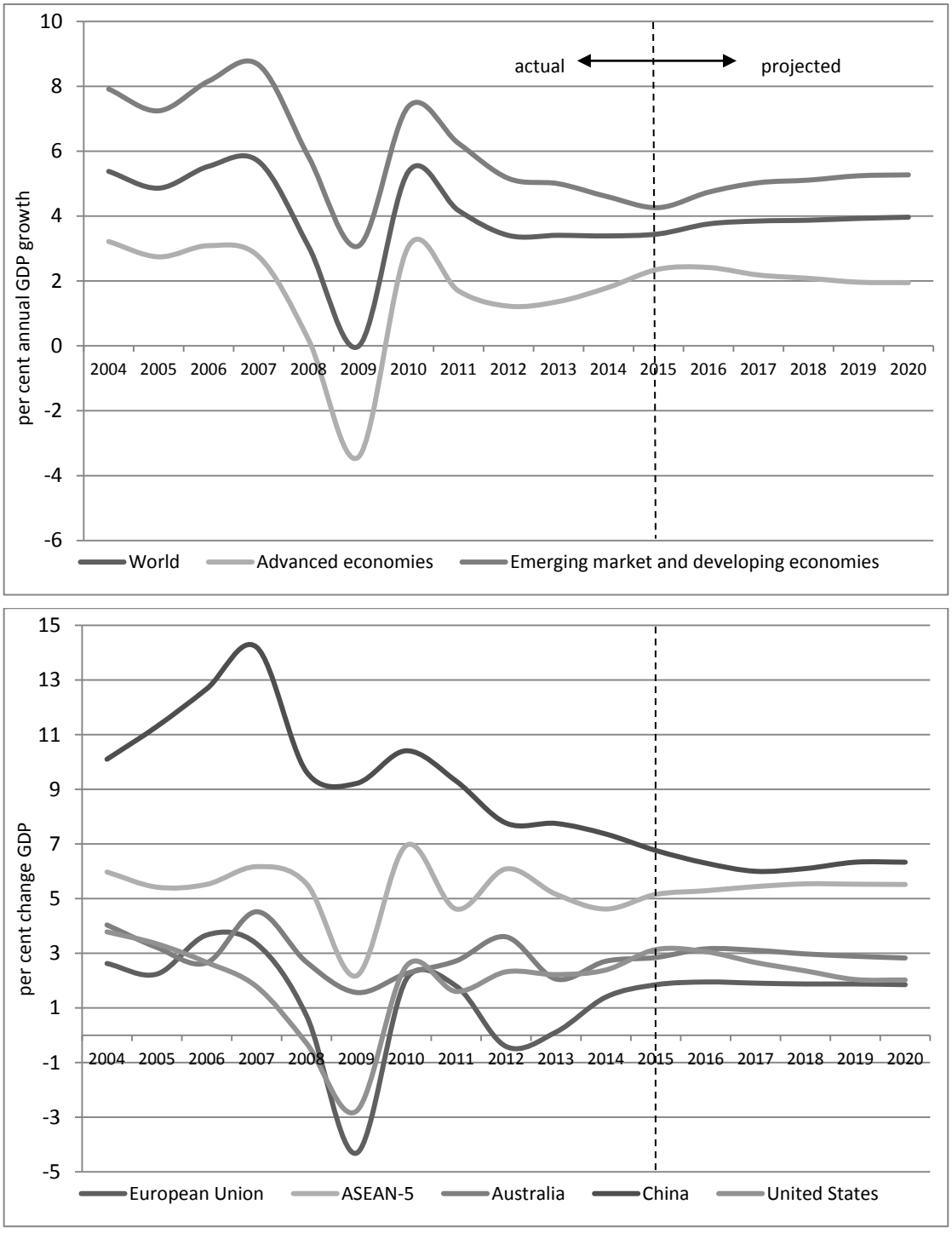
Impact of the Global Financial Crisis

In 2009, the ASPI Budget Brief devoted an entire chapter to the potential impact of the GFC. The key aspects of that analysis are updated below. Figure 5.15 shows the recorded and prospective economic contraction globally and for advanced and developing economies separately. As can be seen, the impact was more severe in the former. In fact, compared with the initial estimates from early 2009, developing countries have gotten off even more lightly than expected—typically 2-3% less contraction—thereby widening the gap between the impact on developed and developing counties.

The results for specific countries and sub-regions are shown in the lower graph. Note that China and Australia managed to avoid the worst of the recession compared with our respective cohorts—at least initially.

Over the past twelve months, the world economic outlook has been more uncertain than encouraging. The ongoing sovereign debt crisis in Europe has cast a shadow over the global economy, growth in China has slowed, and the United Kingdom is undergoing yet another economic slowdown. Overall, growth projections have continued to moderate as the global economy fails to fully recover. On the bright side, the US economy appears to finally be gaining momentum after the slowest and most hesitant recovery from recession in the post-war era. In Australia, where the impact of the GFC was not severe, the recovery has been slow and interest rates have been cut to an historical low of 2% in an attempt to kick-start growth.

Figure 5.15: The Great Recession

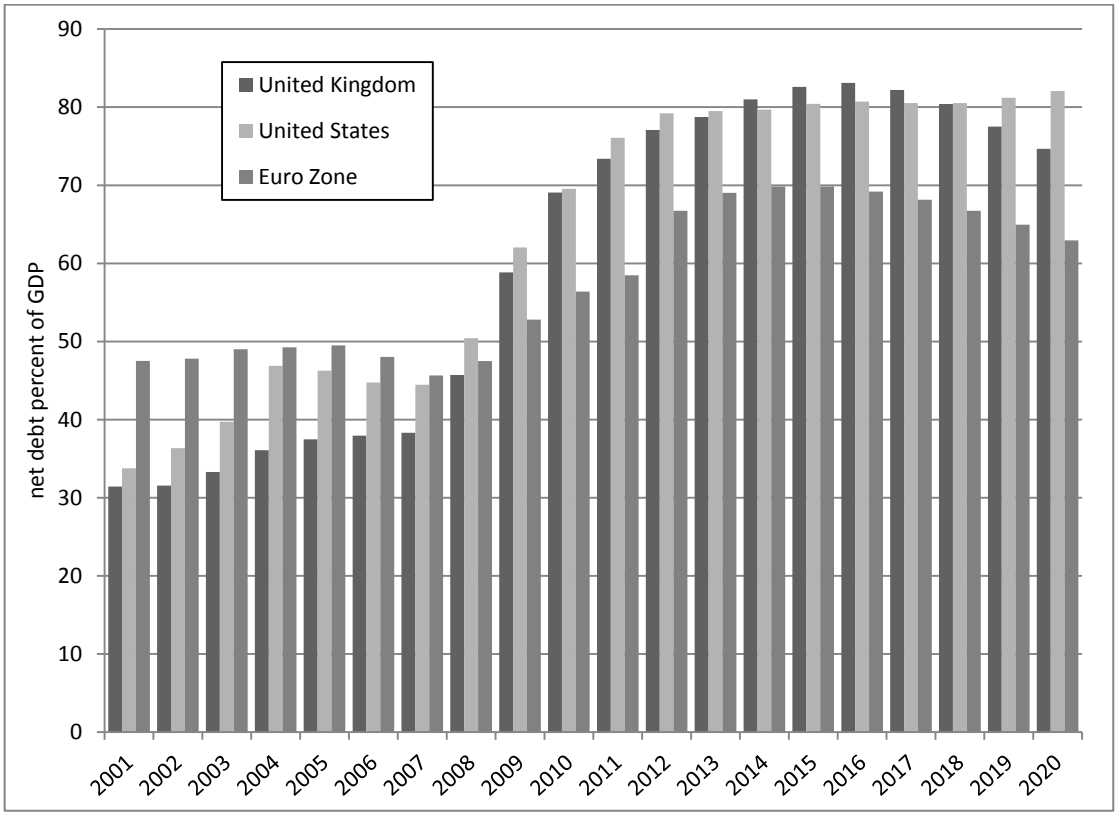


Source: International Monetary Fund, World Economic Outlook, April 2015.

At the time, the GFC only had a limited impact on international defence spending—probably because insufficient time was available to make substantial adjustments. Seven years later, and the longer-term consequences are beginning to emerge. As shown earlier, from around 2010 onwards, substantial cuts to defence spending have been made in a number of countries.

From the perspective of defence spending (and government spending more generally), the GFC did two things. First, it rapidly exacerbated long-standing problems with government debt in many advanced economies, see Figure 5.16.

Figure 5.16: The GFC and government debt



Source: IMF World Economic Outlook, April 2015.

Second, the GFC removed the complacency surrounding the sustainability of the financial system in general and government finances in particular. No longer is it possible to pretend that advanced economies can live beyond their means forever. Moreover, the GFC forced many countries to face up to the fiscal dilemma caused by ageing populations. A 2010 study by the IMF projects that, on current policy settings, the average general government net debt among G-7 countries will reach 200% by 2030 and 441% by 2050.

The extent to which a country decides to reduce its defence spending as a result of mounting debt will depend on many factors—economic, strategic and cultural. A proper analysis of how these factors might come together for even one country is beyond the scope of this brief. But as we've already seen, a number of advanced economies are already working towards fiscal consolidation, including through cuts to defence spending.

As a guide to the extent of fiscal pressures, key economic and fiscal data for countries of interest has been collected in Table 5.7. France, Germany, Italy, the United Kingdom and the United States all face sizable growing debts.

As the data makes clear, there will be much more pressure on advanced economies to rein in defence spending than on developing ones. Among the advanced countries, Australia is in a relatively strong position given its low debt and relatively shallow downturn.

It is worth noting that the debt held by advanced economies will be more difficult to pay off than that in developing countries. Not just because advanced economies tend to owe a greater share of GDP, but also because developing economies grow two or three times faster than their advanced counterparts. Japan, in particular, faces an increasingly serious situation where its ageing population will impede growth at the same time as aged care and health costs rise in the years ahead. China, on the other hand, could erase its public debt within several years if it chose to do so.

References and sources

Economic data including GDP, deflators and CPI indices comes taken from the International Monetary Fund's *World Economic Outlook Database 2015* (April 2015) available at www.imf.org. Most of the defence spending data is taken from successive editions of the International Institute of Strategic Studies' *The Military Balance* from 1980 to 2015. Additional national defence spending data has been taken from: *Analysis of the FY 2012 Defense Budget Request*, 2012, from the Center for Strategic and Budgetary Analysis available at www.csbaonline.org; *China's National Defense in 2010*, the Defense White Paper for the People's Republic of China, available at http://china.org.cn/e-white/index.htm; *Historical Statistics of Japan;* The Statistical Bureau of the Ministry of Internal Affairs and Communications, Japan, http://www.stat.go.jp/english/data/chouki/index.htm. The IMF study referred to is 'Long-term Trends in Public Finances in the G-7 Economies', Carlo Cottarelli and Andrea Schaechter, SPN/10/13, 2010.

Table 5.7: Pressures on government spending that might curtail defence spending

	Net borrowing 2014 (% GDP)	Percentage annual GDP growth			Net general government debt (IMF) as a share of annual GDP		
		2007	2009	2014	2005	2014	2020
Advanced economies							
Australia	-3.6%	4.5%	1.6%	2.7%	-3.8%	17.0%	22.4%
Canada	-1.8%	2.0%	-2.7%	2.5%	31.6%	37.3%	34.3%
France	-4.2%	2.4%	-2.9%	0.4%	58.8%	87.4%	84.4%
Germany	0.6%	3.4%	-5.6%	1.6%	52.0%	49.7%	37.1%
Italy	-3.0%	1.5%	-5.5%	-0.4%	86.0%	110.4%	102.3%
Japan	-7.7%	2.2%	-5.5%	0.0%	82.1%	127.3%	138.7%
Korea	0.3%	5.5%	0.7%	3.3%	25.5%	35.1%	37.4%
Netherlands	-2.3%	4.2%	-3.3%	0.9%	21.9%	34.4%	32.1%
New Zealand	-0.6%	3.4%	-1.4%	3.2%	11.2%	25.8%	18.6%
Singapore	4.2%	9.1%	-0.6%	2.9%	-	-	-
Spain	-5.8%	3.8%	-3.6%	1.4%	34.1%	64.8%	68.4%
Taiwan	-2.5%	6.5%	-1.6%	3.7%	-	-	-
United Kingdom	-5.7%	2.6%	-4.3%	2.6%	37.5%	81.0%	77.5%
United States	-5.3%	1.8%	-2.8%	2.4%	46.3%	79.7%	81.2%
Regional economies							
Indonesia	-2.2%	6.3%	4.7%	5.0%	-	-	-
Malaysia	-3.7%	6.3%	-1.5%	6.0%	-	-	-
Philippines	0.5%	6.6%	1.1%	6.1%	-	-	-
Thailand	-1.8%	5.0%	-2.30%	0.7%	-	-	-
Vietnam	-5.4%	7.1%	5.4%	6.0%	37.8%	58.7%	63.2%
Emerging powers							
China	-1.1%	14.2%	9.2%	7.4%	-	-	-
India	-7.2%	9.8%	8.5%	7.2%	-	-	-
Russia	-1.2%	8.5%	-7.8%	0.6%	-	-	-

Source: International Monetary Fund, World Economic Outlook, April 2015.

Chapter 6 – The Cost of War

Introduction

This chapter includes an explanation of how Defence is funded for deployments, updated information on historical deployment costs and a summary of the cost of recent operations including Iraq and Afghanistan. In addition, the accumulating number of disability pensioners arising from recent deployments is surveyed.

Key Points

Since 1998, Australia has committed more than $15 billion on military operations/overseas deployments.

ADF deployments to Timor-Leste and Solomon Islands have now concluded.

The total commitment to operations in Afghanistan has been $8.2 billion.

Note: all figures nominal.

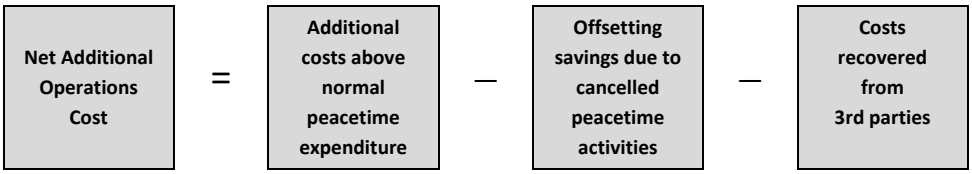
What do we mean by the cost of a war?

As a rule, Defence is supplemented for the *net additional* cost of any major military operation. This makes good sense because, in principle at least, it ensures that Defence does not have to compromise peacetime training to fund operations, and avoids them having to maintain a contingency reserve to cover unanticipated costs. This practice was suspended in 2008-09 because of a surplus of funding. It was then reinstated in 2009-10 but was only applied partially in the case of force protection measures in Afghanistan for which Defence absorbed much of the cost.

Figure 6.1 shows how the net additional cost of an operation is calculated. In the past, Defence only disclosed the aggregate net additional operations cost, the total value of new capital investment and the amount recovered from third parties. However, although offsets remain undisclosed, Defence sometimes provides itemised lists of the individual costs incurred in operations.

Figure 6.1 Calculating the 'Net Additional Cost of War'

Where:



The net additional operations cost includes the additional cost of personnel allowances, shipping and travel, repair and maintenance, health and inoculations, ammunition, contracted support, fuel, inventory, consumables etc. Offsetting savings includes the money saved from foregone activities like the cancelled Exercise Crocodile 99 and the Avalon Air Show in 1999-00 due to the deployment of Australian Forces to East Timor. Those costs recovered from 3rd parties include the partial recouping of costs from the UN when participating in a UN peacekeeping operation.

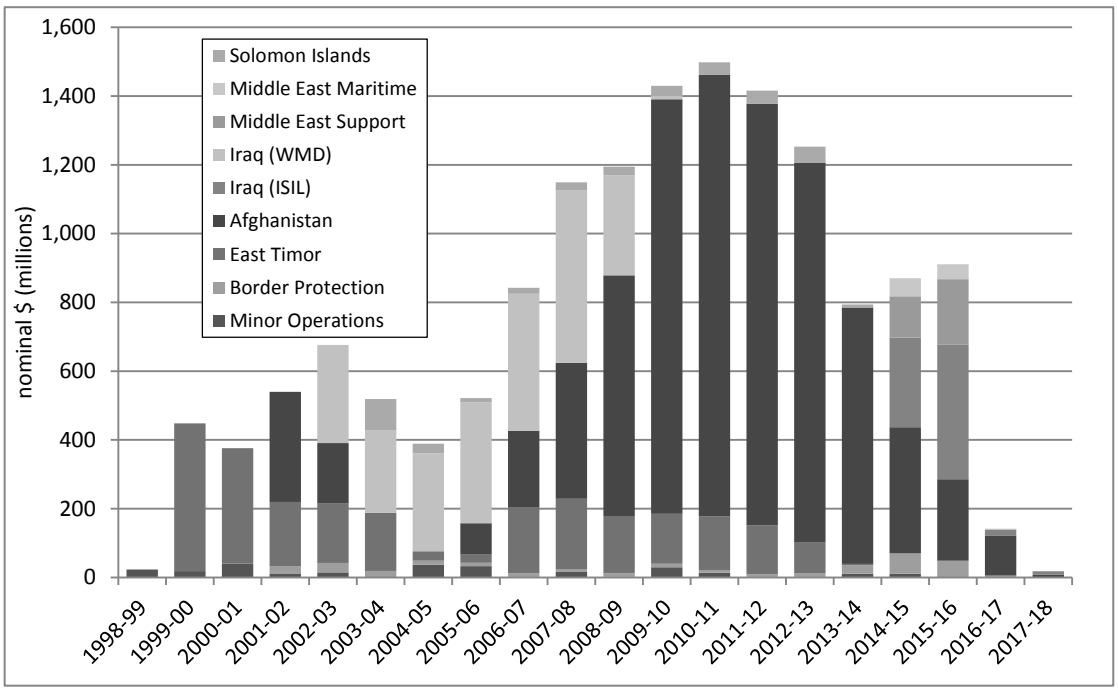
The net additional capital investment usually represents the accelerated filling of capability gaps specific to the operation. Recent examples include the purchase of additional electronic warfare self-protection (EWSP) equipment for the AP-3C maritime patrol aircraft for Iraq, and the rapid acquisition of the *Javelin* anti-armour missile for Afghanistan. Capital costs sometimes also include modifications to platforms and additional inventory purchases.

It's also worth being specific about what is not included. The net additional cost of an operation does not include pay and allowances that would normally be incurred, or the cost of operating platforms within the planned peacetime rate of effort. Nor does it cover the costs incurred outside of Defence by the Australian Federal Police, DFAT or others involved in operations. Thus, aside from additional items like new equipment, ammunition, transport and contracted services, the net additional cost is the *marginal cost* of increased ADF activity due to an operation.

What's the big picture?

Figure 6.2 shows the net cost of Defence deployments from 1998-99 to 2017-18. Note that Defence was directed to absorb costs of $22 million in 2007-08, $1,082 million in 2008-09, $43.1 million in 2009-10, $271 million in 2010-11, $368 million in 2011-12, $176 million in 2012-13, $32.3 million in 2013-14 and $24.3 million in 2014-15.

Figure 6.2: The net additional cost of ADF operations



Source: Defence Annual Reports and Budget Papers

Minor operations include: Bougainville (Op Bel Isi), which cost $109 million between 1998 and 2003 (of which $43.3 million was absorbed by Defence); the 2006 Commonwealth Games (Op Acolyte) ($10.5 million); and support to the G20 Summit in 2014 ($8.1 million).

Figure 6.2 excludes the 'force generation' costs nominally associated with expanding the ADF by 3,555 troops for East Timor in late 1999. This was roughly $450 million per annum permanently included into the Defence funding base at the time of the 2000 White Paper. In

the figure, 'Afghanistan' includes the Multinational Interception Force (MNIF) which became, for a time, part of the Iraq operation in March 2003.

As shown in Figure 6.2, the cost of operations fell for the first time in eight years in 2011-12, but is now on the rise again. The total cumulative real cost of recent operations is given in Table 6.1.

Table 6.1: Total real cost of recent and ongoing operations

	Dates (funding)	Length	Nominal cost $ (million)
Minor Operations	1998-99 to 2016-17	19	269
Border Protection	2001-02 to 2016-17	16	289
East Timor	1998-99 to 2014-15	17	2,444
Afghanistan	2001-02 to 2017-18	17	8,191
Iraq (WMD)	2002-03 to 2009-10	8	2,365
Iraq (ISIL)	2014-15 to 2017-18	4	679
Middle East	2014-15 to 2017-18	4	411
Solomon Islands	2003-04 to 2014-15	12	355
Total	**1998-99 to 2017-18**	**20**	**15,003**

Source: DAR and 2015-16 PBS. East Timor, 'Force Generation' funding to temporarily expand the Army and Air Force (which did not occur) is not included.

Major operations in the 2015-16 Budget

Afghanistan (Operation Slipper and Highroad)

The government has funded Operation Highroad until June 2016 at a cost of $115 million. Operation Highroad is Australia's contribution to 'the NATO-led train, advise and assist mission which has replaced the previous NATO-led ISAF mission'. 400 ADF personnel are involved. A further $122 million will be spent in 2015-16 to reconstitute forces following the conclusion of Operation Slipper in March 2015.

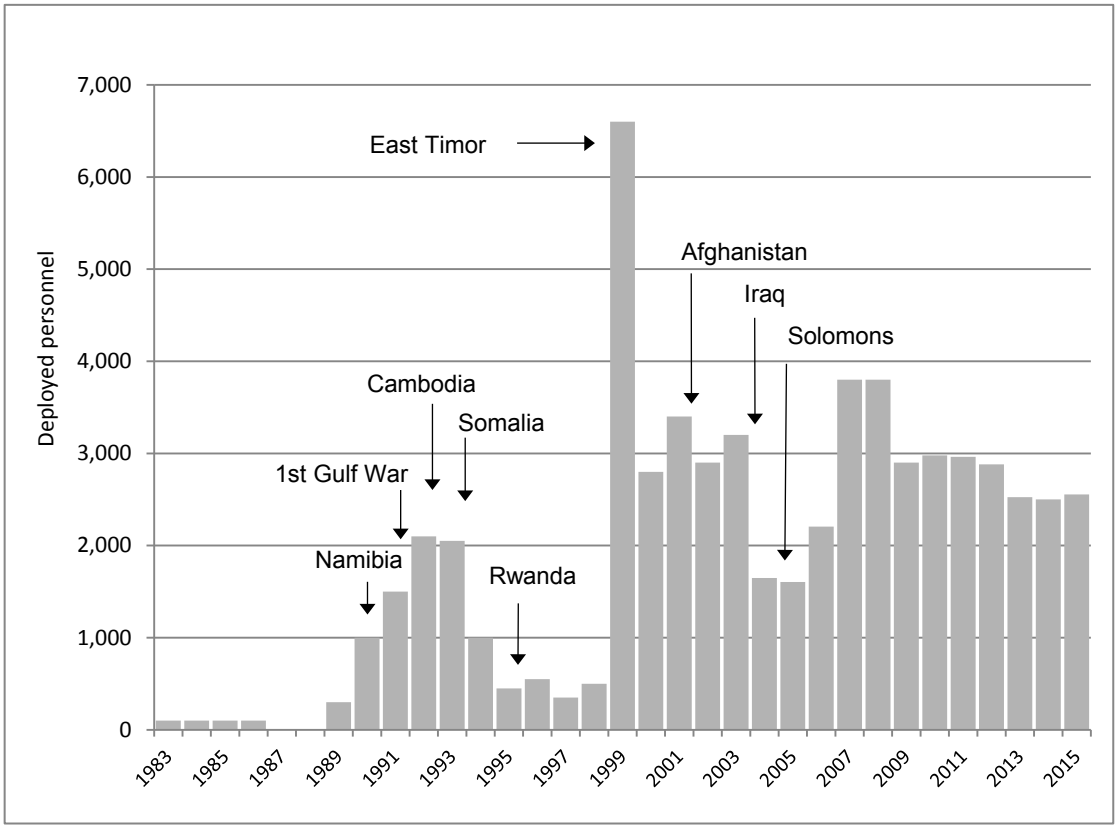
Iraq (Operation Okra)

The government has provided $391 million to cover the cost of Australia's contribution to the international coalition against ISIL, or Daesh, in Iraq in 2015-16. The Australian contingent includes a 400-strong Air Task Group (6 x F/A-18 Super Hornets, 1 x E-7A Wedgetail AEW&C and 1 x KC-30A Multirole Tanker aircraft), and a 200-strong Special Operations Task Group and a 300 strong Task Group to help build the capacity of the Iraqi Army.

Middle East Area Region (Operation Accordion and Manitou)

The government has funded the ADF deployment to the Middle East Region until June 2016, including $191 million for Operation Accordion and $43 million for Operation Manitou. Operation Accordion 'supports the sustainment of ADF operations, enables contingency planning and enhances regional relationships in the Middle East Region'. Around 400 people and various assets are deployed on Operation Accordion. Operation Manitou is Australia's 'contribution to the international effort to promote maritime security, stability and prosperity in the Middle East Region'. One RAN frigate is presently deployed.

Figure 6.3: Indicative deployed personnel numbers, circa May each year.



Note: numbers do not include 500 personnel on border protection duty.

Table 6.2: Deployed ADF personnel as at March 2015

Operation	Location	Personnel	Status
Accordion	Middle East Region	400	Ongoing
Aslan	Sudan	25	Reviewed Annually
Gateway	South East Asia	TBA	Ongoing
Manitou	Middle East Region	270	Ongoing
Mazurka	Egypt	25	Ongoing
Okra	Iraq	900	Ongoing
Pacific Assist	Vanuatu	514	
Paladin	Israel/Lebanon	13	Reviewed Annually
Palate	Afghanistan	2	Reviewed Annually
Render Safe	Pacific Island Countries	2	Ongoing
Resolute	Australian Maritime Interests	500	Ongoing
Highroad	Afghanistan	400	Ongoing
Solania	South West Pacific Southern	TBA	Ongoing
Southern Indian Ocean	Indian Ocean	3	Ongoing
	Total	**3,054**	

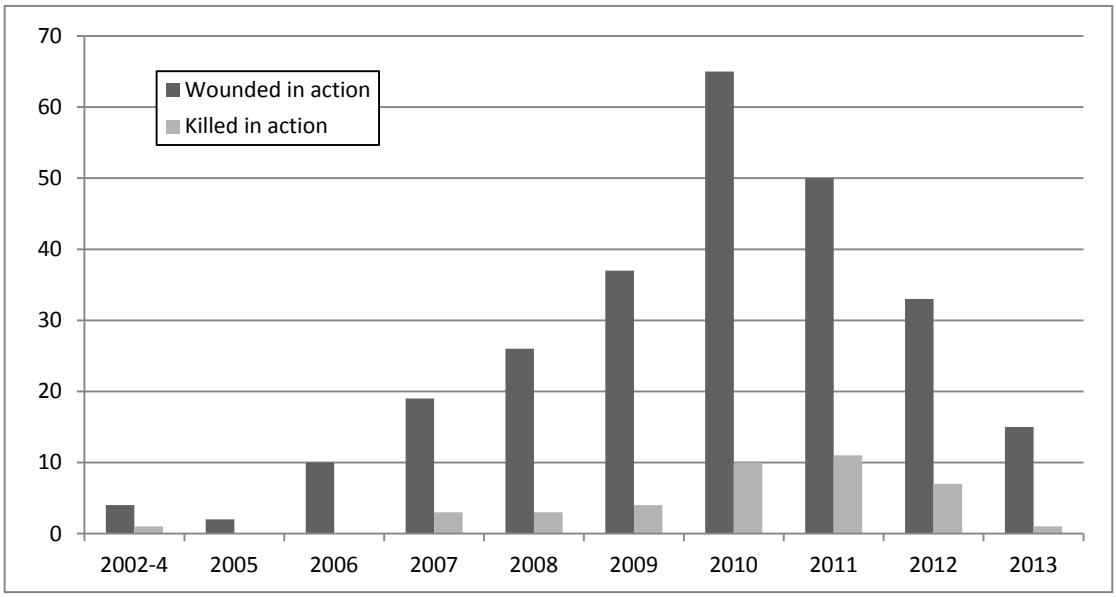
Source: www.defence.gov.au

The human cost of war

The financial costs of Australia's military deployments do not account for the human cost incurred by deployed personnel and their families. A partial picture of this complex area is reflected in battle casualty statistics and disability pensions awarded to ADF members in recent conflicts. These are presented below in Figures 6.4 and 6.5. In Figure 6.5, the Special rate refers to totally and permanently (or temporarily) incapacitated.

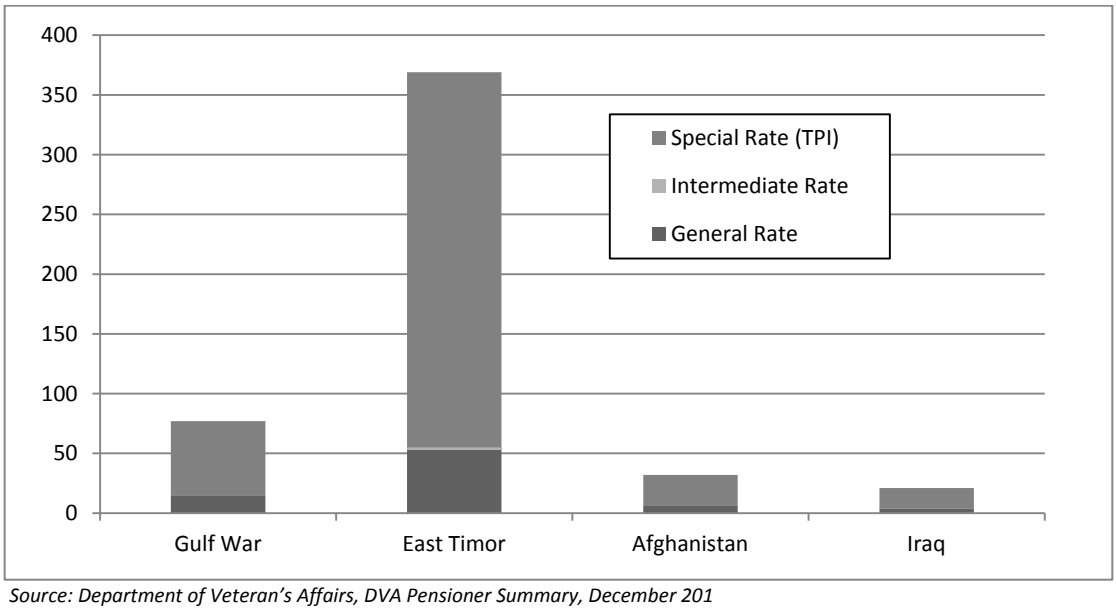
According to a Question on Notice from a Senate Estimates hearing in November 2013, battle casualties and wounded in Afghanistan included: 4 amputations, 56 fractures, 56 gunshot wounds, 12 hearing loses, 22 lacerations/contusions, 33 concussions/traumatic brain injuries, 10 multiple severe injuries, 25 penetrating fragments and 43 'other' injuries.

