

Defence Inflation Estimates Statistical Notice 2009/10



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Executive Summary

The defence inflation statistic measures the average change in pay, and prices of goods and services, making up the defence budget, with quality and quantity held constant.

This statistical notice presents estimates of defence inflation for financial years 2005/06 to 2009/10.

The Defence Analytical Services and Advice (DASA) at the Ministry of Defence (MOD) welcome feedback on all statistical products. If you have comments on this, or any other DASA statistical product, please visit the DASA website (www.dasa.mod.uk) and complete the feedback form.

Key Findings

- Defence inflation was 3.1% in 2009/10 – the lowest rate since the current series began in 2005/06.
- Defence inflation averaged 3.7% over the period 2005/06 to 2009/10.
- In 2009/10, inflation in the GDP deflator was 1.5% and inflation in RPIX (a widely accepted proxy for UK general inflation) was 2.5%. Defence inflation has been higher than the GDP deflator and RPIX for four out of the five years between 2005/06 and 2009/10; in 2006/07 the three measures were broadly similar.
- Inflation in defence contract expenditure was 2.4% in 2009/10.
- Inflation in defence labour cost expenditure was 3.9% in 2009/10 – inflation in civilian labour costs was 2.9%, and inflation in military labour costs was 4.2% in 2009/10.

Table 1 Defence Inflation, 2005/06 to 2009/10

<i>Weights</i> ¹	Contracts ^{2,3}	Labour Costs ^{2,3}	Cash Offices ^{2,3}	All Defence (UK) ³
	632	336	32	1000
Financial Year	Growth Rate ⁴			
2005/06	3.3%	5.6%	0.9%	4.1%
2006/07	3.3%	3.4%	1.4%	3.3%
2007/08	3.8%	4.3%	2.4%	3.9%
2008/09	4.2%	3.7%	9.3%	4.2%
2009/10	2.4%	3.9%	7.7%	3.1%

[1] These weights apply to the 2009/10 measure. Due to chain-linking, weights reflect the expenditure pattern within the base year not the reference year e.g. for the 2009/10 inflation measure weights reflect expenditure in 2008/09.

[2] For the definitions of 'Contracts', 'Labour Costs', and 'Cash Offices' used for the defence inflation estimates, refer to the Glossary.

[3] Data from 2005/06 to 2008/09 have been revised since their original publication in March 2010.

[4] Growth rates are year-on-year and calculated from unrounded data.

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1 Defence Inflation: Summary Results

The defence inflation estimates capture inflation in the inputs to Defence. They reflect the mix of goods, labour and services bought each year, and do not take account of productivity or efficiency improvements.

Headline Results

In 2009/10, defence inflation was 3.1%. Defence inflation averaged 3.7% over the period 2005/06 to 2009/10 (Figure 1).

Figure 1 Defence Inflation, 2005/06 to 2009/10

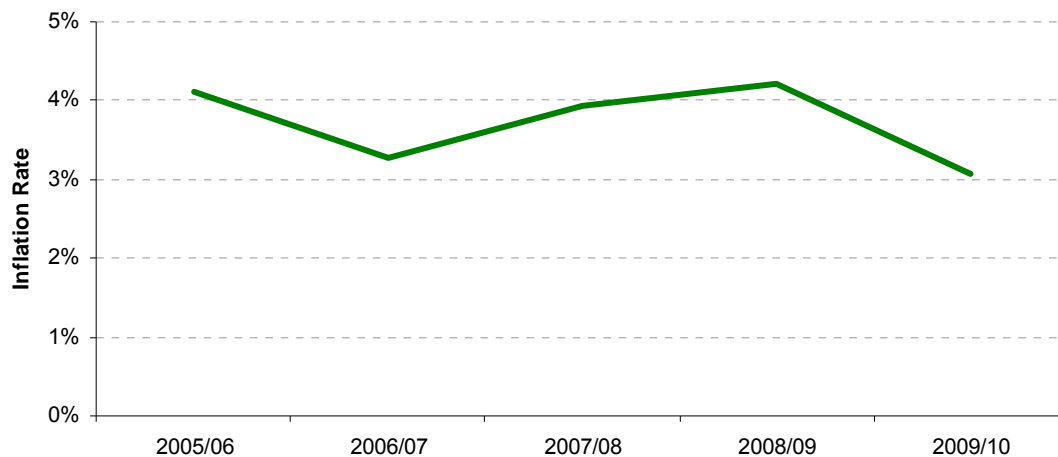


Table 2 presents chain-linked Laspeyres price index numbers and equivalent year-on-year growth rates for the three main components of defence – contracts, personnel and cash offices – as well as overall defence expenditure. The weights are expressed as values out of 1000 and reflect the contribution each component makes to the overall measure of defence inflation. For further details on the methodology refer to **Chapter 5: Methodology** and the Defence Inflation Statistical Bulletin No. 10.

Table 2 Defence Inflation, 2005/06 to 2009/10

<i>Weights</i> ¹	Contracts ^{2,3}		Labour Costs ^{2,3}		Cash Offices ^{2,3}		All Defence (UK) ³	
	632		336		32		1000	
Financial Year	Index & Growth Rate ⁴							
2004/05	100.0	-	100.0	-	100.0	-	100.0	-
2005/06	103.3	3.3%	105.6	5.6%	100.9	0.9%	104.1	4.1%
2006/07	106.7	3.3%	109.2	3.4%	102.2	1.4%	107.5	3.3%
2007/08	110.8	3.8%	113.8	4.3%	104.6	2.4%	111.7	3.9%
2008/09	115.4	4.2%	118.1	3.7%	114.3	9.3%	116.4	4.2%
2009/10	118.2	2.4%	122.7	3.9%	123.2	7.7%	120.0	3.1%

[1] These weights apply to the 2009/10 measure. Due to chain-linking, weights reflect the expenditure pattern within the base year not the reference year e.g. for the 2009/10 inflation measure weights reflect expenditure in 2008/09.

[2] For the definitions of 'Contracts', 'Labour Costs', and 'Cash Offices' used for the defence inflation estimates, refer to the Glossary.

[3] Data from 2005/06 to 2008/09 have been revised since their original publication in March 2010.

[4] Growth rates are year-on-year and calculated from unrounded data.

Comparison with General Inflation

Input measures of inflation (such as defence inflation) do not take account of productivity or efficiency improvements. Consequently, input measures generally have higher growth than comparative output measures. Therefore, the overall measure of defence inflation (an input measure) is not directly comparable to output measures of general inflation such as the Gross Domestic Product (GDP) deflator or the Retail Price Index excluding mortgage interest payments (RPIX).

