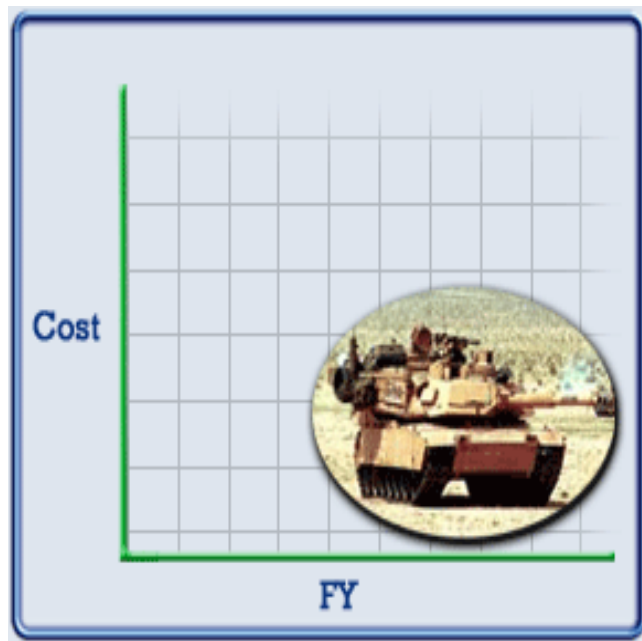


# Escalation

Escalation

# Introduction to Escalation

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Approximate Length: 40 minutes

Welcome to the Escalation Lesson. You are probably well aware of the effects inflation has on costs. This lesson will examine how to take inflation into account as part of the budget formulation process.

Located throughout and at the end of this lesson are Knowledge Reviews, which are not graded but enable you to measure your comprehension of the lesson material.

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## Learning Objective

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**At the end of this lesson, you should be able to relate constant (base year) dollars and then year dollars to each other and understand how both terms relate to the preparation of program cost estimates and budget estimates.**

---

## Inflation (1 of 2)

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Most cost estimates are performed without considering the effects of price changes (inflation) that are likely to occur over the life of the program. This assumption makes it much more straightforward to assess the cost impact of program changes in total quantities, production rates, technical performance, etc.

---

## Inflation (2 of 2)

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However, because the actual program spending will occur sometime in the future, when prices are likely to have changed, inflation clearly must be taken into account in the program's budget request to ensure that sufficient funds are available to pay for goods and services when they are received. DoD must also consider the fact that funds budgeted in a particular fiscal year may not be entirely expended during that fiscal year, meaning that several additional years of inflation may have to be taken into account.

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## Escalation Factors

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DoD therefore employs escalation factors that convert cost estimates expressed in **constant (or base year) dollars** into budget estimates expressed in **then year dollars**.

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## Constant/Base Year Dollars

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A "**Constant**" dollar is one that reflects the purchasing power of a dollar in a specific year. For example, a "Constant FY 2005" dollar is defined as one that could buy a dollar's worth of goods or services during fiscal year 2005.

For acquisition programs, cost estimates are prepared in the constant dollars of a "**base year**," which is typically the year of program initiation or of the latest acquisition milestone. Thus, saying that a cost estimate is in Base Year FY 2008 dollars is the same as saying that it is in Constant FY 2008 dollars.

The difference between constant dollars expressed in one base year and another base year is the inflation that occurs between the years, expressed by the **raw (or compound) index**.

---

## Then-Year/Current Dollars

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Funds budgeted in a particular year are generally not entirely expended during that fiscal year, so several years of inflation may have to be taken into account to ensure that sufficient funds are available to pay for the goods or services when they are received. Therefore, budget requests are prepared in "Then-Year" dollars.

A "**Then-Year**" or "**Current**" dollar is a Constant dollar that has been escalated using an appropriate **Weighted (or Composite) Index** that accounts for inflation based on the spending pattern of the particular appropriation being budgeted.