Figure 6.4: Battle casualties in Afghanistan 2002 to 2013



Source: Department of Defence website, data as at 1 February 2014.

Figure 6.5: Pensions arising from recent conflicts



Source: Department of Veteran's Affairs, DVA Pensioner Summary, December 201

Chapter 7 – Defence Industry

Key Points

Local defence industry grew two-fold between 1995 and 2006 in terms of revenue, but remained stagnant until last year where modest growth occurred.

Local defence industry is dominated by a handful of foreign-owned companies.

The future of naval shipbuilding in Australia remains unclear.

Since at least the 1970s, Australia has aspired to be self-reliant when it comes to its own defence. The caveats and qualifications to what's meant by self-reliance are many and changing, and needn't concern us here. What's important is that everyone agrees that an essential component of self-reliance is a local defence industry that can (at the least) repair, maintain and adapt the equipment used by our defence force.

To this end, successive governments have adopted policies to ensure that Australia's defence industrial base is adequate for the task. This outcome is deemed to be important enough for governments to publish formal defence industry policy statements from time to time. The last such statement was made by the Rudd government in June 2010. In recent years, Defence has also released 'health checks' of particular defence industry sectors as part of an ongoing process of assessment.

There's also a series of mostly long-standing government programs designed to assist local industry. These include support for skills development ($9 million p.a.), research and development (≈$30 million p.a.) and export facilitation (≈$11 million p.a.). The government also tries to leverage its foreign arms purchases to allow local firms to bid into global defence materiel supply chains.

Despite the effort and priority accorded to maintaining a healthy local defence industry, there's surprisingly little hard data in the public domain about the size and shape of the sector. This chapter tries to redress that shortfall by collating and analysing what information is available. Our aim is to analyse macro trends, such as the rate of growth and pace of commercial consolidation or diversification. Readers seeking a detailed company-by-company description of the sector should consult the latest *Australian Defence Magazine* (*ADM*) *Top-40 Defence Contractors* (see *ADM* magazine Dec 2014/Jan 2015), a reliable and informative source from which much of the data used here is derived. However, because of its unique status of being 100% government-owned, a detailed analysis of the shipbuilder *ASC Pty Ltd* has also been included along with a discussion of naval shipbuilding more generally, including an analysis of the recently released RAND corporation report.

Australian Defence Industry

According to the Defence Materiel Organisation (DMO), the Australian defence industry employs around 25-26,000 people (2014-15). Structurally, the sector is dominated by a small number of large prime contractors which account for around 50% of employment. DMO further estimates that there are over 3,000 small and medium-sized enterprises (SMEs) operating in local defence industry, mostly as subcontractors to the larger prime contractors. An SME is typically defined as a firm employing fewer than 200 employees. In most cases, SMEs operating in the defence sector also trade in the civilian economy.

Of the amount spent on materiel acquisition and sustainment in Australia, DMO estimates that around one-third goes directly to local SMEs and two-thirds to prime contractors. Some of the money going to prime contractors will flow on down to subcontracting SMEs. DMO advises that in 2014-15, around $6.1 billion was spent in Australia on defence materiel acquisitions ($1.94 billion) and materiel support ($4.13 billion). The latter figure includes $570 million of fuels, oils and lubricants.

Applying a little arithmetic to these official estimates reveals several interesting things. Taking the mid-point in DMO's employment range, that is 25,500, the average revenue per employee for prime contractors is $282,353, and for non-prime contractors is only $141,176 per employee (excluding fuels, oils and lubricants in each case). The relatively low revenue per employee in defence non-prime contractors probably reflects the fact that they receive further revenue as subcontractors from the primes (i.e. in addition to what they receive directly from Defence). Quite literally, some defence spending gets double handled so the consequential turnover in local defence industry exceeds the amount that Defence initially spends. Assuming that non-prime contractors actually generate revenue per employee at the same rate as large defence firms, total revenue for the sector would be $7.2 billion (of which around $1.8 billion is double counted).

But in absolute terms, even revenue of $282,353 per employee is low compared with the average ($423,140) for Australian manufacturing firms (ABS series 8155 for 2012-13). But this latter figure is inflated by the high output per employee in the large-scale capital-intensive petroleum and primary metal production industries. Arguably better comparators are 'transport equipment manufacture' ($395,841 per employee) and 'machinery and equipment manufacturing' ($339,748 per employee). The remaining difference in revenue per employee probably reflects a combination of three factors: poor economies of scale leading to relatively high fixed labour-intensive administrative overheads, an absence of mechanisation (due to poor economies of scale), and intrinsically labour-intensive software and computer work.

The size of the Australian defence industry sector is compared with manufacturing and Australian industry overall in Table 7.1.

Table 7.1: The scale of Australian defence industry (circa 2012-2014)

	Australian Industry	Australian Manufacturing Sector	Australian Defence Industry
employees	10,606,000	896,000	25,500
revenue ($m)	2,953,300	395,166	7,200
value add ($m)	997,519	97,985	*2,376
revenue per employee	$278,456	$423,140	$282,353

*Source: ABS series 8155, DMO and ASPI analysis. *estimated as explained below*

It follows that defence industry accounts for 0.24% of jobs in Australia, equivalent to 2.85% of jobs in the manufacturing sector. In terms of annual revenue, defence industry accounts for 0.24% of Australian industry and 1.9% of the manufacturing sector. Moreover, if we assume that defence industry results in the same ratio of value added to revenue (34%) as the (relatively high value add) machinery and equipment manufacturing sector, the defence sector gives rise to a value add of $2.4 billion representing less than 0.2% of Australia's GDP.

So although Australian defence industry is undoubtedly important for our defence force, it represents only a trifling fraction of the overall Australian economy.

A closer look

Getting below the aggregate data for local defence industry is difficult because there aren't any official statistics on the detailed size and shape of the sector. Fortunately, however, the *ADM* has been surveying local defence contractors since 1995 and has generously made its nineteen years of data available to us. Two points need to be made before proceeding. First, the nature of the survey results in both limitations and uncertainties on the data set—these will be pointed out as we go. Second, ASPI takes full responsibility for the analysis and conclusions that follow. Whatever violence is done to the data is our fault alone.

The best way to understand the data set is to look in detail at the latest results presented in the Dec 2014/Jan 2015 edition of the *ADM*. The *Top-40 Defence Contractors* list, as it's known, details the top 40 firms contracted to deliver goods and services to Defence either directly or via subcontracting work to prime contractors. This includes not only defence materiel production and maintenance, but also functions such as catering, cleaning and facilities construction. Because these latter activities draw services from the highly competitive broader economy, they're of less interest to us and are therefore excluded as far as possible in what follows.

This isn't to imply that such suppliers are irrelevant to the operation of the ADF—far from it, they're absolutely essential. But our concern is with companies with specialist defence materiel knowledge that are usually highly dependent upon defence contracts for survival. Irrespective of what Defence might do, there will always be companies ready to build facilities, cook meals, clean buildings, mow lawns and transport goods. The same isn't true of firms capable of supplying and sustaining military equipment, hence our focus.

Table 7.2 lists the *ADM Top-40* for 2014 with defence materiel and non-defence materiel companies separated. Some companies straddle the boundary between providing civil and defence specific items, particularly in the information and telecommunications sector. We've done our best to assign such companies on the balance of their activities.

It should also be kept in mind that the *ADM Top-40* survey is voluntary and from time to time companies have chosen not to participate—sometimes reflecting a policy of non-disclosure.

Table 7.2: *ADM Top-40* Defence Contractors 2014

		Revenue ($m)	Personnel	Revenue per employee ('000s)
	Predominately defence materiel contractors			
1	BAE Systems Australia	1,300	4,000	325
2	ASC Pty Ltd	907	2,600	349
3	Thales Australia	837	3,200	262
4	Raytheon Australia Pty Ltd	762	1,222	624
5	Airbus Group Australia Pacific	650	1,300	500
7	Transfield Services Limited	340	1,200	283
9	Boeing Defence Australia	310	1,300	238
10	Lockheed Martin Australia Pty Limited	308	1,062	290
11	Austal	242	650	372
13	Saab Australia Pty Ltd	196	324	605
16	Northrop Grumman Australia Pty Ltd	158	420	377
17	Babcock ANZ (including Australian Helicopters)	151	550	275
18	Forgacs	150	700	214
20	ESS Support Services Worldwide (ESS)	100	750	133
21	CSC Australia	99	500	198
22	Safran Pacific	96	210	457
24	Sikorsky Helitech	82	211	389
25	Cubic Defence New Zealand Ltd	63	121	521
26	Nova Systems	60	263	228
26	CAE Australia Pty Ltd	60	160	375
28	Rockwell Collins Australia	59	95	616
29	QinetiQ Pty Ltd (QinetiQ Australia)	55	250	220
30	CEA Technologies Pty Ltd	52	286	181
31	Australian Defence Apparel Pty Ltd (ADA)	48	181	265
33	General Dynamics Land Systems - Australia	37	85	435
33	KBR (Kellogg Brown & Root Pty Ltd), Defence & Government	37	175	211
35	AECOM Australia Pty Ltd	35	?	-
36	G H Varley Pty Ltd - Defence & Aerospace Division	35	100	346
38	Chemring Australia	32	91	352
39	L-3 Oceania	31	70	443
40	Hawker Pacific Pty Ltd	31	696	44
	Total	**7,322**	**22,772**	**322**
	Predominately non-defence materiel contractors			
6	John Holland Group Pty Ltd	570	?	-
8	Spotless Group Limited	323	2010	161
12	Serco Australia Pty Ltd	227	410	554
14	Lend Lease Building Pty Ltd	186	170	1,094
15	Aspen Medical	170	2,200	77
19	IBM Australia Limited	142	285	499
23	Accenture	95	?	-
32	DHL Global Forwarding	41	?	-
37	GHD Pty Ltd	34	?	-
	Total	**1,814**	-	-

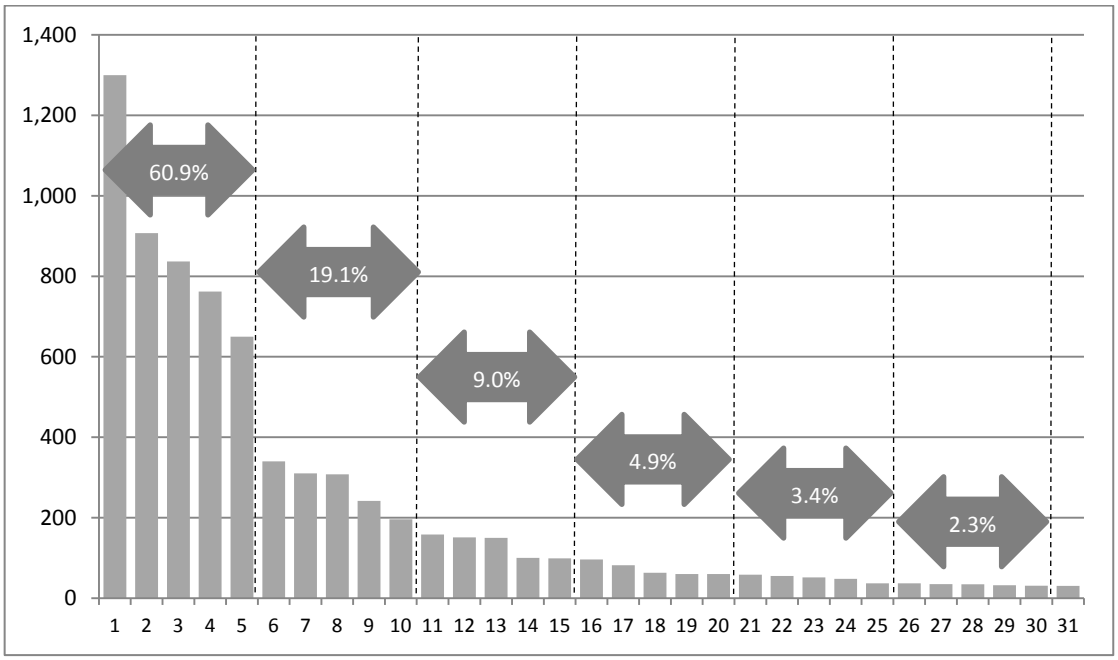
Source: ADM Top-40 Defence Contractors –1995-2014, published by Australian Defence Magazine, Dec/Jan edition each year.

Surveying the data reveals several interesting things. To start with, several companies have surprisingly low revenues per employee, as low as $44,000 in one instance, which probably reflects an overstatement of the number of employees engaged in defence work within the firm. Conversely, a number of firms have surprisingly high revenues per employee, of the sort more commonly attached to large-scale capital-intensive primary production. Setting aside the possibility that Defence is simply paying egregious monopoly rents, there are two likely explanations. First, some firms might have included revenue earned from retailing imported equipment. Indeed, several of the companies in question import weapons systems on a large scale. Second, other firms (particularly in the facilities construction sector) have a natural heavy reliance on subcontractors.

Taking the data at face value, it says that the top thirty contractors by defence revenue have a collective turnover of $7.3 billion and employ around 22,770 people, implying average revenue per employee of $322,000 a year. In comparison, DMO estimate average turnover at $200,000 to $250,000 per employee on the basis of other sources. These figures are broadly commensurate with those derived earlier from Defence's estimate of employment in the sector.

Over the past twenty years, the top five firms in any given year have accounted for, on average, 65% of total revenue of defence materiel contractors in the *ADM Top-40*. In 2014, as shown in Figure 7.1, that share was 60.9%.

Figure 7.1: Revenue distribution for *ADM Top-40* 2014



Source: ADM Top-40 Defence Contractors –1995-2014, published by Australian Defence Magazine, Dec/Jan edition each year.

The actual companies in the top five change from year to year as contracts ebb and flow. Yet the current major players are easily identified. Table 7.3 reproduces the key prime contractors identified in the government's 2010 defence industry policy statement. It's important to note that only one of the firms—the government-owned ASC Pty Ltd—is controlled by an Australian-based entity, with the remainder split between the United States and Europe.

Table 7.3: Key Australia-based prime contractors

Prime	Parent company or owner	Country of origin	Key activities	Per cent of parent revenues	Stock exchange listing
ASC Pty Ltd	Australian Government	Australia	submarines and ships	n/a	n/a
Australian Aerospace	EADS	France, Germany & Spain	helicopters	< 1	Paris
BAE Systems Australia	BAE	United Kingdom	varied	3.2	London
Boeing Defence Australia	Boeing	United States	aerospace	0.5	New York
Raytheon Australia	Raytheon	United States	systems integration	1.3	New York
Saab Systems	Saab AB	Sweden	land and maritime	3.1	Stockholm
Lockheed Martin Australia	Lockheed Martin	United States	electronic and information systems	<1	New York
Thales Australia	Thales	France	maritime and varied	2	Paris

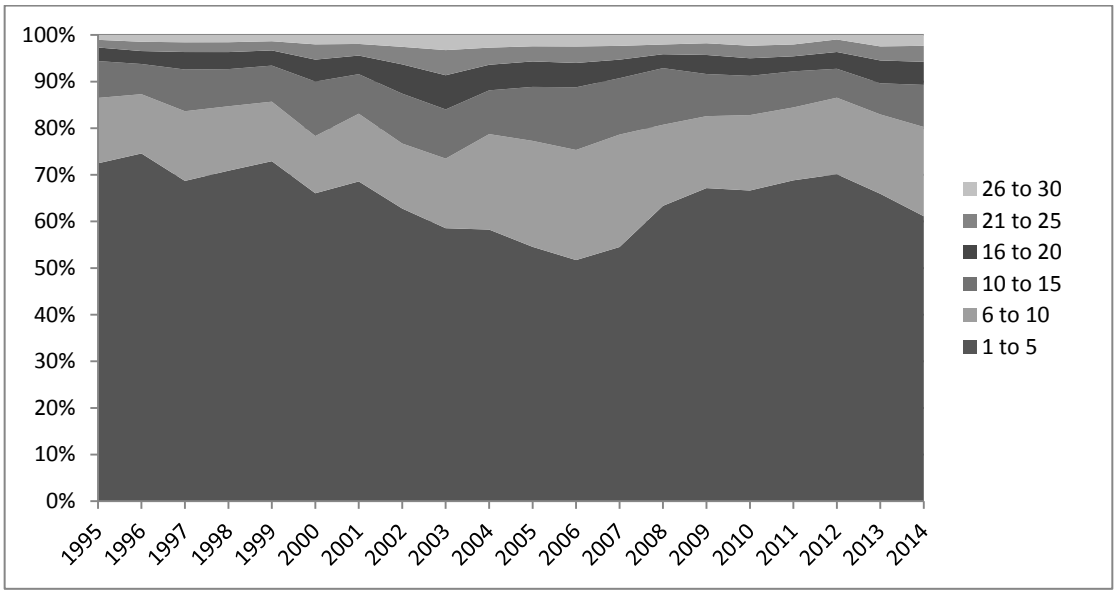
Source: 2010 Defence Industry Policy Statement.

Foreign ownership of our key prime defence contractors brings benefits and risks. On the plus side, we undoubtedly get better access to foreign weapons systems than we otherwise would. In addition, foreign subsidiaries in Australia can 'reach back' to their parent owners for skilled personnel, knowledge and intellectual property. And because we have relationships with arms manufacturers on both sides of the Atlantic, competitive pressures can in theory be brought to bear when making purchases.

On the minus side, because foreign-owned Australian primes account for very small shares of parent company revenue, they're unlikely to command priority if a commercial or strategic conflict of interest arises. For example, if a foreign parent has to choose between supplying Australia or its home country with munitions in a crisis, there's no question about what will happen. In most areas this is unavoidable; Australia doesn't have sufficient demand to support fully indigenous defence industrial capabilities in all but a limited range of niche areas. Choosing and maintaining such capabilities is a strategic challenge of the first order.

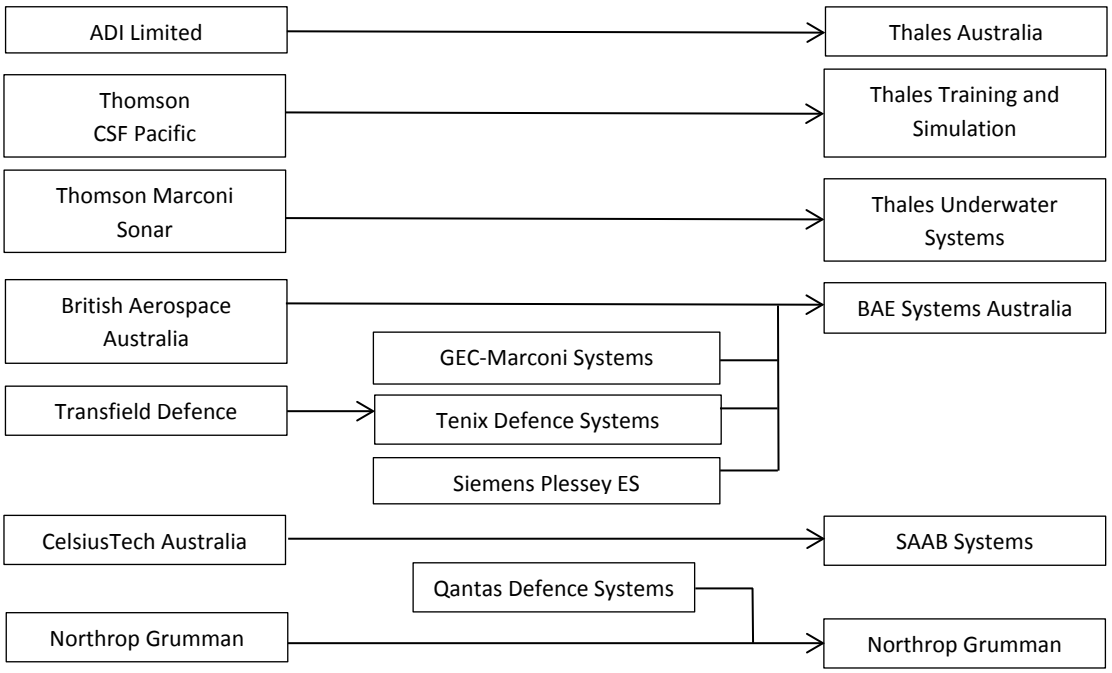
The relatively small number of prime contractors operating in Australia is consistent with the consolidation of defence manufacturing that has been underway in Europe and the United States since 1945 and which accelerated following the end of the Cold War. However, in our particular case, the local cycle of having a small number of large defence projects dominating spending at any one time is probably also important. It's perhaps noteworthy that revenue among local defence firms broadened between 1995 and 2006 (as the Anzac and Collins programs were completed) and narrowed again between 2006 and 2012 (see Figure 7.2). The consolidation of various local companies over the years might have also played a role. Some of the key mergers and acquisitions are depicted in Figure 7.3.

Figure 7.2: Revenue distribution for top 30 defence contractors 1995 to 2014



Source: ADM Top 40 Defence Contractors –1995-2014, published by Australian Defence Magazine, Dec/Jan edition each year.

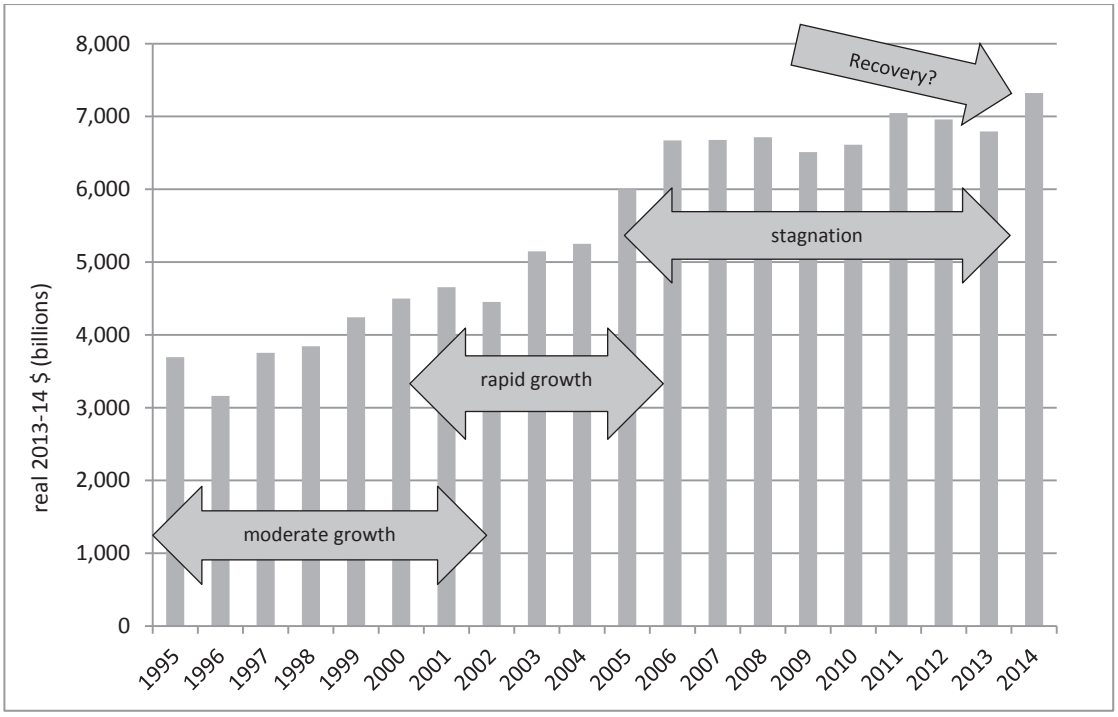
Figure 7.3: Key mergers, acquisitions and name changes in local defence industry



With twenty years of data on local defence industry, the obvious question is whether the sector has grown or contracted over time. Figure 7.4 provides the answer using the Consumer Price Index to inflate historical data. Because total revenues are dominated by a small number of large turnover firms every year, changes to the *ADM Top 40* over time are a credible indicator of trends in the sector. Roughly speaking, the size of the sector in revenue terms has almost doubled since the mid-1990s. Looking more closely, three eras can be identified; moderate growth during the late 1990s, rapid growth in the early- to mid-2000s, and stagnation over the past seven years at a higher than usual level. It's not surprising that revenues grew in the years following the 2000 White Paper as extra money flowed into

Defence. Similarly, the mounting deferrals of investment and various efficiency measures of recent years broadly accord with the observed stagnation. The jump in the final year is encouraging that growth may soon recommence.

Figure 7.4: Growth and stagnation: Turnover of defence materiel contractors in *ADM Top 40*

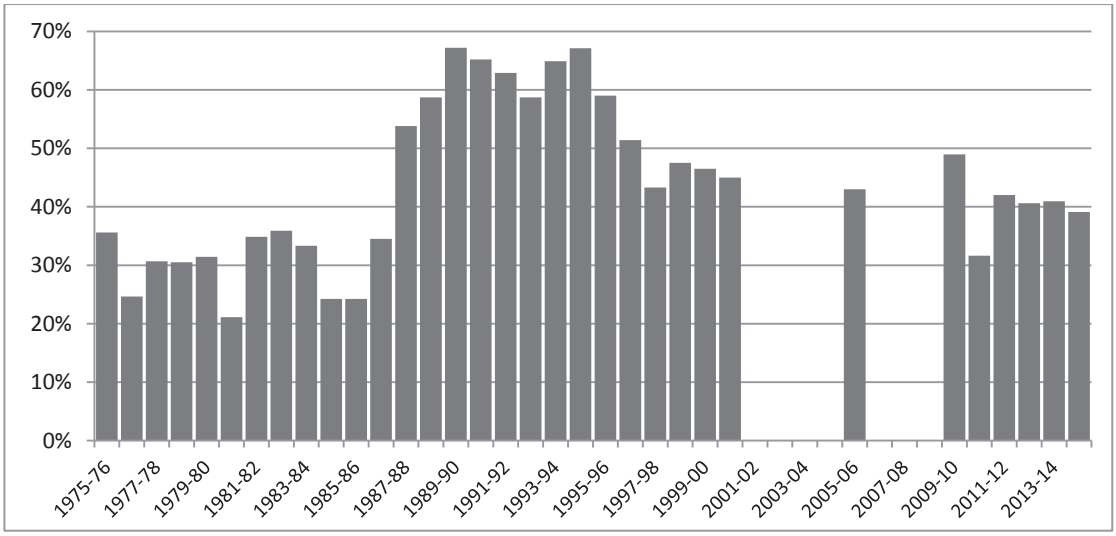


Source: ADM Top 40 Defence Contractors –1995-2014, published by Australian Defence Magazine, Dec/Jan edition each year.

At this point it's natural to compare the trends in local defence industry with spending by Defence on materiel. However, this can only be done with the caveat that repeated changes to Defence's accounting rules and reporting make this difficult, as does the absence and unreliability of data in the years around the turn of the century. Our best attempt to make sense of the available data appears in Figure 7.5. It looks as though the share of local work rose and fell with the wave of large naval construction and aviation upgrades in the 1990s.

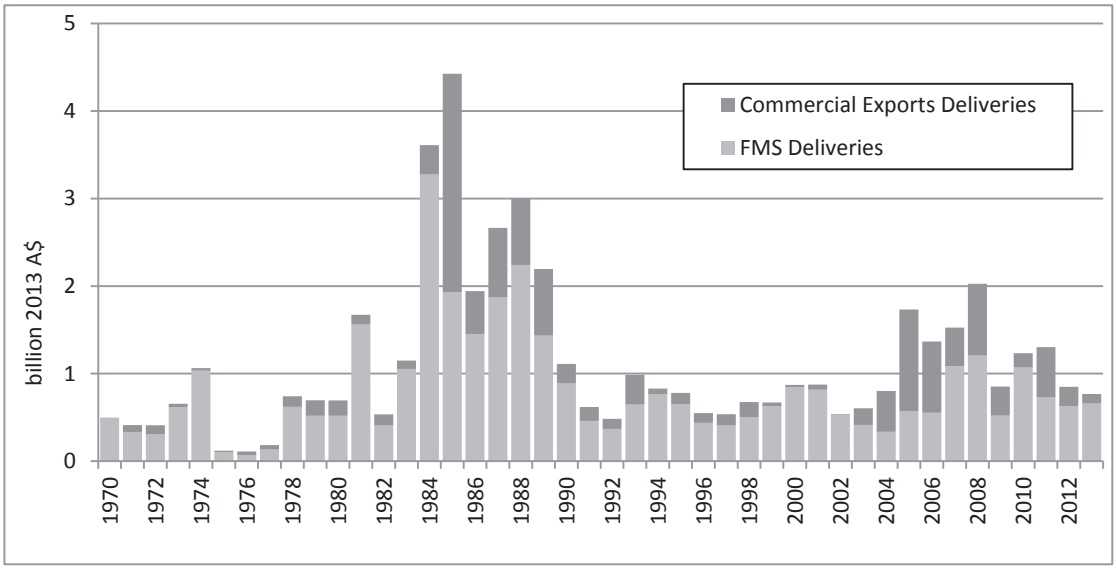
It's possible that the levelling off in revenue for local firms after 2006 (and the corresponding reduced share of total investment) also reflects the increasing tendency of governments to purchase equipment off-the-shelf from foreign suppliers. Recent examples include the 24 F/A-18 Super Hornet fighters and five C-17 Globemaster transport aircraft. Fortunately, the United States Government collects and discloses detailed information on commercial and government-to-government arms exports through the US Foreign Military Sales (FMS) program. Historical trends in US defence exports to Australia are shown in Figure 7.6, where it should be noted that the figures include both equipment acquisitions and sustainment goods and services such as spare parts and repair of rotable items. To allow comparison, the value of each year's exports has been converted from US to Australian dollars at the prevailing exchange rate before being translated into 2013 dollars. Another view of defence exports to Australia can be found in the annual reporting of extant (typically multi-year) arms export licences to commercial US and UK firms for the export of defence materiel to Australia, see Figure 7.7.