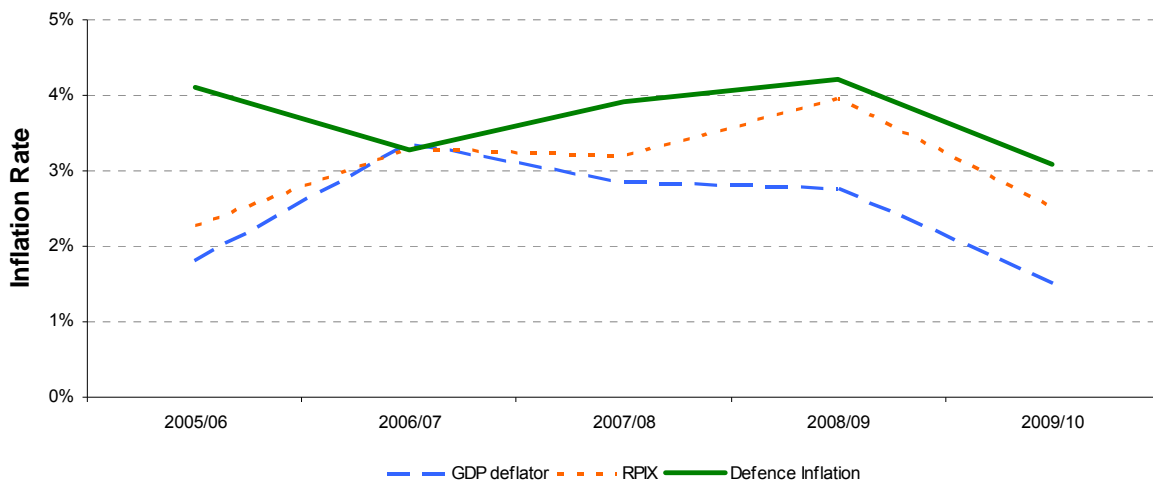
In 2009/10, inflation in the GDP deflator was 1.5% and inflation in RPIX (a widely accepted proxy for UK general inflation) was 2.5%. Defence inflation was 1.6 percentage points higher than the GDP deflator in 2009/10, and 0.6 percentage points higher than RPIX in 2009/10.

Defence inflation has been higher than the GDP deflator and RPIX for four out of the five years between 2005/06 and 2009/10; in 2006/07 the three measures were broadly similar (Figure 2).

Defence inflation averaged 1.3 percentage points higher than the GDP deflator between 2005/06 and 2009/10, compared to an average of 0.7 percentage points higher than the RPIX over the same period.

Inflation in defence contract expenditure has on average been around 0.3 percentage points higher than RPIX over the period 2005/06 to 2009/10. However, in 2009/10 inflation within contract expenditure was 2.4% compared to a growth rate of 2.5% in RPIX.

Figure 2 Defence Inflation and General Inflation, 2005/06 to 2009/10

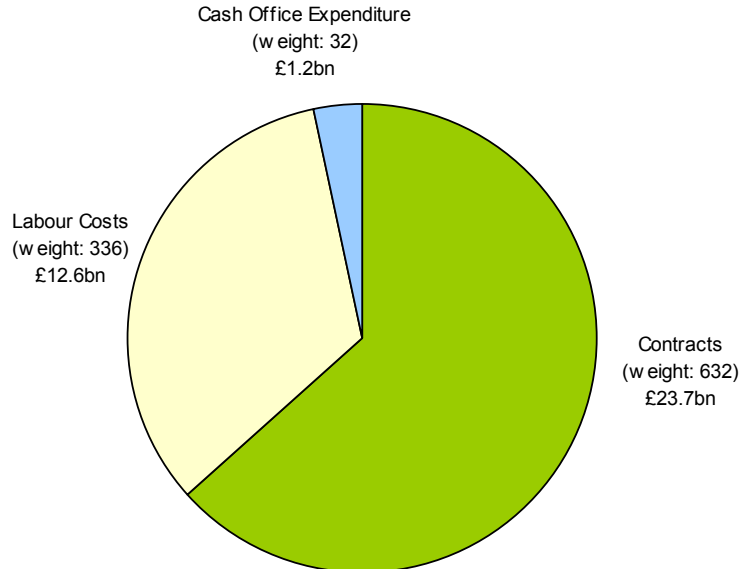


Source: Annual inflation rates for RPIX and the GDP deflator from the Office for National Statistics.

Expenditure and Weights

The 2009/10 defence inflation estimates utilise expenditure figures for the base year 2008/09 (Figure 3). For further details refer to **Chapter 5: Methodology**.

Figure 3 Defence Inflation Expenditure by Category, 2008/09



Expenditure in 2008/09 – used within the 2009/10 defence inflation measure – was £37.4bn, a rise of £3.1bn (9%) compared to 2007/08 (Table 3). This increase was primarily driven by an increase in expenditure on contracts, which increased from £20.8bn in 2007/08 to £23.7bn in 2009/10, a rise of £2.9bn (14%).

Table 3 Defence Inflation Expenditure by Category, 2004/05 to 2008/09

	<i>£ million</i>				
	2004/05	2005/06	2006/07	2007/08	2008/09
All Defence (UK)	29,386	30,879	31,387	34,361	37,443
Contracts	17,065	18,085	18,352	20,795	23,653
Personnel	11,313	11,703	11,896	12,166	12,598
Cash Office Expenditure	1,008	1,091	1,139	1,399	1,191

Contracts

Expenditure on contracts accounts for nearly two-thirds of the total expenditure captured within the 2009/10 defence inflation measure.

In 2009/10, inflation in defence contract expenditure was 2.4% (Table 2) - the lowest rate since the current series began in 2005/06; 1.8 percentage points lower than in 2008/09. This fall in the growth rate between 2008/09 and 2009/10 followed a steady rise between 2005/06 and 2008/09.

The methodology for estimating inflation in defence contracts is dependent on price indices published by the Office for National Statistics (ONS). **Chapter 2: Contracts** presents further information on inflation within different types of contracts and further details on the key drivers.

Labour Costs

Expenditure on labour costs accounts for around one third of the total expenditure captured within the 2009/10 defence inflation measure.

In 2009/10, inflation in labour cost expenditure was 3.9% (Table 2). Between 2005/06 and 2009/10 inflation in labour costs averaged 4.2% per year; with the highest level in 2005/06 (5.6%). The rate of inflation for military labour cost expenditure was 4.2% in 2009/10, whilst the inflation rate for civilian labour cost expenditure was 2.9%.

Chapter 3: Labour Costs presents further information on the inflation rates within the components of labour costs for military and civilian personnel. This includes inflation rates within pay, national insurance contributions (ERNIC), pensions (SCAPE), travel and subsistence, and allowances.

Cash Office Expenditure

Cash office expenditure accounts for about three per cent of the total expenditure captured within the 2009/10 defence inflation measure.

The inflation rates within cash offices represent inflation due to: expenditure on foreign currency by MOD cash offices; and domestic inflation within those countries.

In 2009/10, inflation in cash office expenditure was 7.7%. Broadly speaking the rate of inflation for cash offices is driven by the inflation rate for US dollar and Euro purchases – the two currencies which contribute most to the total level of foreign currency spend. For further details refer to **Chapter 4: Cash Office Expenditure**.

Contract Payments in Foreign Currencies

There is an additional inflationary pressure when contracts are paid in foreign currency. To account for this, in 2009/10 an adjustment of 0.7 percentage points, based upon exchange rates the Ministry of Defence (MOD) achieved in its currency purchases, has been added to the estimates of inflation within contract expenditure.

The overall measure of contract inflation, and thus the overall defence inflation estimate, both capture the inflationary effect of paying for contracts in foreign currencies. It is assumed that the impact is the same across all contract types. The breakdowns of inflation by contract type, presented in **Chapter 2: Contracts** also capture this effect. However, more detailed estimates of inflation for contracts (such as contract inflation by industry) exclude this adjustment.