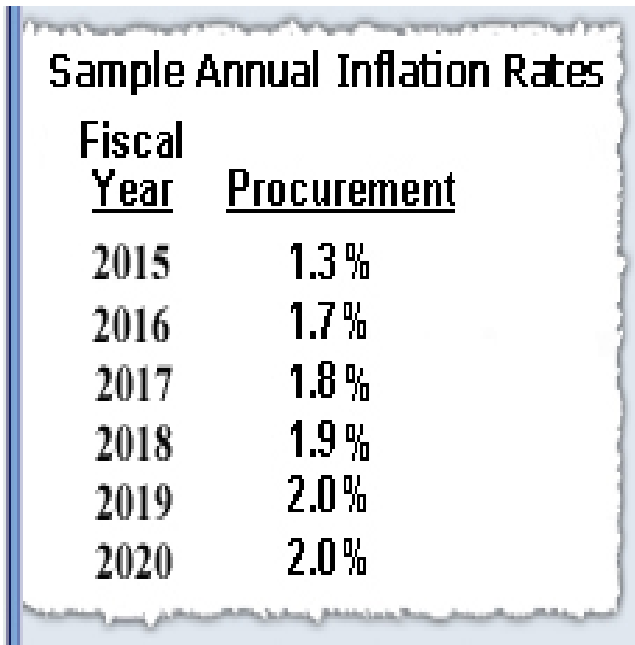
### Long Description

Bar graph, mostly in the background, labelled along the bottom FY 14, FY 15, FY 16, FY 17. Two Lines with data for each FY from left to right, the bottom line labeled Constant Dollar, with \$40 million, \$65 million, \$90 million, and \$80 million, respectively. The top line is labeled Then-Year Dollar, \$40.89 million, \$67.57 million, \$95.27 million, and \$86.28 million, respectively.

---

## Annual Inflation

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The graphic is a table titled "Sample Annual Inflation Rates" with a decorative, torn-edge border. It lists the fiscal year and the corresponding procurement inflation rate as a percentage.

| <u>Fiscal Year</u> | <u>Procurement</u> |
|--------------------|--------------------|
| 2015               | 1.3%               |
| 2016               | 1.7%               |
| 2017               | 1.8%               |
| 2018               | 1.9%               |
| 2019               | 2.0%               |
| 2020               | 2.0%               |

Annual inflation rates reflect the actual or expected price changes compared to the prior year. For example, the sample inflation data shown in the graphic shows that prices for goods and services purchased with Procurement funds will rise by 1.7% in FY16 compared to the previous year (FY15). Similarly, prices in FY19 are expected to be 2.0% higher than in FY18.

Inflation rates are generally positive, indicating rising prices over time, but they may also be negative. For example, a minus 3% inflation rate for a particular year indicates that prices for that year are expected to be 3% lower than they were in the preceding year.

### Long Description

Extract from sample inflation rates document. Actual or projected inflation rates are shown for goods and services purchased with Procurement funds for fiscal years 2015 through 2020. Annual inflation rates are: 2015, 1.3%; 2016, 1.7%; 2017, 1.8%; 2018, 1.9%; 2019, 2.0%; 2020, 2.0%.

## Raw Index (1 of 2)

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| <b>Raw Index</b><br>Effects of Compounding Inflation       |                       |  |  |
|--|-----------------------|--|--|
| <b>Example: Procurement</b><br><b>Base Year: Mid-FY 14</b> |                       |  |  |
| Fiscal Year  | Annual inflation rate | Raw (Compound) inflation rate (% of FY 14 Base Year) | Raw (Compound) Index (FY 14 Base Year) |
| 2014   |                       | 100.00%  | 1.0000                                 |
| 2015   | 1.3%                  | 101.30%  | 1.0130                                 |
| 2016   | 1.7%                  | 103.02%  | 1.0302                                 |
| 2017   | 1.8%                  | 104.88%  | 1.0488                                 |
| 2018   | 1.9%                  | 106.87%  | 1.0687                                 |
| 2019   | 2.0%                  | 108.90%  | 1.0890                                 |
| 2020   | 2.0%                  | 110.97%  | 1.1097                                 |

The raw index shows how the price level in a fiscal year relates to the price level of a selected base year. The raw index is also called the compound index, because it compounds annual inflation rates so that the price relationship between the base year and any other year can be shown in a single number. Thus, the price in some future (or past) year can be determined by multiplying the base year price by the appropriate raw index. A sample of raw indices is shown here.

The table shown here depicts an example of the effects of compounding inflation, with a base year of mid-FY14. For example, the table data shows that price levels in FY20 are expected to be about 10.97% higher than they were in the base year of FY14.

