The IPIC LIFO Guide

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August 3, 2019

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Overview

The Inventory Price Index Computation (IPIC) method allows taxpayers to use published external indexes to calculate inflation for the purpose of valuing LIFO inventories. The IPIC method was first authorized by the IRS in 1982 in order to provide an approved method that would simplify LIFO calculations & make LIFO more accessible to smaller taxpayers.

A taxpayer using the IPIC method must assign appropriate Bureau of Labor Statistics (BLS) Consumer Price Index (CPI) or Producer Price Index (PPI) categories to inventory items in order to measure the amount of inflation used for LIFO calculations. Manufacturers & wholesalers are required to use PPI while retailers are allowed to use either CPI or PPI. These indexes are used to calculate category inflation indexes. Category inflation indexes are then weighted by inventory dollars (taxpayers using the optional 10% Method must also use BLS weights) to compute a current year inflation index for each pool. Taxpayers using the IPIC method can use the IPIC pooling method for which pools are created using broad CPI or PPI major groups (and not the individual categories). Use of the IPIC pooling method is not mandatory & other authorized pooing methods may be used. The pool cumulative indexes are used to deflate the inventory current-year cost (FIFO or average cost) to base period prices, which is then compared to the prior year's inventory valued at base period prices. If the current year's inventory at base is greater than the previous year's inventory at base, the increment is multiplied by the pool cumulative inflation index to price the LIFO layer. If the current year's inventory at base is less than the previous year's inventory at base, the decrement erodes a previous layer (or multiple layers) & is priced using the index(es) originally used to price the layer(s).

IPIC Method Origin

On March 16, 1982 the Department of Treasury published IRS Reg. § 1.472-8(e)(3) as Treasury Decision 7814 regarding the IPIC method. This IPIC method is commonly referred to as "Simplified LIFO". The Simplified LIFO term was first used by the IRS to refer to a method of using published indexes authorized by IRS Code §474 that could be used by very small businesses, originally defined as companies with three-year average annual gross receipts of $2 million (later revised to $5 million) or less. Very few taxpayers ever used this method & now the Simplified LIFO term is used by CPAs to describe the IPIC method. The purpose of the IPIC method is to simplify the use of LIFO accounting by allowing companies to use published indexes.

Since the 1940s the IRS has allowed broad line retailers (i.e., department stores & discount chains) to use published government indexes. The National Retail Federation contracted with the BLS to compile a special set of Department Store Indexes (DSI) as a subset of the Consumer Price Indexes (CPI). Broad line retailers could then use pools corresponding to the DSI categories & utilize one index per pool, which greatly simplified their LIFO calculations.

The prospect of using published indexes was very appealing to food retailers. In 1975 the Food Merchandisers LIFO Advisory Committee of the Food Marketing Institute (FMI) began to work towards the goal of gaining IRS approval for their members to use published indexes. The concept of using published indexes was appealing to food retailers for the same reasons it was to the broad lines retailers, i.e., because of the great difficulty in calculating internal inflation indexes. The cost to develop indexes specifically for food retailers was deemed to be too great & the use of a single Food at Home CPI index for all goods would not have provided sufficient accuracy, so the committee devised what resulted in the IPIC Method regulations using existing published indexes & establishing rules to provide a good balance between precision & simplicity. In January 1983, the FMI published a

booklet entitled *Handbook For LIFO Tax Valuations Inventory Price Index Computation Method (IPIC)* which was a guide for use of the IPIC Method for supermarket chains.
Use of the IPIC method has allowed companies to avoid the onerous task of calculating internal indexes which is particularly difficult for smaller firms. The IPIC Method is not without its drawbacks. The 10 Percent method, which was mandatory in the original 1982 IPIC Regs., requires a complicated two-tiered weighting calculation in which multiple indexes for each pool were first weighted by BLS Weights of Relative Importance & then by actual inventory dollars. While small taxpayers were allowed to use 100% of the inflation calculated with the IPIC method, all other taxpayers were allowed to use only 80% for tax purposes.

The 2002 IPIC Regulations

On May 19, 2000 the IRS published proposed changes to the IPIC LIFO Regulations under Treasury Regulations Section 1.472-8(e)(3) & solicited comments regarding the proposed regulations. A public hearing was held in Washington, D.C. on September 15, 2000 on the proposed regulations.

On January 8, 2002 the IRS issued final Regulations § 1.472-8(e)(3) in Treasury Decision 8976. The following is a synopsis of most important changes encompassed in the new Regs:

- **100% inflation -** All taxpayers may now use 100% of inflation calculated using IPIC for tax purposes. The elimination of the"20% haircut" should encourage more widespread use of IPIC.
- **Use of 10% categories & BLS Weights -** The use of this method was mandatory under the old Regulations but is now optional. Taxpayers now have the option of using only their actual FIFO inventory balances to calculate weighted average pool indexes. Having this option provides for simplification of pool index calculations for companies that can sort their inventories into the Most Detailed CPI or PPI categories the new Regulations require & taxpayers for whom assigning BLS categories to their inventory in greater detail would be burdensome or impossible can still use the IPIC method.
- **Elimination of requirement to use cost complements –** The requirement to make stage of production index conversions using gross margin percentages, (i.e., convert the CPI retail selling price indexes to a cost basis for companies not using Retail LIFO) was well intentioned by the IRS but created numerous problems in practical application. This change is greatly welcomed by any company to whom this applied under the old Regulations.
- **Use of CPI categories by retailers -** Many retailers using CPI categories who do not use the Retail Inventory Method would have been forced to use PPI categories under the proposed Regulations. Under the final new Regulations, these companies can still use CPI categories & can do so without making cost complement adjustments that the old Regulations required. The use of PPI categories for these retailers would have been burdensome because the CPI categories correlate much better with their inventory mix than the PPI categories.
- **Use of Weighted Harmonic mean -** Since the great majority of taxpayers have used the Weighted Arithmetic Mean in the past, this will require a change for most taxpayers. The new method always produces less inflation or greater deflation than using the Weighted Arithmetic Mean method. The decrease in LIFO benefits this produces is relatively small for most taxpayers (much less than extra benefit using 100% rather than 80% produces), though this difference will be significant for some. A likely source of confusion will be the requirement that the Weighted Harmonic Mean is to be used only for pool index FIFO dollars weighting calculations & not for the Category Index BLS weighting calculations required for calculations using the 10 percent categories & BLS Weights method.
- **Change in definition of 10% categories -** Most taxpayers who continue to use the 10 percent categories & BLS Weights method under the new Regulations will need to sort their inventories in

greater detail. This is because the new Regulations definition of the 10% categories threshold is the sum of each pool's FIFO inventory values. The old Regulations specified that the denominator for the 10% categories was "total inventory value" which almost all taxpayers interpreted to mean either the sum of their FIFO inventory values, the sum of their FIFO inventory values on LIFO, or the sum of their FIFO inventory values for which the IPIC method was used. A small minority of taxpayers used the sum of each pool's FIFO inventory values as the 10% categories threshold. Not only does the new definition of 10% categories require more detailed BLS category assignment, it makes this process more complicated because instead of there being one threshold amount for all inventories, there will now be as many different 10% thresholds as there are pools.