Further details on the methodology and historical adjustments are provided in **Chapter 5: Methodology** and within the Statistical Bulletin No.10.

Revisions

Since the previous defence inflation statistical release in March 2010, there have been revisions to historical figures. These revisions reflect:

- i. Acquiring new information relating to already published results;
- ii. Improvements to methodology and selection of data sources;
- iii. Identification of significant errors.

Throughout the tables, the revisions are indicated with a footnote. A comparison to the top level estimates previously published and the impact of these revisions is provided in **Chapter 5: Methodology**. For previously published estimates refer to the March 2010 Statistical Notice and the March 2010 Statistical Bulletin No. 10.

2 Contracts

Key Findings

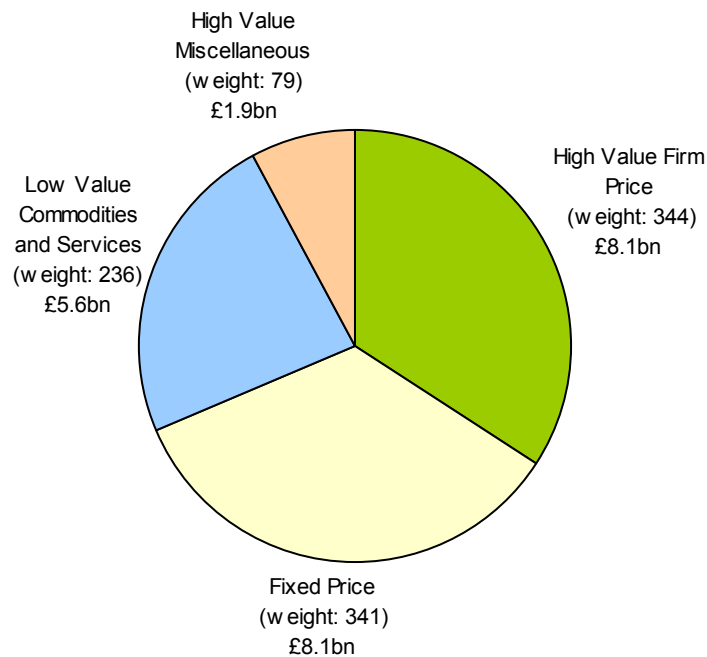
- Inflation in contract expenditure was 2.4% in 2009/10 – the lowest rate since the current series began in 2005/06.
- Between 2005/06 and 2009/10, inflation in contracts averaged 3.4% year-on-year growth.
- In 2009/10, the highest rate of inflation was within High Value Firm Price contracts with a rate of 3.0% and the lowest rate of inflation was within Low Value Commodities and Services contracts with a rate of 1.7%.

Expenditure and Weights

In 2008/09 the Ministry of Defence (MOD) had around 40,000 contracts with payments against them, accounting for nearly £24bn (two thirds) of the Department’s annual expenditure. Some of these contracts are for the provision of complex defence equipment and support, and can last for decades; some are for off-the-shelf goods and services; and some are miscellaneous payments, such as those to local authorities and international collaborative projects.

Defence Analytical Services and Advice (DASA) have defined four sub-groups of contracts (see **Glossary** for definitions). Figure 4 presents the proportion of total contract expenditure spent on each sub-group.

Figure 4 Contract Inflation Expenditure by Contract Type, 2008/09



Inflation Rates across Defence Contracts

In 2009/10, inflation in expenditure on contracts was 2.4%, 1.8 percentage points lower than in 2008/09 (Table 4). Over the period 2005/06 to 2008/09 inflation within contracts steadily increased, from 3.3% in 2005/06 to 4.2% in 2008/09, before falling in 2009/10 to its lowest rate since the current series began in 2005/06. The fall in the inflation rate for contract expenditure between 2008/09 and 2009/10, reflects the general slowing down of price inflation across the whole economy during that period and is mirrored for each of the four sub-groups.

Table 4 Defence Inflation – Defence Contracts, 2005/06 to 2009/10

Contract Type	High Value Firm Price ^{2,3}		Fixed Price ^{2,3}		Low Value Commodities and Services ^{2,3}		High Value Miscellaneous ^{2,3}		Defence Contracts ³	
<i>Weights¹</i>	344		341		236		79		1000	
Financial Year	Index & Growth Rate ⁴									
2004/05	100.0	-	100.0	-	100.0	-	100.0	-	100.0	-
2005/06	103.9	3.9%	102.4	2.4%	103.1	3.1%	103.1	3.1%	103.3	3.3%
2006/07	107.3	3.3%	106.1	3.6%	106.4	3.2%	106.5	3.3%	106.7	3.3%
2007/08	111.8	4.2%	109.8	3.5%	110.4	3.8%	110.0	3.4%	110.8	3.8%
2008/09	116.4	4.2%	114.2	3.9%	115.3	4.4%	114.8	4.4%	115.4	4.2%
2009/10	119.9	3.0%	117.0	2.5%	117.2	1.7%	117.0	1.9%	118.2	2.4%

[1] These weights apply to the 2009/10 measure. Due to chain-linking, weights reflect the expenditure pattern within the base year not the reference year e.g. for the 2009/10 inflation measure weights reflect expenditure in 2008/09.

[2] For the definitions of Contract Types used for the defence inflation estimates, refer to the Glossary.

[3] Data from 2005/06 to 2008/09 have been revised since their original publication in March 2010.

[4] Growth rates are year-on-year and calculated from unrounded data.

During 2009/10, inflation for high value firm price contracts (3.0%) was higher than for the other sub-groups. This reflects the difference in methodologies used to estimate inflation for each group, specifically high value firm price contracts are assumed to capture inflationary conditions at the time of placement, rather than the current conditions.

High Value Firm Price Contracts

Expenditure on high value firm price contracts accounts for 34% of the 2009/10 defence inflation measure for contracts. The inflation rate for these contracts was 3.0% in 2009/10. This is 0.7 percentage points lower than the average year-on-year growth rate (3.7%) between 2005/06 and 2009/10.

Estimates of high value firm price contract inflation are based either on corporate knowledge provided by project teams or by linking them to suitable price indices produced by the Office for National Statistics (ONS). Around 75% of the expenditure on High Value Firm Price contracts in 2009/10 was linked to just eleven price indices. The inflation rates for these price indices fell by 0.8 percentage points between 2008/09 and 2009/10.

Fixed Price Contracts

Expenditure on fixed price contracts accounts for 34% of the 2009/10 defence inflation measure for contracts. The inflation rate for these contracts was 2.5% in 2009/10. This is 0.7 percentage points lower than the average year-on-year rate (3.2%) between 2005/06 and 2009/10.

Estimates of fixed price contract inflation are based on specific ONS price indices, as defined in the corresponding Variation of Price (VoP) clauses. Around one quarter of the expenditure on Fixed Price contracts was linked to the Retail Price Index excluding mortgage interest payments (RPIX), which fell from 4.0% year-on-year growth in 2008/09 to 2.5% in 2009/10. Across all Fixed Price contracts, about 80% of expenditure was linked to price indices with lower growth rates in 2009/10 compared to 2008/09. This explains why estimates of inflation in Fixed Price contracts fell between 2008/09 and 2009/10.