### Long Description

Table title is Raw Index Effects of Compounding Inflation Example, Base Year is mid-FY 14. Column Headers are: Column a., Fiscal Year; Column b., Annual Inflation Rate; Column c., Raw (Compound) Inflation Rate (% of FY 14 Base Year), Column d., Raw (Compound) Index (FY 14 Base Year). Line 1 column entries are: Column a., 2014; Column c., 100.00%, Column d., 1.0000. Line 2 column entries are: Column a., 2015; Column b., 1.3%, Column c., 101.30%, Column d., 1.0130. Line 3 column entries are: Column a., 2016; Column b., 1.7%, Column c., 103.02%, Column d., 1.0302. Line 4 column entries are: Column a., 2017; Column b., 1.8%, Column c., 104.88%, Column d., 1.0488. Line 5 column entries are: Column a., 2018; Column b., 1.9%, Column c., 106.87%, Column d., 1.0687. Line 6 column entries are: Column a., 2019; Column b., 2.0%, Column c., 108.90%, Column d., 1.0890. Line 7 column entries are: Column a., 2020; Column b., 2.0%, Column c., 110.97%, Column d., 1.1097.

## Raw Index (2 of 2)

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Raw indices are used to convert constant dollar estimates from one base year to another base year; for example, to properly compare the costs for two programs with different base years or to change the base year of a program's constant-dollar life-cycle cost estimate to the year of an upcoming milestone. Raw indices account only for inflation and are used as inputs to computing weighted indices that also consider appropriation spending patterns.

Select the following hyperlink to access an [example of applying raw indices](#).

### Raw Index Example

Suppose that an item costs \$5000 in FY 2012. The raw indices for base year FY 2012 are shown here. The expected cost of this same item in FY 2018 would be:

FY 2012 price times FY 2018 Raw Index for Base Year FY 2012

\$5000 times 1.1097 = \$5548.50

| Fiscal Year | Raw Inflation Index<br>(FY 12 Base Year) |
|-------------|--|
| 2011        | 0.9833                                   |
| 2012        | 1.0000                                   |
| 2013        | 1.0130                                   |
| 2014        | 1.0302                                   |
| 2015        | 1.0488                                   |
| 2016        | 1.0687                                   |
| 2017        | 1.0890                                   |
| 2018        | 1.1097                                   |



### Long Description

This table is a sample of raw indices with two columns. Column a. is titled Fiscal Year, Column b. is titled Raw Inflation Index (FY 2012 Base Year). Line 1 column entries are: Column a., 2011, Column b., 0.9833. Line 2 column entries are: Column a., 2012, Column b., 1.0000. Line 3 column entries are: Column a., 2013, Column b., 1.0130. Line 4 column entries are: Column a., 2014, Column b., 1.0302. Line 5 column entries are: Column a., 2015, Column b., 1.0488. Line 6 column entries are: Column a., 2016, Column b., 1.0687. Line 7 column entries are: Column a., 2017, Column b., 1.0890. Line 8 column entries are: Column a., 2018, Column b., 1.1097.

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## Converting Constant Dollar Cost Estimates between Base Years

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It is often useful to convert a constant dollar cost estimate from one base year to another base year to allow an "apples-to-apples" comparison between programs. Such conversions are performed using the appropriate raw indices.

Select the following hyperlink to [access an example](#).

Select the following hyperlink to access an [example of an alternative method](#).

### Conversion Example

For example, suppose Program A's estimated cost is \$25 million in constant FY 2012 dollars, while Program B's estimated cost is \$27 million in constant FY 2017 dollars. At first glance, Program B is clearly more expensive than Program A. However, to get a true comparison of program costs, we should put both estimates in the same context. An easy way to do this is to convert Program A's estimate to constant FY 2017 dollars by using the FY 2017 raw index for Base Year 2012.

From this analysis, we can see that Program A is actually the more expensive program.

$$\begin{array}{l} \text{Program A Cost} \\ \text{( Constant FY 2012)} \end{array} \times \begin{array}{l} \text{FY 2017 Raw Index} \\ \text{(Base Year FY 2012)} \end{array} = \begin{array}{l} \text{Program A Cost} \\ \text{(Constant FY 2017)} \end{array}$$
$$\$25 \text{ M} \times 1.0890 = \$27.225 \text{ M}$$

**Long Description:** Graphic depicts the conversion formula with an example. Line 1 is Program A Cost (Constant FY 2012) times FY 2017 Raw Index (Base Year FY 2012) = Program A Cost (Constant FY 2017). Line 2 is \$25 million times 1.0890 = \$27.225 million.