IPIC Method Advantages & Disadvantages

Companies that are either electing LIFO for the first time or already on LIFO & considering switching to the IPIC method should consider the following:

IPIC LIFO Method Advantages

Advantages of using the IPIC LIFO method include:

- **Index calculation simpler than internal index -** Use of a published index precludes the need to calculate an internal index unless companies switch for tax LIFO only. Internal index calculations are usually a major undertaking & can be avoided if companies switch for book LIFO also. The IPIC LIFO weighted average index calculations can also be complicated if made manually but this problem is solved with automated LIFO software.
- **IRS audit exposure reduced for past years –** Companies switching to the IPIC method are provided a "Safe Harbor" by the IRS with respect to methods used in years prior to the change. IRS audit exposure may be eliminated in these areas:
  Pooling - Many companies use pooling methods not authorized by the IRS. Taxpayers may elect the optional IPIC pooling rules thereby establishing an acceptable pooling method.
  Statistical sampling - Many companies use internal index sampling methods not acceptable to the IRS. For example, a company's sampling method may exclude new items.
  Other - Some manufacturers still use the components-of-cost method despite its prohibition by the IRS. Some manufacturers also incorrectly apply raw materials only indexes to total inventory dollars including labor & overhead dollars. Companies can eliminate exposure from use of these methods by adopting IPIC.
- **Easy means of switching from the double-extension method –** The IRS has been reluctant to permit changes from this submethod to the link-chain method, especially for companies whose annual turnover of inventory items is not rapid. Taxpayers can make this change without IRS consent when electing the IPIC method & electing the link-chain submethod as an automatic approval change.
- **Higher inflation indexes possible -** Some companies have found CPI or PPI inflation rates to be consistently higher than their internal index inflation. For most large supermarket chains the advantage of using CPI vs. internal indexes has been substantial. An annual positive differential of 1% between CPI or PPI inflation & a company's internal index inflation would reduce taxable income by $1 million annually for a company with $100 million in total inventory at FIFO cost at the beginning of a year.
- **Fewer pools possible -** Supermarket chains not using IPIC LIFO are required to maintain as many as 12 pools. Supermarket chains using IPIC LIFO use between 3 & 6 pools because IPIC LIFO allows pooling based on the 8 different CPI Major Groups & this is the number of pools typically required using this method. Having fewer pools will produce additional LIFO benefits because layer erosions

are fewer since decreases in formerly separate pools will be offset by increases in others when pools are combined.
- **IPIC LIFO need not be also used for financial reporting -** Companies may adopt IPIC for tax purposes while continuing to use internal indexes for book LIFO. Higher tax LIFO expense may result without increasing the amount of the book LIFO expense if the internal indexes used for financial reporting are less than the IPIC tax indexes.

IPIC LIFO Disadvantages

- **Separate Book & Tax calculations for companies required to continue using internal indexes for Book & IPIC for Tax –** Although there are hundreds (if not thousands) of companies that use IPIC LIFO for Book & Tax, most publicly-traded companies along with some larger private corporations are required to maintain internally-calculated inflation indexes for financial reporting while using IPIC LIFO for Tax, meaning a company must maintain separate Book & Tax LIFO layer histories.
- **Higher inflation not guaranteed -** Higher CPI or PPI inflation than for internal indexes historically is no guarantee that it will always be higher.
- **Implementation time -** Developing a means to sort inventory by the appropriate CPI or PPI categories can require considerable time & effort.

BLS Inflation Index Options

The Regs. permit retailers to choose either CPI or PPI indexes. All other taxpayers must use PPI indexes. For taxpayers using CPI indexes, Table 3 of the CPI Detailed Report must be used. For taxpayers using PPI indexes, Table 9 of the PPI Detailed Report must be used unless the taxpayer can demonstrate that another PPI table is more appropriate. Use of PPI Table 11 indexes rather than Table 9 PPI indexes is extremely rare because the main difference between these tables is in the organization (Table 9 is by commodity type & Table 11 is by industry) & there are Table 9 index categories corresponding to almost every Table 11 index category. The references in the Regs. to the PPI Detailed Report tables are Table 6 for commodities & Table 5 for industries. The BLS changed the numbers of these tables in 2014 so that Table 9 is now the commodities table & Table 11 is now the industries table.

CPI IPIC Pools (BLS CPI Major Expenditure Category Groups)

Unlike for the PPI, the BLS does not introduce new CPI categories & discontinue old ones every four months. The BLS restructured the entire CPI series beginning in January 1998, though, & similar restructurings may occur in the future.

The 2002 New Regs specified that LIFO taxpayers using Consumer Price Indexes & the IPIC Pooling Method should use the CPI major expenditure categories (i.e., major groups) as their IPIC pools. These Major Groups are not defined in the Regs. but appear to be these:

BLS Pool #	BLS CPI Major Expenditure Category Group Name
1	Food & Beverages
2	Housing
3	Apparel
4	Transportation
5	Medical Care
6	Recreation
7	Education & Communication

8	Other Goods & Services

PPI IPIC Pools (BLS PPI Major Commodity Groups)

Similar to IRS CPI Regs., taxpayers using Producer Price Indexes & the IPIC pooling Method should use the PPI major commodity groups as their IPIC LIFO pools, and are as follows:

BLS Pool#	**BLS PPI Major Commodity Group Name**
01	Farm Products
02	Processed Foods & Feeds
03	Textile Products & Apparel
04	Hides, Skins, Leather & Related Products
05	Fuels & Related Products & Power
06	Chemicals & Allied Products
07	Rubber & Plastic Products
08	Lumber & Wood Products
09	Pulp, Paper, & Allied Products
10	Metal & Metal Products
11	Machinery & Equipment
12	Furniture & Household Durables
13	Nonmetallic Mineral Products
14	Transportation Equipment
15	Miscellaneous Products