Figure 7.5: Percentage of equipment by cost purchased locally 1975 to 2014-15



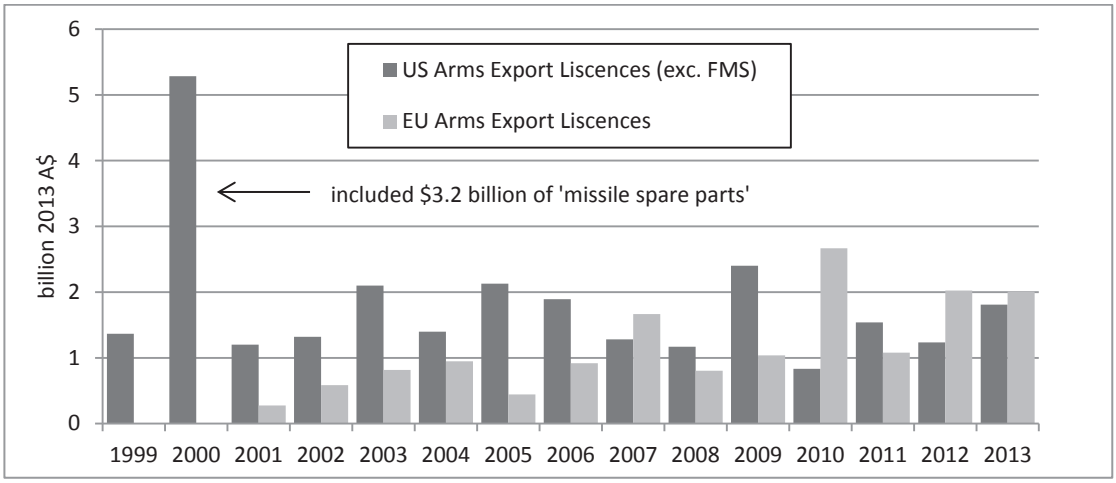
Source: Defence Annual Reports and FAD&T SLC Question on Notice 44, 29 May 2012.

Figure 7.6: US defence exports to Australia



Source: Data from US Security Cooperation Agency, US State Department export controls reports.

Figure 7.7: US and EU export licences for defence exports to Australia



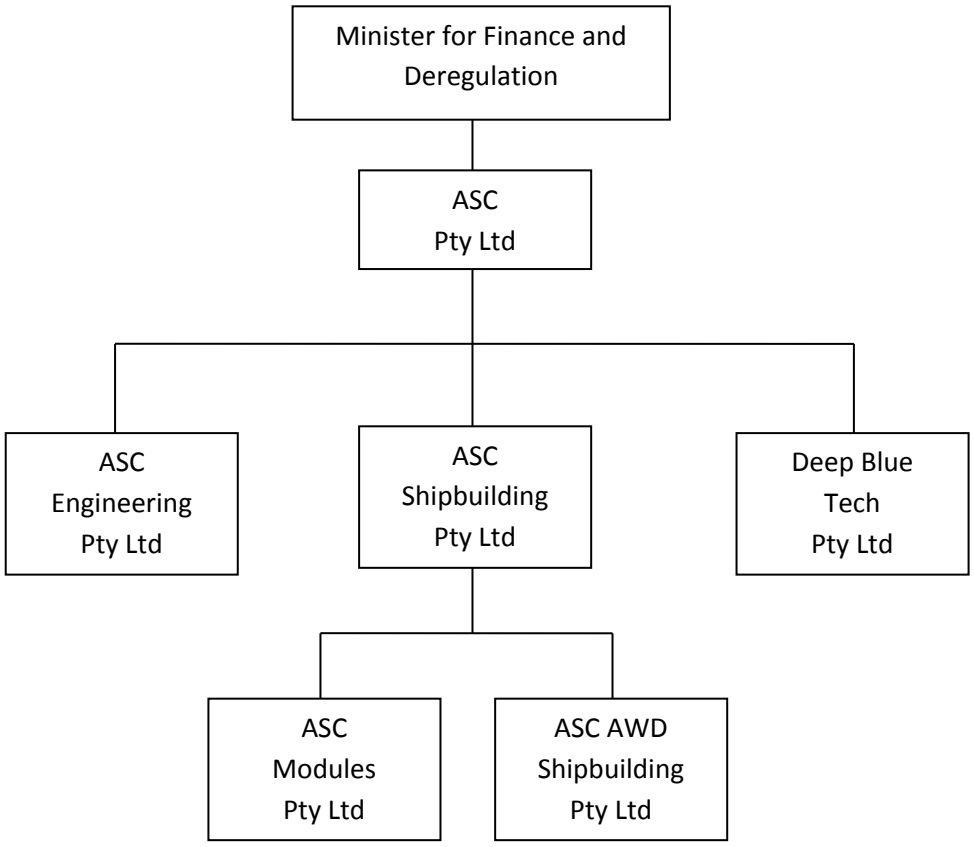
Source: Data from US Security Cooperation Agency, US State Department export controls reports, EU arms export reporting.

ASC Pty Ltd (formerly the Australian Submarine Corporation)

The Australian Submarine Corporation was formed in 1985, and in 1987 was awarded the contract to build six Collins class submarines. Initially, ownership of the corporation was shared between the Australian Government, submarine designer Kockums of Sweden, Wormald International and Chicago Bridge and Iron, but by 1991 only Kockums and the government remained shareholders. In 2000, the Australian Government bought out Kockums and became the sole owner.

Overview

At present, ASC is operated as a Government Business Enterprise (GBE) under the *Commonwealth Authorities and Companies Act 1997* with the Minister for Finance as sole shareholder. Consistent with its status as a GBE, the company has a board made up of executive and non-executive members. The corporate structure appears below.



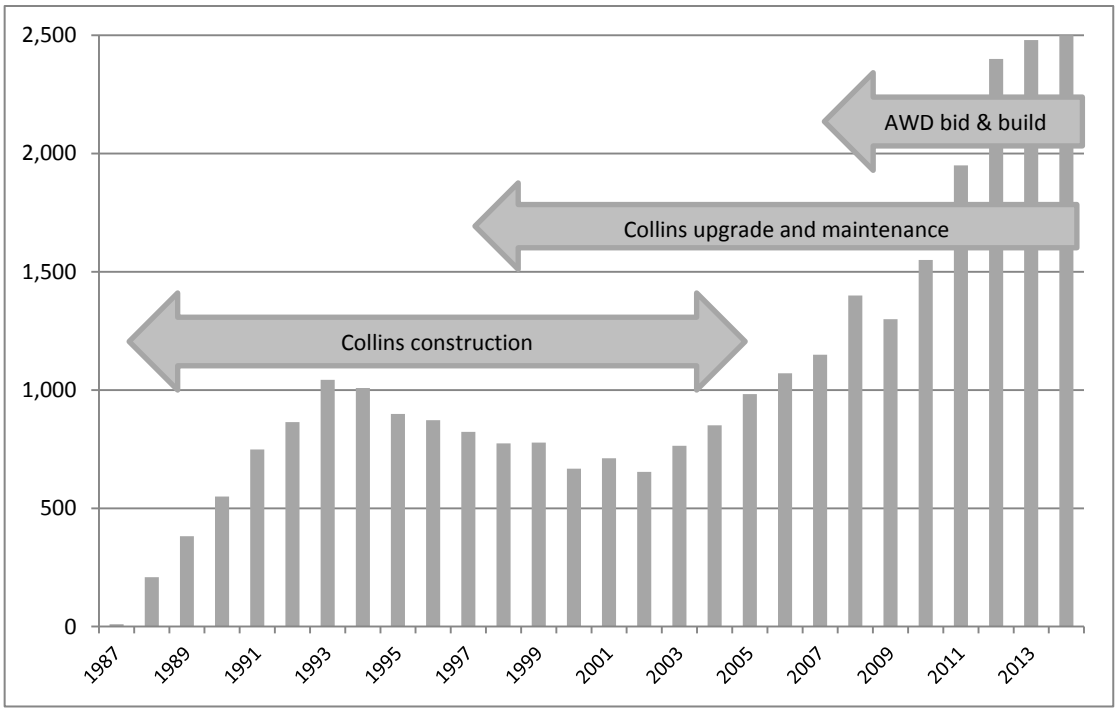
The three direct subsidiaries of ASC reflect the diversification of ASC into areas beyond the construction, upgrade and maintenance of the Collins class. *ASC Engineering* was established to undertake the design, construction and project management of civil heavy engineering projects. At present, *ASC Engineering* isn't an active entity. *Deep Blue Tech* was established to secure a role in the design of the Collins class replacement. The largest of the three entities, A*SC Shipbuilding,* was established to bid for what has become the $8.1 billion Air Warfare Destroyer project for the RAN. Its two subsidiaries *ASC Modules* and *ASC AWD*

Shipbuilding were created to operate within the *AWD Alliance*, which we explore in detail in the next section. ASC also runs a submarine training school for the RAN that's based in WA.

Putting aside the latent *ASC Engineering* and unclear status of *Deep Blue Tech,* there are two main projects underway at ASC: the construction of the AWD, and sustainment and upgrade of the Collins fleet. The former occurs at the 'ASC South' facility at Osborne SA while the latter occurs mostly at the (original) 'ASC North' facility at Osborne SA. Some additional submarine work is also undertaken at 'ASC West' in WA near the RAN submarine homeport. ASC South and ASC North are separated by the SA Government's taxpayer-funded Common User Facility which includes the massive ship-lift and hardstand being used for the consolidation and launch of the three AWDs by ASC.

There are two ways to track the scale of activity at ASC over time: financial turnover and personnel numbers. As shown in Figure 7.8, the ASC workforce grew during the construction of the Collins fleet and fell before rising again as the full volume of Collins class remediation, upgrade and maintenance work was felt. Recently, the ASC workforce has grown to around 2,600 as the AWD workload approaches its maximum.

Figure 7.8: ASC workforce 1987 to 2014



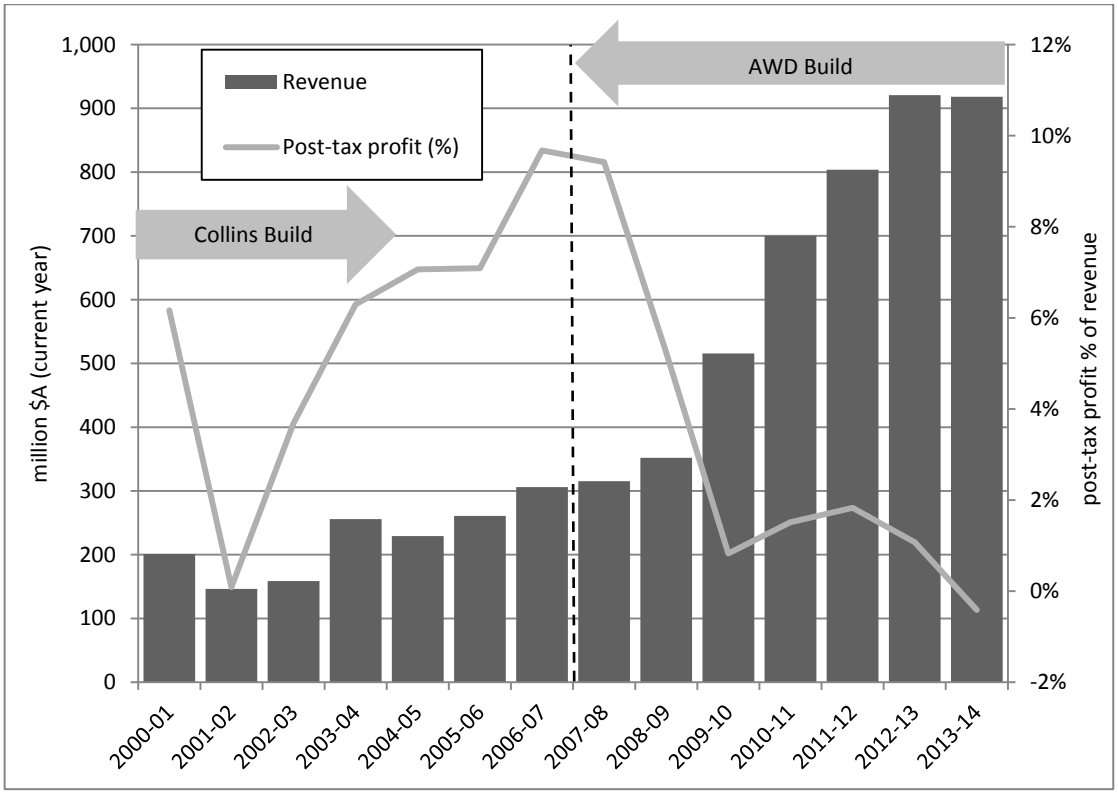
Source: ASC Pty Ltd Annual Reports

Only a small number of personnel were employed by ASC on the AWD project prior to 2006 (and even in that year the AWD workforce was only about 60 staff). Consequently, by the middle of the last decade, the size of the ASC workforce engaged in submarine post-construction work was close to the peak reached during the Collins construction program twelve years earlier. This demonstrates the relative high labour-intensity of Collins through-life-support compared with construction.

The consolidated corporate turnover and profit for recent years is shown below in Figure 7.9, where the increase in revenue after the commencement of AWD construction in

mid-2007 is clear. Note, however, that ASC's after-tax profit as a share of revenue fell from 9.7% in 2007 to 1.1% 2013. In at least the first part of the period, this reflects a decision to reinvest profits back into the business, including into facilities and *Deep Blue Tech*.

Figure 7.9: ASC Key Financial Results



Source: ASC Pty Ltd Annual Reports

We now turn to examine in Dickensian fashion the various activities of ASC in a little more detail before concluding with some observations about its future ownership.

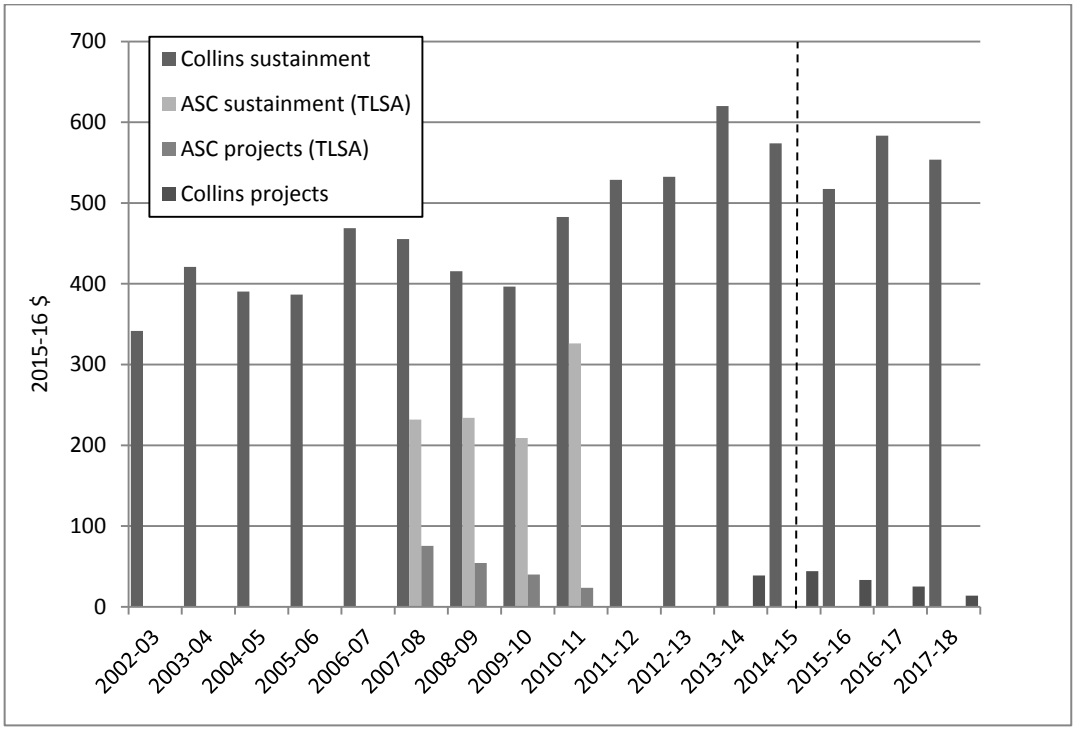
The ghost of submarines past—Collins through-life support

For reasons that we don't understand, Defence failed to have a through-life-support strategy or contract in place for the Collins class at the end of the construction program. Instead, ASC undertook piecemeal work as requested to maintain, repair and upgrade the fleet. In 2003, a long-term Through Life Support Agreement (TLSA) was established between Defence and ASC. Nominally a 15-year $3.5 billion agreement, the TLSA is essentially a cost-plus contract with limited options for incentives and sanctions.

Because we don't know the price paid each year to ASC to maintain the Collins, we have to rely on the reported total sustainment costs for an indication of costs. Note that total sustainment costs include many things that don't result in payments to ASC (such as fuel and government furnished equipment). In particular, sustainment of mission system items such as sonar, combat system and electronic warfare is provided separately by other suppliers through DMO. Total sustainment costs for the Collins fleet are given in Figure 7.10, beginning with the first year that data is available, 2002-03. To allow a comparison over time, historical costs have been inflated using the 2.5% deflator applied to the Defence

budget. Known payments to ASC under the TLSA for sustainment and projects have also been included.

Figure 7.10: Total annual Collins class sustainment costs



Source: Defence Annual Reports, 2014-15 PAES, 2015-16 PBS, FAD&T QoN 19, 17 October 2012, QoN196, 28/29 May 2012, QoN 129, 20 November 201, QoN 66, 26 February 2014 and QoN 170, 22 October 2014,.

Caution must be exercised when inferring anything from Figure 7.10. Large year-to-year fluctuations naturally arise due to the timing of full-cycle-dockings, spares purchases, and the number of boats actually being operated by the RAN (as opposed to lying idle absent a crew).

Notwithstanding these uncertainties, the overall cost of sustaining the Collins fleet is perceived to be high. Coupled with long-standing problems with the availability and reliability of the vessels, this has led to three initiatives that are reshaping the sustainment of the fleet and ASC's role therein.

First, ASC has a comprehensive program to boost labour productivity. As a government-owned entity working under what are effectively cost-plus contracts, it would be surprising if inefficiency hadn't crept in over time. Initial reports confirm this to be the case, with substantial improvements achieved over the past couple of years—including a boost in labour utilisation from 30% to 75% in some areas.

Second, in June 2012 Defence and ASC agreed to a performance-based In-Service Support Contract (ISSC). By moving away from cost-plus reimbursement for work, ASC will have strong incentives to continue productivity and performance improvements within its business.

Third, the government is implementing the recommendations of a review of Collins sustainment undertaken by an independent expert, Mr John Cole. The phase one report,

which was delivered in December 2011, identified a host of problems within and between Defence, DMO, Navy and ASC that contribute to poor and/or costly outcomes for Collins class sustainment. The phase two report was delivered in December 2012 and suggested the following target levels for the Collins fleet:

- 2 boats available 100% of the time
- 3 boats available 90% of the time
- 4 boats available 50% of the time.

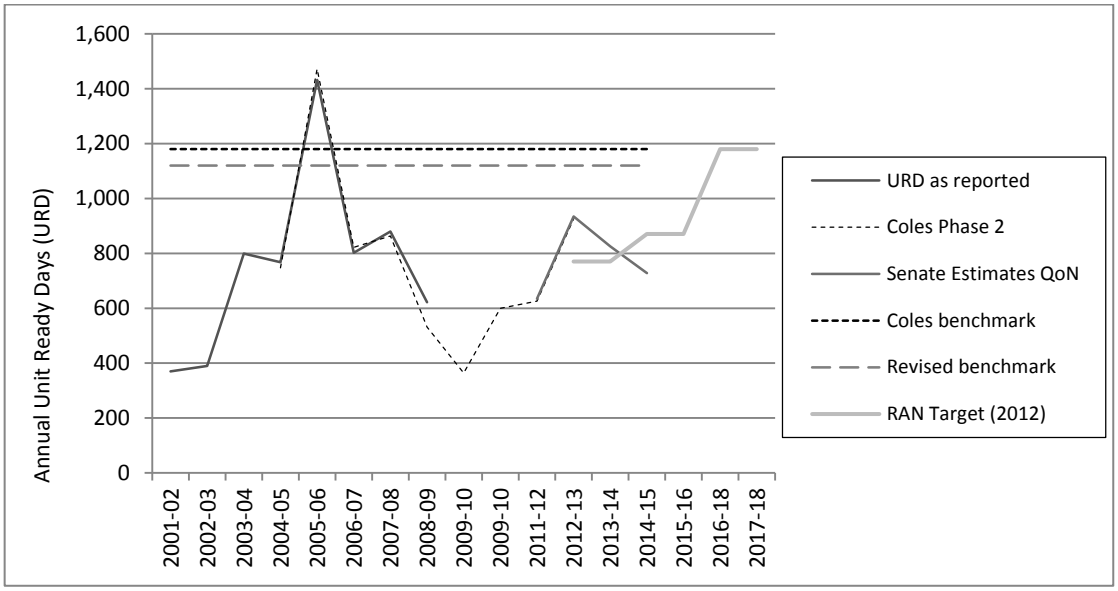
The report made 25 recommendations for how to achieve this, including reducing the length of full-cycle dockings from three to two years, moving to a cycle involving a one-year mid-cycle docking and six-month intermediate dockings, and appointing a Transformation Manager to implement the report's recommendations.

A follow-up report released in April 2014 concluded that 'submarine availability has improved significantly with the submarine force achieving usually two and frequently three submarines materially available on any one day' as measured over successive financial years. The improvement is attributable to a combination of 'greatly enhanced availability of spares, [fewer] planned maintenance over-runs, few breakdowns and faster repairs to operational boats'.

In the longer term, to meet the targeted availability of the vessels it's critical that major refits are completed in two years. The first two year Full-Cycle Docking under the new maintenance regime commenced in June 2014 (HMAS *Farncomb*), its scheduled return to service in May 2015 will be a major test for ASC.

Although the Navy ceased disclosing Collins availability in 2008-09, it's easy to reverse engineer other available data to recover a full and reasonable accurate time series, see Figure 7.11. As can be seen, good progress is being made.

Figure 7.11: Total annual Collins Unit Ready Days: reported and estimated



Source: DAR, Coles Review reports, FAD&T Question on Notice No 63, 25 February 2015.

Overall then, it looks as though the arrangements for sustainment of the Collins class have finally been put on a solid technical and commercial base and, so far, the results are very encouraging.

The ghost of ships present—the Air Warfare Destroyer project

In October 2001, the last of the RAN's three Charles F Adams class DDG destroyers, HMAS *Brisbane*, was decommissioned, leaving a capability gap in the area of fleet air defence. The 2000 Defence White Paper (produced sometime after the stable door had been left wide open) included Project SEA 4000 *Air Warfare Destroyer* to redress the shortfall. After preliminary studies in the first half of the decade, the project effectively gained first-pass approval in mid-2005 when two companies, *ASC Shipbuilding* and *Raytheon Australia,* were selected as alliance partners to work with Defence to take the proposal forward to second pass. A third firm, *Gibbs and Cox,* was designated as the preferred designer*,* with Spanish builder *Navantia* also engaged as a design partner.

Two options were developed for second-pass consideration: an Australianised (and smaller) version of the US DDG-51 Arleigh Burke destroyer, the so-called 'baby Burke', and the military-off-the-shelf Spanish F-100 frigate with an Australianised combat system. In each case, the core of the combat system was to be the Lockheed Martin Aegis system with its phased array radar. Purchase of the combat system commenced in 2006 under a Foreign Military Sales (FMS) program with the US Government.

When the F-100 was announced as the winner in June 2007, some people were surprised. Gibbs and Cox, the designer of the DDG-51, had been designated as the 'preferred designer' of the evolved option back in 2005 and many perceived the F-100 as a 'stalking horse' to put commercial pressure on the US option. As it turned out, the extra cost and risk associated with a scaled-down but on-paper-only DDG-51 tipped the balance in favour of the smaller pre-existing Spanish vessel.

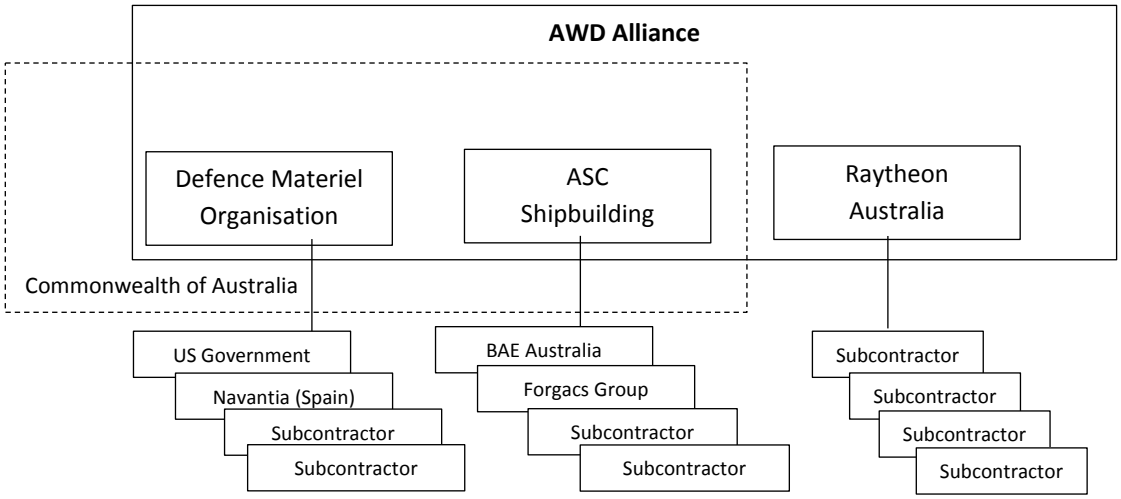
From the commencement of the project through to second pass, a total of $227 million was spent, excluding long lead-time purchases for the Aegis combat system. Most of the money (roughly $186 million) was spent in the two years between mid-2005 and mid-2007. It remains to be explained how so much money was spent simply to make a decision between two designs.

The *AWD Alliance,* as it's known, involves three parties in a contractual arrangement, which is novel for Australian Defence (see Figure 7.12). ASC is the designated shipbuilder, Raytheon Australia is the combat system integrator and DMO acts as both the customer on behalf of the RAN (and ultimately the Commonwealth) and as a full participant in the alliance. Governance is exercised by a Board made up of representatives of the three parties with a commitment to consensus decision-making.

The alliance is predicated upon an 'equitable sharing of risks and rewards' between the three participants. In practice, this revolves around achieving a Target Cost Estimate (TCE) for the project that was developed back in 2007. The TCE was for around $4.5 billion for the work covered by the alliance. This includes the direct recovery cost of planned activities by the participants and their respective subcontractors. The remainder of the overall initially

planned $8 billion project cost involved other expenses to be covered directly by DMO, including government furnished equipment such as the Aegis combat system.

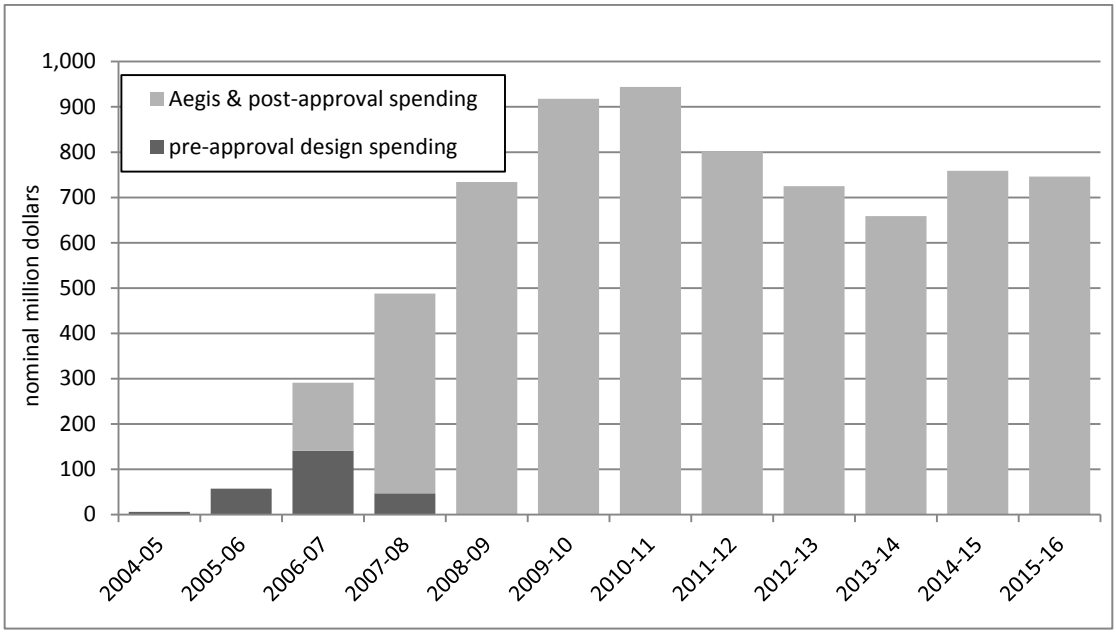
Figure 7.12: The AWD Alliance



Previously, in the 2013-14 Budget Brief, we included an extensive discussion of the alliance contracting framework and its incentives (perverse and otherwise). Rather than repeat that material this year, we turn now to look at how the project has been going.

The build phase of the project is expected to have spent $6,733 million by June 2016 from an approved project budget of $7,891 million, representing about 85% of available funds, see Figure 7.13. Some care needs to be taken in inferring progress from aggregate expenditure because a significant share of the budget is allocated to the combat system and weapons purchases, which are somewhat unrelated to the progress in physical construction.

Figure 7.13: AWD expenditure ($m)



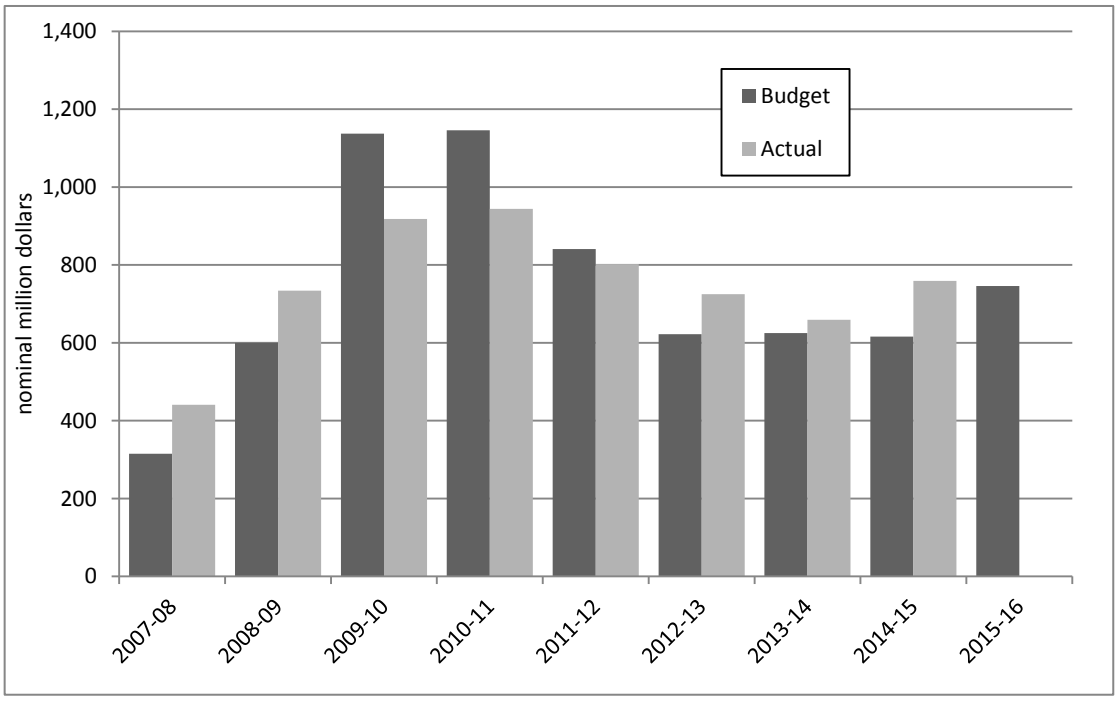
Source: Defence Annual Reports 2014-15 PAES and 2015-16 PBS

According to ASC Ltd, the AWD build was 50.5% complete as at June 2012, 69.6% complete as at June 2013, and 73% complete at June 2014 with around $486 million spent over the intervening 12 months. (At this rate, it will take another decade to complete the project at a cost of roughly an extra $4.9 billion dollars to the taxpayer.)