### Example of Alternative Method of Conversion

Another way to make this comparison is to convert Program B's cost into FY 2012 dollars. In this case, we must divide Program B's cost by the FY 2017 raw index for Base Year 2012.

Once again, we get the same result. Program B is in fact cheaper than Program A (at \$25 M) when both estimates are converted to the same base year.

$$\begin{array}{l} \text{Program B Cost} \\ \text{( Constant FY 2017)} \end{array} \div \begin{array}{l} \text{FY 2017 Raw Index} \\ \text{(Base Year FY 2012)} \end{array} = \begin{array}{l} \text{Program B Cost} \\ \text{(Constant FY 2012)} \end{array}$$
$$\$27 \text{ M} \div 1.0890 = \$24.793 \text{ M}$$

**Long Description:** Graphic depicts conversion formula with an example. Line 1 is Program B Cost (Constant FY 2017) divided by FY 2017 Raw Index (Base Year FY 2012) = Program B Cost (Constant FY 2012). Line 2 is \$27 million divided by 1.0890 = \$24.793 million.

## Knowledge Review

The following Knowledge Review is a matching question. Select a letter associated with the answers below and type that letter in the space next to the best corresponding phrase or statement. Then, select the Submit button and feedback will appear. Match the following terms with the appropriate definitions:

- a. Accounts for inflation based on the spending pattern of the particular appropriation being budgeted.
- b. An expression of the inflation that occurs between one base year and another base year.
- c. A constant dollar that has been escalated using an appropriate weighted (or composite) index.
- d. Reflects the purchasing power of a dollar in a specific year.

**1. Weighted (or composite) index**

**2. Then year (or current) dollar**

**3. Raw (or compound) index**

**4. Constant (or base year) dollar**

*Correct! A weighted (or composite) index accounts for inflation based on the spending pattern of the particular appropriation being budgeted. A "then year (or "current") dollar is a constant dollar that has been escalated using an appropriate weighted (or composite) index. The raw (or compound) index is an expression of the inflation that occurs between one base year and another base year. Finally, a constant dollar is one that reflects the purchasing power of a dollar in a specific year.*

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## Knowledge Review

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The following Knowledge Review is a multiple choice question. Only one answer is correct; select the best answer and feedback will immediately appear.

Perform a conversion to compare costs between the two programs below, to find out which is the more expensive program.

Program A estimated cost in constant FY 2012 dollars: \$12M  
Program B estimated cost in constant FY 2016 dollars: \$13M  
FY 2012 Raw Index (Base Year 2012): 1.0000  
FY 2016 Raw Index (Base Year 2012): 1.0687

Which program is more expensive? [Open Calculator](#)

**a. Program A**

**b. Program B**

*Correct!*

*Program B is more expensive. This is determined either by multiplying Program A cost by the FY 2016 raw index (\$12 million times 1.0687 = \$12.824 million) and then comparing with Program B cost (\$13 million), or by dividing Program B cost by the FY 2016 raw index (\$13 million divided by 1.0687 = \$12.164 million) and then comparing with Program A cost (\$12 million).*

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**Outlay Profiles (1 of 2)**

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For DoD, funds budgeted in a particular fiscal year generally are not entirely expended during that fiscal year. A good example of this expenditure lag is the typical procurement appropriation. The full funding policy dictates that DoD budget all of the funds required to deliver a usable end item in the year in which the item is placed on contract.

However, the contractor will not be paid up front at the time of contract award. Rather, payment will be spread in some way over the life of the contract effort (for example, performance payments) or made in a lump sum upon delivery and acceptance of the item, which may be several years after the contract award. In addition, contract close-out procedures may result in additional payments to the contractor after item delivery.

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## Outlay Profiles (2 of 2)