Each two-digit General Category is comprised of successively more-detailed three-digit, four-digit, six-digit, & eight-digit categories. For example, the General Category 02 PROCESSED FOODS & FEEDS includes 9 three-digit categories:

Cereal & bakery products
022 Meats, poultry, & fish
023 Dairy products
024 Processed fruits & vegetables
025 Sugar & confectionery
026 Beverages & beverage materials
027 Fats & oils
028 Miscellaneous processed foods
029 Prepared animal feeds

The three-digit category 021 Cereal & bakery products includes 4 four-digit categories:
0211 Bakery products
0212 Flour & flour base mixes & doughs
0213 Milled rice
0214 Other cereals

The four-digit category 0211 Bakery products includes 7 six-digit categories:
021101 White pan bread
021104 Other bread
021105 Bread type rolls
021107 Sweet yeast goods
021108 Soft cakes

021109 Pies
021121 Cookies, crackers, & related products

The six-digit category 021104 Other bread includes 3 eight-digit categories:
02110401 White hearth bread
02110402 Dark wheat bread
02110404 Other variety bread
There are changes made every four months in the PPI codes published by the BLS. Some of the PPI codes shown in this section have been discontinued since this guide was first written but they are used here to illustrate how the hierarchy of PPI codes is organized.

PPI Most-Detailed Categories

A most-detailed category is one that does not include any other categories. Eight-digit categories are always most-detailed categories. There are numerous most-detailed categories, however, that have fewer than eight digits. *021101 White pan bread* is a six-digit category that does not include any eight-digit categories, hence it is a most-detailed category. *0232 Butter* & *0234 Ice cream & frozen desserts* are each examples of four-digit categories that are most-detailed categories because they do not include any six-digit categories. Sometimes three-digit categories are considered most-detailed categories because they include only four-digit & six-digit categories with the same category name (e.g., *138 Glass containers* consists entirely of *1381 Glass containers* & *138101 Glass containers*); in these cases the three, four, & six-digit categories will have identical indexes & BLS weights. Because of this, which categories are most-detailed categories cannot be determined based simply on the number of digits in the commodity code.

For the purposes of the IPIC Method the definitive reference for PPI categories is Table 9 of the monthly BLS publication entitled PPI Detailed Report. PPI indexes are also available on the BLS web site (http://www.bls.gov).

BLS Category Assignment Options

10 Percent Method vs. Most-Detailed Categories Method

The IRS Regs. describe an optional method taxpayers may use for assigning inventory items to BLS categories & for determining category inflation indexes called the 10 Percent method. The 10 Percent method is intended to simplify the use of the IPIC method by allowing taxpayers to sort their inventories into fewer, less-detailed categories than are required for the alternative Most-Detailed Categories method. While the 10 Percent method makes the task of assigning inventory to BLS categories less burdensome, there is a trade-off involved because the math required to calculate category inflation indexes is more complex. The Regs. require taxpayers electing to use the 10 Percent method to first weigh inflation indexes with BLS weights, then with inventory dollars. Taxpayers using the Most-Detailed Categories method only use inventory dollars to weight inflation indexes.

Taxpayers are allowed to select either the 10 Percent method or the Most-Detailed Categories method for assigning BLS categories to their inventory dollars & calculating pool indexes. Many retailers still use the retail inventory method & do not have inventory systems that allow them to track the actual costs of specific goods at their stores. Requiring taxpayers to sort inventory into most-detailed categories, therefore, would have been a formidable burden for most retailers. The real value of the 10 Percent method is that it allows taxpayers carrying many different inventory items to reduce the burden of assigning all of their IPIC LIFO inventories to BLS categories. Taxpayers that have

relatively few inventory items, or that have accounting systems that allow them to determine detailed item costs, may want to use the Most-Detailed Categories method in order to simplify the math of their pool index calculations.

LIFO-PRO, Inc. has performed numerous pro-forma calculations comparing the results of the two methods. For any given year the use of one pool index calculation method will produce higher or lower indexes than the other method. Over time, however, there should be little difference. As a practical matter, taxpayers should consider the following when deciding which index calculation method to use:

1. Time & cost associated with assigning BLS categories by less-detailed (10% method categories) or more-detailed categories
2. Whether they have software that automates the complex 10 Percent method pool index calculations

Most-Detailed Categories Method

Regs. § 1.472-8(e)(3)(iii)(C)(1) states that taxpayers using the Most-Detailed Categories method "must assign each item in a dollar-value pool to the most-detailed BLS category of the selected BLS table that contains that item." This simply means that all inventory items must be assigned to each most-detailed category of the BLS table selected by the taxpayer (CPI or PPI) for items that are present in inventory. To think of it more simplify, BLS category assignment under this method must be performed on an item by item basis.

BLS Category Assignment Considerations

	10% Method		Most-Detailed	
Consideration	**Pro**	**Con**	**Pro**	**Con**
BLS category assignment simplification	**X**			
BLS category assignment complexity				**X**
Pool index calculation complexity		**X**		
Pool index calculation simplification			**X**	

- Companies that sort their inventory by most-detailed CPI or PPI categories may also use BLS Weights & 10% rollups in performing their pool index calculations
- Companies that sort their inventory balances using 10% categories are required to use the 10 Percent method
- Taxpayers may switch from one IPIC pool index calculation method to the other after the initial adoption of the IPIC Method, but this requires filing a Form 3115
- Once this change in this method is made, the taxpayer cannot change to the alternative method for a five year period.

10 Percent Method BLS Category Assignment

IPIC Regs. § 1.472-8(e)(3)(iii)(C)(2) describe a three-step process to assign inventory items to BLS categories when using the 10 Percent method:

1. First, when the current-year inventory value of a specific item is 10% or more of the pool total, that item must be assigned to the most-detailed category that includes that item.
2. Second, for items not assigned to BLS categories in the first step, the taxpayer must examine successively less-detailed categories to determine whether the combined value of the categories

included within them is 10% or greater, a process known as “rolling up,” or performing “10% roll-ups.” This step must be repeated until all items in the pool have been rolled up to a less-detailed category level where the 10% threshold is met. The highest level that items can be rolled up to is the General Category level.

3. Third, items not assigned after the previous two steps (i.e., due to the hierarchical structure of BLS categories) must be identified & segregated.