Low Value Commodities and Service Contracts

Expenditure on low value commodities and service contracts accounts for 24% of the 2009/10 defence inflation measure for contracts. The inflation rate for these contracts was 1.7% in 2009/10. This is 1.6 percentage points lower than the average year-on-year rate (3.2%) between 2005/06 and 2009/10.

High Value Miscellaneous Contracts

Expenditure on high value miscellaneous contracts accounts for 8% of the 2009/10 defence inflation measure for contracts. The inflation rate for these contracts was 1.9% in 2009/10. This is 1.3 percentage points lower than the average year-on-year rate (3.2%) between 2005/06 and 2009/10.

Inflation by Industry Group

Table 5 presents inflation in contract expenditure broken down by industry group. The five industry groups with the highest expenditure in 2008/09 are presented along with their associated inflation rates (see discussion of DASA Standard Industrial Classification in **Chapter 5: Methodology** for further information). Estimates of inflation in high value miscellaneous contract expenditure are presented separately.

Table 5 Defence Inflation – Defence Contracts by Industry Group, 2005/06 to 2009/10

Industry Group	Weighted Financial Year Growth Rates ¹				
	2005/06	2006/07	2007/08	2008/09	2009/10
Aircraft and Spacecraft	3.1%	4.0%	3.4%	3.6%	3.5%
Construction	3.6%	3.0%	5.2%	2.9%	-0.9%
Ships and Boats	3.0%	2.9%	3.4%	4.5%	2.3%
Weapons and Ammunition	2.8%	2.9%	2.8%	3.0%	3.3%
Computer Activities	3.6%	3.6%	3.5%	3.3%	2.4%
All Other Industry Groups	3.9%	3.6%	4.1%	3.9%	1.4%
High Value Miscellaneous Contracts ^{2,3}	3.1%	3.3%	3.4%	4.4%	1.9%
Foreign Currency Adjustment ⁴	-0.4%	-0.2%	-0.1%	0.4%	0.7%
Defence Contract Inflation^{2,3}	3.3%	3.3%	3.8%	4.2%	2.4%

[1] Weights are derived from expenditure by industry group and contract type.

[2] Data from 2005/06 to 2008/09 have been revised since their original publication in March 2010.

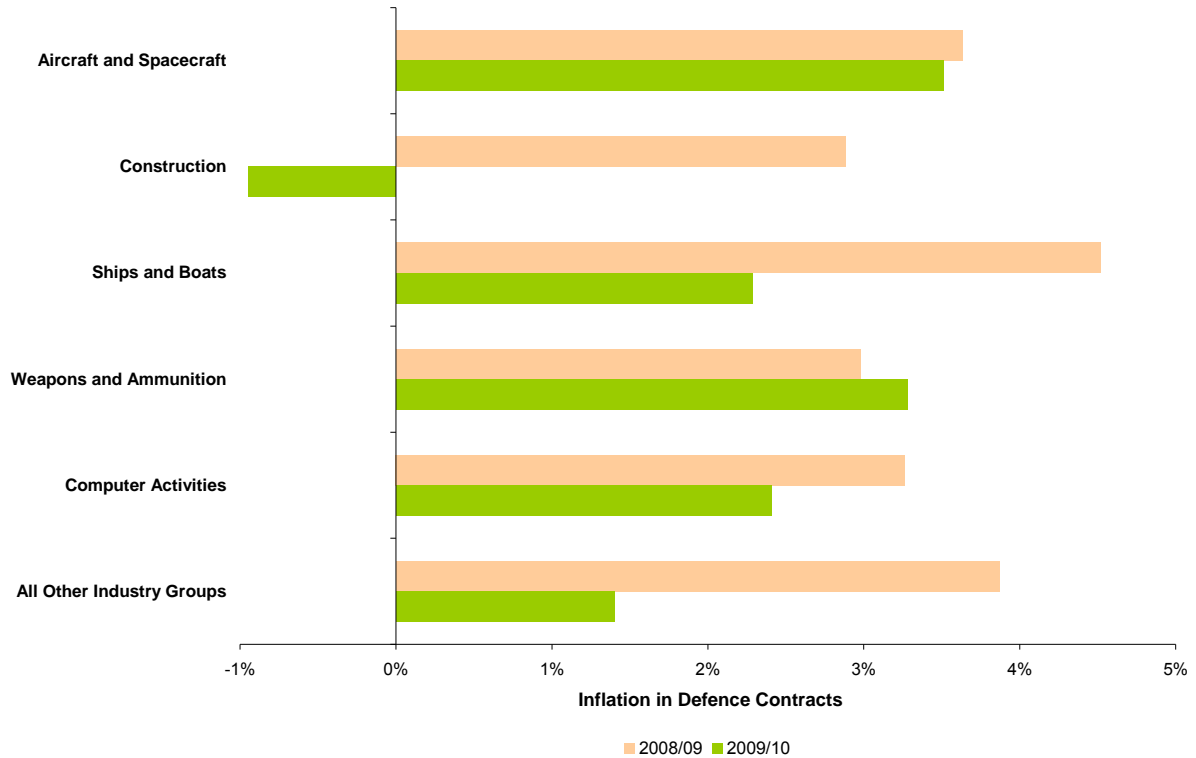
[3] Including the foreign currency adjustment, see **Chapter 5: Methodology**.

[4] This adjustment cannot be applied to industry groups due to insufficient data.

Figure 5 presents a comparison of the changes in inflation rates by industry group between 2008/09 and 2009/10.

Inflation within the construction, ships and boats, and all other industry groups fell significantly between 2008/09 and 2009/10. The fall in inflation for the all other industry group reflects the overall slowing of price inflation across manufacturing.

Figure 5 Defence Inflation – Defence Contracts by Industry Group¹, 2008/09 and 2009/10



[1] This analysis is based on high value firm price, fixed price and low value commodities and service contracts. It excludes high value miscellaneous contracts due to insufficient data.

3 Labour Costs

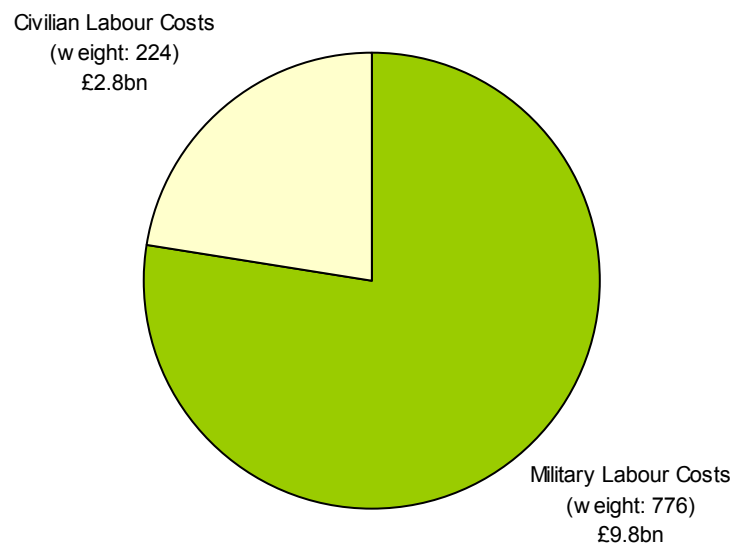
Key Findings

- Inflation in labour cost expenditure was 3.9% in 2009/10.
- Inflation in military and civilian labour cost expenditure was 4.2% and 2.9% respectively.
- Military labour cost inflation for 2009/10 is similar to the average for the period 2005/06 to 2009/10.
- Civilian labour cost inflation for 2009/10 is the lowest year-on-year inflation rate since the current series began in 2005/06.