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| Examples Of Historical Outlay Rates<br>(As a Percentage of First Year Budget Authority) |                |       |       |       |       |       |       |
|---|----------------|-------|-------|-------|-------|-------|-------|
| APPROPRIATION   | EXECUTION YEAR |       |       |       |       |       |       |
|   | 1              | 2     | 3     | 4     | 5     | 6     | 7     |
| <b>ARMY</b>   |                |       |       |       |       |       |       |
| AIRCRAFT PROC   | 24.60          | 42.00 | 29.40 | 02.00 | 02.00 |       |       |
| MISSILES  | 09.50          | 36.10 | 38.00 | 12.70 | 03.70 |       |       |
| RDT&E   | 41.97          | 45.60 | 07.32 | 02.49 | 02.62 |       |       |
| <b>AIR FORCE</b>  |                |       |       |       |       |       |       |
| AIRCRAFT PROC   | 12.40          | 37.60 | 28.90 | 14.00 | 03.50 | 03.60 |       |
| MISSILES PROC   | 24.10          | 30.90 | 23.80 | 10.90 | 03.70 | 06.60 |       |
| RDT&E   | 57.20          | 34.66 | 05.53 | 01.46 | 01.15 |       |       |
| <b>NAVY</b>   |                |       |       |       |       |       |       |
| AIRCRAFT PROC   | 16.00          | 38.50 | 31.80 | 06.40 | 03.70 | 03.60 |       |
| SCN   | 06.70          | 16.10 | 20.00 | 18.80 | 11.30 | 13.60 | 13.50 |
| RDT&E   | 53.77          | 38.60 | 05.29 | 01.17 | 01.17 |       |       |

Because expenditures and their associated outlays generally occur close together in time, an appropriation's outlay profile is a good representation of the appropriation's spending rate. Each appropriation has a unique outlay profile. For example, the RDT&E, Navy; RDT&E, Army; and RDT&E, Air Force appropriations each spend out at different rates even though they may finance similar types of activities.

The outlay profiles for DoD appropriations are published annually in the inflation guidance issued by the OSD Comptroller.

The figure here displays examples of historical outlay rates (as a percentage of first year budget authority).

### Long Description

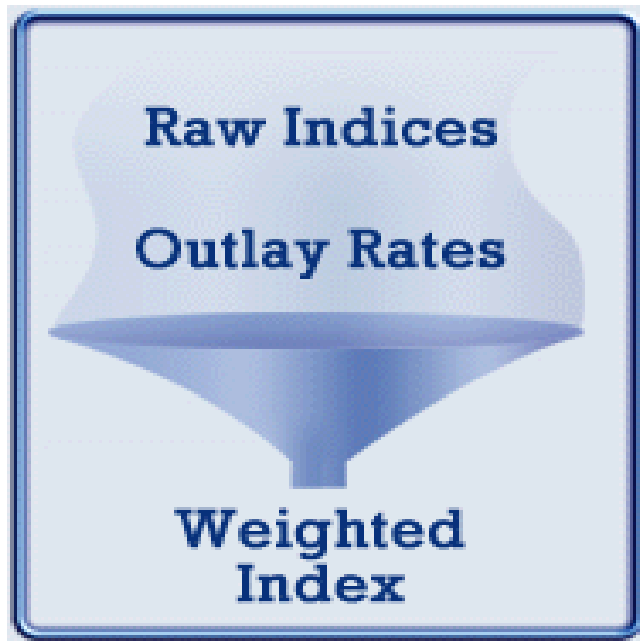
Table depicting examples of historical outlay rates (as a percentage of first year budget authority). Eight columns, with the first column labeled "Appropriation" and the remaining columns labeled "Execution Years 1, 2, 3, 4, 5, 6, 7." Line 1 column entries are Column 1, Army. Line 2 column entries are Column 1, Aircraft Procurement; Column 2, 24.60; Column 3, 42.00; Column 4, 29.40; Column 5, 02.00, Column 6, 02.00. Line 3 column entries are Column 1, Missiles; Column 2, 09.50; Column 3, 36.10; Column 4, 38.00; Column 5, 12.70; Column 6, 03.70. Line 4 column entries are Column 1, RDT&E; Column 2, 41.97; Column 3, 45.60; Column 4, 07.32; Column 5, 02.49; Column 6, 02.62. Line 5 column entries are Column 1, Air Force. Line 6 column entries are Column 1, Aircraft Procurement; Column 2, 12.40; Column 3, 37.60; Column 4, 28.90; Column 5, 14.00; Column 6, 03.50; Column 7, 03.60. Line 7 column entries are

Column 1, Missiles Procurement; Column 2, 24.10; Column 3, 30.90; Column 4, 23.80; Column 5, 10.90; Column 6, 03.70; Column 7, 06.60. Line 8 column entries are Column 1, RDT&E; Column 2, 57.20; Column 3, 34.66; Column 4, 05.53; Column 5, 01.46; Column 6, 01.15. Line 9 column entries are Column 1, Navy. Line 10 column entries are Column 1, Aircraft Procurement; Column 2, 16.00; Column 3, 38.50; Column 4, 31.80; Column 5, 06.40; Column 6, 03.70; Column 7, 03.60. Line 11 column entries are Column 1, SCN; Column 2, 06.70; Column 3, 16.10; Column 4, 20.00; Column 5, 18.80; Column 6, 11.30; Column 7, 13.60; Column 8, 13.50. Line 12 column entries are Column 1, RDT&E; Column 2, 53.77; Column 3, 38.60; Column 4, 05.29; Column 5, 01.17; Column 6, 01.17.