In addition, Regs. § 1.472-8(e)(3)(iii)(D)(5) defines a less-detailed category (in the context of determining a category inflation index) as a BLS category that:
A) subsumes (i.e., includes, or incorporates in a more comprehensive category) two or more BLS categories;
B) does not have a single assigned item whose current-year cost is 10% or more of the current-year cost of all items in the dollar-value pool;
C) has at least one item in at least one of the subsumed BLS categories; and
D) has at least one subsumed BLS category that either does not have any assigned items or is a separate 10% BLS category.

Based on these Regs. sections, three types of index categories may be identified:

Most-Detailed 10% Categories - Any most-detailed category with a FIFO balance greater than 10% of the pool sum of FIFO balances is an index category by itself. BLS weights will not be applied to these categories when performing index calculations; only actual inventory dollar weighting will be used. Also, these categories are excluded from the roll-ups used to create Other 10% Categories. Most-Detailed 10% Categories are those that are assigned inventory dollars in Step 1 of Regs. § 1.472-8(e)(3)(iii)(C)(2).

Other 10% Categories - These categories, which are always less-detailed categories, are those with aggregated FIFO balances (for the categories they include) that exceed 10% of the pool sum of FIFO balances. BLS weighting is used for Other 10% Categories in category index calculations. Other 10% Categories are those that are assigned inventory dollars in Step 2 of Regs. § 1.472-8(e)(3)(iii)(C)(2).

Remaining Categories grouping - This is the aggregation of all categories which remain after the procedures described above. Due to the hierarchical structure of the BLS categories it is possible that some categories may not be rolled up so that they are included in an Other 10% Category. There might not be any Remaining Categories for a given pool. BLS weighting is used for Remaining Categories in category index calculations. Remaining Categories are those that are identified & segregated in Step 3 of Regs. § 1.472-8(e)(3)(iii)(C)(2).

Category Representation

A taxpayer that uses the 10 Percent method does not need to break down their inventory dollars to the level of greatest detail but it is necessary to account for whether the most-detailed categories actually have items present in inventory. The reason for this is that only the indexes & BLS weights of categories actually present are used for pool index calculations.
Appendix A shows several examples of BLS category assignment to inventory items in which the balances for most-detailed categories are shown along with the appropriate BLS category assignment to inventory items with the 10 Percent method.

10 Percent Categories Determination

Assigning inventory dollars to BLS categories is a data-gathering process that precedes pool index calculations. It is the mechanics of the 10 Percent method pool index calculations, however, that determines the appropriate BLS category assignments when using the 10% method. This means that changes in the inventory mix or pooling may require assigning different BLS categories if using the 10% method.

Examples

Example 1 – CPI: This company uses CPI & does not have fuels on LIFO. The following CPI Major Groups each include at least 5% of the total FIFO inventory balances:
Food & beverages
Other goods & services
The sum of the other six Major Groups' FIFO inventory balances is greater than 5% of total inventory, so they will be combined in a third All other goods pool.
For Pool 1 Food & beverages, the BLS CPI 10% categories are:

Commodity Code	Category Name
SAF111	Cereals & bakery products
SAF112	Meats, poultry, fish & eggs
SEFJ	Dairy & related products
SAF113	Fruits & vegetables
SAF114	Nonalcoholic beverages & beverage materials
SEFN01	Carbonated drinks
SAF115	Other food at home
SEFR02	Candy & chewing gum
SEFT03	Snacks
SEFW	Alcoholic beverages at home

For Pool 2 Other goods & services, the BLS 10% categories are:

Commodity Code	Category Name
SEGA01	Cigarettes
SEGA02	Tobacco products other than cigarettes
SEGB	Personal care products
SEGE	Miscellaneous personal goods

For Pool 3 All other goods, the 10% categories are:

Commodity Code	Category Name
SAH	Housing
SEHN01	Household cleaning products
SEHN02	Household paper products
SEHN03	Miscellaneous household products
SAA	Apparel
SETC02	Vehicle accessories other than tires
SAM	Medical care
SEMB01	Internal & respiratory over-the-counter drugs
SAR	Recreation
SERG	Recreational reading materials
SAE	Education & communication

Example 2 – PPI: This company uses PPI & has fuels on LIFO. The following PPI 2-digit codes each include at least 5% of the total FIFO inventory balances:

02 Processed foods & feeds
05 Fuels & related products & power
06 Chemicals & allied products
15 Miscellaneous products

The sum of the other 11 PPI 2-digit codes inventory balances is less than 5% of total inventory balances so they will be included with the largest pool.

For Pool 1 Processed foods & feeds (02) & all other goods, the 10% categories are:

Commodity Code	Category Name
01	Farm products
02	Processed foods & feeds
025503	Candy & nuts
0261	Alcoholic beverages
02620609	Noncarbonated soft drinks
026207	Bottled carbonated soft drinks
02890172	Chips (potato, corn, etc.)
03	Textile products & apparel
04	Hides, skins, leather & related products
07	Rubber & plastic products
08	Lumber & wood products
09	Pulp, paper & allied products
10	Metal & metal products
11	Machinery & equipment
12	Furniture & household durables
13	Nonmetallic mineral products
14	Transportation equipment

025503 Candy & nuts, *02620609 Noncarbonated soft drinks*, *026207 Bottled carbonated soft drinks*, & *02890172 Chips (potato, corn, etc.)* will each probably include at least 10% of Pool 1's inventory balances. *0261 Alcoholic beverages* includes canned & bottled beer & other malt beverages, wine, & distilled spirits. If any of those categories of alcoholic beverages is likely to include 10% of the pool total, then more detailed categories should be used for BLS category assignment to inventory items. *02 Processed foods & feeds* can be used for BLS category assignment to inventory items that are all other food & beverage categories because the pool's 10% threshold is not likely to be met by aggregating ("rolling up") inventory balances at any four-digit or three-digit level included in the *02* PPI 2-digit code. Similarly, all other inventory in Pool 1 can be sorted at the 2-digit level because no other PPI 2-digit code will likely include 10% or more of the pool total. In fact, some of these PPI 2-digit codes will probably not have any inventory balances—*10 Metal & metal products* & *13 Nonmetallic mineral products*, for example.

For Pool 2 Fuels & related products & power (05), the 10% categories are:

Commodity Code	Category Name
057103	Unleaded premium gasoline
057104	Unleaded regular gasoline
057105	Unleaded mid-premium gasoline

057303 #2 diesel fuel
057604 Lubricating & similar oils

Each of these is likely to include 10% of the pool total.

