



Automated Cost Estimating Integrated Tools

Calculating Inflation and Using ACEIT Librarian

Gina Fennell
ACEIT Users Conference, Santa Barbara, CA
January 2009





- **What is Inflation?**
- **Terminology & Calculation**
 - Raw/Compound
 - Weighted/Composite
 - Outlay rates/expenditure profiles
- **Using the ACEIT Librarian**
 - What is it?
 - How do I create indices?
 - Using fixed inflation rate
 - Using changing yearly inflation rate
 - With Outlay rates
 - Without Outlay rates
 - How do I view inflation indices?



What is Inflation?

“Law of inflation: whatever goes up will go up some more”

-Anonymous

- **Inflation is a rise in the price of goods and services over time**
- **An inflation index represents a percentage comparison of inflation from a fixed point of reference**



Terminology & Calculation

■ Raw/Compound Indices

- Based on OSD-prescribed inflation rates
- Used to convert dollars from one base year to another
- Percent changes from the midpoint of one year to another

Sample Calculation of Raw Inflation Index

BY = 2004

Fiscal Year	Inflation/Escalation Rate (%)	Inflation Index
2003	1.000	.9852
2004	1.500	1.000
2005	2.800	1.028
2006	2.500	1.0537
2007	2.700	1.0821
2008	1.900	1.1027

Raw Index = 1

$$\text{FY06 raw inflation index} = 1.0 * (1 + 0.028) * (1 + 0.025) = 1.0537$$



Terminology

■ **Outlay rates/expenditure profiles**

- The net amount of funds paid out in a given year
- Represent the actual disbursement for a given appropriation
- Unique for each appropriation
- Vary from 2-3 years for Military Personnel non-pay appropriations to 6-7 years for Procurement and O&M appropriations

■ **Used to calculate Weighted/Composite Indices**



Terminology & Calculation

■ Weighted/Composite Indices

- Used to convert Base Year constant dollars to budget dollars in another year
- Based on raw/compound inflation indices and outlay rates

Sample Calculation of Weighted Inflation Index

Base Year = 2004

Fiscal	Raw Inflation	Outlay Rates (%)					
Year	Index	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6
2003	.98522	10	40	30	12	5	3
2004	1.000						
2005	1.028						
2006	1.0537						
2007	1.0821						
2008	1.1027						

FY03 weighted inflation index

Standard Calculation = $1 / (0.1/.98522 + 0.4/1.0 + 0.3/1.028 + 0.12/1.0537 + 0.05/1.0821 + 0.03/1.1027) = 1.0198$

Army Calculation = $0.1*.98522 + 0.4*1.0 + 0.3*1.028 + 0.12*1.0537 + 0.05*1.0821 + 0.03*1.1027 = 1.0206$

- I have been fully-funded to buy 500 candy bars.



	2009	2010	2011
Candy Bar Avg Unit Cost	\$1.50	\$1.75	\$2.0
Number Eaten	250	150	100

- How much money should I ask for now if I want to have enough money to buy all 500?



Example (cont)

■ Convert to Raw and Weighted Indices in Base Year 2009

Fiscal Year	Escalation Rate (%)	Outlay Rates (%)			Raw Indices	Weighted Indices
		2009	2010	2011		
2009		50	30	20	1.0	1.1024
2010	16.6				1.1667	
2011	14.3				1.3333	

■ Raw Index Calculations:

- FY2009 = 1.0
- FY2010 = $1.0 * 1.166 = 1.1667$
- FY2011 = $1.25 * 1.143 = 1.3333$

■ Weighted Index Calculation for 2009 (Army):

- $1.0 * .5 + 1.1667 * .3 + 1.3333 * .2 = 1.1167$

■ Weighted Index Calculation for 2009 (Other Services):

- $1/ (.5/1.0 + .3/1.1667 + .2/1.3333) = 1.1024$



Example (cont)

■ How much money do I ask for?

- Use weighted indices to get TY budget dollars

- Qty * UnitCost\$ * WeightedInflFactor

- Army Calc:

- $500 * 1.5 * 1.1167 = \mathbf{\$837.50}$

- Other Services Calc:

- $500 * 1.5 * 1.1024 = \mathbf{\$826.77}$



What is the Librarian?



- **A repository to store custom CERs/Methodologies and/or custom Inflation indices**
- **Can also view system CERs and Inflation indices**



How do I create Indices using the Librarian?

- **Librarian is very flexible**
- **Enter the information you have**
 - Actual inflation index
 - A fixed annual percentage rate
 - A variable annual percentage rate
 - (optional) Outlay rates
- **You can download instructions on creating custom indices using the Librarian from ACEIT.com**
 - Go to Support > Library
 - Click on How-to Guides
 - Download PDF file entitled “How to Create Custom Inflation Tables”



Steps to Add Indices

■ Steps to Add Indices

1. Create new Inflation Table

- Click New Table icon () and enter a description for the inflation table

2. Create new Appropriation

- Click New Appropriation icon ()
 - Enter Appropriation Details
 - Select appropriation inflation input:
 - Fixed Rate
 - Yearly Escalation
 - Actual indices
 - Enter years to create indices for
 - Select what to do about Weighted indices
 - Enter Inflation Source information

3. Create Inflation Indices

- Enter data in the highlighted cells



Demonstration



How to Use Indices

■ **How to Use Indices**

1. Close Librarian
2. From ACE Session, open File Properties dialog
3. From the Inflation tab, select the newly-created Inflation Table name from the Custom Inflation Table section
4. Close dialog
5. From the Appropriation column, right click and select new appropriation from choice list



Summary

- **Raw and Compound indices are synonymous**
 - Raw indices allow you to convert costs from one base year to another
- **Weighted and Composite indices are synonymous**
 - Weighted indices use raw indices and outlay rates to calculate
 - They are used to convert costs from base year (constant) dollars to then year (budget) dollars
- **The ACEIT Librarian simplifies the task of creating custom inflation indices**