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## Weighted Index

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The weighted index shows how the requested budget for a particular appropriation relates to the price level of a selected base year. As such, the weighted index combines raw indices with outlay profiles to ensure that sufficient funds are budgeted to cover the full effect of inflation on appropriations that are expended over several years. This index is also sometimes known as the "composite index."

The weighted index is used to convert constant dollars into then year dollars, using this relationship:

**Constant Dollars x Weighted Index = Then-Year Dollars**

---

## Weighted Index (Example)

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| Fiscal Year | Raw Index (FY 12 Base Year) | Weighted Index (FY 12 Base Year) |
|-------------|-----------------------------|----------------------------------|
| 2011        | 0.9833                      | 1.0066                           |
| 2012        | 1.0000                      | 1.0223                           |
| 2013        | 1.0130                      | 1.0395                           |
| 2014        | 1.0302                      | 1.0585                           |
| 2015        | 1.0488                      | 1.0785                           |
| 2016        | 1.0687                      | 1.0990                           |
| 2017        | 1.0890                      | 1.1198                           |
| 2018        | 1.1097                      | 1.1411                           |

|                          |          |   |          |                       |
|--------------------------|----------|---|----------|-----------------------|
| Constant FY 2012 Dollars | X        | Appropriation A FY2018 Weighted Index Base Year FY 2012 | =        | Amount to be Budgeted |
| <b>\$1 M</b>             | <b>X</b> | <b>1.1411</b>   | <b>=</b> | <b>\$1.1411 M</b>     |

Suppose that an item to be financed by Appropriation A costs \$1M in Constant FY12 dollars. However, the program will not be contracting for the item until FY18. The base year FY12 weighted indices for Appropriation A are shown on the graphic at right. The amount that should be budgeted for this item in FY18 would be:

### Long Description

Table with 3 columns and 8 rows. Column a. is labeled Fiscal Year; Column b. is labeled Raw Index (FY 12 Base Year); Column c. is labeled Weighted Index (FY 12 Base Year). Line 1 column entries are Column a., 2011, Column b., 0.9833; Column c., 1.0066. Line 2 column entries are Column a., 2012, Column b., 1.0000; Column c., 1.0223. Line 3 column entries are Column a., 2013, Column b., 1.0130; Column c., 1.0395. Line 4 column entries are Column a., 2014, Column b., 1.0302; Column c., 1.0585. Line 5 column entries are Column a., 2015, Column b., 1.0488; Column c., 1.0785. Line 6 column entries are Column a., 2016, Column b., 1.0687; Column c., 1.0990. Line 7 column entries are Column a., 2017, Column b., 1.0890; Column c., 1.1198. Line 8 column entries are Column a., 2018, Column b., 1.1097; Column c., 1.1411. Underneath this table is the formula discussed with an example, Constant FY 2012 dollars (\$1 million), times Appropriation A FY 2018 Weighted Index for Base Year FY 2012 (1.1411), equals \$1.1411 million.

## Knowledge Review

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The following Knowledge Review is a True or False question. Select the best answer and feedback will immediately appear.

Although the RDT&E, Navy; RDT&E, Army; and RDT&E, Air Force appropriations all finance similar types of activities, each appropriation has its own unique set of escalation factors because they spend out (outlay) at different rates.

a. True

b. False

*Correct!*

*Although the RDT&E, Navy; RDT&E, Army; and RDT&E, Air Force appropriations all finance similar types of activities, each appropriation has its own unique set of escalation factors because they spend out (outlay) at different rates.*

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## Knowledge Review

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The following Knowledge Review is a multiple choice question. Only one answer is correct; select the best answer then select the Submit button and feedback will appear. Use the table shown here to calculate your answer.

Suppose that an item to be financed by Appropriation A costs \$5M in Constant FY12 dollars. However, the program will not be contracting for the item until FY16. What is the amount that should be budgeted for this item in FY16?