For Pool 3 Chemicals & allied products (06), the 10% categories are:

Commodity Code	Category Name
06	Chemicals & allied products
0638	Pharmaceutical preparations
0675	Cosmetics & other toilet preparations

It may be necessary to use one or more 8-digit category included in *0638* for BLS category assignment to inventory items. For example, if *063802 Central nervous system*, *063805 Respiratory system*, & *063807 Vitamins, nutrients & hematinic preparations* were each more than 10% of the pool total then those would be used as BLS categories & all other pharmaceutical preparations would be assigned into *0638*.

For Pool 4 Miscellaneous products (15), the 10% categories are:

Commodity Code	Category Name
15	Miscellaneous products
152101	Cigarettes
15250101	Other tobacco products

152101 Cigarettes & *15250101 Other tobacco products* are most detailed categories that are likely to include 10% of the pool total. All other goods in this pool can be can be assigned 2-digit BLS PPI codes.

Decision to use Cost LIFO or Retail LIFO Method for Retailers

Retailers adopting LIFO for the first time will need to decide whether to use retail or cost LIFO. Historically, those companies with warehouse inventories used cost LIFO because of the difficultly of converting warehouse cost inventory balances to retail values. Companies without warehouse inventories using the IPIC method typically used retail LIFO because this did not require conversion of retail basis CPI indexes to a cost basis using cost complements as required by the old (pre-2002) IPIC LIFO Regs. We believe most retailers would be better off using cost LIFO regardless of whether they have warehouse inventories. The reason for this is that the annual LIFO expense using retail LIFO is affected by margin changes from the prior year (this is not the case for cost LIFO) & this makes the planning for the amount of LIFO expense less predictable.

Stores Inventory BLS Category Assignment Strategies

Most retailers use the 10 Percent method because this allows them to reduce time spent assigning BLS categories to their inventory items & use fewer less detailed CPI or PPI codes. Supermarkets using CPI, for example, must make BLS category assignments to their inventories by 33 less-detailed CPI categories rather than about 100 most-detailed categories as required by use of the Most-Detailed Categories method. Supermarkets using PPI that use the 10 Percent method must sort their inventories by about 55 less-detailed PPI categories rather than about 200 most-detailed categories as required by use of the Most-Detailed Categories method

The 10 Percent method entails more complicated pool index calculations but this is not an issue if the LIFO-PRO software is used because the necessary BLS weighting & dollar weighting is completely automated.

Most retailers that maintain warehouse inventories have warehouse inventory accounting systems that produce sufficient detail to allow breakdown of these balances by the required CPI or PPI categories. This is because these systems typically keep track of cost per item. Some companies' store inventory accounting systems also include sufficient cost per item data to allow breakdown of these balances by the required CPI or PPI categories but at this point, the majority of retailers don't have this luxury. For store inventories, the traditional inventory accounting method for at least some departments has been some variation of the Retail Inventory Method for which retail balances are known by department & cost by department balances are calculated by use of standard gross profit margins for these departments.

While any means of breaking store inventories down by CPI or PPI categories may be considered, the most common way to do this has been to get these breakdowns from physical inventory counts. When this procedure is used, the physical inventory counts planning need to incorporate these aspects:

Inventory count instructions-The inventory service should be provided the list of CPI or PPI categories required for IPIC method calculations. These are referred to as "LIFO counts". While a few of the CPI or PPI categories may correspond to the regular physical count breakdowns, this will be a special LIFO count listing. The inventory service may or may not be instructed to make the normal count breakdowns in addition to the LIFO counts. An inventory service should be able to provide both the normal & LIFO breakdowns from the same physical count. This is accomplished by making different store layout maps (what shelf space belongs in the various breakout categories). Making LIFO counts in addition to normal counts often entails an additional fee from the inventory service & a 40% premium to do this is not unusual.

Sample size-For companies having only a few stores, they may well make LIFO counts for all stores. For companies with numerous stores, LIFO counts are made for a sample of stores & the sample stores' CPI or PPI category distribution is used for the total of all stores' inventory balances. The IRS provides no guidelines for this type of sampling. The IPIC LIFO Regs. make no mention of whether sampling is an appropriate means of obtaining the CPI or PPI category breakdowns, but this type of sampling has been used by retail grocers for 20 years without substantial IRS challenge of this practice. The sampling plan should take into account different store size, formats & location or other factors that could cause one store to have a significantly different inventory mix than another store. It is not uncommon for the same LIFO count stores for one year to be LIFO count stores in succeeding years because this eliminates the need for the inventory service to make LIFO count layouts for more stores.

Once the physical counts have been taken & the LIFO count sheets are available, there are several things that need to be taken into consideration including:

- Most count categories will have retail selling price totals but some may be cost totals
- Some departments may not be counted & back room goods are usually not counted
- There will usually be departments, such as pharmacy, for which the non-LIFO physical counts are broken down that correspond exactly to CPI or PPI categories. If physical counts are made for all stores at or near year end, a company may decide that the stores' total for pharmacy per all counts

(LIFO or not) is more accurate than extrapolating the LIFO count breakdown percentages to the entire inventory.

- Once the stores total balances by CPI or PPI categories have been accumulated, the warehouse balances, if applicable, should be added to these totals.
- Cost-only or cost & retail balances required—Only cost balances by CPI or PPI category are required for cost LIFO taxpayers but both cost & retail balances by CPI or PPI category is required for retail LIFO taxpayers.

BLS Weights

The PPI categories in Table 9 represent a market basket of goods & BLS weights are a measure of each categories' relative weight, of price data sampled by the BLS, in proportion to the entire market basket. As an example, the BLS weight of 02 PROCESSED FOODS & FEEDS is equal to the sum of the BLS weights for the 9 three-digit categories that are included in that General Category.

		2003 BLS Wts.	%-to-Total
02	PROCESSED FOODS & FEEDS	9.911	
021	Cereal & bakery products	1.143	11.53%
022	Meats, poultry, & fish	2.575	25.98%
023	Dairy products	1.144	11.54%
024	Processed fruits & vegetables	0.575	5.80%
025	Sugar & confectionery	0.651	6.57%
026	Beverages & beverage materials	1.539	15.53%
027	Fats & oils	0.265	2.67%
028	Miscellaneous processed foods	1.260	12.71%
029	Prepared animal feeds	0.759	7.66%
Sum of BLS weights of three-digit 02 categories		9.911	100.00%

To illustrate the practical implications of the use of BLS weights for IPIC calculations using the 10 Percent method, consider the following example in which the inflation index (current-year appropriate month price index divided by previous-year appropriate month price index) for 021104 Other bread is equal to the sum of the BLS-weighted inflation indexes for the 3 eight-digit categories included in 021104.