As mentioned above, as best we can estimate, around $186 million was spent prior to the project being approved (excluding the Aegis system). We return to the question later in the context of the future submarines.

Planned and actual expenditure are compared on a year-by-year basis in Figure 7.14. As can be seen, the project exceeded its spending targets for the first two years, then fell well short for the next two. Over the past three years planned expenditure targets have been exceeded. However, as we'll see, it would be wrong to interpret this as a sign of favourable progress.

Figure 7.14: Planned and actual expenditure ($m)



Source: Defence Annual Reports, PBS and PAES

Trouble at the docks

At the time of second-pass approval, the first AWD was scheduled to be delivered in December 2014, the second in March 2016 and the third in June 2017. Due to early problems with the construction of modules, the schedule for the delivery of the first AWD was slipped by twelve months to December 2015.

Specific issues included the difficulty of activating new, and reactivating long unused fabrication operations, as well as problems with learning to work with the style of drawing provided by the Spanish designer. As a result, responsibility for fabricating 18 of the 90 modules was reallocated in May 2011. Then, in March 2012, a further reallocation of modules occurred, resulting in additional work going offshore to Spain.

When the module work was reallocated it was hoped that the changes, coupled with refinements within the consolidation yard, would be sufficient to make the revised schedule feasible. Indeed, work was well underway on the fabrication of the first two vessels and work had commenced on modules for the third.

However, in September 2012 it was announced that there would be a further delay to AWD delivery. The formal announcement was unhelpfully ambiguous about the reasons for the delay. On the one hand it said that the 'revised AWD plan will reduce peak demand on project critical resources and facilities, and reduces project risk'. On the other, it said that 'the delay will help avoid a decline in naval shipbuilding skills before the commencement of Australia's largest and most complex naval project—the Future Submarine'.

It's unlikely the preservation of naval shipbuilding skills was a significant factor in bringing about the delay. As Figure 7.15 shows, most of the workforce was planned to have dissipated well prior to the delivery of the final vessel, so even with the additional nine-month delay for the final vessel, most of the workforce will have moved on from the maritime sector by 2016.

What's more, the skills needed at the end of a shipbuilding project are different to those needed at the start of a submarine project. Add to this that the Future Submarine project isn't due for second-pass consideration until 2016–17 at the earliest, and it's clear that maintaining skills in the sector for that purpose was largely irrelevant to the reschedule.

According to DMO's 2013 *Future Submarine Industry Skills Plan* (FSISP) the financial consequence of the delays to the AWD project had been in the order of $200 million at that stage, which it attributed to a 'lack of experience across production engineering and production supervision'. An alternative measure of the impact of the delays can be garnered from the shipbuilding workforce profiles provided in the FSISP for the period prior, and subsequent, to the delays (Scenario 2 verses Scenario 5). The workforce demands in the charts group together the LHD and AWD projects, but since the LHD project is apparently going well, the difference must be due to the extension of the AWD schedule. With a sharp pencil and a little care, the additional workload can be measured. The result is around an additional 2,153 work-years (representing 19% of the total) to complete the project (as at mid-2013).

According to an ANAO report released in March 2014, it was estimated in November 2012 that 'the contract for the construction of the DDGs would be completed at an estimated cost of some $302 million or 6.8% in excess of the Target Cost Estimate'.

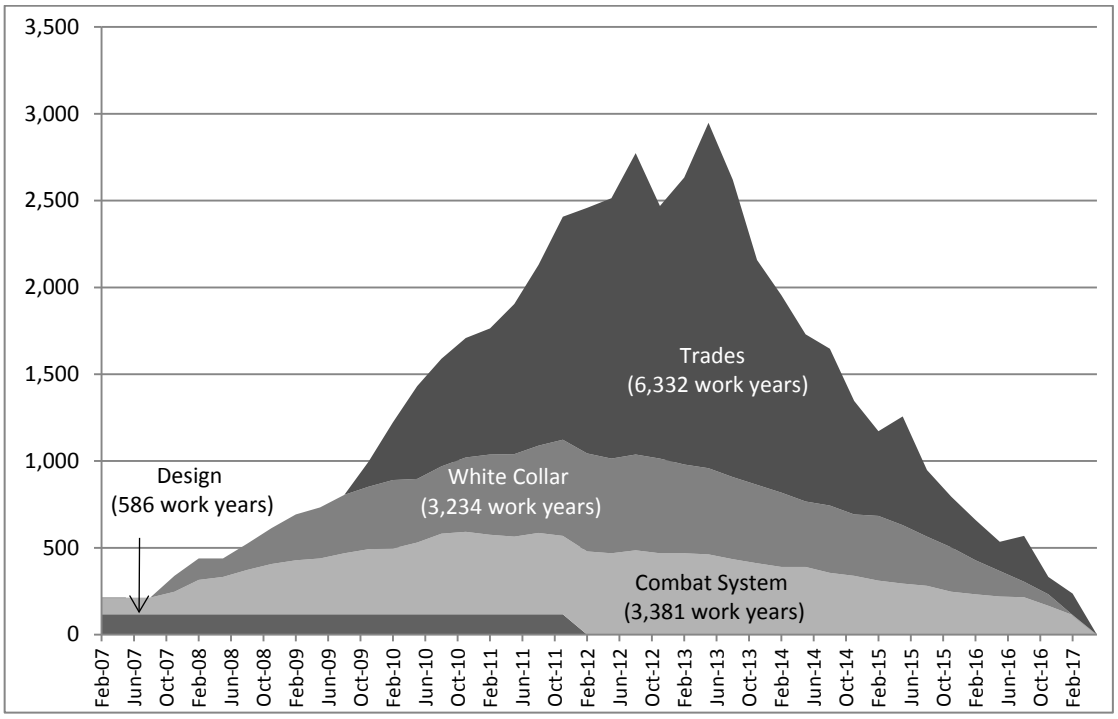
Again, according to the ANAO, the project has experienced a range of difficulties including 'immaturity in detailed design documentation and block construction problems leading to extensive, time consuming and costly re-work', and 'substantially lower than anticipated construction productivity'. On the latter issue, by November 2013 it was costing $1.60 to produce work originally estimated to cost $1.00.

It would be a mistake to blame the problems experienced with the 'immaturity in detailed design documentation' solely on Navantia. In the period leading up to selection of the design and final government approval, the three members of the alliance had every opportunity to

assess the suitability of Navantia as a supplier of design documents and to test their ability to make use of those documents.

Similarly, it would be a mistake to accept the claim by industry and Defence that productivity is low because of having to recommence shipbuilding after an extended hiatus. In the final analysis, the delays to the project reflect a failure by the alliance to understand what could be achieved with the workforce it knew would be available. Nonetheless, for a long time, problems with the AWD were depicted as the result of externalities beyond the control of Defence or Industry.

Figure 7.15: AWD workforce demands – alliance plus local contractors



Source: presentation by Defence official, January 2012

A rescue plan

In December 2013 government announced an external review of the AWD program. The delivery of the resulting 'White-Winter report' was announced in June 2014. Although the report hasn't been released, the government said it identified problems with; the initial program plan, inadequate government oversight, the alliance structure's capacity to manage the project, and the performance and capabilities of ASC and major subcontractors.

The recommended remediation plan was to have three parts;

- improve shipbuilding productivity at ASC and its subcontractors
- urgently insert an experienced shipbuilding management team into ASC
- reallocate modules between shipyards to make the program more sustainable.

By any measure, the second of the three steps was the most decisive—putting a new management team into ASC. At first, this seemed to be what would happen, after the government engaged advisors with 'mergers and acquisitions' experience to help with the

process. In a case of history repeating itself, it looked as though a private sector shipbuilder would be brought in to save the ailing project, just as had happened back in the 1980s, when the long-troubled FFG project at the then government-owned Williamstown shipyard was turned over to the private sector to complete. The fact that one of the authors of the report (John White) had been involved in the FFG rescue is noteworthy.

Initially, the government baulked at taking such radical action. Instead, it announced that it would 'insert 'additional shipbuilding expertise' into the AWD program—a far cry from inserting 'an experienced shipbuilding management team' into the project. Thus, following a competitive process, BAE Systems, Navantia SA and Raytheon Australia were given 'increased roles in the Air Warfare Destroyer program for an interim period'. At the time, the thinking appeared to be that the project had until the end of the year to demonstrate substantial improvements in productivity. Indeed, the implicit deal was that the greenlight for building the future frigates in Australia depended on things being turned around.

But the government lost patience. Following the completion of a 'forensic audit' of the project in May 2015, the government finally moved to more fully adopt the White-Winter recommendations. How fully we cannot say—the report remains under wraps.

The new sense of urgency was likely prompted by the sobering results of the forensic audit, which forecasts further delays and an additional $1.2 billion to complete the program. This is more than twice the cost blow-out previously disclosed. As the Minister for Finance observed, 'these ships are costing $3 billion a ship when equivalent ships in other parts from the world would have cost us $1 billion a ship'. Table 7.4 shows the progressive slippage in the schedule.

Table 7.4: Progressive delivery schedule for the AWD project

	Original delivery date	2011 reschedule	2012 reschedule	2015 reschedule
HMAS *Hobart*	December 2014	December 2015	March 2016	June 2017
HMAS *Brisbane*	March 2016	March 2017	September 2017	September 2018
HMAS *Sydney*	June 2017	June 2018	March 2019	March 2020

Source: Various Ministerial Media Releases.

The government now plans a limited tender process 'seeking proposals to either insert a managing contractor into ASC for the remainder of the AWD build or to further enhance ASC capability through a partnering agreement'. At this point, it's impossible to say what the contracting arrangement might be in either case; that's something to be negotiated with the firm that wins the contract. But we can think through the possibilities.

In the event of a partnering agreement, it would likely be akin to the interim measures already adopted. The difference would be that a single firm would be providing a package of skilled personnel to work within and with ASC. Perhaps more importantly, as a 'partner' they would also have some influence over the higher management of the project. Nonetheless, with no skin in the game, it would be a case of 'all care, no responsibility' for the partner.

In the event of the managing contractor option, things get more interesting. However, it appears that the proposal is *not* to bring in a firm to take over the whole project, but rather only the ASC component. Similarly, the submarine component of ASC looks safe from

intervention for the moment. Indeed, the announcement of the new approach extolled the merits of the government's recent appointment of a new CEO at ASC from US shipbuilder Bath Iron Works. Thus, far from having a private sector firm run the project, the managing contractor will operate *within* ASC and *with* the existing alliance partners (unless Raytheon becomes the managing contractor).

If so, this will further complicate the already intricate arrangements of the alliance. Assuming the new managing contractor is contracted under some sort of incentive scheme (rather than a purely cost-plus contract), we'll have four parties—ASC, Raytheon, Defence and the managing contractor—operating under two layers of contractual incentives. The potential for perverse incentives cannot be discounted. Moreover, capable firms may be hesitant to risk their reputation under an arrangement where their fate is linked to the performance of the parties that got us to where we are today.

So how will it work? The government's announcement implied that the establishment of a new baseline for the project was a precondition for seeking tenders. Could it be that they think that the costs are well enough understood to have a managing contractor sign up to a fixed cost contract? That might be hard to achieve. Potential managing contractors will find it hard to properly undertake a due diligence assessment before bidding. So it might have to be a cost-plus contract with incentives for improved shipyard productivity and schedule acceleration—though a stronger arrangement might be negotiated downstream.

Would a bolder and more decisive approach be possible? Certainly today's approach is half pregnant compared with what was done back in the 1980s. Not knowing what White-Winter recommended, it's hard to say. Perhaps the alliance contract is simply too difficult a knot to disentangle; the current approach might be the best available.

However, given the scale of the cost blowouts, it's almost certain that the incentive/penalty provisions of the alliance contract have been exhausted and the participants are now working under cost plus arrangements. This is far from good news for the taxpayer since the parties have little reason (beyond reputation) to improve their performance. But if we've gotten to that stage, chances are that the Commonwealth has step-in rights to restructure the contract. If so, why not bring in an experienced shipbuilding company to manage the whole project and take the role as leader of the Alliance?

Whatever the arrangement— partnering agreement, managing contractor, or something bolder—there is an implicit incentive beyond any direct financial considerations; the chance to be in pole position for the eventual sale of ASC and the lucrative future frigate program that's due to commence around 2020. Again, history may be helpful. After Tenix completed the two half-complete FFG languishing in the government shipyard, it went on to execute the very successful Anzac frigate program. Of course, taking on the completion of AWD could be a two-edged sword. It's only going to be advantageous if the program can be turned around; otherwise it's a poisoned chalice.

Only time will tell whether the government's latest action will fix the project or not. The future of naval shipbuilding rests on the current plan. Although the government reaffirmed its commitment to deliver 'an enterprise-level naval shipbuilding plan' later this year, the sad experience of the AWD will surely influence future decisions. On the government's own figures, we are getting three ships for the price of nine. That's probably not fair to local industry—the lessons learned from a government-owned shipyard cannot be simply extrapolated to the private sector—but that's how the cards have fallen.

And the game's not over yet. With 25 months before the first vessel is delivered, there's a lot that could happen. The construction of modules and their consolidation are but initial steps along the way, with fitting out the vessels with their communications, navigation and weapons systems to follow. On past experience, the hard parts are yet to come.

Finally, before leaving the AWD project, there's the long-term question of through-life support. Successive naval platforms have been delivered to the RAN without a coherent sustainment plan or contract in place. The Collins class is perhaps the most visible failure of this type, but other classes of vessel have suffered similarly. Let's hope that a plan emerges soon. (For the record, we said this last year, and the year before that, and the year before that.)

The ghost of submarines future—replacing the Collins

Just prior to the 2012 May budget, the government announced the next steps in the process of replacing the Collins class submarine. In broad terms, the goal was to achieve first-pass approval in late 2013 or early 2014 and second-pass approval in 2017. The options being considered were (verbatim):

- An existing submarine design available off-the-shelf, modified only to meet Australia's regulatory requirements.
- An existing off-the-shelf design modified to incorporate Australia's specific requirements, including in relation to combat systems and weapons.
- An evolved design that enhances the capabilities of existing off-the-shelf designs including the Collins Class.
- An entirely new developmental submarine.

Concurrent with the release of the 2013 Defence White Paper in May 2013, the government announced that it would:

> *'…suspend further investigation of the two Future Submarine options based on military-off-the-shelf designs in favour of focusing resources on progressing an 'evolved Collins' and new design options that are likely to best meet Australia's future strategic and capability requirements'.*

Also in May 2013, the government identified the US AN/BYG-1 as the reference combat system for the development of the Future Submarine and announced the results of a study of the service life of the Collins:

> *'The study found there is no single technical issue that would fundamentally prevent the Collins Class submarines from achieving their indicative service life or a service*

life extension of one operating cycle for the fleet, which is currently around seven years, excluding docking periods'.

Given the extended time necessary to execute either of the two options then under consideration, the extension of the Collins life-of-type by an additional operating cycle had seemingly become a foregone conclusion—and a feasible one given the encouraging news from the last Coles Review.

Change of plan

In April 2014, at an ASPI conference on the subject of the future submarine, it rapidly became clear that Defence and the government hadn't yet compared their respective approaches to the project. While Defence was still marching to the beat of the previous government's drum, the new government had some very different ideas. At issue was not just the type of submarine to be acquired, but the size of the fleet and location of their construction. The long-promised goal of building twelve new boats in South Australia was now far from certain. Almost overnight, the purchase of fewer-than-twelve foreign built boats was firmly on the cards. By the time of the DMO-Industry conference mid-year, the word was on the street; the government was interested in purchasing submarines from Japan.

While in opposition, the government often repeated the mantra of 'twelve boats built in South Australia', but a close reading of the coalition's defence policy going into the election showed that their thinking had shifted. There was no mention of numbers, and the commitment to SA left some wiggle room: '…work on the replacement of the current submarine fleet will centre around the South Australian shipyards.' Of course, that does not guarantee that there'll be much work to do.

Rumours about Option J, as it became known, continued, and the government soon disclosed that the option was under consideration. Commentators (me included) expressed concern that in the absence of a rigorous tender process, we wouldn't be able to make a well-informed decision, let alone secure a good deal in either cost or capability terms. Others expressed concern about the geopolitical consequences of a closer Australia-Japan strategic partnership.

Matters were brought to head in February 2015, when a deal was apparently struck between the Prime Minister and some South Australian members of the party room in the context of a looming leadership spill. After some confusion settled, it became clear that a 'competitive evaluation process' would be held, with potential suppliers bidding on the basis of a foreign build, local build and/or hybrid approach. At that time, the government advised Australian industry that they would need to work with an international partner. To the surprise of many, Sweden was excluded from the process, leaving the potential suppliers narrowed to France, Germany and Japan.

The competitive evaluation process seeks proposals addressing:

- pre-concept designs based on meeting Australian capability criteria
- options for design and build overseas, in Australia, and/or a hybrid approach
- rough order of magnitude costs and schedule for each option

- positions on key commercial issues, for example intellectual property rights and the ability to use and disclose technical data.

In announcing the process, the government said that the new submarines must be replaced 'in time to avoid a capability gap in the mid-2020s when the Collins Class submarine is scheduled to be retired from service', which appears to avoid a life-of-type extension for the Collins. In terms of capability, the government says it wants:

- range and endurance similar to the Collins Class
- sensor performance and stealth characteristics superior to the Collins Class.

Unsurprisingly, the joint US-AS combat system and heavyweight torpedo are the government's preferred fit-out for the new boats.

With the process slated to take ten months, the successful partner should be announced in December 2015 or January 2016. A yet-to-be-appointed expert advisory panel will oversee the process.

How much does it cost to get ready to build a submarine?

It was noted earlier that selecting a design for the AWD cost the taxpayer around $186 million. How this money was spent remains unclear. It would be nice to know given that even more money has been set aside to initiate the Collins replacement. Project SEA 1000 Phase 1A, *Future Submarine Design and Construction (Progress of Options)* has been allocated $297 million, and the money is being spent at a brisk pace, see table 7.5, with $132 million already spent.

Table 7.5: Project SEA 1000 Phase 1A

	2011-12	2012-13	2013-14	2014-15	2015-16	after
Budget	?	-	58	98	87	77
Actual	?	14	44	74		
Cumulative	?	14	58	132	219	77

Source: DAR, PBS, PAES

Fortunately, the Defence/DMO contracts list provides an informative insight into spending in from July 1 2011 through to 30 December 2014 for contracts exceeding $100k. We've been able to identify 97 separate contracts accounting for $78.6 million—which seems about right given that we don't have visibility of spending in the first half of 2015. Because of the vagaries of the contract list, we cannot be sure that duplicated contracts haven't slipped in (but we've done our best to remove them). The top eight contractors are listed in Table 7.6.

In addition, there are 35 separate contracts for industry participants in the Future Submarine Industry Integrated Project team (IPT) at a total cost $22.3 million dollars. The average annual cost of each of the participants is $512,748. Not bad work if you can get it; only the Secretary and CDF get paid more within Defence. Industry expertise does not come cheap. An Integrated Project Team Deputy costs $764k a year (we have two of them), an Engineering Management Planner comes in at $759k a year, a Combat System Sonar Engineer costs $778k a year, a Survivability Engineer costs $697k, and an Industry and Business Analyst costs $703k a year. Will someone please tell me next time they advertise?

Table 7.6: Project SEA 1000 contracts

Contractor	# of contracts	Purpose	Value ($m)
USN Foreign Military Sales	6	Support from United States firms and USN	27.5
Thyssenkrupp marine systems	2	RFI response and Evolved Collins Study	4.7
Babcock Integrated Technology	5	Submarine propulsion facility implementation planning activities, knowledge management, engineering services, IPDE services	4.0
BMT Design & Technology Pty Ltd	6	Engineering services, naval architecture, reviews of deliverables, submarine design authority	2.9
Frazer-Nash Consultancy	3	Strategic safety framework, functional modelling, preliminary requirements study, engineering services, combat system concept lead design	2.7
Ernst and Young	3	Corporate advisor, financial modelling services	2.3
AGIS Group	2	Project management and specialist engineering Support for power and energy R&D, Engineering Services	2.2
ASC Pty Ltd	4	Safety management and engineering services, product development & sustainment environment subject matter expert	2.2

Source: Defence and DMO contracts list 2012 to 2014

The 2015 RAND report on Australian naval shipbuilding

Summary

Commissioned in late 2014 under a $2.5 million contract, the RAND report *Australian's Naval Shipbuilding Enterprise: Preparing for the 21st Century* was released on 16 April 1 2015. The government says it's developing an 'enterprise-level Naval Shipbuilding Plan…informed by the expert, independent advice from the RAND review'. It's important therefore that RAND's analysis is carefully evaluated. RAND comes to two key policy-relevant conclusions:

- Building four Offshore Patrol Vessels commencing in 2017 would provide a 'cost-effective transition' between the end of the AWD program and the commencement of the future frigate program.
- Adopting a 'continuous-build' program for the future frigates and subsequent classes of surface combatant would help create a sustainable naval shipbuilding industrial base.

The RAND report does not provide a persuasive case for either conclusion. The proposal to build four OPV seeks to maintain skilled workers in the sector so as to (1) reduce the cost of the subsequent future frigate program, and (2) reduce delays in the future frigate program predicted by a RAND computer simulation. RAND fails to quantify either the savings or the cost of the four OPV. But, under reasonable assumptions, the savings amount to only $89 million (c.f. the $5.5 billion labour cost of the future frigates) and the four vessels will cost in the vicinity of $890 million. Thus, the net cost of the proposal is around $801 million for four vessels, for which there is no identified strategic need at this time. For technical reasons explained in this paper, RAND's prediction of delays to the future frigate program is far from certain.

RAND proposes that the future frigate program be slowed from a 12 month to 24 month pace of ship delivery with the aim of creating a 'continuous build program'. Setting aside the additional cost and capability shortfall (16 ship-years) from not replacing the existing Anzac frigates when they reach their 30-year life-of-type, the end result would be that the final future frigate would be delivered 6 years before the first AWD is due to be retired. That's the same gap that we now face between the end of the present AWD program and the first delivery of a future frigate. Thus, continuity remains elusive. A continuous build program is possible by replacing vessels more frequently or by increasing the number of vessels—but either option would cost billions of dollars more.

RAND says that by adopting a continuous build program and reforming shipbuilding practice, the current 30% to 40% cost premium (RAND's estimate) could be reduced by half by midway through the future frigate program. But if the OPV program only saves $89 million on the future frigate program, the remaining savings must be predominately due to the reforms to shipbuilding practice rather than from continuity. RAND's own conclusion thereby further undermines the case for a continuous build program.

Background

The RAND report seeks to addresses three requirements:

- provide an understanding of the current Australian shipbuilding capability and gauge how alternative acquisition strategies might affect both the capacity of the industrial base and the total cost of the enterprise
- compare the costs of Australia's naval shipbuilding industry with overseas manufacturers that produce platforms of comparable size and scope
- assess the economic costs and benefits of government investments in Australia's naval shipbuilding industrial base under the various enterprise options.

At the time of the report's launch in April 2015, more than a little consternation accompanied the revelation that RAND was not asked to include submarines in its analysis. In comparison, the Gillard government's 2013 shipbuilding plan included both submarines and ships, as did the Howard government's 2002 plan. The omission of submarines is regrettable; it would have been good to see some analysis of building submarines and frigates concurrently. On the one hand, there would be competition for skilled labour from concurrent programs; on the other hand, the two programs would have made it easier to sustain skills and careers in the specialised areas common to both—at least so long as they were both running.

At 297 pages, the RAND report presents a wealth of data, analysis and modelling about naval shipbuilding in Australia. Amid the myriad details, the report comes to six policy-relevant conclusions:

- The economic benefits of domestic shipbuilding are unclear and largely depend on broader economic conditions.
- A healthy naval ship repair industry is not dependent on building vessels in Australia.
- The pause in shipbuilding between the end of the AWD program and the commencement of the future frigate program in 2020 will increase the cost and delay the schedule of the future frigate program. As a result, there will be a 10 ship-year capability gap as the Anzac class retires.
- The gap between the end of the AWD program and start of the future frigate program could be filled with a four-vessel Offshore Patrol Vessel (OPV) program with two benefits:
    - The delay in replacing the Anzac frigates is reduced to two ship-years.
    - Most of the labour cost of the OPV program is offset by improved productivity in the future frigate program due to the transition of skilled personnel from the OPV program.
- The price premium for building naval vessels in Australia is 30% to 40%.

- By moving to a continuous build model for surface combatant construction and adopting new shipyard and design practices, the price premium could be halved.

The remainder of this paper examines each of these conclusions in turn. Further reading on each topic can be found in the bibliography at the end.

The economic benefits of domestic shipbuilding are unclear and largely depend on broader economic conditions.

In recent times, state governments, industry groups, shipbuilders and unions have all published reports extolling the economic benefits of building ships and submarines in Australia. They will surely be dismayed that RAND has come to such an ambivalent verdict. But although RAND's discussion of the issue runs to a mere five pages, its conclusion is justified. Other analyses—including by this author—are even more sceptical of the claimed economic benefits.

A healthy naval ship repair industry is not dependent on building vessels in Australia.

Although the counter-assertion is often used to justify domestic construction, Australia's experience with foreign-sourced ships and aircraft unambiguously supports RAND's conclusion.

The pause in shipbuilding between the end of the AWD program and the commencement of the future frigate program in 2020 will increase the cost and delay the schedule of the future frigate program. As a result, there will be a 10 ship-year capability gap as the Anzac class retires.

RAND says that, on the basis of current plans, we face a 10 ship-year delay (i.e. an average 15-month delay for each of the eight vessel fleet) relative to the retirement of the Anzac class assuming a 30 year life-of-type. In RAND's analysis, the delays are a consequence of the gap between the end of the Air Warfare Destroyer (AWD) program and the start of the future frigate program. The 'cold start' on the latter leads to unproductive labour-hours as personnel are trained, which, in turn, leads to delays.

All this sounds entirely plausible, but caution is required in interpreting RAND's modelling and the conclusions drawn from it—especially given that RAND go on to propose a costly interim OPV build to bridge the gap between the end of the AWD and start of the future frigates.

Are the retirement dates correct?

There are two problems with RAND's analysis. The first concerns the assumed retirement dates for the Anzac frigates. RAND assumes a 30 year life-of-type for the Anzac frigates and defines it as commencing from the date of commissioning. Table 7.7 below gives the commissioning dates of the eight Anzac frigates and the calculated retirement date. However, the diagrams in the Rand study use earlier dates (see for example Figure 4.6 in the RAND report). The differences are significant. Using the RAND retirement dates the first six vessels are late by an aggregate 11.2 ship-year delay. In comparison, using the actual 30 year life-of-type sees only the first four vessels delivered late (resulting in a 7 ship-year delay) and

the last three vessels are delivered early by an aggregate 2.4 ship-years. The resulting 38% reduction in total delay (not counting early deliveries) is significant given the emphasis placed on delays in the first part of the RAND report.

Table 7.7: Anzac retirement dates

Vessel	Commissioned	Retire
Anzac	18 May 1996	18 May 2026
Arunta	12 December 1998	12 December 2028
Warramunga	21 March 2001	21 March 2031
Stuart	17 August 2002	17 August 2032
Parramatta	4 October 2003	4 October 2033
Ballarat	26 June 2004	26 June 2034
Toowoomba	10 October 2005	10 October 2035
Perth	26 August 2006	26 August 2036

Source: commission dates from www.defence.gov.au

The aggregate delays in RAND's calculation depend upon the date at which work begins on the second and third vessel. As shown in Figure 2, there's a three-year delay between commencing work on the first and second vessels in the program, and a two-year delay between the start of work on the second and third. In contrast, the Anzac ship project produced vessels in quick succession, with work commencing on the second vessel with twelve months of the first and so on. The apparent larger than one-year gaps in the commissioning of the second and third Anzac vessels only arose because the second and fourth vessels in the ten-ship Anzac program went to New Zealand rather than Australia. It looks as though RAND have assumed a *production schedule* based on the *delivery schedule* of Anzac frigates to Australia (perhaps they are unaware of the two New Zealand vessels). In any case, the absence of New Zealand hulls this time around means that we could bring forward work on the second and third vessels to help alleviate the gaps predicted by RAND's modelling for ships two through eight.

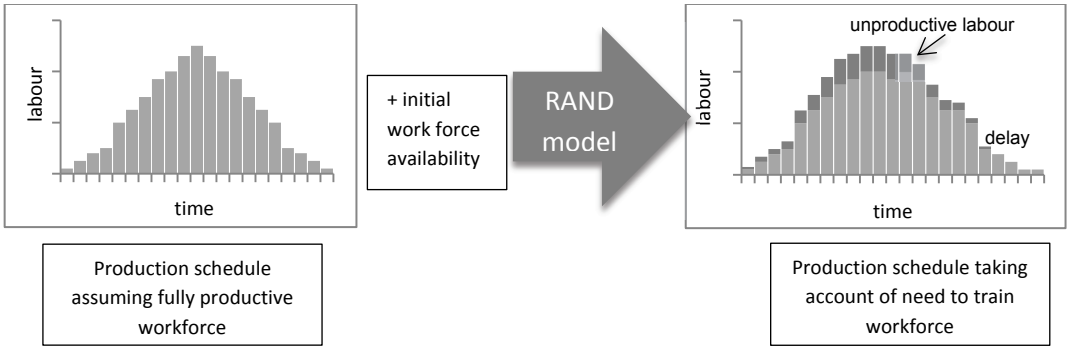
How much confidence can we place on the RAND modelling?

In addition to problems with RAND's assumed Anzac retirement dates and its scheduling of vessel construction, its modelling is problematic.

RAND starts by assuming an initial production schedule for the future frigates that could be executed given the availability of 'fully productive' skilled personnel. It then feeds that initial schedule (along with assumptions about the available workforce) into a computational model. The computational model then simulates the production taking into account the time needed to train personnel when they are not available. Thus, on a quarter-by-quarter basis, the model introduces delays as the requisite personnel are recruited and trained. Importantly, the model doesn't look ahead. Instead, an essentially Markovian approach is taken whereby 'decisions to grow or shrink the workforce are made on the basis of the current quarter's demand irrespective of future demand'. That is, the project is executed as if the managers are blindfolded to the demand for labour beyond a ninety-day horizon.