[Open Calculator](#)

| Fiscal Year | Raw Index (FY 12 Base Year) | Weighted Index (FY 12 Base Year) |
|-------------|-----------------------------|----------------------------------|
| 2011        | 0.9833                      | 1.0066                           |
| 2012        | 1.0000                      | 1.0223                           |
| 2013        | 1.0130                      | 1.0395                           |
| 2014        | 1.0302                      | 1.0585                           |
| 2015        | 1.0488                      | 1.0785                           |
| 2016        | 1.0687                      | 1.0990                           |
| 2017        | 1.0890                      | 1.1198                           |
| 2018        | 1.1097                      | 1.1411                           |

a. \$5.1115 million

b. \$5.3435 million

c. \$5.4950 million

d. \$5.5990 million



*Correct! The constant dollar cost estimate must be converted into then-year dollars using the weighted index to determine the budget request. Multiplying \$5 million (Constant FY 2012 dollars) times 1.0990 (Appropriation A FY 2016 Weighted Index for Base Year FY 2012) equals \$5.4950 million. This is the amount that should be budgeted for this item in FY 2016.*

### Long Description

Table with 3 columns and 8 rows. Column a. is labeled Fiscal Year; Column b. is labeled Raw Index (FY 12 Base Year); Column c. is labeled Weighted Index (FY 12 Base Year). Line 1 column entries are Column a., 2011, Column b., 0.9833; Column c., 1.0066. Line 2 column entries are Column a., 2012, Column b., 1.0000; Column c., 1.0223. Line 3 column entries are Column a., 2013, Column b., 1.0130; Column c., 1.0395. Line 4 column entries are Column a., 2014, Column b., 1.0302; Column c., 1.0585. Line 5 column entries are Column a., 2015, Column b., 1.0488; Column c., 1.0785. Line 6 column entries are Column a., 2016, Column b., 1.0687; Column c., 1.0990. Line 7 column entries are Column a., 2017, Column b., 1.0890; Column c., 1.1198. Line 8 column entries are Column a., 2018, Column b., 1.1097; Column c., 1.1411.

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### Knowledge Review

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The following Knowledge Review is a multiple choice question. The following Knowledge Review is a multiple choice question. Only one answer is correct; select the best answer then select the Submit button and feedback will appear. Use the table shown here to calculate your answer.

The estimated cost of 50 end items to be financed by Appropriation A is \$3M in FY12 Constant dollars. What would the estimated cost of the 50 end items be in FY15 Constant dollars?

[Open Calculator](#)

| Fiscal Year | Raw Index (FY 12 Base Year) | Weighted Index (FY 12 Base Year) |
|-------------|-----------------------------|----------------------------------|
| 2011        | 0.9833                      | 1.0066                           |
| 2012        | 1.0000                      | 1.0223                           |
| 2013        | 1.0130                      | 1.0395                           |
| 2014        | 1.0302                      | 1.0585                           |
| 2015        | 1.0488                      | 1.0785                           |
| 2016        | 1.0687                      | 1.0990                           |
| 2017        | 1.0890                      | 1.1198                           |
| 2018        | 1.1097                      | 1.1411                           |

- a. \$3.0669 million
- b. \$3.1464 million
- c. \$3.2061 million
- d. \$3.2355 million

*Correct! In this case, the constant dollar cost estimate in one base year must be converted into constant dollars for another base year using the raw index. Multiplying \$3 million (Constant FY 2012 dollars) times 1.0448 (Appropriation A FY 2015 Raw Index for Base Year 2012) equals \$3.1464 million. This is the estimated cost of the 50 end items in FY 2015 Constant dollars.*

**Long Description**

Table with 3 columns and 8 rows. Column a. is labeled Fiscal Year; Column b. is labeled Raw Index (FY 02 Base Year); Column c. is labeled Weighted Index (FY 12 Base Year). Line 1 column entries are Column a., 2011, Column b., 0.9833; Column c., 1.0066. Line 2 column entries are Column a., 2012, Column b., 1.0000; Column c., 1.0223. Line 3 column entries are Column a., 2013, Column b., 1.0130; Column c., 1.0395. Line 4 column entries are Column a., 2014, Column b., 1.0302; Column c., 1.0585. Line 5 column entries are Column a., 2015, Column b., 1.0488; Column c., 1.0785. Line 6 column entries are Column a., 2016, Column b., 1.0687; Column c., 1.0990. Line 7 column entries are Column a., 2017, Column b., 1.0890; Column c., 1.1198. Line 8 column entries are Column a., 2018, Column b., 1.1097; Column c., 1.1411.