		(1) 2003 BLS Weight	(2) = (1) / ∑ (1) Relative Weight (%-to-Total)	(3) Table 9 July 2004 BLS Price Index	(4) Table 9 July 2003 BLS Price Index	(5) = (3) / (4) Inflation Index	(6) = (2) x (5) BLS Weighted Extension
021104	Other bread	0.08		202.4	203.2	0.99606	
02110401	White hearth bread	0.03	37.5%	216.2	220.6	0.98005	0.36752
02110402	Dark wheat bread	0.03	37.5%	190.1	194.5	0.97738	0.36652
02110404	Other variety bread	0.02	25.0%	202.7	193.4	1.04809	0.26202
	Sum of BLS weights =	0.08		BLS weighted inflation index (∑ (6)) =			0.99606

The preceding example is mathematically identical to the following computation in which the percent-to-totals (a.k.a., relative weighting) in Column (2) are eliminated, the BLS weights are multiplied times the inflation indexes to produce BLS weighted extensions, & the sum of the BLS weights is divided by the sum of the BLS weighted extensions.

		(1)	(2) Table 9 July 2004	(3) Table 9 July 2003	(4) = (2) / (3)	(5) = (1) x (4)
		2003 BLS Weight	BLS Price Index	BLS Price Index	Inflation Index	BLS Weighted Extension
021104	Other bread	0.08	202.4	203.2	0.99606	
02110401	White hearth bread	0.03	216.2	220.6	0.98005	0.02940
02110402	Dark wheat bread	0.03	190.1	194.5	0.97738	0.02932
02110404	Other variety bread	0.02	202.7	193.4	1.04809	0.02096
	Sum of BLS weights =	0.08	Sum of BLS weighted extensions =			0.07968
	Sum of BLS weighted extensions / Sum of BLS weights =					0.99606

These examples demonstrate that the inflation indexes of less-detailed categories are derived from the BLS weights & inflation indexes of the more-detailed categories they include. This means that if the 10 Percent method is used, rather than weighting the inflation indexes of 02110401, 02110402, & 02110404 with their respective BLS weights, then dividing the sum of the BLS weighted extensions by the sum of the BLS weights, the inflation index of 021104 can be used *if each of the categories 021104 includes are present in inventory.* If any of the three 8-digit categories included in 021104 is not present in the ending inventory (a single item, in this case a loaf of bread, is sufficient for the category to be considered present in inventory), then the inflation index for 021104 must be calculated using the inflation indexes & BLS weights of the more-detailed categories which are actually present in inventory.

BLS weighting is only used for categories which represent less than 10% of the pool's total FIFO dollars. For categories representing an amount greater than 10% of the pool total, their inflation indexes are weighted only by the inventory dollars assigned to them.

Most-Detailed Categories Method Pool Index Calculations

The math involved in the pool index calculations is simpler with this method because it is not necessary to use BLS Weights & perform 10% roll-ups. A typical retail grocer using this method would need to sort their inventory by approximately 80 CPI categories. Pool index calculations can be summarized by these three steps:

1. A Category Inflation Index is calculated by dividing the Current Year PPI index by the Previous Year PPI index.

Category Inflation Index = Current Year PPI / Previous Year PPI

2. Harmonic Dollars Weighted Extensions are calculated (using Harmonic Mean math) by dividing Category FIFO dollars by the Category Inflation Index.

Harmonic Dollars Weighted Extension = FIFO / Category Inflation Index

3. A pool's IPI is calculated by dividing the sum of the pool's FIFO dollars by the sum of the pool's Harmonic Dollars Weighted Extensions.

IPI = ∑ FIFO / ∑ Harmonic Dollars Weighted Extensions

Examples

Example 1 – CPI: A Convenience Store chain using CPI & the Most Detailed Categories method sorted their Other goods & services pool's inventory into the following categories:

CPI Code	Category Name	(1) Y/E FIFO $s
SAG	OTHER GOODS & SERVICES	
SEGA	Tobacco & smoking products	
SEGA01	-Cigarettes	9,875,000
SEGA02	-Tob. products other than cigarettes	1,500,000
SEGB	Personal care products	
SEGB01	-Hair, dental, shaving & misc.	325,000
SEGB02	-Cosmetics, perfume, bath, nail prep.	300,000
SEGE	Misc. personal goods	500,000
	Pool Total	12,500,000

The current year indexes are then divided by the previous year indexes for each category, which produces the December 2004-to-December 2005 inflation index expressed as a decimal.

	(2)	(3)	(4) = (2) / (3)
CPI	CPI Indexes		Category
Code	12/2005	12/2004	Inflation
SEGA01	207.6	196.0	1.059184
SEGA02	154.6	147.1	1.050986
SEGB01	102.1	101.7	1.003933
SEGB02	173.1	169.2	1.023050
SEGE	86.4	86.6	0.997691

The FIFO inventory amounts for each category are then divided by category inflation to calculate harmonic dollar-weighted extensions.

CPI Code	(1) Y/E FIFO $s	(4) Category Inflation	(5) = (1) / (4) Harmonic $-Wtd. Extension
SEGA01	9,875,000	1.059184	9,323,218
SEGA02	1,500,000	1.050986	1,427,232
SEGB01	325,000	1.003933	323,727
SEGB02	300,000	1.023050	293,241
SEGE	500,000	0.997691	501,157
Total	12,500,000		11,868,574

The last step is to divide the total pool FIFO balances by the sum of the harmonic dollar-weighted extensions.

Sum of Y/E FIFO $s		Sum of Extensions		Pool Index
12,500,000	÷	11,868,574	=	1.053201

This pool index will then be multiplied times the previous year's cumulative deflator index to produce the current year's cumulative deflator index for this pool.