Expenditure and Weights

Expenditure on labour accounts for around one third of the Department's expenditure. For the 2009/10 estimates, 78% of this expenditure is on military personnel and 22% is on civilian personnel (Figure 6).

Figure 6 Labour Cost Inflation Expenditure by Personnel Type, 2008/09



For both military and civilian personnel, the inflation rate captures the growth in average labour costs, which includes gross pay, employer's National Insurance contributions (ERNIC), Travel and Subsistence (T&S) and pension contributions (SCAPE). It implicitly includes all paid sickness, paternity or maternity leave. The inclusion of all these costs captures the total inflationary impact of employing the Department's labour, over and above changes in their salaries.

Due to the different methods adopted for estimating inflation in expenditure on gross pay for military and civilians, the estimates are not directly comparable. Further information is available in **Chapter 5: Methodology**.

Labour Costs

Inflation in labour cost expenditure was 3.9% in 2009/10 (Table 6). This is slightly lower than the average labour cost inflation rate of 4.2% for the period 2005/06 to 2009/10. Labour cost inflation for 2009/10 is lower than the average because the 2009/10 civilian labour inflation estimate is the lowest rate since the current series began in 2005/06. Inflation in military labour cost expenditure was similar to previous years.

Table 6 Defence Inflation – Labour Costs, 2005/06 to 2009/10

Weights ¹	Military ^{2,3}		Civilian ^{2,3}		Defence Labour Costs ³	
	776		224		1000	
Financial Year	Index & Growth Rate ⁴					
2004/05	100.0	-	100.0	-	100.0	-
2005/06	105.1	5.1%	107.4	7.4%	105.6	5.6%
2006/07	108.5	3.2%	111.5	3.9%	109.2	3.4%
2007/08	113.3	4.5%	115.5	3.6%	113.8	4.3%
2008/09	117.2	3.4%	120.8	4.6%	118.1	3.7%
2009/10	122.2	4.2%	124.3	2.9%	122.7	3.9%

[1] These weights apply to the 2009/10 measure. Due to chain-linking, weights reflect the expenditure pattern within the base year not the reference year e.g. for the 2009/10 inflation measure weights reflect expenditure in 2008/09.

[2] For the definitions of 'Labour Costs', 'Military Labour Costs' and 'Civilian Labour Costs' used for the defence inflation estimates, refer to the Glossary.

[3] Data from 2005/06 to 2008/09 have been revised since their original publication in March 2010.

[4] Growth rates are year-on-year and calculated from unrounded data.

Military Labour Costs

Inflation in military labour cost expenditure was 4.2% in 2009/10 (Table 7); this is similar to the average military labour cost inflation rate of 4.1%, but higher than the 2008/09 estimate of 3.4%.

Table 7 Defence Inflation – Military Labour Costs, 2005/06 to 2009/10

Military Labour Costs ^{1,2}	Weights ³	Financial Year Growth Rates ⁴				
		2005/06	2006/07	2007/08	2008/09	2009/10
Salaries	620	3.0%	3.1%	3.6%	3.7%	2.8%
Non-activity Allowance	25	-2.7%	9.2%	36.2%	-11.4%	12.1%
Activity Allowance	18	5.0%	7.5%	14.2%	2.6%	1.8%
Reservists & Cadets	19	5.2%	3.2%	3.8%	3.6%	2.8%
Pay and Allowances	682	2.9%	3.3%	4.9%	3.0%	3.1%
Travel and Subsistence	112	2.6%	2.9%	3.1%	4.5%	2.7%
National Insurance Contributions	51	2.6%	2.5%	3.8%	6.3%	2.5%
Pension Contributions	154	18.1%	3.1%	3.6%	3.8%	10.7%
Military Labour Costs	1000	5.1%	3.2%	4.5%	3.4%	4.2%

[1] For definitions used for the defence inflation estimates, refer to the Glossary.

[2] Data from 2005/06 to 2008/09 have been revised since their original publication in March 2010.

[3] These weights apply to the 2009/10 measure. Due to chain-linking, weights reflect the expenditure pattern within the base year not the reference year e.g. for the 2009/10 inflation measure weights reflect expenditure in 2008/09.

[4] Growth rates are year-on-year and calculated from unrounded data.

Inflation in military labour costs rose between 2008/09 and 2009/10 due to increases in non-activity related allowances and pension contributions (SCAPE):

- ↑ There was a 12.1% rise in non-activity related allowances in 2009/10.
- ↑ There was a 10.7% rise in the department's pension contributions in 2009/10, driven by a step change in the SCAPE rates for both officers and other ranks. A similar effect was also observed in 2005/06.

Civilian Labour Costs

Inflation in civilian labour cost expenditure was 2.9% in 2009/10 (Table 8). This is the lowest year-on-year inflation rate since the current series began in 2005/06.

Table 8 Defence Inflation – Civilian Labour Costs, 2005/06 to 2009/10

Civilian Labour Costs ^{1,2}	Weights ³	Financial Year Growth Rates ⁴				
		2005/06	2006/07	2007/08	2008/09	2009/10
Gross Pay ⁵	640	4.0%	3.3%	3.7%	4.0%	2.8%
Locally Engaged Civilians Pay	100	5.3%	4.8%	4.3%	11.0%	7.9%
Royal Fleet Auxiliary Pay	28	2.5%	3.0%	2.6%	2.6%	3.2%
Pay and Allowances	768	4.1%	3.5%	3.7%	4.8%	3.4%
Pension Contributions	118	43.4%	7.3%	3.6%	3.6%	-0.8%
National Insurance Contributions	49	3.6%	4.0%	0.7%	2.9%	-0.9%
Travel & Subsistence	65	2.3%	2.2%	4.5%	5.8%	5.3%
Civilian Labour Costs	1000	7.4%	3.9%	3.6%	4.6%	2.9%

[1] For definitions used for the defence inflation estimates, refer to the Glossary.

[2] Data from 2005/06 to 2008/09 have been revised since their original publication in March 2010.

[3] These weights apply to the 2009/10 measure. Due to chain-linking, weights reflect the expenditure pattern within the base year not the reference year e.g. for the 2009/10 inflation measure weights reflect expenditure in 2008/09.

[4] Growth rates are year-on-year and calculated from unrounded data.

[5] Gross pay includes overtime, allowances and non-consolidated performance related pay award inflation.

Inflation in civilian labour costs was 2.9% in 2009/10. This is lower than the 4.6% in 2008/09:

- ↓ Inflation in civilian labour costs fell between 2008/09 and 2009/10 mainly due to a 0.8% decrease in pension contributions made by the department. This decrease was driven by an increase in the earnings thresholds and a reduction in the Department's pension contribution rates. Pension contributions account for around 12% of civilian labour costs.

Pay and Allowances

Estimates of inflation in labour costs include the inflation in pay and allowances. In 2009/10 pay and allowances accounted for 68% of military labour costs and 77% of civilian labour costs.