The model is depicted schematically in Figure 7.16.

Figure 7.16: Schematic of RAND modelling methodology



In essence, the RAND model tells us what would happen if we planned a project assuming the instantaneous availability of a skilled workforce and then proceed to train the workforce in a piecemeal fashion as we discovered that we didn't have the people we needed, all the while deliberately ignoring future demand. RAND goes on to use their model to estimate the unproductive labour-hours that the future frigate would entail as a function of the percentage of peak workforce demand available at the start of the program.

Not surprisingly, with the future frigate program scheduled to begin several years after the AWD workforce has dispersed, the RAND model predicts delays and additional costs due to the need to train new staff. But while there's no question that a cold start project will present challenges and that start-up costs will be incurred, how realistic is RAND's estimate of the delays and additional costs? The best way to answer that question is to compare RAND's approach to what would happen in practice.

In the real world, a plan would be developed for the future frigates taking account, from the start, of the need to train personnel to meet demand across the life of the project. The resulting plan would differ from RAND's simulation in two important respects.

First, the real plan would anticipate the need for personnel and take steps to train them on longer than a 90-day planning horizon. This can't help but reduce the delays relative to the RAND estimates. Indeed, prudent planners may well decide to start training new staff well before the commencement of construction. In the Anzac program, there were 27 months between contract award (August 1989) and the first cutting of steel (March 1992). In the AWD program, there was around four years between the selection of the shipbuilder in mid-2005 and the commencement of fabrication in mid-2009. In each instance, there was ample opportunity for the shipbuilder to commence training well ahead of the actual demand for labour. The future frigate program can, and should, be structured to provide timely selection of the shipbuilder and any third-party module fabricators.

Second, the real plan will make trade-offs between labour costs and schedule. There's a limit to how much money is worth spending to avoid a temporary capability gap—those costs are as real as start-up costs. In practice, project planners will try to optimise the project taking account of the relative importance of avoiding additional costs and delays. Given that the Anzac class is currently undergoing a substantial upgrade and will remain a potent warship for quite some time, it's likely that delays will be accepted to contain costs.

The essential point is this: there's no reason the think that RAND's approach yields anything resembling the plan that would result from, well, actually planning the project. The RAND methodology will unavoidably yield a more pessimistic result than is possible. After all, it begins with a production schedule that's doomed to fail, and then simulates its execution by managers with zero foresight.

But what about the AWD project?

Given the mounting delays in the AWD program (27 months expected to grow to 39 months for the first vessel) surely the RAND analysis is correct? Well, yes and no. There's no denying that the AWD program has been plagued with delays and cost overruns, and the worst may be yet to come. But there are important differences between the problems in the AWD program and the mechanism simulated in the RAN model—a mechanism that begins and ends with the need to hire and train workers.

The White-Winter report into the AWD program identified four causes for the cost and schedule issues; the initial program plan, inadequate government oversight, the alliance's limited capacity to respond to issues, and the performance of ASC and its subcontractors. Nowhere is there a mention of delays due to finding and training skilled workers. Similarly, the RAND report itself contains an informative and thoughtful analysis of problems with the AWD program (p. 43-47) without once mentioning problems arising from the need to find and train personnel—notwithstanding that the AWD program ran through a period where the demand for skilled labour was high due to the resources boom. Thus, there's a fundamental disconnect between our current understanding of problems in the AWD program and the mechanism underlying the RAND model.

The gap between the end of the AWD program and start of the future frigate program could be filled with a four-vessel Offshore Patrol Vessel (OPV) program with two benefits: First, the delay in replacing the Anzac frigates is reduced to two ship-years. Second, most of the labour cost of the OPV program is offset by improved productivity in the future frigate program due to the transition of skilled personnel from the OPV program.

Having used their computer simulation to predict delays and a cost premium for a cold-start future frigate program, RAND then looks for ways to 'fill the gap' and maintain the core of a capable workforce to transition onto the future frigate program. Their goal is two-fold. (1) Replace unproductive labour-hours on the future frigate program with productive work on the 'fill-in' project. (2) Reduce the projected delay in replacing the Anzacs as they retire.

Ignoring the shortcomings of RAND's computer simulation, its best option for filling the gap is problematic in and of itself.

Having effectively rejected (for good reasons) the bringing forward of the frigate program, RAND explore the possibilities of a fourth AWD or a new program building a number of Offshore Patrol Combatants (OPV) in the 1,700-1,800 tonne range. The report focuses on the latter and says:

> *In essence, the four OPVs could be built basically for "free," given that they are sustaining productive labor that reduces the costs of*

unproductive labor when building the workforce for the Future Frigate construction.

Better still, doing so reduces the delay in future frigate delivery from ten ship-years to two ship-years.

Of course, the OPVs aren't actually free, even if RAND's estimates are correct. The offset only refers to *labour costs* associated with the build. Materials and equipment aren't included, nor are the costs of crewing and operating the vessels throughout their life.

So how large an offset do we get, and how large are the other undisclosed costs? According to the RAND report, the labour cost of building four OPV would only add $130 million to the base labour cost of acquiring eight frigates ($5.49 billion) with the remainder offset by a reduction in the cost of unproductive labour in the frigate program. Curiously, RAND omits the actual labour cost of building four OPV so we can't immediately see how much is actually saved in their proposed strategy. But with a little arithmetic, it's possible to estimate what RAND fails to disclose—but first a technical point needs to be cleared up, see Box 1.

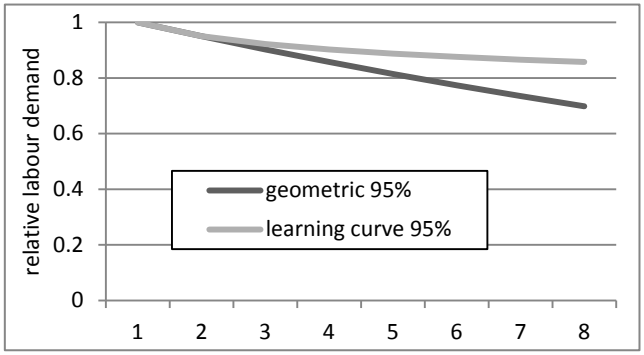
Box 1: Learning about learning curves

Learning curves take account of the productivity improvements over time in a production program. RAND says: 'In this report, we define unit learning curve as the percentage of man-hours required to construct an additional ship compared with the number of man-hours required to produce the previous ship' (p. 53 and again on p. 169) . For a 95% learning curve, that corresponds to a geometric difference equation, where: $L_n = 0.95\ L_{n-1}$ and L_n is the quantity of labour required for the nth vessel, and L_{n-1} is the quantity of labour required for the previous vessel.

However, learning curves more usually refer to the power law relationship: $L_n = L_1 n^{\lambda}$ where L_n is the quantity of labour required for the nth vessel, L_1 is the quantity of labour required for the first vessel and λ for a 95% learning curve is defined as

$$\lambda = \frac{\log(95/100)}{\log(2)} = -0.074$$

Confusingly, RAND describe a learning curve consistent with this standard approach on page 182. It is not clear what approach they have actually used. Although the two approaches yield similar results for small numbers of vessels (2 or 3), the outcomes diverge significantly for 5 or more vessels.



All learning curve calculations in this chapter use the latter standard methodology, which gives a slightly higher value for the savings claimed for building four OPVs, and so is a conservative approach.

We are told that the first OPV requires 700,000 labour-hours to build, which implies around 2,642,094 labour-hours for the four vessels using the report's assumed 95% learning curve. Turning now to the ASC Limited 2014 annual report, we see that the firm employed 2,600 employees and incurred labour expenses of $393,618,000 corresponding to an average per capita cost of $151,400. Assuming an output of 48 weeks at 38 hours per week, the hourly rate comes out to be $83 per hour. (It's possible that the actual number is smaller due to overtime.) In any case, the figure of $83 per hour yields a labour cost of $219 million for the OPV, meaning that only $89 million of the labour cost is offset by removing 'unproductive' labour hours from the future frigate program, see Table 7.8. Thus, far from the 'labor cost of producing these additional ships [being] largely offset by the savings that stem from sustaining a productive workforce', we'll be lucky to get a 41% discount on the labour component. And this will be an even smaller share of the total price—to which we now turn.

Table 7.8: OPV estimated labour costs and 'savings'

Vessel	Labour hours (95% learning curve)	Cost at ASC $83/hour
OPV 1	700,000	$58,100,000
OPV 2	665,000	$55,195,022
OPV 3	645,344	$53,563,526
OPV 4	631,751	$52,435,292
Total	**2,642,094**	$219,293,841
Additional labour cost		$130,000,000
Saving in future frigate program		**$89,293,841**

The UK is purchasing three OPV at a cost of £349 million. Assuming a 95% learning curve, the four vessels will cost (ignoring the lower productivity and higher wage rates in Australia) around £459 or $889 million at today's exchange rate of £1 = A$1.94 for which we get an $89 million discount, see Table 7.9. And that's before the cost of crewing and operating the vessels is taken into account. Even if our estimate of program costs is artificially inflated by the current relative strength of the British pound to the Australian dollar, the fact remains; $89 million is a small fraction of the acquisition, let alone through-life cost, of four OPV. Note that the learning curve has been applied to the entire cost of the vessels rather than just its (unknown) labour component, this will tend to *underestimate* the cost of a fourth vessel.

Table 7.9: UK OPV costs extrapolated to a four vessel program

Vessel	Vessel costs (95% learning curve)	A$ @ $1.94 per £
OPV 1	£121,522	
OPV 2	£115,446	
OPV 3	£112,033	
Total	**£349,000**	
OPV 4	£109,673	
Total	**£458,673**	**$889,826**

UK program costs from *The Telegraph* online, 12 August 2014.

None of this comes out in the RAND report, instead we are told that 'four additional OPVs are added to the RAN fleet at very marginal costs' adding that 'delays in delivering replacement ships are reduced to almost zero'. This is difficult to accept. An $89 million saving on a $890 million program does not constitute a purchase 'at very marginal costs', and a reduction from 10 ship-years to 2 ship-years is not 'almost to zero'. More importantly,

far from being inevitable, the delay is a product of RAND's inherently pessimistic modelling. They've created a schedule problem that might not exist and propose that the taxpayer foot the bill for four ships as a solution (at a net cost of $890 million - $89 million = $801 million) for which there is no identified strategic need at this time.

Perplexingly, having justified the option of buying four additional vessels, in part, on the basis of foreclosing a supposed gap in the delivery of replacements for the Anzac frigates, RAND goes on to propose that we incur an even larger ship-year gap by moving to a slower-paced continuous-build scheme for the replacement of the Anzac frigates.

The price premium for building naval vessels in Australia is 30% to 40%.

RAND benchmark the price of Australian build warships by three independent techniques and concludes that 'the various methods all indicate a modal Australian naval shipbuilding premium of about 30 to 40 percent for ships built entirely in Australia' adding that the premium 'can be significantly influenced by foreign exchange rates'.

While there's no doubt that low productivity and high wages impose a price premium on local naval construction, local shipbuilders will be disappointed that the recent depreciation of the Australian dollar appears not to have been taken into account. The proffered premium of 30% to 40% is narrow compared with recent movements in the value of the Australian dollar. At the time of writing the Australian dollar was worth 77 US cents, only a few years ago it was 43% higher at 1.09 US dollars. In terms of the average post-float (post-December 1983) performance, at 77 US cents the Australian dollar is still marginally above its long-term average of 76 US cents. What's more, the RBA is eager to see the dollar depreciate further to make Australian manufacturing more competitive.

More generally, RAND's price benchmarking analysis is unsatisfying because it fails to present and employ a model that takes account of how foreign exchange, labour rates and productivity combine to determine production costs/prices. So although a wide range of data has been assembled, it's never transparently brought together. A contour plot of the cost premium as a function of the USD-AUD exchange rate and relative labour productivity would have been useful.

Finally, for the purposes of comparisons with other sectors of the economy, it would have been useful to have also the premium expressed as the 'effective rate of assistance' to allow comparison with other industries where the government provides subsidies or protection.

Schedule performance—why bother?

On schedule performance, RAND compare the keel-to-commission duration of the Australian AWD and Anzac programs with comparable overseas programs. Having noted that the 'Australian Anzac class is faster than the average' and the 'AWD average time is comparable with the average', they nonetheless conclude that Australian shipbuilding is 'slightly longer with respect to schedule'—which is only the case in recent times. The apparent inconsistency would be a concern if comparisons of schedule duration were useful, but they aren't. Shipbuilding isn't a race. The optimal production schedule will depend on the specifics of the available facilities and workforce, along with many other factors—most especially the relative priorities placed on cost and schedule. Shorter schedules are not

always better. Cost-schedule trade-offs are a central component of rational project planning. Delays to scheduled production are pertinent, and a benchmarking of variations between planned and achieved schedule would be useful, but that's *not* what's been done.

By moving to a continuous build model for surface combatant construction and adopting new shipyard and design practices, the price premium could be halved.

The RAND report's executive summary says:

> *In the long term, a continuous build strategy of building major surface combatants with a drumbeat of 1.5 to two* [years between builds] *should sustain a healthy and cost-effective shipbuilding industrial base. Building OPVs during the short-term gap will provide a cost-effective transition to the lower demands of a Future Frigate program resulting from a [production] drumbeat greater than one. But adopting this option will present challenges with a number of pre-conditions required to achieve it, including starting [OPV] production by 2017, using an existing design without modifications, and strategically scheduling the build program to complement the Future Frigate workforce profile. And the end of the Future Frigate build program would flow into the build of the next major surface combatant. There will be challenges during the replacement of the Anzac class, but these challenges might be met with careful planning of delivery schedules and extended usage of the existing fleet.*

There's a lot of analysis underpinning this scheme, and it's fair to say that the authors have addressed many of the issues relevant to a continuous build. For example, they are aware that building future frigates at a rate of less than one per year will complicate the replacement of the Anzac class as they leave service. Nonetheless, there are a couple of points requiring closer scrutiny.

Firstly, if we build future frigates at the rate of one every 18 or 24 months, how exactly will the future frigate program 'flow into the build of the next major surface combatant' if we maintain our present fleet of eight frigates and three AWDs? RAND seems confident that this can occur, observing that; 'assuming a six-year build for the replacement ship, construction would start in 2041, at approximately the same time as the build of the Future Frigates would end (assuming a drumbeat of two)'. They are even nonplussed by the prospects of an eighteen-month drumbeat observing that 'a drumbeat of 1.5 would end Future Frigate construction a few years before the start of the AWD replacement, thus creating a short gap in workforce demand.' Hence their conclusion quoted above that 'major surface combatants with a drumbeat of 1.5 to two [years between builds] should sustain a healthy and cost-effective shipbuilding industrial base.'

A reality check is called for. Consider Figure 7.17, which depicts the situation assuming a 30 year life-of-type for the AWD and that the anticipated additional 12-month delay in their delivery eventuates (which appears to be a forgone conclusion). There is a *six-year gap* between the delivery of the last future frigate and the replacement of the first AWD—precisely the same situation we face today between the end of the AWD program and the

delivery of the first Anzac. Note that the end of end of the future frigate program (2041) and the commencement of the AWD replacement program (2047) agree with the dates put forward by RAND.

Can it really be that today we face a productivity sapping boom-and-bust discontinuity, but when the same situation occurs again in three decade's time it's part of a 'healthy and cost-effective shipbuilding industrial base.'? With an eighteen-month delivery schedule, see Figure 7.18, the gap increases to 9.2 years. Yet we are told that this is not only a short gap but that it is still consistent with a 'continuous build strategy'.

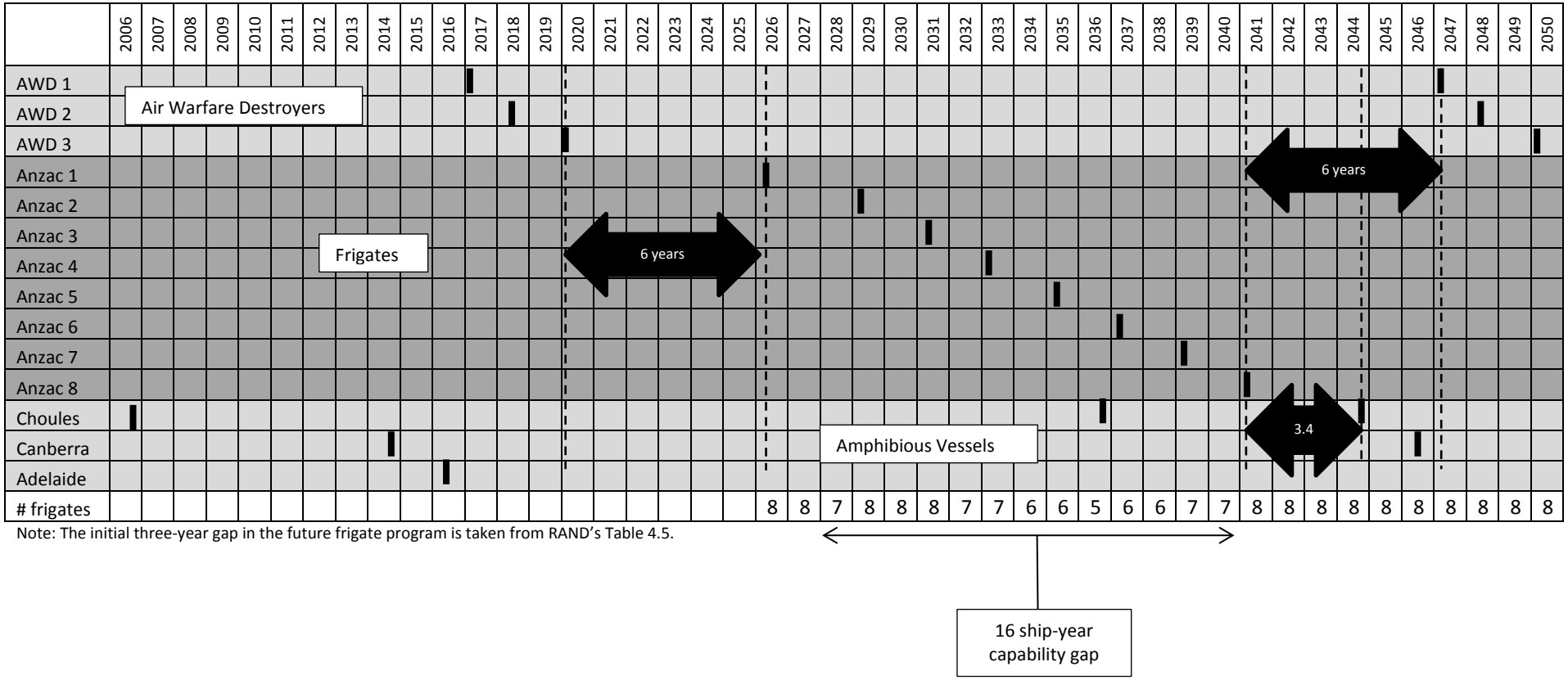
If a 9-year gap is consistent with a continuous build program, we've had one since 1985 when the keel first Australian FFG was laid down. The was no gap between the FFG program and the Anzac program, and the gap between the delivery of the last Anzac frigate in August 2006 was only 8.3 years prior to the planned delivery of the first AWD in December 2014. Clearly this is not the case. A six (let alone nine) year gap would mean that precious little carryover would be possible between the two programs. Indeed, the workforce completing the fit out of the last future frigate would be nothing like the design and planning workforce that would be needed to initiate the AWD program, as Figure 7.15 for the AWD program makes clear. A continuous build program requires overlapping work on successive similar vessels. The scheme proposed in the RAND study does not achieve that.

The one vessel per 24 months approach proposed by RAND will also result in a shortfall in frigate numbers between 2028 and 2040. In aggregate, 16 ship-years will be lost, with a maximum deficit of 3 vessels in 2035. Not only is this undesirable from a strategic perspective, it will would also be difficult to manage from the standpoint of personnel management. It took years to recover from the delayed transition from a declining Oberon fleet to the Collins class. The resulting capability gap with an eighteen-month production interval would be less, but the resulting production gap before the AWD replacement would be longer.

There are two further problems with a two-year drumbeat. First, facilities and corporate overheads per vessel would be roughly twice as high for a two-year production interval than for a one-year production interval. With a slower production rate, shipyard executives would be neither less numerous nor less well remunerated. All other things being equal, a two-year drumbeat production schedule will cost more than the regular one-year drumbeat approach.

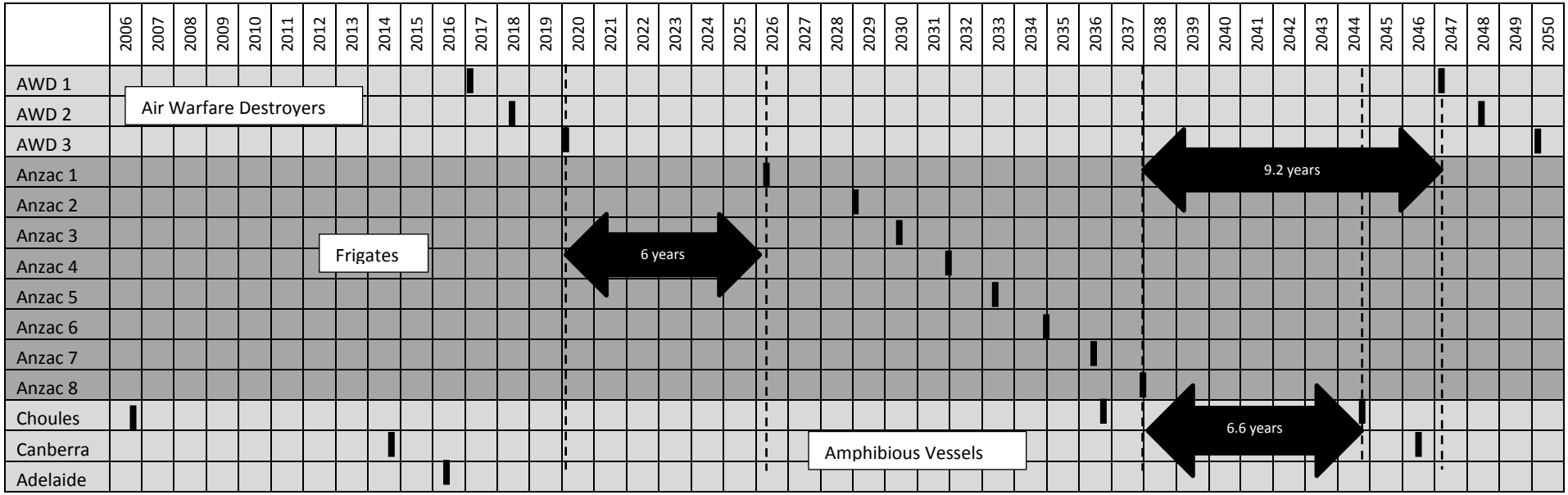
Second, a stretched production schedule would make it difficult to maintain a single configuration across the fleet. Technological improvements and obsolescence would inevitably forces changes during the execution of the program. An eight vessel program with a two-year drumbeat would extend across 14 years, or 19 if the five years to build the first vessel is included. In practice, the vessels would be produced in batches, each varying in important ways. This would complicate maintenance, training and logistics, albeit with the compensating advantage of progressive capability improvement.

Figure 7.17: The not-so-continuous build program—two-year production interval



Note: The initial three-year gap in the future frigate program is taken from RAND's Table 4.5.

Figure 7.18: The not-so-continuous build program—eighteen-month production interval



Why would we even consider adopting two-year drumbeat production schedule for the future frigates with its additional costs and resultant capability gap if it simply brings us back to the situation we face today? It would be a case of back to the future with 2020 replaced by 2040.

A continuous build program could also be achieved by retaining vessels for a shorter life-of-type. To provide continuity beyond the future frigate program we'd need to replace the first AWD in early 2043. But at that point the youngest AWD will be at most 26 years old. The consequences for the remainder of the fleet would be greater. With a major surface combatant fleet of 11 vessels and a drumbeat of 2 years, vessels have to be retired every 22 years rather than every 30.

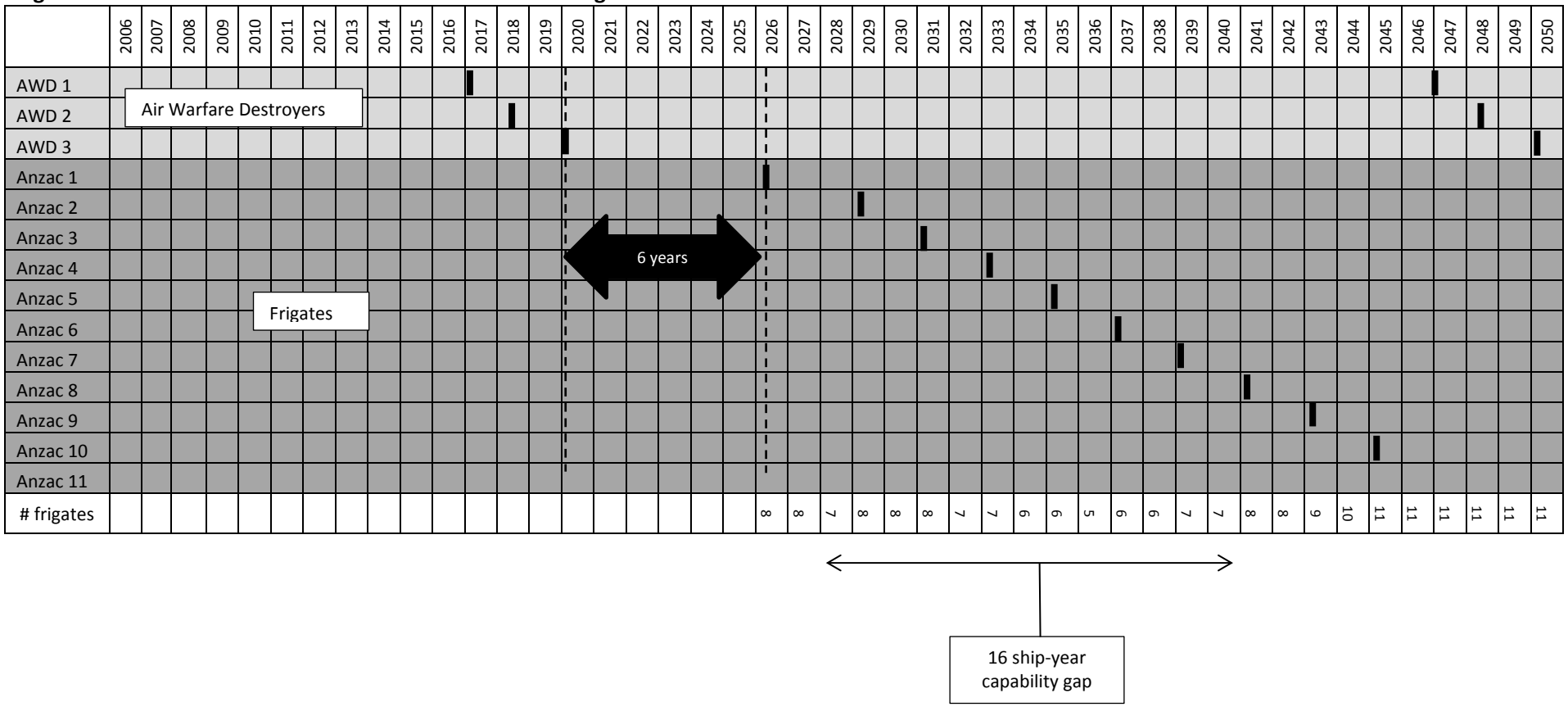
By reducing the life-of-type by 8 years, the amortised capital cost rises by 36%. That is, the average procurement cost of the fleet is at least 36% higher. In theory, this can be partially offset by removing the need to upgrade vessels mid-life—though the bar is set high. Although the RAND report examines shorter life-of-type options (p. 79), it fails to acknowledge that a shorter life-of-type for vessels would constitute a new and significant source of additional long-term costs.

Another way to create a continuous build program would be to increase the size of the destroyer-frigate fleet beyond the currently planned three AWDs and eight Anzacs. Indeed, the main body of the report does include an analysis (Table 4.4) of the number of combatants needed to sustain a continuous build program. Options include 17 vessels with a 25 year life-of-type built one every 18 months, and 15 vessels with a 30 year life-of-type built one every 24 months. Nonetheless, RAND's modelling focuses on an 8 vessel future frigate program throughout the report. The closest we get is a reference to the White Paper considering a future frigate fleet in the range of 8 to 10 vessels, but with only 3 destroyers that's still well short of the 15 to 17 vessels required to meet RANDs estimated continuous build schemes.

As Figure 7.19 shows, by building 10 or 11 future frigates the gap can be closed. But then to complete the scheme, we'll then need to build 4 or 5 replacement destroyers around mid-century. Thus, to properly accommodate a continuous build program, 2 or 3 additional frigates and 1 or 2 additional destroyers would be needed to achieve a 30 year life-of-type. A still larger number of vessels would be required to accommodate an 18-month drumbeat.

The RAND authors must realise that for Australia to have a 'continuous build strategy of building major surface combatants with a drumbeat of 1.5 to two' some combination of more combatants and shorter in-service lives are necessary. And expanding the size of the fleet, or reducing the life-of-type of vessels, will each increase the overall cost of ownership. Yet no attempt is made in the RAND report to compare these additional costs with the claimed savings from a continuous build program. RAND's focus on the price premium per vessel fails to take account of what really matters; the long-term amortised cost of maintaining a navy consistent with our strategic needs. A larger fleet might be attractive if such an increase was planned on strategic grounds in any case, but certainly isn't if it's a case of the sustainable industry tail wagging the ADF capability dog.

Figure 7.19: But if we build another two or three future frigates…



Within the body of the RAND report, a variety of options for the post-Future Frigate workload are examined. There's an examination of having a follow-on Littoral Multirole Vessel (LMRV) program, but they aren't major surface combatants. As RAND observes, 'littoral multirole ships will provide some demand for new ship construction after the Future Frigates. However, they are not large, complex surface combatants.' The scale of demand is also very different, a LMRV would require 500 workers compared with the almost 3,000 needed for the build of a major surface combatant.

Even adding the RAN's amphibious vessels into the mix fails to retrieve the situation, see Figure 7.18; the gap is only reduced to 3.5 years. (The first amphibious vessels will need to be replaced midway through the future frigate program, which is problematic if the build occurs in Australia).

Bringing forward the replacement of the final two amphibious vessels would allow the gap to be reduced to around 2 years. But the large amphibious vessels make very different demands of facilities and workforces to technology-intensive surface combatants, and a two-ship build would be dominated by start-up costs. As was the case with the present Canberra class LHD, the business case for buying a vessel from an existing overseas yard is likely to be very strong, so it's unsurprising that the RAND study does not bother to model a continuous build program including amphibious vessels. To the contrary, they talk explicitly about a 'continuous build strategy of *building major surface combatant* [my italics]'.