Example 2 – PPI: A Convenience Store chain using PPI & the Most Detailed Categories method sorted their Miscellaneous goods (15) pool's inventory into the following categories:

Code	Category Name	(1) Y/E FIFO $s
15	MISC. PRODUCTS	
15110154	Toys, excl. games & hobbies	40,000
15110156	Dolls & stuffed toy animals	60,000
152101	Cigarettes	9,875,000
15250101	Other tobacco products	1,500,000
1542	Photographic supplies	150,000
159404	Costume jewelry & novelties	50,000
15950201	Ball point pens, incl. roller pens	75,000
15950208	Markers, fn. pnt. & brd. tipped	5,000
15960313	Watches, clocks, cases, & parts	20,000
159A0901	Other misc. products, n.e.c.	50,000
159C0101	Reprdn. of aud. dsk. & video	50,000
	Pool Total	11,875,000

Assuming December is the "appropriate month", the current year indexes are divided by the previous year indexes for each category, which produces the December 2004 to December 2005 inflation index as a decimal. This example includes two instances of missing indexes, which are common when using PPI. A preliminary index for December 2005 was not published for *15110154 Toys, etc.* so the current year & previous year indexes for the next less detailed category, 1*51101 Toys, games, & children's vehicles* were used. *15250101* was introduced in December 2005, so there is no previous year index for this category. The current year & previous year indexes for *152 Tobacco*

products, incl. stemmed & redried were used instead (*1525 Other tobacco products* & *152501 Other tobacco products* were also introduced December 2005).

PPI Code	(2) PPI Indexes 12/2005	(3) PPI Indexes 12/2004	(4) = (2) / (3) Category Inflation
15110154	127.0	125.9	1.008737
15110156	127.7	124.4	1.026527
152101	548.5	516.3	1.062367
15250101	460.8	435.2	1.058824
1542	120.9	114.8	1.053136
159404	153.5	147.8	1.038566
15950201	163.2	157.5	1.036190
15950208	127.1	122.2	1.040098
15960313	131.4	130.4	1.007669
159A0901	140.2	139.3	1.006461
159C0101	98.7	98.2	1.005092

The FIFO inventory balances for each category are then divided by the category inflation indexes to calculate harmonic dollar-weighted extensions or current year inventory balances deflated to balances expressed in prior year prices.

PPI Code	(1) YE FIFO $s	(4) Category Inflation	(5) = (1) / (4) Harmonic $-Wtd. Extension
15110154	40,000	1.008737	39,654
15110156	60,000	1.026527	58,449
152101	9,875,000	1.062367	9,295,283
15250101	1,500,000	1.058824	1,416,667
1542	150,000	1.053136	142,432
159404	50,000	1.038566	48,143
15950201	75,000	1.036190	72,381
15950208	5,000	1.040098	4,807
15960313	20,000	1.007669	19,848

159A0901	50,000	1.006461	49,679
159C0101	50,000	1.005092	49,747
Total	11,875,000		11,197,089

The last step is to divide the total pool FIFO dollars by the sum of the harmonic dollar-weighted extensions.

Sum of YE FIFO $s		Sum of Extensions		Pool Index
11,875,000	÷	11,197,089	=	1.060544

This pool index will then be multiplied times the previous year's cumulative deflator index to produce the current year's cumulative deflator index for this pool.

10 Percent Method Pool Index Calculations

The 10 Percent method was devised to provide a happy medium between pool index calculation simplicity & the effort required to sort inventories by CPI & PPI categories. Pool Inventory Price Index (IPI) calculations can be summarized by these four steps:

1. A Current Year Inflation Index is calculated by dividing the Current Year PPI index by the Previous Year PPI index. For categories not requiring BLS weighting the Category Inflation Index is equal to the Current Year Inflation Index.

Current Year Inflation Index = Current Year PPI / Previous Year PPI

2. For categories requiring BLS weights, the formula for calculating a Category Inflation Index (using Arithmetic Mean math) is:

$$\text{Category Inflation Index} = \frac{\sum [\text{BLS Wt. x Current Yr. Inflation Index (for each subcategory)}]}{\sum \text{BLS Weights}}$$

3. Harmonic Dollars Weighted Extensions are calculated (using Harmonic Mean math) by dividing Category FIFO dollars by the Current Year Inflation Index.

Harmonic Dollars Weighted Extension = FIFO / Current Year Inflation Index

4. A pool's IPI is calculated by dividing the sum of the pool's FIFO dollars by the sum of the pool's Harmonic Dollars Weighted Extensions.

IPI = ∑ FIFO / ∑ Harmonic Dollars Weighted Extensions

Examples

Example 1- CPI: This example shows a pool index calculation using CPI & the Ten Percent method. The pool's total FIFO inventory balance is $23,500,000 so the 10% threshold is $2,350,000. For inventory balances assigned to a 10% category, an "X" indicates that a category has items present in inventory & an "*" (asterisk) indicates that a category has no items present in inventory:

CPI (1)

Code	Category Name	Y/E FIFO $s
SAF	FOOD & BEVERAGES:	
SAF11	-Food at home:	
SAF111	--Cereals & bakery products:	1,880,000
SEFA	---Cereals & cereal products:	
SEFA01	----Flour & prepared flour mix	X
SEFA02	----Breakfast cereal	X
SEFA03	----Rice, pasta, cornmeal	X
SEFB	---Bakery products:	
SEFB01	----Bread	X
SEFB02	----Fresh biscuits, rolls, muff.	X
SEFB03	----Cakes, cupcakes & cook.	X
SEFB04	----Other bakery products	X
SAF112	--Meats, poultry, fish & eggs:	1,645,000
SAF1121	---Meats, poultry & fish:	
SAF11211	----Meats:	
SEFC	-----Beef & veal:	
SEFC01	------Uncooked ground beef	*
SEFC02	------Uncooked beef roasts	*
SEFC03	------Uncooked beef steaks	*
SEFC04	------Uncooked other beef & vl.	*
SEFD	-----Pork:	
SEFD01	------Bacon, brkfst. saus. & rel.	X
SEFD02	------Ham	*
SEFD03	------Pork chops	*
SEFD04	------Other pork, incl. roasts	*
SEFE	-----Other meats	X
SEFF	----Poultry:	
SEFF01	-----Chicken	*
SEFF02	-----other poultry incl. turkey	*
SEFG	----Fish & seafood:	
SEFG01	-----Fresh fish & seafood	*
SEFG02	-----Processed fish & seafood	X
SEFH	---Eggs	X
SEFJ	--Dairy & related products:	1,410,000
SEFJ01	---Milk	X
SEFJ02	---Cheese & related products	X
SEFJ03	---Ice cream & related	X
SEFJ04	---Other dairy & related	X
SAF113	--Fruits & vegetables:	705,000
SAF1131	---Fresh fruits & vegetables:	
SEFK	----Fresh fruits:	
SEFK01	-----Apples	*
SEFK02	-----Bananas	*
SEFK03	-----Citrus fruits	*
SEFK04	-----Other fresh fruits	*
SEFL	----Fresh vegetables:	
SEFL01	-----Potatoes	*
SEFL02	-----Lettuce	*