- ↓ Military pay and allowances inflation was 3.1% in 2009/10. This is slightly lower than the average of 3.4% in the period 2005/06 to 2009/10 and is driven by the 2.8% uplift in pay¹.
- ↓ The 2009/10 civilian pay and allowances estimate (3.4%) is the lowest since the current series began in 2005/06. This was driven by an 11.2% fall in total expenditure on civilian non-consolidated performance related pay awards inflation between 2008/09 and 2009/10.

¹ The 2.8% uplift for military pay and allowances is based upon recommendations made by the Armed Forces Pay Review Body and the Review Body for Senior Salaries which were accepted by the Prime Minister and Secretary of State for Defence.

4 Cash Office Expenditure

Key findings

- Inflation in cash office expenditure was 7.7% in 2009/10.
- Between 2005/06 and 2009/10, inflation in cash office expenditure averaged 4.3% year-on-year, but has been volatile over this period.
- Inflation within cash offices for US dollars was 8.3% and for Euros was 4.4% in 2009/10.

Cash Offices

Cash office expenditure accounts for about three per cent of the total expenditure captured within the defence inflation measure in 2009/10. The inflation rates within cash offices capture both: the inflation due to changes in currency exchange rates; and domestic inflation in the relevant country.

Table 9 presents inflation in cash office expenditure over the period 2005/06 to 2009/10. In 2009/10, inflation within cash office expenditure was 7.7% year-on-year. Over the five year period inflation averaged 4.3%, ranging from 0.9% to 9.3%.

Broadly speaking the rate of inflation for cash offices is driven by the inflation rate within the US dollar and the Euro – the two currencies which contribute most to the total level of foreign currency spend.

Exchange rates for US dollars and Euros used to estimate defence inflation in cash offices are based upon the actual rates achieved by the MOD for currency deliveries through spot buys and the forward buy programmes. For all other currencies, exchange rates are based on spot prices only.

Table 9 Defence Inflation – Cash Office Expenditure, 2005/06 to 2009/10

Currency	Cash Offices - US Dollar ^{2,3}		Cash Offices - Euro ^{2,3}		Cash Offices - Other ^{2,3}		Cash Offices ^{2,3}	
<i>Weights¹</i>	640		224		136		1000	
Financial Year	Index & Growth Rate ⁴							
2004/05	100.0	-	100.0	-	100.0	-	100.0	-
2005/06	95.9	-4.1%	101.5	1.5%	105.5	5.5%	100.9	0.9%
2006/07	94.1	-1.9%	106.2	4.6%	106.8	1.3%	102.2	1.4%
2007/08	96.4	2.5%	107.4	1.0%	110.9	3.8%	104.6	2.4%
2008/09	102.8	6.7%	113.5	5.7%	133.6	20.5%	114.3	9.3%
2009/10	111.4	8.3%	118.5	4.4%	147.5	10.4%	123.2	7.7%

[1] These weights apply to the 2009/10 measure. Due to chain-linking, weights reflect the expenditure pattern within the base year not the reference year e.g. for the 2009/10 inflation measure weights reflect expenditure in 2008/09.

[2] For the definition of 'Cash Offices' within the defence inflation measure refer to the Glossary.

[3] Data from 2005/06 to 2008/09 have been revised since their original publication in March 2010.

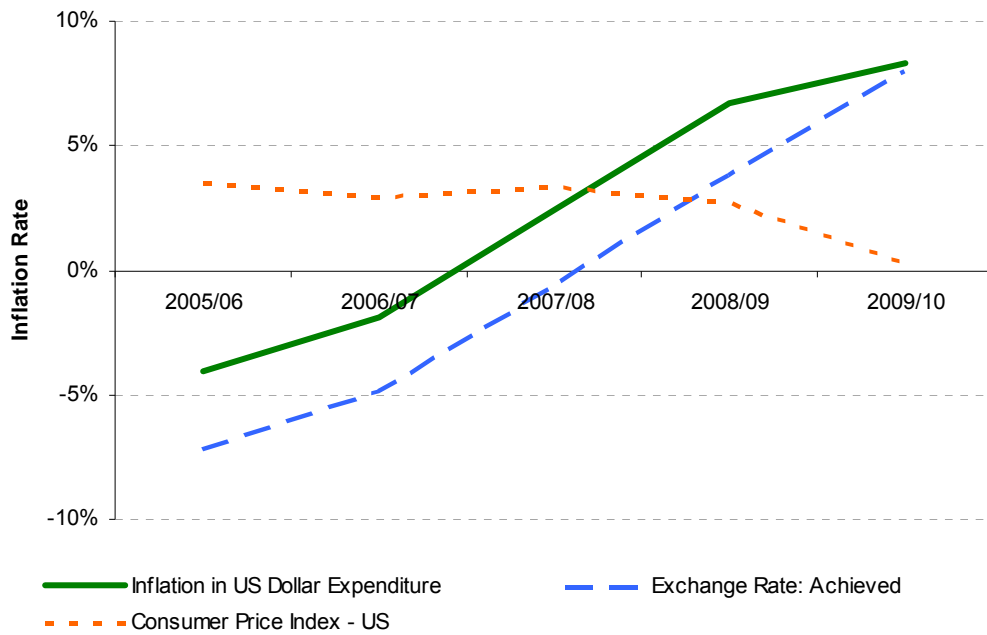
[4] Growth rates are year-on-year and calculated from unrounded data.

Cash Offices – US Dollars and Euros

Two-thirds of the expenditure through cash offices in 2008/09 (base year for the 2009/10 inflation measure) was spent on US dollars and over a fifth was spent on Euros. In 2009/10, the inflation rate for cash office expenditure on US dollars and Euros was 8.3% and 4.4%, respectively.

Figure 7 presents the relationship between the exchange rate for US dollar (based on the Department's spot purchases and forward buys), and the US Consumer Price Index (CPI). Between 2005/06 and 2009/10 there has been a steady increase in US dollar expenditure inflation. This increase has been slowed in 2009/10 because of the fall in US CPI inflation between 2008/09 and 2009/10.

Figure 7 Inflation in Cash Offices on US Dollars



Source: Annual inflation rates for CPI US from the Bureau of Labor Statistics.

5 Methodology

Summary

Defence inflation estimates were published for the first time in March 2010. These measure the average change in pay and prices of goods and services, making up the defence budget, with quality and quantity held constant.

The estimate for defence inflation is a chain-linked Laspeyres price index. For each pair of consecutive years pure price growth is estimated by holding the quality and quantity of goods, services and personnel constant, and either directly measuring their change in price or making reference to relevant price indices. The year-on-year price growths are multiplied together to produce the chain-linked Laspeyres index with the reference period being the financial year 2004/05.

Process

Each component (contract, personnel and cash office expenditure) of defence inflation is estimated using a bespoke method reflecting the different data sources. These estimates are averaged, using the expenditures for individual components (from the Department's accounting data) as weights, to produce an overall measure of defence inflation. For a detailed overview of the methodology used to estimate defence inflation, refer to the Statistical Bulletin No.10, published on www.dasa.mod.uk.

The components of defence inflation are listed below, with percentages indicating the average breakdown of MOD expenditure in the last five years (rounded to nearest five per cent).