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**Knowledge Review**

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The following Knowledge Review is a multiple choice question. The following Knowledge Review is a multiple choice question. Only one answer is correct; select the best answer then select the Submit button and feedback will appear. Use the table shown here to calculate your answer.

The estimated cost of 50 end items to be financed by Appropriation A is \$3M in FY12 Constant dollars. How much should be budgeted to purchase these 50 end items in FY15? Use the table shown here to calculate your answer.

[Open Calculator](#)

| <b>Fiscal Year</b> | <b>Raw Index (FY 12 Base Year)</b> | <b>Weighted Index (FY 12 Base Year)</b> |
|--------------------|------------------------------------|---|
| 2011               | 0.9833                             | 1.0066                                  |
| 2012               | 1.0000                             | 1.0223                                  |
| 2013               | 1.0130                             | 1.0395                                  |
| 2014               | 1.0302                             | 1.0585                                  |
| 2015               | 1.0488                             | 1.0785                                  |
| 2016               | 1.0687                             | 1.0990                                  |
| 2017               | 1.0890                             | 1.1198                                  |
| 2018               | 1.1097                             | 1.1411                                  |

a. \$3.0669 million

b. \$3.1464 million

c. \$3.2061 million

d. \$3.2355 million

*Correct! The constant dollar cost estimate must be converted into then-year dollars using the weighted index to determine the budget request. Multiplying \$3 million (Constant FY 2012 dollars) times 1.0785 (Appropriation A FY 2015 Weighted Index for Base Year 2012) equals \$3.2355 million. This is the amount that should be budgeted to purchase these 50 end items in FY 2015.*

### Long Description

Table with 3 columns and 8 rows. Column a. is labeled Fiscal Year; Column b. is labeled Raw Index (FY 12 Base Year); Column c. is labeled Weighted Index (FY 12 Base Year). Line 1 column entries are Column a., 2011, Column b., 0.9833; Column c., 1.0066. Line 2 column entries are Column a., 2012, Column b., 1.0000; Column c., 1.0223. Line 3 column entries are Column a., 2013, Column b., 1.0130; Column c., 1.0395. Line 4 column entries are Column a., 2014, Column b., 1.0302; Column c., 1.0585. Line 5 column entries are Column a., 2015, Column b., 1.0488; Column c., 1.0785. Line 6 column entries are Column a., 2016, Column b., 1.0687; Column c., 1.0990. Line 7 column entries are Column a., 2017, Column b., 1.0890; Column c., 1.1198. Line 8 column entries are Column a., 2018, Column b., 1.1097; Column c., 1.1411.

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## Lesson Summary (1 of 2)

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**Congratulations!** You have completed the Escalation Lesson. The following topics were presented:

- Constant Dollar Cost Estimates. To simplify their preparation, most acquisition program cost estimates are prepared in constant dollars that reflect the purchasing power of a dollar in a specific base year, ignoring inflation.
- Raw Index. The raw (or compound) index accounts for all the inflation that occurred or is expected to occur between any two years. If the price of an item in a base year is known, the price of that item in some future or past year can be estimated by:
  - $\text{Base Year Price} \times \text{Raw Index for future (or past) year} = \text{Future (or Past) Year Price.}$
- Converting Constant Dollars between Base Years. The raw index is used to convert a constant dollar cost estimate from one base year to another. Such conversions are commonly done to change a program's cost estimate base year to the year of an upcoming milestone and to facilitate "apples to apples" comparisons with other programs.

## Lesson Summary (2 of 2)

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Other topics presented include:

- Then-Year Dollar Budget Estimates. Although cost estimates are done in constant dollars, budget requests are prepared in then year (or current) dollars to properly consider inflation so that sufficient funds are available to pay for future goods and services.
- Weighted Index. Because the funds appropriated in a particular fiscal year often are expended over several years, the inflation that occurs throughout the entire expenditure period must be taken into account. This is done for each appropriation by combining the inflation raw indices with the appropriation's outlay (spending) profile to produce a unique set of weighted (or composite) indices for that appropriation.
- Converting Constant Dollars to Then-Year Dollars. The weighted index is used to convert constant dollars into then year dollars:
  - $\text{Constant Dollars} \times \text{Weighted Index} = \text{Then year Dollars}$

This page completes the lesson. Select a lesson from the Table of Contents to continue.