Calculating Inflation and Using ACEIT Librarian

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

Tecolote Research, Inc.

- **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?

"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

FY06 raw inflation index = $1.0 * (1 + 0.028) * (1 + 0.025) = 1.0537$

- **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**

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 Year	Raw Inflation Index	Outlay Rates (%)					
		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	$2.00
Number Eaten	250	150	100

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

- **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	16.67				1.1667	
2011	14.29				1.3334	

- **Raw Index Calculations:**
  - FY2009 = 1.0
  - FY2010 = 1.0 * 1.1667 = 1.1667
  - FY2011 = 1.1667 * 1.1429 = 1.3334

- **Weighted Index Calculation for 2009 (Army):**
  - 1.0 * .5 + 1.1667 * .3 + 1.3334 * .2 = 1.1167

- **Weighted Index Calculation for 2009 (Other Services):**
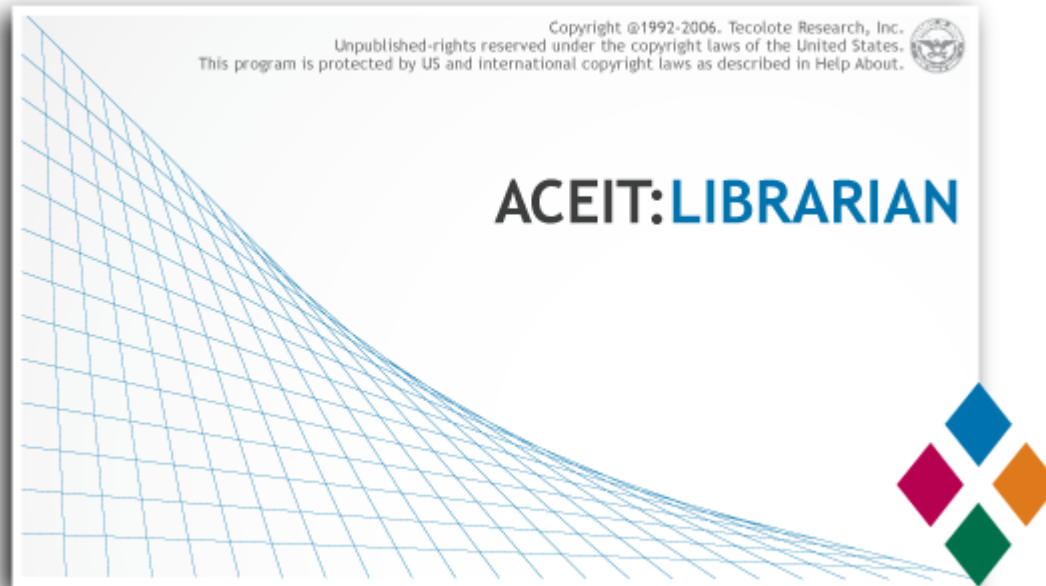 - 1/(.5/1.0 + .3/1.1667 + .2/1.3334) = 1.1024

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 = **$837.50**
  - Other Services Calc:
    - 500 * 1.5 * 1.1024 = **$826.77**

ACEIT Librarian

What is the Librarian?

Copyright @1992-2006. Tecolote Research, Inc.
Unpublished-rights reserved under the copyright laws of the United States.
This program is protected by US and international copyright laws as described in Help About.

ACEIT:LIBRARIAN

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

- **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**

  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

- **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**

Thank You