Where does this leave us?

The RAND report poses itself the rhetorical question:

> *Is it possible for Australia's naval shipbuilding industrial base to achieve a continuous build strategy, and how would such a strategy's costs compare with the current and alternative shipbuilding paths?*

If only RAND had gone the extra step to answer the question. Not only is the cost of building four OPVs omitted (in fact it's actively downplayed), but the cost of a workable continuous build program for surface combatants (in terms of either more-frequent recapitalisation, a larger major combatant fleet or both) isn't properly acknowledged, let alone costed. Instead, we're offered a plan that, implemented as presented, would impose additional costs and substantial capability shortfalls. And when all is said and done, in 2040 we'll be right back where we are today looking at a six-year gap between one class of surface combatant and the next.

It's as if we're being offered a scheme designed to keep Australian shipbuilders busy for the next couple of decades, irrespective of the costs and force structure consequences of doing so.

In return, we're promised that although 'building ships in Australia carries a 30% to 40% price premium compared with buying the ships from foreign shipbuilders…that premium could drop to approximately half that level over time with a steady production program that leads to a productive workforce.' Moreover, RAND say that 'it is achievable mid-way though the build of the future-frigate program.'

Of course, as explained already, focusing on the acquisition cost premium risks obscuring the larger question of the long-term cost of maintaining the fleet. Nonetheless, halving the current 30% to 40% cost premium (RAND's estimate) for domestic shipbuilding would deliver substantial saving: if frigates cost $1 billion each absent a premium, they'll cost around $1.35 billion with a 35% premium

and around $1.175 billion with half that premium. Across just the last half of the program, that would amount to savings of (4 x $175 million =) $700 million.

Thus, RAND's claim of being able to halve the premium around half way through the future frigate program warrants close attention. In the conclusion (p. 149) the claim is made contingent only on 'a steady production program that leads to a productive workforce'. Elsewhere, in the executive summary (p. xxxvii) and in the conclusion (p. 146), the claim is contingent upon both a continuous build program and other changes, including the use of more-mature designs and a shift to a continuous-improvement culture in shipyards. The question must therefore be asked: to what extent is the reduction in premium contingent on a continuous-build scheme, and to what extent does it depend on the other changes?

RAND doesn't break down those dependencies. But an important inference can be drawn from their claim that the reduction is achievable midway through the future frigate program. Given that the three-vessel OPV 'gap filler' only results in an $89 million dollar cost reduction in the future frigate program, the benefit through continuity of building OPVs is entirely marginal compared to a 30% to 40% cost premium on a multi-billion dollar program. Thus, the promised halving of the cost premium midway through the future frigate must be almost entirely the result of factors other than continuity of work. So why should we even consider building additional vessels or trying to smooth demand?

Anyone for monopoly?

The RAND report takes a largely production engineering approach to shipbuilding, with very little attention paid to the commercial arrangements. This is a worrying omission. A continuous shipbuilding program would create an effective domestic monopoly involving a single consolidation yard and a single module builder. The resulting power of the firms, unions and host state government involved would preclude any credible threat of going offshore for future builds. With commercial pressures all but absent, the task of improving and maintaining productivity would be very difficult. Conversely, a program-by-program approach would keep local industry on its toes through foreign competition. None of this seems to have been taken into account in the RAND report.

Similarly, the critical question of what to do with the government-owned ASC Limited is conspicuous by its absence. A shipbuilding enterprise is much more than production schedules and charts of workforce demand. As the AWD program shows, contracts, incentives, governance arrangements and corporate management are central to the success or failure of any shipbuilding program. Until these fundamental issues are addressed, any plan for Australian naval shipbuilding is an exercise in hoping for the best. Soviet-style central planning will deliver Soviet levels of efficiency. A lesson from the United Kingdom is illustrative.

The idea of building OPV as a gap-filler isn't a new idea. The United Kingdom is building three OPVs 'to sustain key industrial capability' between the end of the Queen Elizabeth class aircraft carrier and beginning of the Type 26 frigate program. But there's more to the story—under an agreement with the shipbuilder, the UK would be 'liable to pay the costs of maintaining these skills whether or not any shipbuilding was taking place at UK yards'. The oldest of the vessels the OPV will replace is only 12 years old at the moment. Such are the joys of managing a monopoly shipbuilder.

Further reading

The RAND report provides an extensive list of references. Nonetheless, there are several Australian publications that do not appear. These are listed below for readers interested in a local perspective. For completeness, relevant government reports and articles on submarines are included.

Government reports

Department of Defence, *Naval Shipbuilding and Repair Sector Strategic Plan*, 2002.

Department of Defence, *Future Submarine Industry Skills Plan: A plan for the naval shipbuilding industry*, 2013. (A critical analysis of this plan can be found in Chapter 7 of the 2013-14 ASPI Defence Budget Brief.)

Industry and union papers

Tasman Asia Pacific, *Impact of Major Defence Projects: A Case Study of the ANZAC Ship Project*, 2000.

Tasman Asia Pacific, *Impact of Major Defence Projects: A Case Study of the Minehunter Coastal Project*, 2002.

DefenceSA, *Naval Shipbuilding: Australia's $250 billion Nation Building Opportunity*, 2010.

Defence SA, Guarding our edge: *Building and sustaining the future submarine in Australia*, 2012.

Australian Manufacturing Workers Union, *Australian Naval Shipbuilding*, 2013.

Other Publications

Mark Thomson, *Setting a Course for Australia's Naval Shipbuilding and Repair Industry*, ASPI Strategy series, 2002.

Mark Thomson, *Weapons of Mass Construction: Australian naval shipbuilding*, ASPI Insight series, 2004.

Australian Strategic Policy Institute, *Naval gazing: The future of Australia's naval shipbuilding and repair sector*, ASPI Special Report, 2010.

Andrew Davies, Henry Ergas and Mark Thomson, *Should Australia Build Warships: An economic and strategic analysis,* Proceedings of the RAN Sea Power Conference 2012, p. 275.

Andrew Davies and Mark Thomson, *Mind the gap: getting serious about submarines*, ASPI Insight series, 2012, and *How to buy a submarine: Part 2*, ASPI Insight series, 2014.

Sean Costello and Andrew Davies, *How to buy a submarine: Defining and building Australia's future fleet*, ASPI Insight series, 2012.

Andrew Davies, *What price the future submarine?*, ASPI Policy Analysis, 2012.

Peter Briggs, *Why Australia should build its own submarines*, ASPI Insight series, 2015.

Chapter 8 – Australia's Foreign Aid

Australia's foreign aid was administered by the Australian Agency for International Development (AusAID), until that department was absorbed into the Department of Foreign Affairs and Trade (DFAT) in late 2013. As a result, new budgeting arrangements for Australia's Official Development Assistance (ODA) program were put in place in the 2014 Budget. Further changes occurred this year.

Unfortunately, the new arrangements make it difficult to compare post-2013 budgets for ODA with those from previous years. To make matters worse, the long-standing *Ministerial Statement on International Development Assistance* ('Blue Book') has been discontinued. Some information on Australia's foreign aid program is available from the DFAT website.

Australia's approach to foreign aid

One of Prime Minister Abbott's first acts after being sworn-in on 18 September 2013 was to announce that, along with some other administrative changes, the agency known since 1995 as AusAID would be integrated back into DFAT. The aid organisation had been an 'autonomous agency' within the foreign affairs portfolio from 1973, and an even more independent 'executive agency' from 2010. Although the Coalition's pre-election foreign affairs policy had indicated it was unsatisfied with the strategic priorities and governance of Australia's aid program, and Coalition frontbenchers had signalled a shake-up was likely, few observers had expected such a quick or comprehensive re-amalgamation. In announcing the change, the Prime Minister pointed to a need to more closely align the aid and diplomatic arms of Australia's international policy.

Consistent with developing a new approach, the foreign minister Julie Bishop commissioned a series of reviews, including on aid benchmarks, the role of the private sector in promoting growth and poverty-reduction, and some key bilateral relationships. In June 2014, Bishop released the government's new aid policy and performance framework via a National Press Club speech entitled; *The new aid paradigm*. Key points from the accompanying press release included:

- Australia's ODA will henceforth focus on ways to drive economic growth in developing nations and create pathways out of poverty.
- Strict performance benchmarks will ensure aid spending is accountable to tax payers and achieve results.
- New aid investments will consider ways to engage the private sector and promote private sector growth.
- Aid for trade investments will be increased to 20 per cent of the aid budget by 2020.
- Australia's ODA will focus on the Indo-Pacific region, with over 90 per cent of country and regional program funding spent in our neighbourhood, the Indo-Pacific.
- A new development innovation hub will be established in DFAT.
- Australia will continue to be one of the world's most generous aid donors with a responsible, affordable and sustainable aid budget of over $5 billion a year.

As we'll see, the last dot-point is no longer government policy.

New budgeting arrangements

Following the absorption of AusAID into DFAT, Australia's aid program is funded through DFAT under Outcome 1:

> *The advancement of Australia's international strategic, security and economic interests including through bilateral, regional and multilateral engagement on Australian Government foreign, trade and international development policy priorities.*

Funding relevant to Australia's aid program is mentioned in several places in the DFAT PBS (see below Tables 8.1 – 8.3). According to the DFAT website, ODA will amount to $4,051.7 million in 2015-16. We're unable to find that figure within the DFAT PBS. Moreover, changes to the DFAT sub-programs this year make funding difficult to follow.

Table 8.1: Australia's ODA-related funding by DFAT program

Program	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1.2 Official Development Assistance		249,066	3,354,665	3,199,114	3,580,806	3,636,007
1.3 Official Development Assistance—Multilateral Replenishments		106,868	-	2,434,284	12,622	105,000
Total			**3,354,665**	**5,633,398**	**3,593,428**	

Source: 2015-16 DFAT PBS

Table 8.2: Administered International Development Assistance funding

Program	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
International Development Assistance	2,100,773	3,479,540	3,105,723	2,935,547	3,308,173	3,360,130
Other – International Development Assistance	538,386	659,576	-	128,510	12,622	105,000
IDA/ADF grants	99,079		-	248,764	-	-
Total	2,738,238	4,139,116	3,105,723	3,312,821	3,320,795	3,465,130

Source: 2014-15 and 2015-16 DFAT PBS

Table 8.3: Cash used for International Development Assistance

Program	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
International Development Assistance	3,692,411	3,837,406	3,479,378	3,336,921	3,681,347	3,661,367

Source: 2014-15 and 2015-16 DFAT PBS

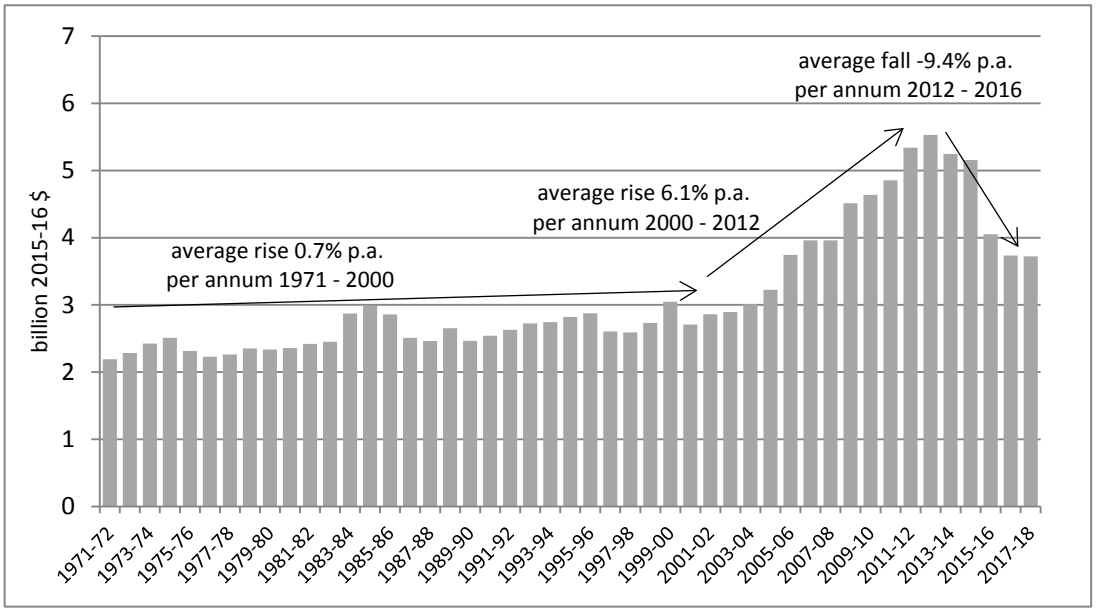
Clearly, the budget papers are of limited assistance in explaining Australia's contributions to ODA. Fortunately, the Development Policy Centre at the Australian National University has done a great job disentangling the trends from the jumble of data. Much of what follows relies on their data collation and analysis.

The Development Policy Centre website is https://devpolicy.crawford.anu.edu.au/. It contains a wealth of informed analysis and commentary.

How much does Australia spend on foreign aid?

In 2015-16 Australian foreign aid will amount to $4.0 billion. Funding is about $1.1 billion less than last year representing a 21.4% decrease. This decisively reverses the recent robust growth in the aid budget. Between 2000-01 and 2012-13 foreign aid increased in real terms by an average of 6.1% per annum.

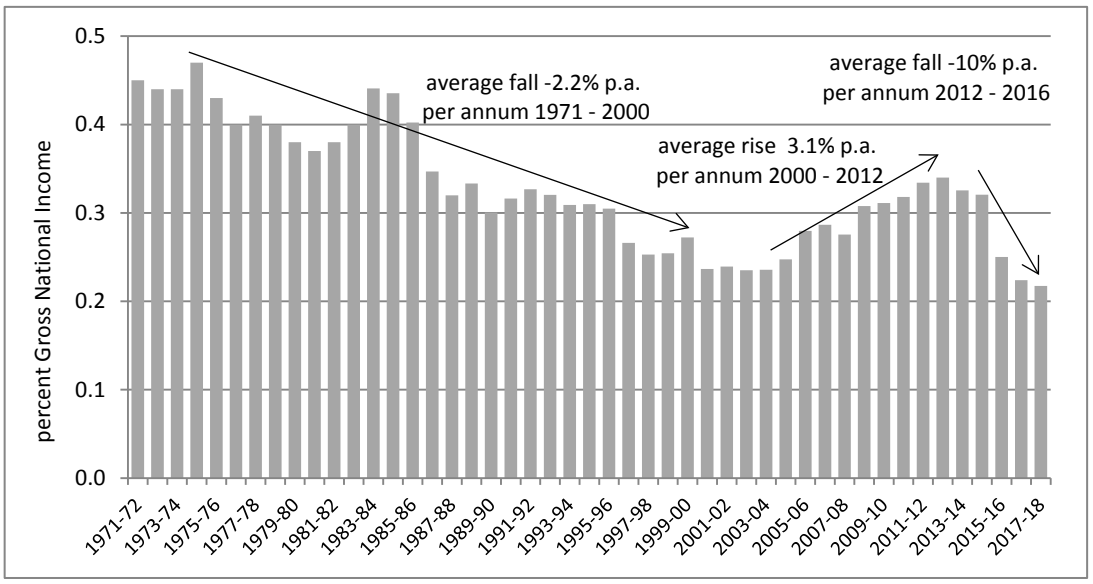
Figure 8.1: Australian spending on foreign aid 1971-72 to 2017-18



Source: DevPol website analysis of 2015-16 DFAT PBS.

In much the same way that defence spending is measured as a share of GDP, foreign aid spending is often measured as a share of Gross National Income (GNI) (see Figure 8.2). However, in contrast to previous years, the share of GNI hasn't been disclosed—and no estimate of GNI is to be found in the Budget Papers. According to the Development Policy Centre Australia's ODA will fall to 0.25% of GNI in 2015-16.

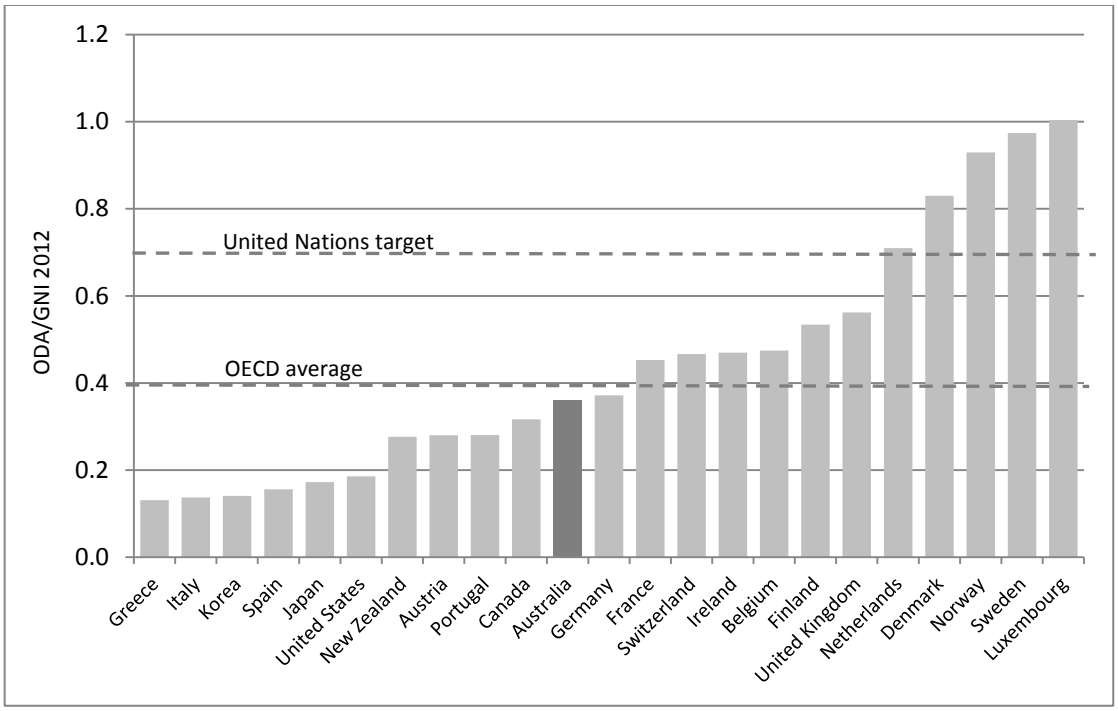
Figure 8.2: Australian foreign aid as a share of GNI 1971-72 to 2017-18



Source: DevPol website analysis of 2015-16 DFAT PBS.

Even before the recent cuts, Australian foreign aid spending wasn't especially impressive in international terms. In 2012, the last year for which comparative data is available, Australia ranked 13th out of 23 OECD countries for aid as a share of GNI (see Figure 8.3). Not only do we fall below the average for industrialised nations, but our budgeted GNI figure of 0.25% for 2015-16 is less than half of the agreed United Nations target of 0.7%, now met by four OECD-DAC countries, including the Netherlands and Sweden. Australia's position is set to fall further as our spending drops but global aid expenditure rebounds with OECD countries recovering from the Global Financial Crisis and 'non-traditional donors' that operate outside OECD guidelines, such as China, increasing their development spending.

Figure 8.3: Comparison of ODA from OECD nations



Source: 2014 OECD Factbook

A brief history of Australia's foreign aid

A bipartisan consensus from the late Howard era to the first Rudd government to increase Australia's foreign aid to 0.5% of GNI by 2015-16 was faltering by 2012 as the then government grappled for an elusive surplus—abruptly reallocating hundreds of millions of dollars within the aid budget to meet domestic asylum-seeker costs, and deferring the timetable to meet the 0.5% target out to 2017-18. In 2013-14 ODA was only budgeted to be 0.37% of GNI.

The Coalition's pre-election foreign affairs policy recommitted to the 0.5% target as a benchmark but announced it would 'stabilise the aid budget' by reducing previously planned growth to just rises in the consumer price index over the forward estimates, so that only nominal increases in funding could be expected in the immediate term. Before the election, the Coalition signalled it intended to make significant cuts to the aid budget for each of the next several years, and in January 2014 the new Government cut $650 million spending for the remainder of 2013-14.

The 2014 budget capped aid spending at $5.03 billion for two financial years, after which it was planned to grow in line with the CPI. That was actually $1 billion more than promised by the Coalition at the time of the 2013 election. However, further cuts were made in December 2014 and confirmed in this year's budget. As a result, nominal aid spending fell by around $1 billion to reach $4 billion.

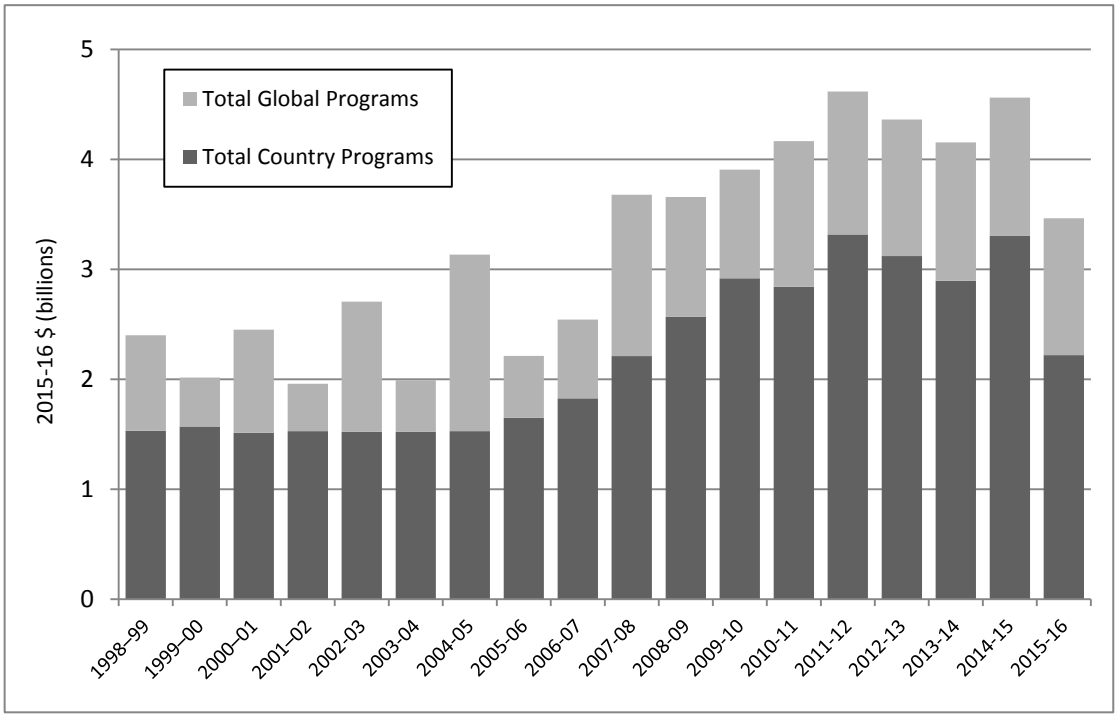
Where does the money go?

The annual aid budget is composed of a country-specific program and a global program, see Figure 8.4. The latter includes payments to various development banks and UN and Commonwealth agencies, including emergency aid through the World Food Program. Because of multi-year payments, the global program can vary greatly from one year to the next (accrual accounting smooths the payments in reporting).

Australian country-specific aid is mostly focused on Asia and Pacific Island states, although locations further afield also benefit. Figure 8.5 shows the amount of country-specific aid by region since 1998. As noted, PNG and regional programs stand out as particular beneficiaries of Australia's aid.

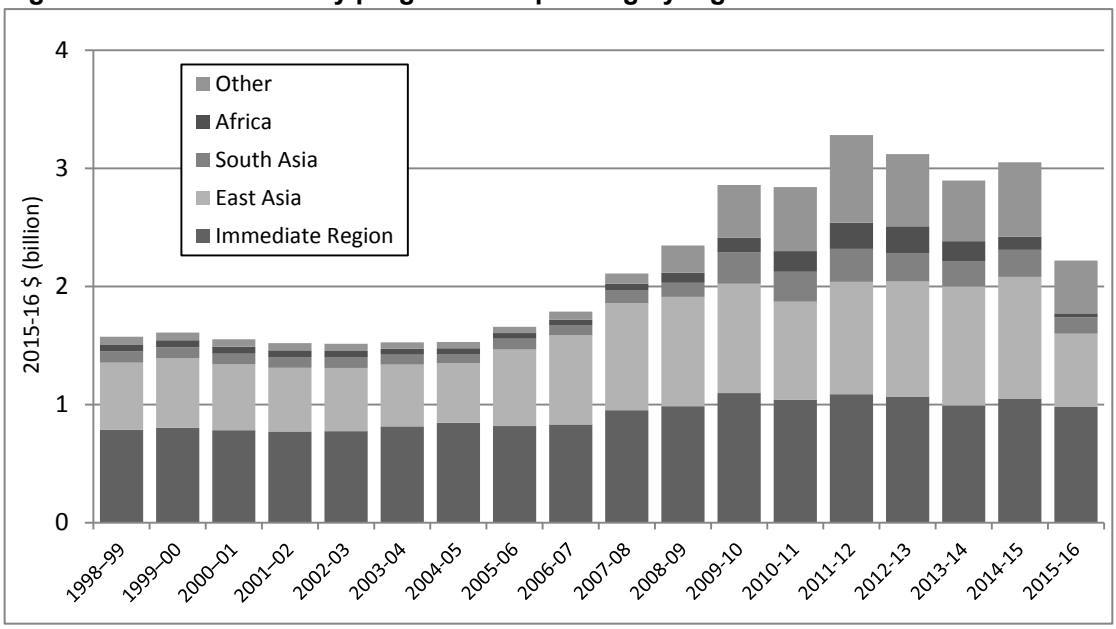
Traditionally, Australian aid tended to be overwhelmingly focused on countries close to Australia. This priority is still apparent in Figure 8.5 where the category of 'immediate region' includes PNG, East Timor and the island states of the Pacific. This focus was strengthened in the 2015-16 budget. Though not shown, most of the aid to East Asia goes to Southeast Asia and to Indonesia in particular (though that fell from $605 million to $366 million this year).

Figure 8.4: AusAID — Global and Country Programs



Source: AusAID annual reports and DFAT website.

Figure 8.5: AusAID country programs — spending by region 1998-2015



Source: AusAID annual reports and DFAT website.

Table 8.4 lists Australia's total budgeted ODA by value for 2014-15 and 2015-16 (including apportionment from global programs where possible and including non-AusAID programs). Additional funds are provided through core contributions to multilateral organisations. This country-specific data provides an interesting picture of Australia's changing aid priorities. It underlines the fall in funding for countries beyond our immediate region.

Table 8.4: Australian aid — spending by partner country/region 2015-16

	2014-15 Budget Estimate ($m))	2015-16 Budget Estimate ($m)		2014-15 Budget Estimate ($m)	2015-16 Budget Estimate ($m)
Indonesia	605.3	366.4	Sri Lanka	42.8	27.3
Papua New Guinea	577.1	533.6	Samoa	37.6	37.2
Sub-Saharan Africa	186.9	93.9	Nepal	33.9	26.8
Solomon Islands	168.1	176.7	South /West Asia Regional	33.1	32.0
Philippines	143.0	84.2	Tonga	30.3	31.4
Vietnam	141.3	89.9	Nauru	27.1	27.1
Afghanistan	134.2	81.7	Kiribati	26.9	25.9
Pacific Regional	129.1	106.0	Mongolia	16.3	8.7
East Asia Regional	100.0	60.9	Caribbean & Latin America	21.1	19.1
Timor-Leste	96.6	93.9	Bhutan	14.8	9.5
Bangladesh	94.2	60.9	North Pacific	13.5	12.8
Burma	90.0	60.5	Tuvalu	10.4	10.8
Cambodia	79.0	79.1	Middle East / North Africa	8.8	4.2
Pakistan	79.0	51.3	Maldives	7.0	5.3
Fiji	61.9	59.6	Niue and Tokelau	6.3	5.4
Vanuatu	60.4	60.9	Cook Islands	4.0	3.8
Palestinian Territories	56.5	42.1	Iraq	0.3	-
Laos	55.6	36.7			

Source: DFAT website

How does aid further Australia's national interests?

Aside from making us feel better about ourselves, foreign aid furthers our national interests in two ways. First, bilateral aid to countries establishes a *quid pro quo* that facilitates access to, and influence with, foreign governments. Second, aid can bolster the institutions, infrastructure and human capital necessary for economic development and political stability. The rationale for the first category is self-evident; the second furthers our national interest by improving the stability of countries important to our security.

Much of Australian aid is of the first sort. Until recently, for example, we gave a small amount of aid to China each year, which had no significant impact on its 1.3 billion people or its economic development. Other aid, like that to Solomon Islands, is directly focused on achieving tangible improvements in governance, human security and economic development. Beyond seeking to address severe deprivation and inequality as potential sparks for violence and instability in nearby countries, aid's direct security dimensions include: stabilising fragile states (whether in regional interventions such as RAMSI, or by supporting ODA-eligible police and other preventive security partnerships before challenges reach crisis-point); assisting security sector reform to help demobilise, disarm and reintegrate ex-combatant groups and prevent violence re-emerging once stabilisation missions wind-down; and civil-military cooperation to provide planning, logistics, transport, communications, and medical equipment and skills following disasters and emergencies.

An informative picture emerges by examining the ratio of Australian aid to a recipient country's GDP. High ratios indicate a real effort to make a difference in a country; small ratios reflect largely diplomatic gestures that will hopefully be repaid through access and influence. Table 8.5 lists Australian aid recipients in ascending order of the ratio of Australian aid to national GDP. The figures for smaller nations are unreliable.

Table 8.5: Australian aid as a share of GDP

Country	Ratio of Australian aid to GDP (PPP)	2015-16 Australian Aid (A$m)	2014 per capita (PPP)	Country	Ratio of Australian aid to GDP (PPP)	2015-16 Australian Aid (A$m)	2014 per capita (PPP)
Tuvalu	28.33%	10.8	3,617	Laos	0.17%	36.7	3,285
Solomon Islands	9.26%	176.7	3,568	Nepal	0.06%	26.8	1,576
Vanuatu	4.96%	60.9	4,847	Burma	0.05%	60.5	1,867
Kiribati	4.01%	27.2	6,533	Mongolia	0.05%	8.7	6,631
Tonga	3.87%	31.4	8,406	Indonesia	0.03%	366.4	5,499
Samoa	3.39%	37.2	6,384	Vietnam	0.03%	89.9	4,256
PNG	2.69%	533.6	2,977	Bangladesh	0.02%	60.9	2,216
Fiji	1.39%	59.6	5,254	Sri Lanka	0.02%	27.3	7,046
Timor-Leste	0.35%	93.9	23,338	Philippines	0.02%	84.2	4,962
Afghanistan	0.24%	81.7	1,178	Pakistan	0.01%	51.3	3,231
Cambodia	0.20%	79.1	2,777	Laos	0.17%	36.7	3,285
Bhutan	0.20%	9.5	6,864				

Sources: DFAT website, IMF World Economic Outlook April 2014.