Expenditure on Contracts (60%)

1. Fixed price contracts with explicit indexation clauses (15%)
2. High value firm price contracts (25%)
3. High value miscellaneous payments (5%)
4. Low value contracts and miscellaneous payments (15%)

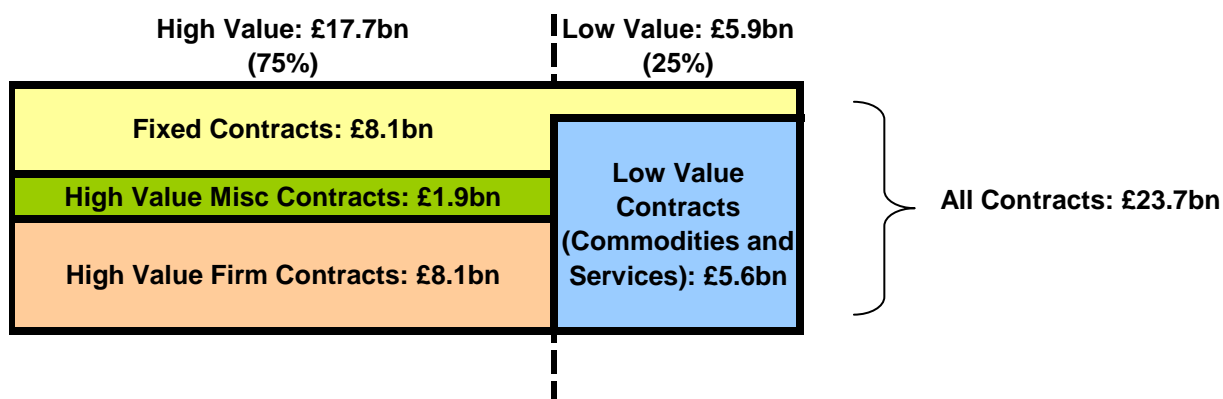
Expenditure on Labour (35%)

5. Military labour costs (25%)
6. Civilian labour costs (10%)

Cash Office Expenditure (5%)

Contracts

In 2008/09 the Ministry of Defence (MOD) had around 40,000 contracts with payments against them, accounting for nearly £24bn (two thirds) of the Department's annual expenditure. The method developed for estimating inflation in contracts reflects the skewed distribution of payments. There are three categories of high value (ranked in the top 75% of annual expenditure) contracts each with a method of estimation tailored to their particular characteristics and one category for low value contracts with its own estimation method. Figure 8 provides an indicative illustration of the split by contract type and high value / low value.

Figure 8 Contract Inflation Expenditure by Contract Type, 2009/10


The method of estimating inflation often relies upon the Standard Industrial Classification (SIC) assigned to the contract. DASA places contracts into homogeneous groups, based upon the SIC code which reflects the good or service being procured. These groups provide a useful tool for identifying relevant price indices for contracts.

There is insufficient data to facilitate mapping between contracts which have reached their conclusion, and their replacement. Moreover, most new contracts incorporate changes in both quality and quantity. Therefore, the method focuses on estimating inflation imbedded within contracts, assuming any residual price change is driven by changes in specification. In this way, the inter-generational effect of moving to new platforms is excluded from the measure of defence inflation. For further details see the Defence Inflation Bulletin No 10.

Labour Costs

Expenditure on labour costs accounts for around one third of the Department's expenditure. For both military and civilian personnel, the inflation rate captures the growth in average labour costs, which includes gross pay, employer's National Insurance contributions (ERNIC), Travel and Subsistence (T&S) and pension contributions (SCAPE). It implicitly includes all paid sickness, paternity or maternity leave.

The SCAPE rates are determined by the Government's Actuary Department, reflecting their expectations of future pension provision rather than changes to economic conditions. However, changes in SCAPE rates result in the Department experiencing a change in the cost of employing an individual without a change in output.

Different methods have been adopted for estimating inflation in military and civilian gross pay, and as such the estimates on inflation are not directly comparable. The military pay method assumes the structure of the Armed Forces, by rank and point on the pay-scale, is fixed and therefore does not take account of joiners, leavers or progression up the pay scale. The civilian pay method measures the change in average pay and therefore includes joiners, leavers and movements up the pay scale.

Cash Office Expenditure

Foreign currencies are purchased by the Department for a range of purposes: to meet personnel expenditure requirements; to make payments on contracts denominated in foreign currencies; and to make payments through cash offices. Expenditure through cash offices on US dollars includes some foreign payments on contracts.

The Department's Cash and Banking Services records transfers of Euros and US Dollars from the forward and spot buy programme to cash offices around the World, and also purchase many other quoted and non-quoted currencies. Data on volumes and achieved rates for these currency deliveries are used to estimate the inflation in this category of expenditure. For all other currencies spot rates are used.

Expenditure on personnel and contracts is removed from the overall currency purchases figure, as the inflationary impacts of these elements are included elsewhere. An estimate of the inflation for cash office expenditure is then estimated as a product of the local inflation, as measured by the country's Consumer Price Index, and the average change in the exchange rates achieved by the Department.

Contract Payments in Foreign Currencies

Exchange rate variation can have an inflationary impact on contracts in two ways: (i) the contract has a formal exchange rate variation clause that adjusts the price/cost, in pounds sterling, to reflect movements in exchange rates; or (ii) part, or all, of the contract is paid in a foreign currency.

Details of contracts with an exchange rate variation mechanism were collected as part of the work on fixed price contracts. Inflation due to foreign exchange movement is therefore captured explicitly for these contracts.

In comparison, it is not possible to identify which firm price contracts are paid in foreign currencies. Instead, information on volume and price of actual currency deliveries is used to estimate the overall inflationary pressure of paying some contracts in foreign currency; this is assumed to be spread equally across all contracts. Table 10 provides the inflationary adjustments to contracts between 2005/06 and 2009/10 as a result of paying for some contracts in foreign currency; in 2009/10 this adjustment was 0.7 percentage points.

Table 10 Impact of Paying Contracts in Foreign Currencies

	<i>Percentage Points</i>				
	2005/06	2006/07	2007/08	2008/09	2009/10
Contract Adjustment	-0.4	-0.2	-0.1	0.4	0.7

Revisions

Revisions will be made to the defence inflation measure to improve the usability and relevance when necessary. Reasons for revising figures include:

- (i) Acquiring new information relating to already published results;
- (ii) Improvements to methodology and selection of data sources;
- (iii) Identification of significant errors.

Throughout the publication, where revisions occur, they will be indicated by table footnotes.

Since the previous defence inflation estimates were released in March 2010, there have been revisions to previous figures. These reflect:

- Improvement to the methodology for estimating inflation within contracts for the purchase of fuels. Estimates now reflect better the inflation experienced by the Department.
- Acquisition of new information about contracts for the purchase of fuels.
- Improvement to methodology for labour costs, using a more relevant data source for estimating exchange rate variations.
- Identification of an error with some Consumer Price Index inflation rates used.

The overall impact of all revisions in the 2009/10 publication resulted in small changes to some of the defence inflation estimates between 2005/06 and 2008/09. Table 11 presents how these changes impacted on the top-level estimates, comparing results from latest and previous publications. Throughout the publication, where revisions occur, they are indicated by a table footnote.

Table 11 Impact of Revisions at 29 September 2010

Defence Inflation	2005/06	2006/07	2007/08	2008/09	2009/10
Latest Estimates	4.1%	3.3%	3.9%	4.2%	3.1%
Previously Published	3.8%	3.3%	3.7%	4.1%	n/a
Difference - Percentage Points	0.3	0.0	0.2	0.1	n/a

For other previously published figures refer to the Statistical Notice or Statistical Bulletin published in March 2010.