Not surprisingly, Pacific Island states head the list followed by other countries in the immediate region. Note that some smaller Pacific countries have been omitted because

economic data wasn't available. For comparison, the latest GDP per capita in PPP dollars has been included as a measure of the relative level of poverty in recipient countries. Clearly, Australian aid is only loosely directed on the basis of need.

The ratio of aid to GDP at which aid becomes an entirely diplomatic gesture is impossible to define, though it's hard to argue that figures below 0.5% of GDP reflect a serious effort to have a significant impact—except perhaps in a limited area like governance.

Conversely, it's clear Australia is trying to make a real difference in those countries where aid approaches or exceeds 5% of GDP. As Table 8.5 shows, this category is entirely within our immediate region.

Australia's military cooperation program

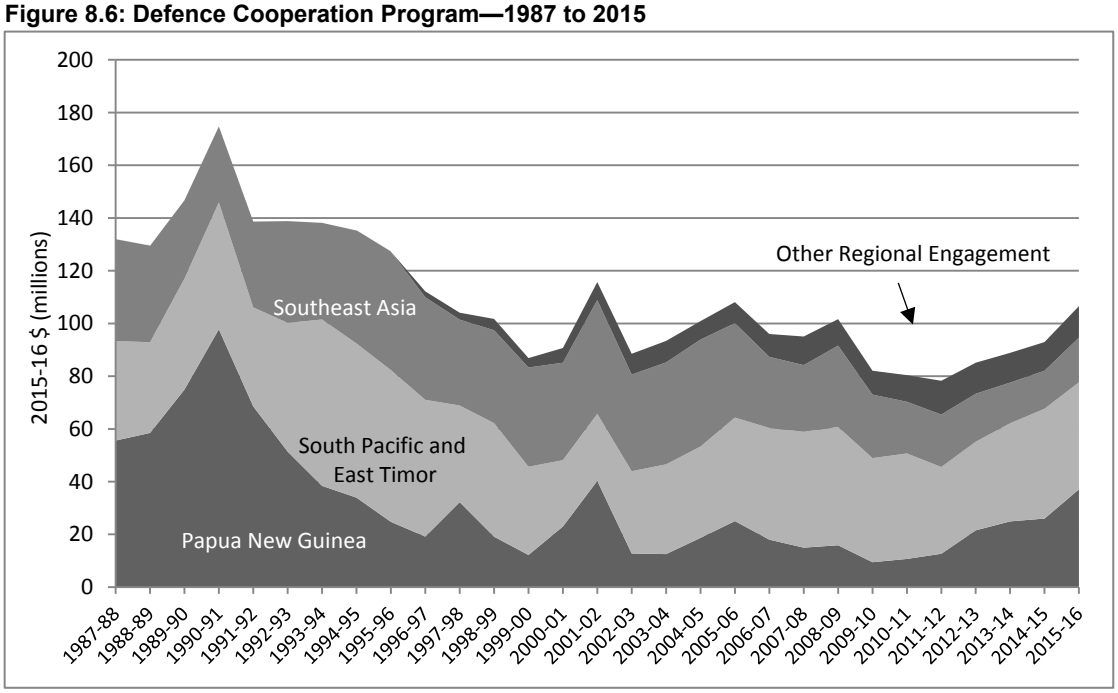
Allied to Australia's international aid effort is the $107 million a year Defence Cooperation Program run and funded by the Department of Defence. According to the 2015-16 Portfolio Budget Statements, the objective of the Defence Cooperation Program 'is to maximise Australia's security through developing close and enduring links with partners that supports their capacity to protect their sovereignty, work effectively with the ADF and contribute to regional security'. The program:

- promotes the capacity of partners
- improves Australia's capacity to work with partners in response to common security challenges
- builds strong people-to-people links with regional militaries at the tactical, operational and strategic levels.

In practice, the Defence Cooperation Program provides assistance to regional security forces through military advisors, training initiatives, bilateral exercises, capacity building, and equipment and infrastructure projects. A long-standing part of the Defence Cooperation Program is the Pacific Patrol Boat (PPB) Program, which provided 22 Patrol Boats along with ongoing training and technical support to 12 Pacific Island countries. These vessels allow the countries involved in the Program to independently police their maritime territories. The follow-on Pacific Maritime Security Program is due to start replacing the first PPBs from 2018. Tenders have been sought to supply up to 21 steel-hulled new patrol vessels.

Figure 8.6 sets out the spending on the Defence Cooperation Program over the past 20-odd years. For ease of display, individual country spending has been aggregated into convenient categories. Country specific data for 2014-15 and 2015-16 appears in Table 8.6.

Figure 8.6: Defence Cooperation Program—1987 to 2015



Source: Defence Budget Papers and Annual Reports

Table 8.6: Defence Cooperation Program—2014-15 and 2015-16

Country	2014-15 ($'000) estimated	2015-16 ($'000) budget	Country	2014-15 ($'000) estimated	2015-16 ($'000) budget
South Pacific			**Southeast Asia**		
Timor-Leste	3,814	4,707	Singapore	63	80
Vanuatu	652	800	Philippines	2,063	2,641
Solomon Islands	647	820	Thailand	2,743	2,685
Tonga	6,296	4,350	Malaysia	2,950	3,567
Samoa	174	120	Indonesia	3,248	4,268
Cook Islands	90	110	Vietnam	1,858	2,100
Fiji	193	2,200	Cambodia and Laos	1,055	1,320
Marshall Islands	73	160	Brunei	30	45
Micronesia	105	105	Myanmar	56	227
Tuvalu	396	200	***Sub-total***	**14,066**	**16,933**
Kiribati	233	200	Other regional activities	5,535	6,831
Palau	397	350	Defence International Training Centre	5,068	5,134
DCP Scheduled Support	5,382	4,382	**Total**	**90,681**	**106,583**
Pacific Patrol Boats	22,195	22,096			
Sub-total	**40,647**	**40,600**			
Papua New Guinea	25,365	37,086			

Source: 2015-16 PBS

Chapter 9– Pay and People

In late 2014, the government's decision to give ADF members a sub-inflation 1.5% per year salary rise over three years attracted a lot of media commentary. Although the government has said it will revise the wage outcome up to 2% per year, it will still see ADF salaries fall in real terms over the next three years. Public sympathy for ADF members' plight (see Figure 1.2.10) was muted, perhaps reflecting a public perception that the ADF were already well paid. This Chapter provides a brief survey of ADF pay issues. We begin by benchmarking ADF pay against domestic and international comparators. The mechanisms for setting ADF pay are then examined with a focus on the recent ADF pay outcome. Finally, executive remuneration is examined for both civilians and military leaders.

In the time available, it has not been possible to examine the non-financial benefits received by ADF members, such as free health care, subsidised housing and military superannuation. Similarly, it has not been possible to examine the interesting area of Reserve remuneration. Nor has it been possible to explore the allowances—including operational allowances—that ADF members can receive depending on circumstances. The exception is the near-universal service allowance. Thus, the comparisons that follow will systematically understate the full remuneration accorded ADF members.

The following comparison table will prove useful for readers unfamiliar with ADF and APS ranks/levels.

Table 9.1: Defence civilian and military ranks/levels

APS Levels	ADF Ranks	US Ranks	
APS 1	Private (PTE)	E-1, E-2	
	Lance Corporal	E-3	
APS2	Corporal	E-4	
APS 3	Sergeant	E-5	
	Staff Sergeant	E-6	
APS 4	Warrant Officer, Class 2 (WO2)	E-7, E-8	
	Warrant Officer, Class 1 (WO1)	E-9	
	2nd Lieutenant	O-1	
	Lieutenant	O-2	
APS 5	Captain	O-3	
APS 6	Major (MAJ)	O-4	
Executive Level 1 (EL1)	Lieutenant Colonel (LTCOL)	O-5	
Executive Level 2 (EL2)	Colonel (COL)	O-6	
Senior Executive Service Band 1 (SES1)	Brigadier	O-7	1-star
Senior Executive Service Band 2 (SES2)	Major General	O-8	2-star
Senior Executive Service Band 3 (SES3)	Lieutenant General	O-9	3-star
Secretary	General	O-10	4-star
		O-10	5-star

Note; in terms of comparing APS and ADF levels: 'The table is a guide for comparing ADF and APS ranks and classification levels for clerical duties that do not require the exercise of military command responsibilities.' (PAC Manual, http://www.defence.gov.au/dpe/pac/) Enlisted rank equivalences for the United States are from public sources and are only approximate.

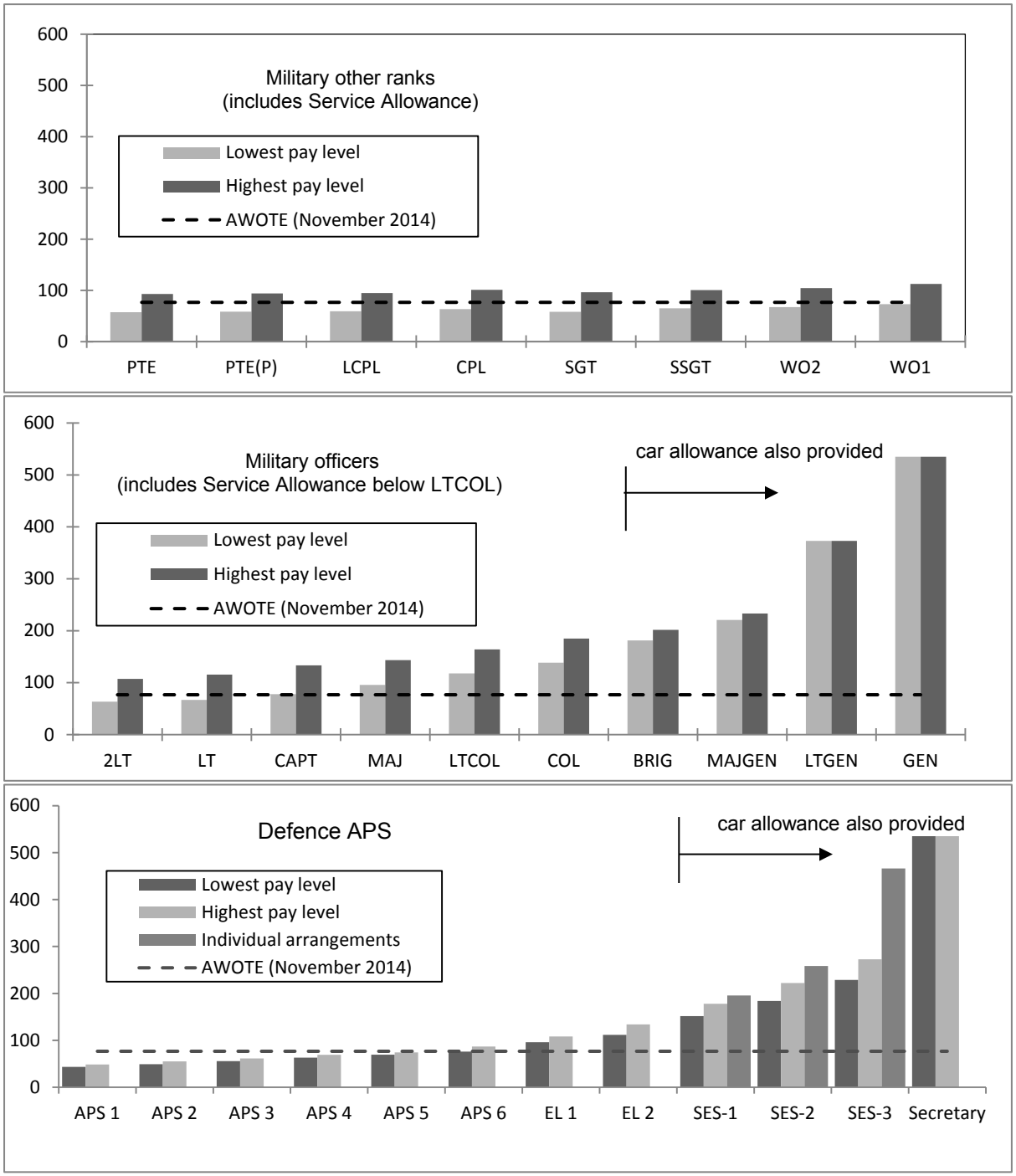
Domestic benchmarking

Figure 9.1 shows Defence military and civilian salaries as at April 2015 benchmarked against the most recent Average Weekly Ordinary-Time Earnings for Full-Time Adults (AWOTE). The latest military pay increase occurred in November 2014 while the latest Defence APS wage rise occurred in July 2013. With regard to the use of AWOTE as a comparator, civilian remuneration tends to be

predominately salary based whereas military personnel receive a range of non-cash benefits such as the family health program. A new civilian agreement is currently being negotiated.

The military figures in Figure 9.1 include both salary and the service allowance of $13,118 per year received by all service personnel below the rank of Lt Colonel. Note that the three graphs use the same scale. Roughly speaking, all officers above the rank of Lieutenant get paid at or above the Australian average, as do all other ranks above the rank of Sergeant and all Defence APS members above APS 5.

Figure 9.1: Defence salaries (thousand $), circa 2015

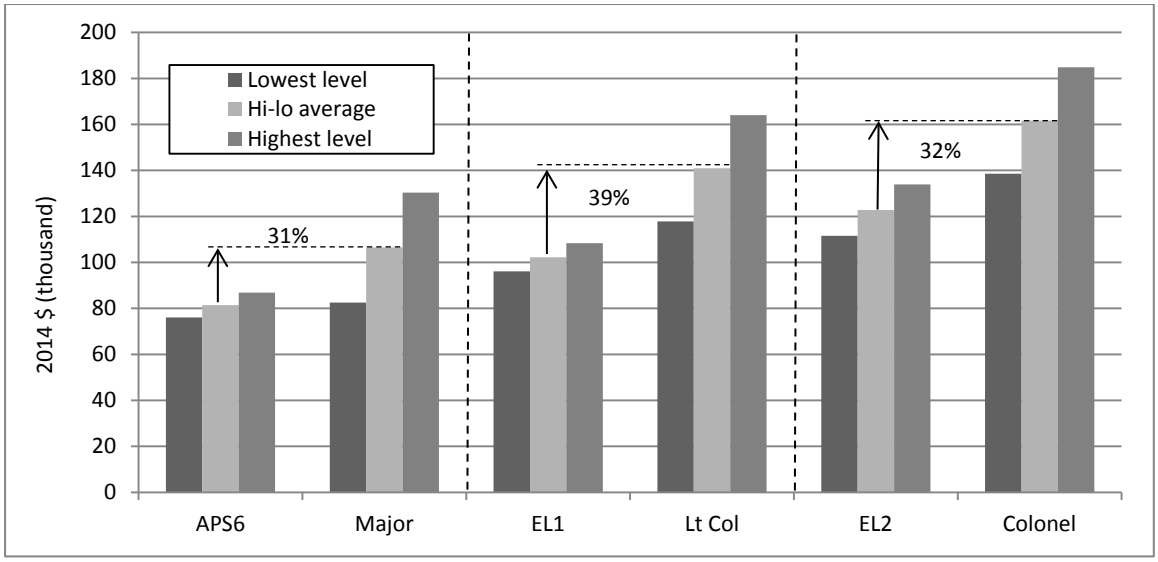


Source: Non-executive salary rates as at April 2015; SES, Lt Gen and Gen as at June 2014. Secretary is 'base salary' for level-one secretaries from Remuneration Tribunal, November 2014. APS individual arrangements are from June 30 1014. Average Australian Earnings is taken from the Average Weekly Ordinary-Time Earnings Adult (AWOTE) ABS 6302.0, Trainee salaries have not been included.

An interesting comparison is possible between Defence civilian APS and ADF members' wages. While it's spurious to compare the work of an APS employee with a military officer commanding troops in the field (for example), a very large number of middle and senior level officers spend extended periods sitting at desks on Russell Offices and elsewhere. This is especially the case for officers above the rank of Major, where most work at a desk.

Three rank/levels that are particularly numerous in Russell Offices are APS6/MAJ, EL1/LTCOL and EL2/COL. At the moment, there are 2,114 officers at ranks equivalent to LTCOL or COL and 6,012 APS members at level EL1 or EL2. In many instances, as Figure 9.2 shows clearly, ADF members are paid substantially higher salaries than their civilian counterparts at the corresponding level.

Figure 9.2: Comparison of civilian and military salaries circa 2014



Source: As per Figure 9.1. Note: service allowance has not been included for majors.

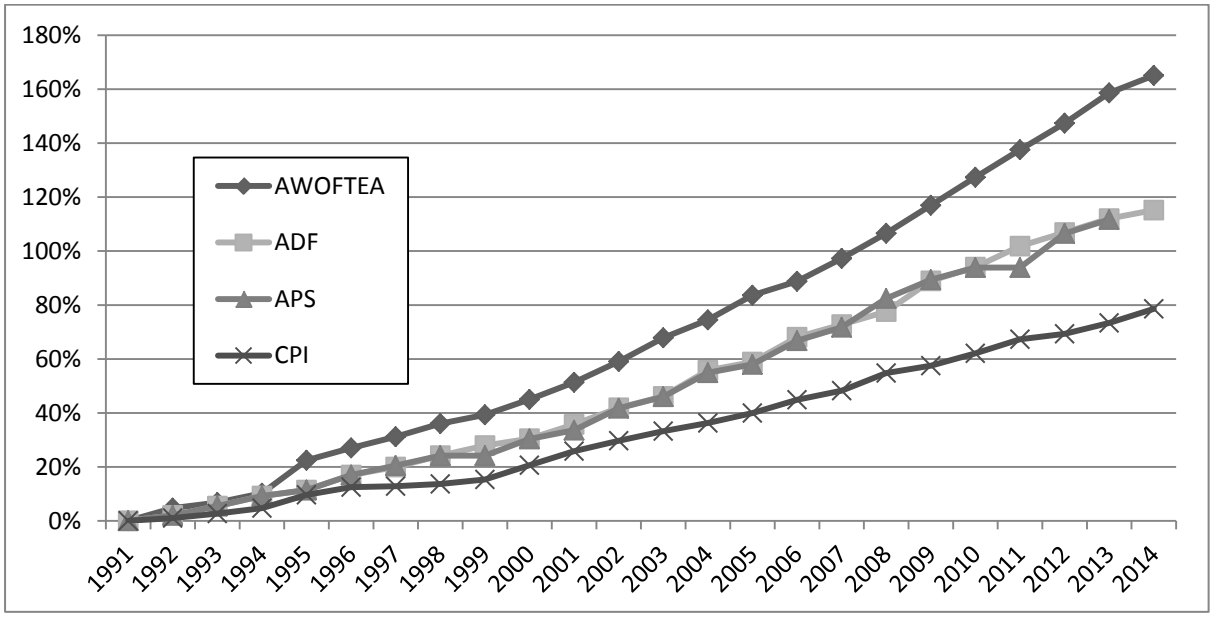
The comparison of defence salaries with AWOTE in Figure 9.1 represents only a snapshot in time. The relative dynamics of average earnings, defence salaries and the cost of living is quite another issue. Indeed, as Figure 9.3 shows, over the past two decades, defence salaries have consistently grown more slowly than average earnings but more quickly than the Consumer Price Index (CPI). Note that for almost two decades, the percentage increases awarded to the ADF and Defence APS moved in unison. In practice, the gains achieved by one workforce transferred over to the other in a close lock-step (notwithstanding the absence of any industrial agreement linking the two workforces). That practice will almost certainly now cease with the current round of APS wage negotiations.

Should we be concerned about the relatively slower wage growth in Defence compared with the broader economy? It's hard to say. Structural changes to the Australian economy over the period will have altered the type and value of employment relative to that performed within the ADF and Defence APS. For example, twenty years ago the ADF was operating equipment close to the cutting edge of technology, whereas today ICT systems pervade the broader economy to the extent that the military now leverages civilian technology for its purposes.

Another potential reason not to worry too much about the differential rate of growth is that the period percentage increases to salary levels (which are what Figure 9.3 tracks) do not tell the whole story. Military pay levels are subject to revision from time-to-time in addition to the explicit

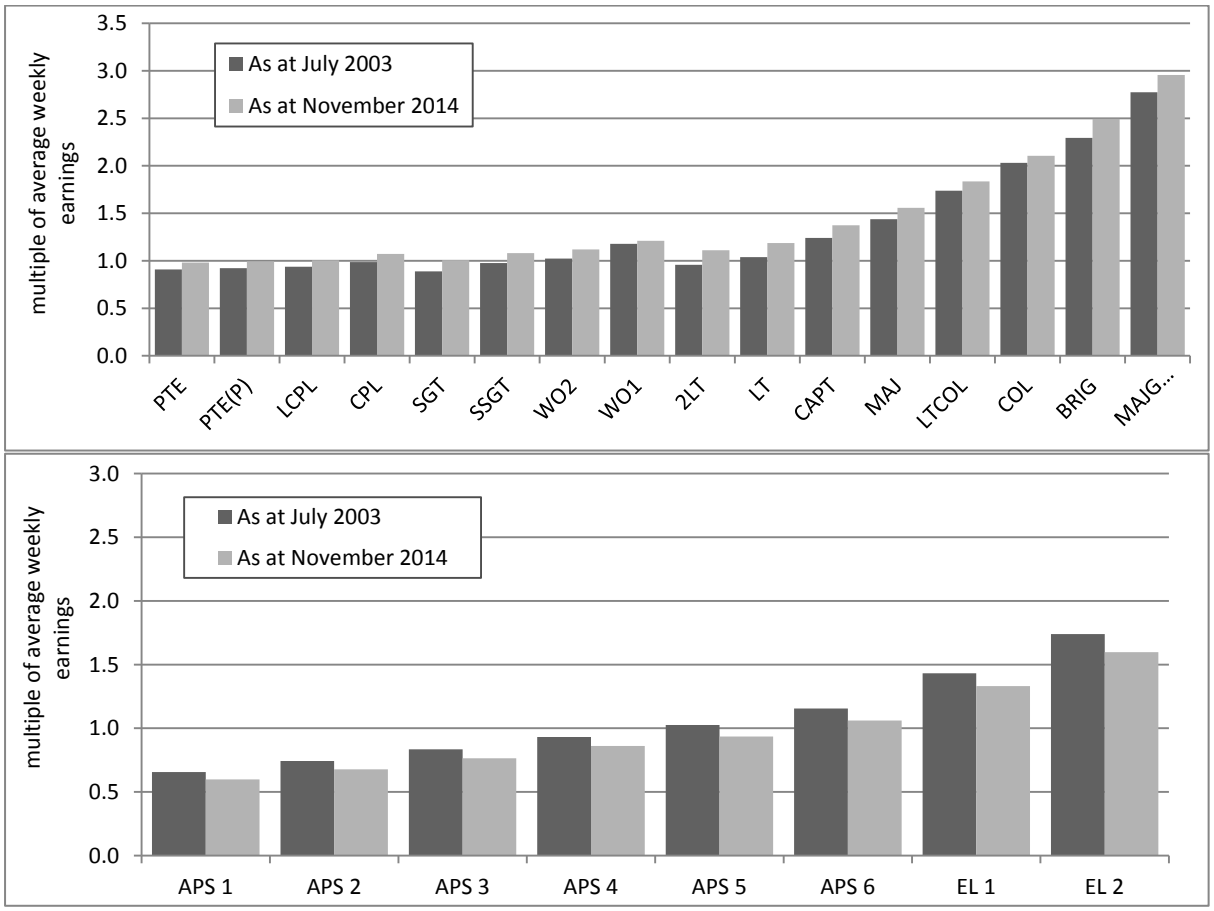
percentage outcomes. To see what affect this has had, we've calculated mid-point ADF and Defence APS salaries from July 2003 and November 2014 as multiples of then-extant AWOTE. The results appear in Figures 9.4.

Figure 9.3: Civilian and military wage growth and economic indices—percent change



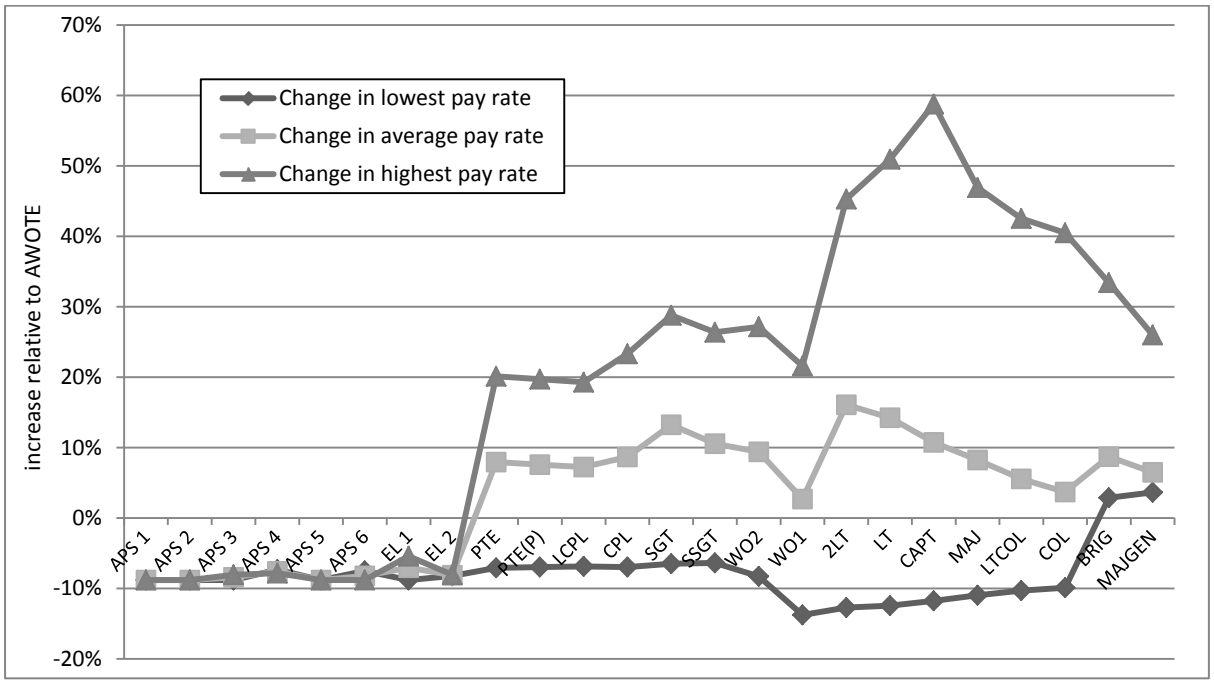
Source: ABS weekly earnings data and Defence percentage pay increases.

Figure 9.4: ADF and Defence ADF mid-point salaries as multiples of then-extant AWOTE



While Defence APS mid-point salaries have declined as multiples of AWOTE (as expected), ADF mid-point salaries have grown measured on the same basis. The paradox is resolved in Figure 9.5 where the percentage change in lower, mid-point and upper salary levels relative to AWOTE is displayed

Figure 9.5: Increases in lower, mid-point and upper wages relative to AWOTE



Thus, although the percentage changes for the civilian and military workforce have been almost identical over the period, the range of military pay categories for a given rank have expanded substantially—mostly upwards. To see how ADF median salaries have actually evolved over time, we'd need to know how the distribution of personnel across pay levels at a given rank has changed over time. Unfortunately that information is not available.

Care is needed interpreting the rise in pay levels. On the one hand, in some instances allowances may have been converted into salary thereby leaving total remuneration unaffected. However, in other instances, the addition of new salary levels resulted in a net boost to remuneration. For example, in 2007, more than $500 million was provided over the decade to fund a revised ADF pay structure. Unless some people were being paid more, there would have been no need to provide additional funds. So at least some individuals received salary increases beyond the percentage increases granted through periodic workplace arrangements.

International benchmarking

Comparing ADF rates of pay with those of other advanced economies is difficult because of the vagaries of exchange rates. Nonetheless, a broad-brush comparison is possible by graphing the distribution of pay rates *scaled* to average weekly earnings in the country. This is done in Figures 9.6 to 9.9. Unfortunately, no two countries provide precisely comparable statistics on median or average salaries. We've done our best to achieve apples-with-apples comparisons but the correspondences are at best approximate. Also, differences in allowances and ancillary benefits have not been taken into account (although the Australian data includes service allowance where applicable).

Figure 9.6: US military pay circa 2013

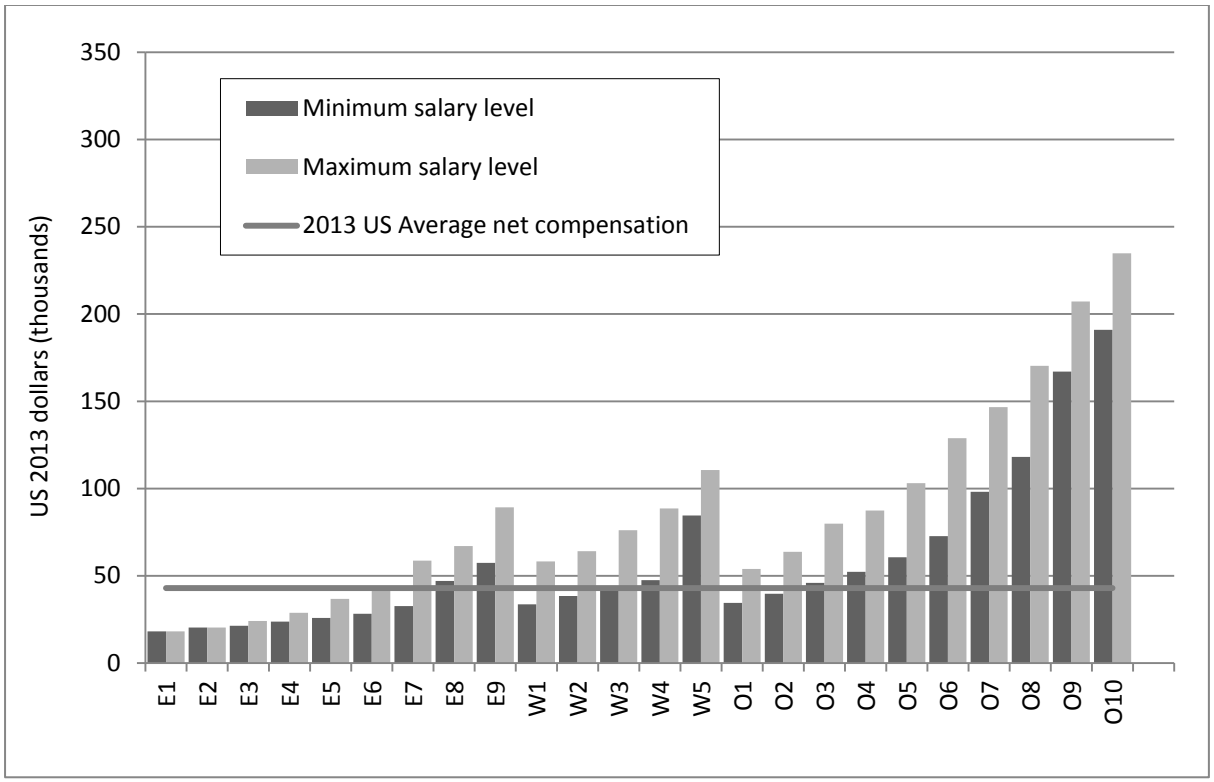


Figure 9.7: UK military pay circa 2014

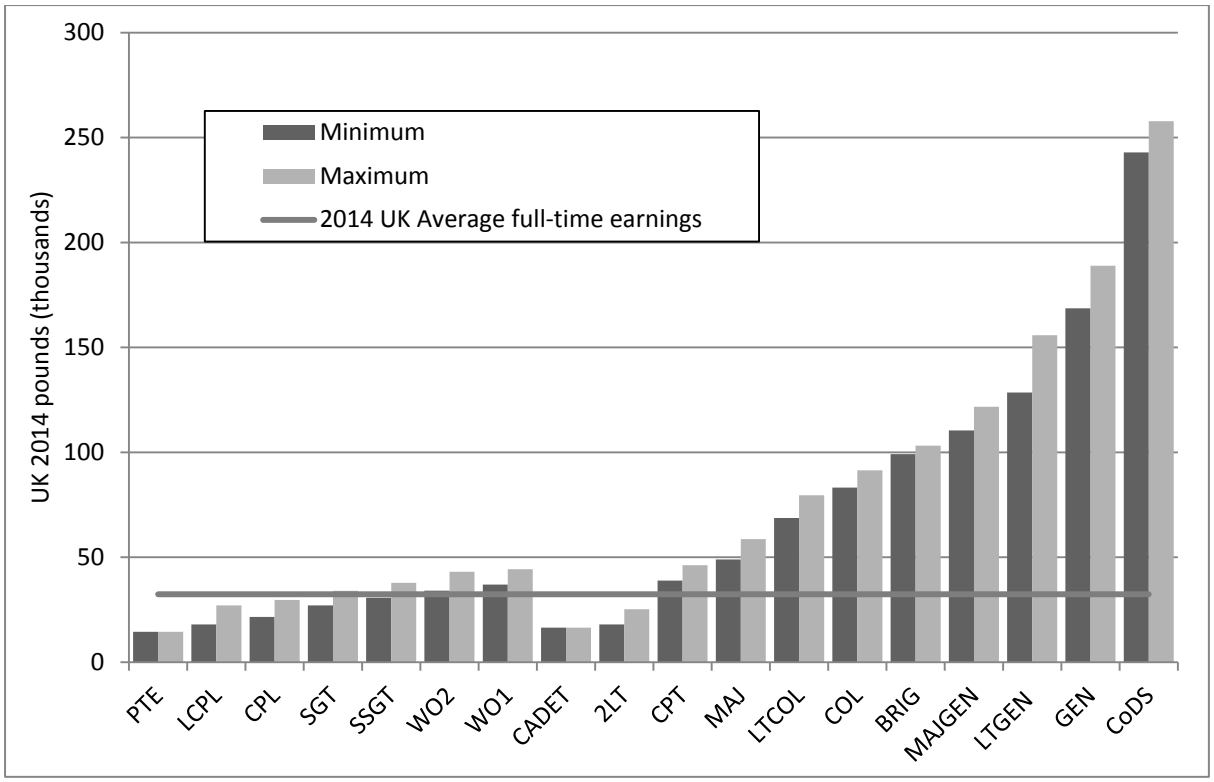


Figure 9.8: Canadian military pay circa 2013

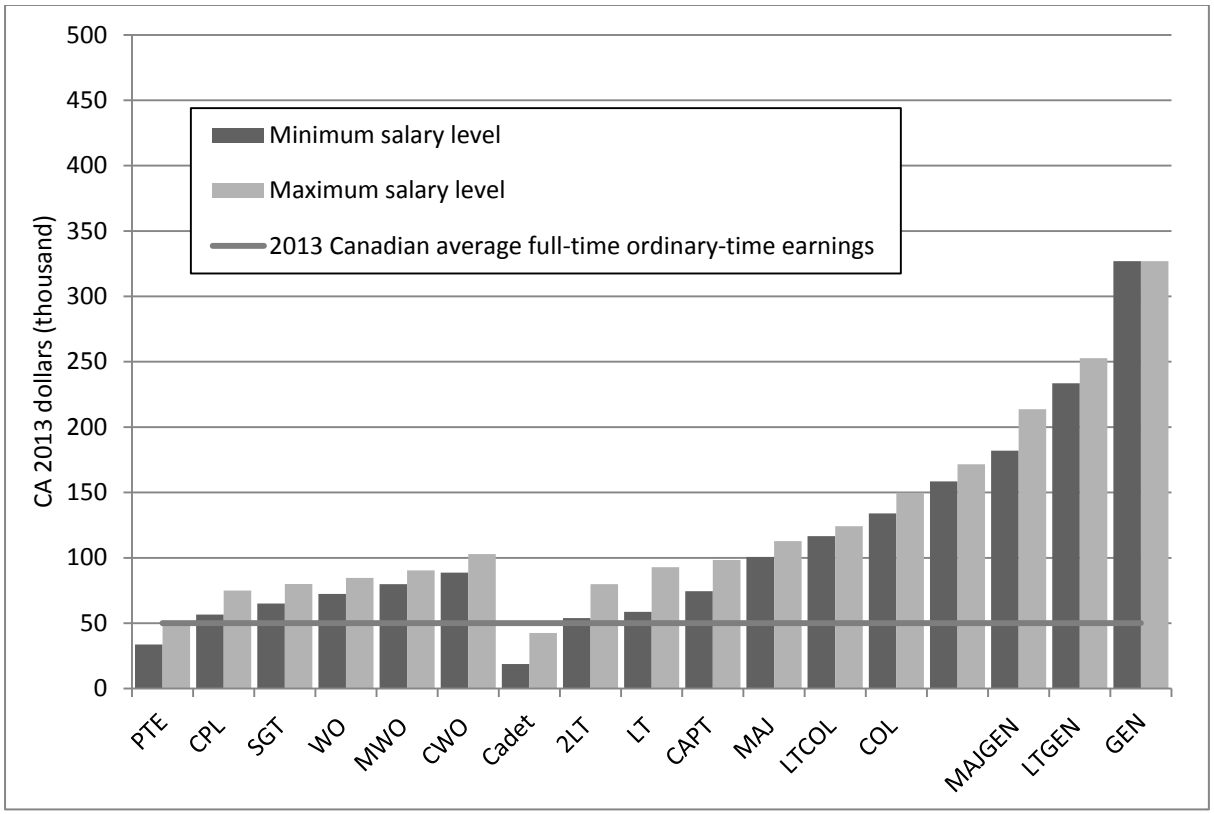
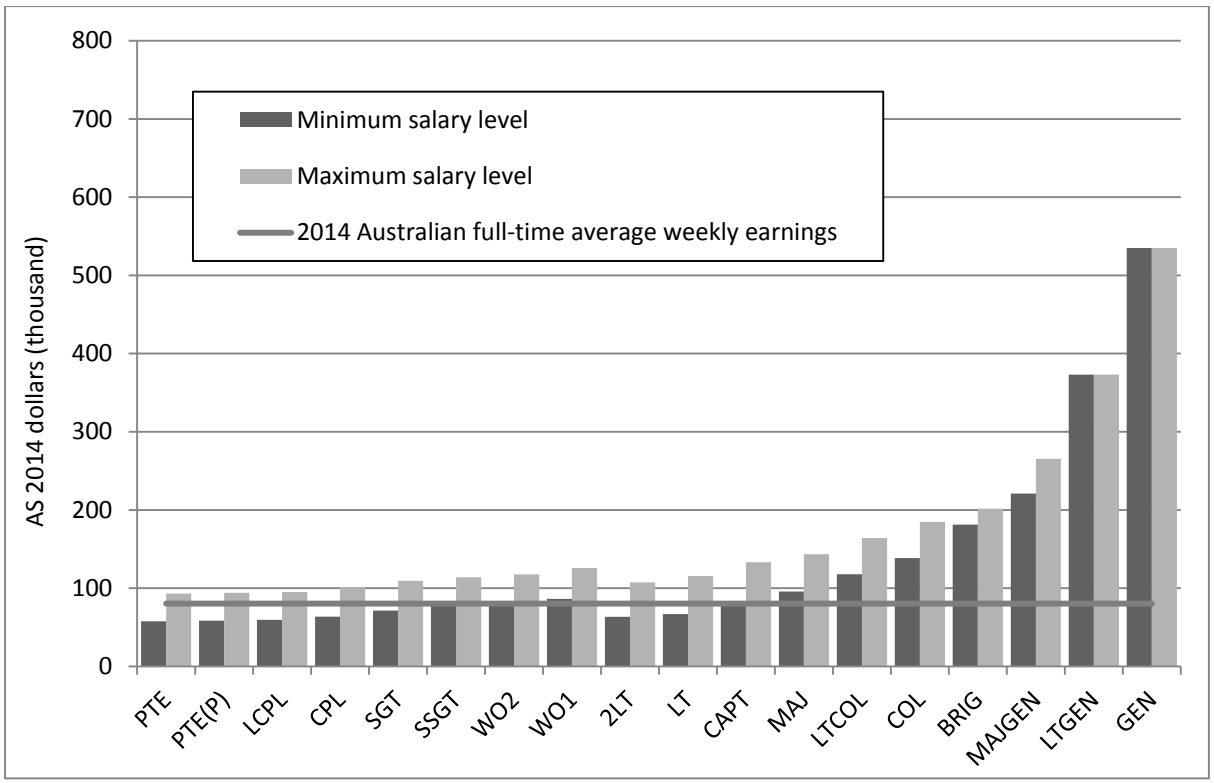
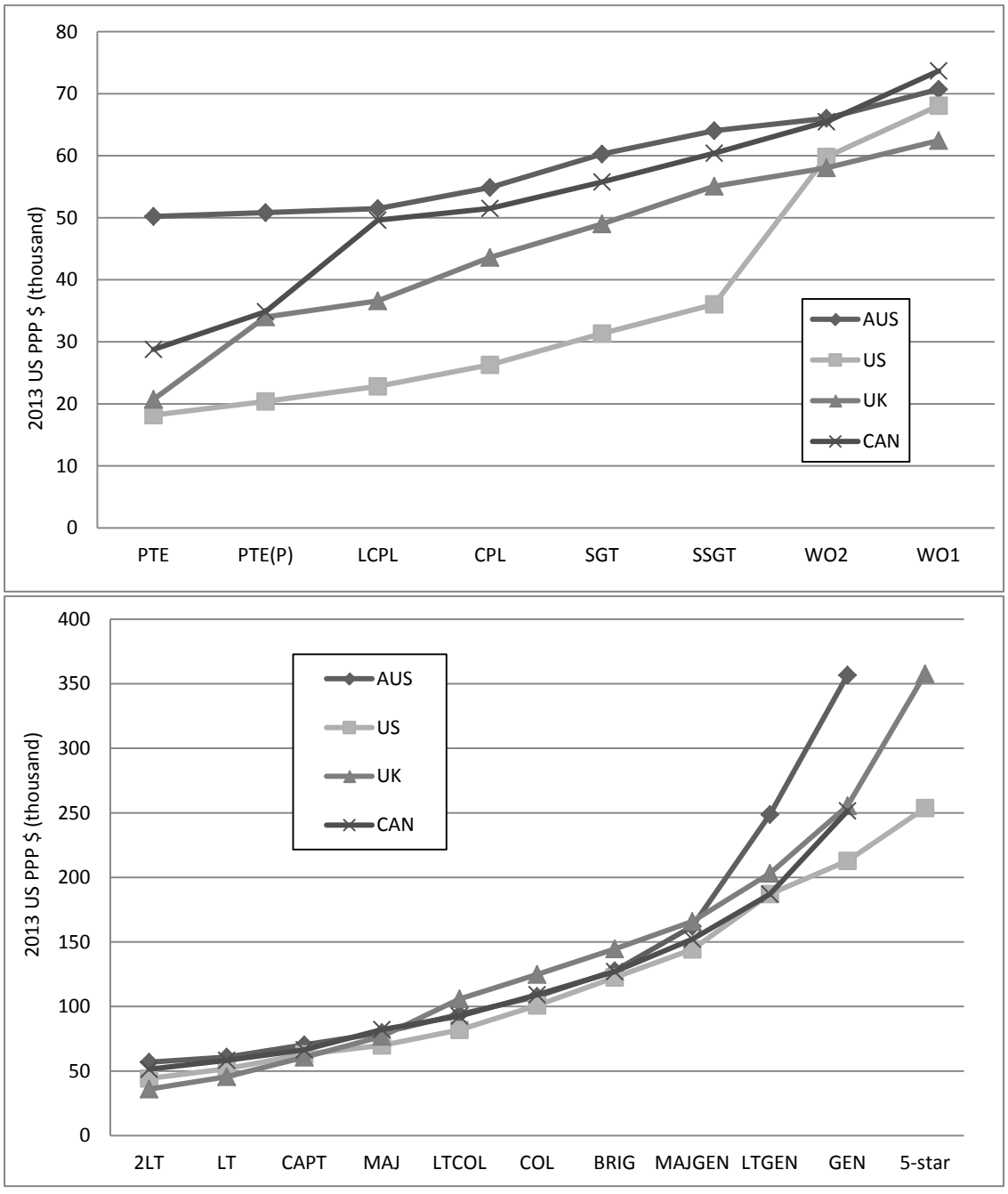


Figure 9.9: Australian military pay circa 2014



Another way to compare ADF salaries with those of other countries is to use the World Bank Purchasing Power Parity (PPP) conversion rate that takes account of differences in purchasing power between countries. Figure 9.10 shows the results for the Australia, Canada, the United Kingdom and the United States.

Figure 9.10: PPP of military pay rates circa 2014



A broadly consistent picture emerges from Figure 9.6 through 9.9 and Figure 9.10:

- Australia and Canada's enlisted personnel (other ranks) are relatively better paid than their UK and especially US counterparts.
- Officer salaries are broadly commensurate up to the level of Major General.

- UK and especially Australian senior level officers (above Major General) are much better paid than their North American counterparts.

Defence remuneration setting

Three bodies broadly determine the remuneration of Defence employees; the Defence Force Remuneration Tribunal, the Remuneration Tribunal and the Fair Work Commission, see Figure 9.11.

The Defence Force Remuneration Tribunal is an independent institution created by the *Defence Legislation Amendment Act 1984.* As stipulated by Section 58H of the *Defence Act 1903,* the Defence Force Remuneration Tribunal sets all defence force pay and pay-related allowances for Regular and Reserve members of the Australian Defence Force (ADF). The Tribunal delivers determinations on the ADF Workplace Remuneration Arrangement and increases salary and salary related allowances in return for improvements in organisational efficiency and productivity. The most recent arrangement was updated in November 2014, replacing its previous 2011-2014 determination.

In contrast to their APS counterparts, members of the ADF are not considered 'employees', but rather as 'Servants of the Crown'. This means ADF members do not enter into a work contract and are not awarded the voting rights outlined by the *Fair Work Act 2009*. While ADF members do not have a right to vote on the Workplace Remuneration Arrangement (WRA), the Defence Force Remuneration Tribunal (DFRT) requires the ADF to undertake genuine communication with all ADF members during the development of the new WRA. However, it is notable that throughout the latest 'consultation' process, ADF members were not provided the WRA offer. Moreover, ADF members were advised that 'they did not have the ability to bargain, and that provision of information about the offer, was not for the purposes of bargaining or negotiation' (2014 Workplace Remuneration Arrangement, Matter no 9 of 2014, Joint Submission by ADF and the Commonwealth, 15 October 2014, p. 21). So what was the point of consultation?

In reality, the government tells the ADF leadership what the outcome will be, the ADF leadership prepares a long submission (100 plus pages) to the DFRT seeking the government's outcome, it is then approved. One wonders why all the paperwork is needed.

Generalist ADF senior officers holding the rank of Brigadier (equivalent) and Major General (equivalent) are renumerated by the ADF Senior Officer Remuneration Arrangement. All other senior Officers (excluding statutory office holders whose salaries are determined by the Remuneration Tribunal) have remunerated set by the Defence Force Remuneration Tribunal under section 58H of the Defence Act. Other non-salary related conditions of service are determined by the Minister of Defence under section 58B of the Defence Act.

The remuneration of statutory office holders (Chief of Defence Force and the Secretary) are determined by the Remuneration Tribunal as specified by the *Remuneration Tribunal Act 1973*.

The Defence Enterprise Collective Agreement is the civilian counterpart to the Defence Force Workplace Remuneration Arrangement. The Agreement sets out most of the terms and conditions of employment for Defence's non-Senior Executive Services (SES) Australian Public Service (APS) employees. Underpinned by the *Fair Work Act 2009* and the *Public Service Act 1999*, the agreement is developed through extensive consultation with Defence employees and their representatives, with the Fair Work Act affording APS workers the right to vote and organise a union. It is notable that the Defence Enterprise Collective Agreement and the ADF Workplace Remuneration Arrangement follow

similar trends, such that the ADF arrangement can be re-opened to adjust for any substantial material differences (2011-2013 Defence Force Remuneration Tribunal).

Similar to the ADF senior officer remuneration system, SES employee remuneration is set by a 'collective' determination made under Section 24(1) of the Public Service Act. It is determined by agency heads under the Public Services Act 1999, and must be made is accordance with Remuneration Policy as outlined in the Australian Government Public Sector Workplace Bargaining Policy and with the APS Executive Remuneration Management Policy. Where a remuneration package exceeds the notional amount, agency heads must obtain approval from the Australian Public Service Commissioner.

Figure 9.11: Defence remuneration setting mechanisms

Secretary and Chief of Defence:

Determined by: Secretary of the DPMC in consultation with the President of the Remuneration Tribunal and the APS Commissioner assigns remuneration consistent with the classification structure determined by the Remuneration Tribunal

Legal Framework: The *Remuneration and Other Legislation Amendment Act 2011* (ROLA Act) amended the Public Services Act (Section 61) and the *Remuneration Tribunal Act 1973* (Division 4 of part II).

ADF statutory office holders (excluding the Secretary of Defence and Chief of the Defence Force)

Determined by: The Remuneration Tribunal

Legal Framework: *Remuneration Tribunal Act 1973*

Generalist ADF senior officers holding rank of Brigadier (equivalent) and Major General (equivalent)

Determination: ADF Senior Officer Remuneration Arrangement

Determined by: Defence Force Remuneration Tribunal

Legal Framework: *Defence Legislation Amendment Act 1984* and Section 58H of the *Defence Act 1903*

Note: Other non-salary related conditions of service are determined by the Minister of Defence

Legal Framework: Section 58B of the Defence Act

Regular and Reserve members of the ADF

Determination: Workplace Remuneration Arrangement

Determined by: Defence Force Remuneration Tribunal

Legal Framework: *Defence Legislation Amendment Act 1984* and Section 58H of the Defence Act

SES employee remuneration

Determination: *Individual salary agreements*

Determined by: Common law agreement between the Secretary and individual SES employees. Other terms and conditions are set in the collective determination under *Public Service Act 1999.*

Defence's non-Senior Executive Services Australian Public Service employees

Determination: The Defence Enterprise Collective Agreement

Approved by: Fair Work Commission following agreement between the Secretary of Defence and a majority of employees covered by the agreement

Legal Framework: *Fair Work Act 2009*

Recent developments in the ADF remuneration framework

Government have introduced two major reforms to the ADF remuneration structure in recent times; ADF remuneration reform and Project Suakin. In August 2007, then Defence Minister, Dr Brendan Nelson launched an ADF remuneration reform that sought to simplify and add flexibility to the current pay structure. Allocated $585 million over 10 years, the reform introduced a new and more favourable salary structure for some ADF personnel.

In November 26, 2013, the government launched Project Suakin. The project was designed to respond to the increasing challenges associated with the recruitment and retention of quality personnel despite strict financial constraints. Still in its infancy, Project Suakin seeks to improve mobility by removing the legal and administrative barriers to switching between full-time, part-time, and reserve service or between services. The elimination of the barriers to employee mobility has been estimated to produce medium-term savings of over $20 million per annum. Phase 2 of the project commenced on 1 July 2014, with its primary focus on implementing the mechanisms needed to deploy the model.

The current round of pay negotiations

On 13 November 2014, the Defence Remuneration Tribunal confirmed that Defence personnel would get a pay rise of 1.5% per annum (below the anticipated 2.5% rate of inflation) for the next three years (a total of 7.7%). Not only was the agreement seen as a real pay cut, it was a cut on the previous remuneration arrangement that offered a 9.3% pay rise over three years from 2011 to 2013 (4%, 2.5% and 2.5% respectively). As salary increases must be offset by productivity or efficiency gains, the 2014 arrangement offered the salary increase in exchange for reduced Christmas and recreational leave, as well as other changes. It is notable that in the appendix of their 2014 joint submission to the Defence Force Remuneration Tribunal, the ADF and the Commonwealth themselves acknowledged the difficulties in measuring and quantifying productivity gains.

However, spirited opposition led by the Tasmanian Senator Jacqui Lambie and the deployment of Australian troops to Iraq later saw the government withdraw the reductions to leave conditions. Subsequently, on 4 March, the government announced that the government would seek to increase ADF pay by 2% per annum, describing the 0.5% increase as ‘a modest catch-up’ (to perceived increases in APS salaries) and an acknowledgement of the special ‘compact’ between the Australian people and the defence force. As shown in Figure 9.3 and 9.5, there has been no deterioration in ADF salaries relative to APS salaries. Whilst the size of the Government’s pay offer is small (total 6.13%), it is almost double the 3.18% increase (1.98%, 1.18% and 0%) on offer to 19,000 Defence APS employees who face productivity offsets that include removal of a specified leave day and longer working hours.

Executive remuneration

Having observed that ADF senior military officers are paid more than their international counterparts it would be remiss not to look more closely at this issue—especially at a time when the lower ranks are being asked to accept real cuts to their salary. We begin by looking at the APS as a whole to capture the trends in the federal public sector labour market.

The 2013 APS Remuneration Report tracked median base salary increases across the APS from 2003 to 2013. As Table 9.2 shows, the Senior Executive Service has enjoyed significantly faster salary growth than the rank and file of the APS. It looks as though cream rises to the top.

Table 9.2: Nominal increases to median base salary 2003-2013

	Nominal increase in median base salary 2003-2013	Annual compounding rate of nominal growth 2003-13
APS 1	43.8%	3.7%
APS 2	49.8%	4.1%
APS 3	51.7%	4.3%
APS 4	51.1%	4.2%
APS 5	48.8%	4.1%
APS 6	49.3%	4.1%
EL 1	49.9%	4.1%
EL 2	51.4%	4.2%
SES 1	63.6%	5.0%
SES 2	67.7%	5.3%
SES 3	76.5%	5.8%

Source: APS Remuneration Report 2013, Public Service Commission

Turning to Defence salaries, unavailability of data limits the development of a time series extending back to 2003. But we have been able to assemble data for circa 1 July 2006 and 1 July 2014 from a variety of sources. Table 9.3 provides the resulting rates of salary growth over the period.

Table 9.3: Senior executive base salary increases 2006 to 2014

	Total increase in minimum or base salary (annual rate)	Total increase in maximum or base salary (annual rate)
Civilian levels		
Secretary	55% - 70% (5.6% - 6.8%)	
Deputy Secretary (SES-3)	44% (4.7%)	33% (3.7%)
First Assistant Secretary (SES-2)	43% (4.6%)	31% (3.4%)
Assistant Secretary (SES-1)	44% (4.7%)	29% (3.3%)
Non-executive APS salary increase	31.5%	
Military levels		
General (CDF)	87% (8.1%)	
Lieutenant General (3-star)	61% (6.2%)	
Major General (2-star)	42% (4.5%)	26% (2.9%)
Brigadier (1-star)	42% (4.5%)	32% (3.5%)
Non star rank military salary increase	31.5%	

Source: One-page summaries of ADF pay rates for 2006 and 2014, 2011 & 2010 Egan Report into remuneration of departmental secretaries (from Remuneration Tribunal), Remuneration Tribunal determinations 2006/5, 2006/06, 2014/07, 2014/11 and 2014/12. Non-executive wage increases correspond to cumulative percentage increases from 1 July 2006 to 1 July 2014 not taking account of pay restructures.

As with the broader APS, those at the top have received more generous pay increases than those they lead. Several points are worth making. First, the seemingly slower rate of increase in the base salary of the departmental secretary results from a change in the way base salary is calculated as a proportion of total remuneration (80% in 2006 and 70% in 2014). In reality, the salary and total remuneration of the Secretary and CDF remained similar over the period. Second, the rates for SES officers exclude those on (typically) more lucrative individual arrangements. For example, in 2014 the top regular pay-level for SES 3 in Defence was $273,659 per year, whereas the top individual contract at that level was for $466,458. For this reason, the figures in Table 9.3 understate the growth in SES salaries.

Much higher figures would result from using the maximum salary given for senior military officers in the Annual Report (see for example Table 8.10 in the 2013-14 DAR.) However, this would be misleading because the maximum figures in the Annual Report erroneously list *total remuneration* rather than salary. For this reason we've used the minimum figure from the annual report (which corresponds to *base salary*).

Turning to 2011, we now explore what factors contributed to the gradual increases to CDF and Defence Secretary remuneration. However, before we delve into the changes made in 2011, it is important to understand how secretary remuneration was determined and why it was changed.

From 1974 to 1999, the Remuneration Tribunal set the remuneration of all departmental secretaries. However in 1999, section 61 if the *1991 Public Service Act* conferred the authority to the Prime Minister, noting the Prime Minister is required to seek the advice of the Remuneration Tribunal. Later, a 2010/2011 review of departmental secretaries proposed the Remuneration Tribunal determine the remuneration for the secretaries of the Department of the Prime Minister and Cabinet (DPMC) and Treasury, assigning the Secretary of DPMC the authority to determine all other secretary remunerations. The Tribunal argued secretaries' remuneration was inadequate compared to comparative positions in the private sector, and identified substantial increases to remuneration, initially and over time. Both the 2005/2006 Annual Report of the Tribunal and the 2010/2011 Remuneration Tribunal Review of the office of secretary noted that

…Secretaries' remuneration has been well below where it should have been for many years. The Tribunal considers it necessary that the remuneration of Secretaries should now be 'rebased' to correct this. (Remuneration Tribunal, Review of the office of secretary: Report– Part II, preface, p.1.)

Thus, in June 2011, the *Remuneration and Other Legislation Amendment Act 2011* (ROLA Act) was subsequently passed by the Parliament. The amendments state that the Secretary of the DPMC must in consultation with the President of the Remuneration Tribunal and the Australian Public Service Commissioner assign all departmental secretaries an amount of remuneration consistent with the classification structure determined by the Remuneration Tribunal. Later, the March 2012 Remuneration determination outlined the secretary classification structure as well as a six-step phased introduction of new increased pay points. The determination was updated in 2013, outlining specified six-monthly increases through to July 2014, with the base salary accounting for 70% of total remuneration. The increases in remuneration were thus justified by a desire to bring Secretary Remuneration up to private sector standards.

So what about the ~~1.5%~~ 2% per annum salary increase?

This short study has focused on ADF and APS salaries. While these are only a part of overall ADF

remuneration, the question at hand is whether the sub-inflation increase to ADF salaries is appropriate. To be honest, nothing presented here can decisively answer that question. In terms of an international comparison, our enlisted personnel have higher salaries than their overseas counterparts while our officers are on a par. The exception is our three- and four-star officers who are better paid than their equivalents overseas. In terms of domestic comparisons, there is nothing to indicate that ADF personnel are poorly paid relative to those in the broader economy. Certainly senior and star-rank officers receive higher salaries than their civilian counterparts across the hall.

As interesting as these various benchmarks are, supply and demand will have the final say. That is; the adequacy or otherwise of the ADF salary increase will be determined by the decisions that the members of the ADF and potential recruits make over the next three years. If separation rates rise and recruitment rates fall, the labour market will have passed its verdict on the 2% decision.

Two things likely contributed to the government's parsimonious approach. First and foremost, they want to balance the federal budget. Second, they probably want to drive down real wages in the economy to increase Australia's export competitiveness. A reduction in real wages has a similar impact to a fall in the exchange rate on exports. By constraining wage growth in the public sector, there is hope that it will flow on to private sector wages.

Who's to know what would have happened if the ADF salary outcome had followed rather than preceded negotiation of new agreements across the APS. By going first, the government had an incentive to achieve a low outcome as a precedent for the negotiations to follow.

The government is undertaking a brave experiment. The latest Treasury projections for wage growth in the economy over the next three years are; 2.5%, 2.75% and 2.75%. The government are counting on ADF members sticking around despite improving prospects in the civilian economy. They might get away with it. Transition costs are high for individuals and loyalty is a real thing among military personnel. Trouble is, for three years in a row the ADF has fallen short of its target strength: 1,059 persons fewer in 2011-12, 2,029 fewer in 2012-13, 1,871 fewer in 2013-14 and 1,251 fewer in 2014-15.

As discussed in Chapter 2, the failure to reach targeted personnel levels may simply reflect poor workforce planning. Let's hope that the case. The alternative is that the ADF employment offer was losing its lustre prior to the latest workplace arrangement. If that's the case, it's one hell of a time to be experimenting.

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Glossary

ADF	Australian Defence Force
AEW&C	Airborne Early Warning & Control
ANAO	Australian National Audit Office
APS	Australian Public Service
AWD	Air Warfare Destroyer
CDF	Chief of the Defence Force
CIOG	Chief Information Officer Group
CSP	Commercial Support Program
DAR	Defence Annual Report
DCP	Defence Capability Plan
DFRB	Defence Force Retirement and Death Benefits
DHA	Defence Housing Authority
DMO	Defence Materiel Organisation
DRP	Defence Reform Program
DSG	Defence Support Group
DSTO	Defence Science and Technology Organisation
EWSP	Electronic Warfare Self Protection
FADT	Foreign Affairs Defence and Trade
FBT	Fringe Benefits Tax
FMA	*Financial Management and Accountability Act 1997*
GDP	Gross Domestic Product
GNI	Gross National Income
GST	Goods and services tax
NPOC	Net Personnel and Operating Costs
OPA	Official Public Account
PAES	Portfolio Additional Estimates Statements
PBS	Portfolio Budget Statement
SES	Senior Executive Service
WRA	Workplace Remuneration Arrangement

The Cost of Defence

ASPI Defence Budget Brief 2015–2016

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