Quality

A Background Quality Statement providing an assessment of the defence inflation statistics can be accessed at the following link on www.dasa.mod.uk:

<http://www.dasa.mod.uk/applications/newWeb/www/index.php?page=48&pubType=3&thiscontent=900&PublishTime=09:30:00&date=2010-09-29&disText=Single%20Report&from=listing&topDate=2010-09-29>

Glossary

Activity Related Allowances Allowances awarded to individuals being asked to perform activities different from their standard duties, such as operations or training.

Cash Offices Operate in British embassies and MOD bases around the world and are responsible for maintaining imprest accounts. Imprest accounts are used to make payments in local currency or Great British Pounds to personnel, which cannot be made by other means. These include payments to overseas units with non-sterling bank accounts, payments to operational units overseas and payments to HM Ships and RFAs afloat. Contractors should not normally be paid through imprest accounts.

Chain-Linked Price Index An index which relates the price of a basket of goods and services to the prices of a similar basket in a previous period, not a fixed base period. Chain-linking an index enables the basket of goods to be regularly updated without introducing a break in the series.

Commodities and Service Contracts Any **low value contract** which does not have an indexation arrangement (e.g. **fixed price**). Commodity and service contracts are therefore made up of low value **firm price** and low value **miscellaneous** contracts.

DASA see **Defence Analytical Services and Advice**.

Defence Analytical Services and Advice DASA was created in July 1992 and provides National Statistics on Defence and other corporate information, forecasting and planning and consultancy, advice and research services to the MOD. It ceased to be an Agency on 1 April 2008 and was renamed Defence Analytical Service and Advice.

Defence Contracts All contracts have been grouped by **DASA** into four categories: high value **firm price**; **fixed price**; high value **miscellaneous**; and low value **commodities and services**. See also: **high value contracts** and **low value contracts**.

Defence Inflation Defence inflation is the average rate of increase in pay, and prices of all goods and services, making up the Defence budget, after allowing for changes in quality and quantity.

Earnings Related National Insurance Contributions (ERNIC) National Insurance payments made by the Department to HM Revenue & Customs, on earnings paid to the employee. These payments (secondary contributions) are in addition to those National Insurance contributions made by the individual themselves.

ERNIC see **Earnings Related National Insurance Contribution**.

Firm Price Contracts DASA defined sub-group of **defence contracts** which captures contracts with a non-variable inflation rate imbedded in the contract price.

Fixed Price Contracts DASA defined sub-group of **defence contracts** which captures contracts which contain an indexation adjustment, typically a variation of price clause. The indexation component of a contract links the contract payments to changes in price indices, in order to reflect inflation in related industries.

GDP Deflator see **Gross Domestic Product Deflator**.

Gross Domestic Product Deflator This is an implicit price deflator for the Gross Domestic Product and is derived by dividing the estimate of GDP at current prices by the estimate of GDP at constant prices. The GDP Deflator can be viewed, and is commonly used, as a measure of inflation in the economy for the country to which it refers.

Gross Pay This represents an individual's total pay before deductions (such as tax and pension contributions) have been removed. Gross pay also includes allowances, overtime and non-consolidated performance related pay awards.

High Value Contracts Defence Contracts having an annual payment which fall in the top 75% of all ranked contract expenditure.

Laspeyres Price Index This is a measure of the change in the price of a basket of goods. The quantity of the items within the basket of goods are fixed to allow a measure of pure price change. Prices are aggregated in a Laspeyres index by using weights from the base period.

LEC Locally engaged civilian, see **Locally Engaged Personnel**.

Locally Engaged Personnel A civilian employee recruited overseas exclusively for employment in support of the UK Armed Forces deployed in a particular overseas theatre (or in support of the Sovereign Base Areas Administration in Cyprus). These are terms and conditions of service applicable only to that overseas theatre or Administration. They include the dependants of UK military personnel or UK-based civilian staff employed in that overseas theatre (who are sometimes separately identified as UK Dependents). LECs are not civil servants.

Low Value Contracts Defence Contracts having an annual payment which fall in the bottom 25% of ranked contract expenditure.

Ministry of Defence The Ministry of Defence (MOD) is the United Kingdom government department responsible for implementation of government defence policy and is the headquarters of the British Armed Forces.

Miscellaneous Contracts The payment method employed by the MOD Financial Management Shared Service Centre (the MOD's primary bill paying authority) for running service items such as the provision of utilities. Such items are covered by "miscellaneous" transactions where no 'MOD HQ Contract' exists. These agreements for goods or services will have been set up locally between the MOD Branch and the Supplier and are legally binding.

MOD see **Ministry of Defence**.

Non-Activity Related Allowances are essentially benefits paid to individuals such as education, and committal and retention allowances.

Office for National Statistics (ONS) A non-ministerial Department responsible for the production of a wide range of independent economic and social statistics. The ONS is the executive office of the UK Statistics Authority which reports directly to Parliament. The ONS is the UK Government's single largest statistical producer.

Officers Member of the Armed Forces holding the Queen's Commission. This includes ranks from Sub-Lt/2 and Lt/Pilot Officer up to Admiral of the Fleet/Field Marshal/Marshal of the Royal Air Force, but excludes Non-commissioned officers.

ONS see **Office for National Statistics**.

Other Ranks Members of the Royal Marines, Army and Royal Air Force who are not officers. The equivalent group in the Royal Navy is known as "Ratings".

Retail Price Index excluding mortgage interest payments (RPIX) is a **chain-linked price index** which measures the price change in the goods and services consumed by a typical household (excluding the change in price of mortgage interest payments). RPIX is a well known and commonly used indicator of inflation in the UK general economy.

RFA see **Royal Fleet Auxiliary Service**.

Royal Fleet Auxiliary Service Constituted in 1905, this is a civilian manned fleet, owned by the Ministry of Defence. Its main task is to supply warships of the Royal Navy at sea with fuel, food, stores and ammunition which they need to remain operational while away from base. It also provides aviation

support for the Royal Navy, together with amphibious support and secure sea transport for Army units and their equipment. Its employees are full-time civil servants, but who come under the Naval Discipline Act when deployed to sea under naval command.

RPIX see **Retail Price Index excluding mortgage interest payments.**

SCAPE see **Superannuation Contribution Adjusted for Past Experience.**

SIC see **Standard Industrial Classification.**

SIC Groups These are DASA defined groups based upon the Standard Industrial Classification of economic activity, which is maintained by the Office for National Statistics, and are used to place defence contracts into homogeneous categories based upon the principle economic activity undertaken by a contract.

Specialist pay This is paid for undertaking specific activities related to an individual's normal work such as flying, parachuting, or being in a submarine.

Standard Industrial Classification (SIC) SIC classifies business establishments and other statistical units by the type of economic activity in which they are engaged. The classification is maintained by the **ONS**.

Superannuation Contribution Adjusted for Past Experience (SCAPE) The model, accepted by HM Treasury, to charge government departments for the provision of an unfunded pension scheme. Under SCAPE, both the employer and the employee make contributions to the scheme. SCAPE rates are determined by the Government's Actuary Department to reflect their expectations of future pension provision.

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Developing a Measure of Defence Inflation

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