SEFL03	-----Tomatoes	*
SEFL04	-----Other fresh vegetables	*
SEFM	---Processed fruits & veg.	
SEFM01	----Canned fruits & veg.	X
SEFM02	----Frozen fruits & veg.	X
SEFM03	----other proc. fruits & veg.	X
SAF114	--Nonalc. bev. & bev. mat.	3,055,000
SEFN	---Juices & nonalc. drinks:	
SEFN01	----Carbonated drinks	3,525,000
SEFN02	----Frozen noncarb. juic. & dr.	X
SEFN03	----Nonfr. Noncarb. juic. & dr.	X
SEFP	---Bev. mat. Incl. coffee & tea	
SEFP01	----Coffee	X
SEFP02	----Other bev. mat. incl. tea	X
SAF115	--Other food at home:	2,115,000
SEFR	---Sugar & sweets:	
SEFR01	----Sugar & artific. sweeteners	X
SEFR02	----Candy & chewing gum	3,760,000
SEFR03	----Other sweets	X
SEFS	---Fats & oils:	
SEFS01	----Butter & margarine	X
SEFS02	----Salad dressing	X
SEFS03	----Other fats & oils incl. p.b.	X
SEFT	---Other foods:	
SEFT01	----Soups	X
SEFT02	----Frozen & freeze dried prep.	X
SEFT03	----Snacks	2,820,000
SEFT04	----Spices, etc.	X
SEFT05	----Baby food	X
SEFT06	----Other miscellaneous foods	X
SEFW	-Alcoholic beverages at home:	2,585,000
SEFW01	--Beer, ale & other malt bev.	X
SEFW02	--Distilled spirits at home	X
SEFW03	--Wine at home	X
	Pool Total	23,500,000

Four category inflation index calculations will not require the use of BLS weights. Three most-detailed categories: *EFN01* Carbonated drinks, *SEFR02* Candy & chewing gum & *SEFT03* Snacks exceed the 10% threshold so category inflation & harmonic dollar-weighted extensions are calculated for these categories without using BLS weights. The inventory balances aggregated at *SEFW* exceed 10% of the pool total & all categories included in it (*SEFW01*, *SEFW02* & *SEFW03*) are present in inventory so *SEFW*'s category inflation index is also calculated without using BLS weights. The calculations for these category inflation indexes are shown below.

	(2)	(3)	(4) = (2) / (3)
CPI	CPI Indexes		Category
Code	12/2005	12/2004	Inflation
SEFN01	133.1	127.5	1.043922

SEFR02	111.4	107.5	1.036279
SEFT03	181.3	171.4	1.057760
SEFW	171.5	170.9	1.003511

The inventory balances sorted at *SAF114* exceed 10% of the pool total but not all categories included in it have their balances aggregated at that level. The *SEFN01* balances are excluded because the 10% threshold was met at the most-detailed category level. BLS weights will be used to calculate the category inflation index at the *SAF114* level. The calculations for these category inflation indexes are shown below.

	(2)	(3)	(4) = (2) / (3)	(5)	(6) = (4) * (5)
CPI	CPI Indexes		Category	BLS	BLS Wtd.
Code	12/2005	12/2004	Inflation	Wts.	Extension
SEFN02	111.7	111.5	1.001794	0.025	0.025045
SEFN03	107.4	105.7	1.016083	0.269	0.273326
SEFP01	162.3	145.5	1.115464	0.100	0.111546
SEFP02	115.9	115.4	1.004333	0.174	0.174754
			Sum =	0.568	0.584672

Sum of Wtd. Ext.		Sum of BLS Wts.		Category Index
0.584672	÷	0.568	=	1.029351

Similarly, the balances sorted using all other categories will be "rolled up" to *SAF11* where the total aggregated balances will exceed 10% but BLS weighting will be required because not all categories included in *SAF11* are present (some are missing due to category inflation index calculations at more-detailed levels & others because they are not present in inventory). The calculations for these category inflation indexes are shown below.

	(2)	(3)	(4) = (2) / (3)	(5)	(6) = (4) * (5)
CPI	CPI Indexes		Category	BLS	BLS Wtd.
Code	12/2005	12/2004	Inflation	Wts.	Extension
SEFA01	171.6	165.4	1.037485	0.050	0.051874
SEFA02	201.3	205.7	0.978610	0.221	0.216273
SEFA03	167.1	165.0	1.012727	0.128	0.129629
SEFB01	126.9	123.3	1.029197	0.225	0.231569
SEFB02	126.1	123.1	1.024370	0.109	0.111656
SEFB03	213.9	209.4	1.021490	0.220	0.224728
SEFB04	205.9	206.9	0.995167	0.230	0.228888
SEFD01	120.3	124.8	0.963942	0.147	0.141700

SEFE	180.4	178.9	1.008385	0.282	0.284364
SEFG02	108.2	106.9	1.012161	0.127	0.128544
SEFH	154.7	152.6	1.013761	0.094	0.095294
SEFJ01	128.7	124.4	1.034566	0.324	0.335199
SEFJ02	182.3	181.4	1.004961	0.252	0.253250
SEFJ03	179.1	178.4	1.003924	0.147	0.147577
SEFJ04	121.9	120.1	1.014988	0.126	0.127888
SEFM01	119.1	112.6	1.057726	0.133	0.140678
SEFM02	122.6	117.0	1.047863	0.076	0.079638
SEFR01	154.3	142.7	1.081289	0.051	0.055146
SEFR03	118.6	116.6	1.017153	0.055	0.055943
SEFS01	131.2	135.6	0.967552	0.083	0.080307
SEFS02	105.6	110.3	0.957389	0.070	0.067017
SEFS03	116.3	113.8	1.021968	0.104	0.106285
SEFT01	211.4	207.4	1.019286	0.092	0.093774
SEFT02	154.3	152.9	1.009156	0.241	0.243207
SEFT04	185.2	178.4	1.038117	0.208	0.215928
SEFT05	127.4	123.2	1.034091	0.072	0.074455
SEFT06	112.4	110.8	1.014440	0.301	0.305347
			Sum =	4.168	4.226158

Sum of Wtd. Ext.		Sum of BLS Wts.		Category Index
4.226158	÷	4.168	=	1.013954

The FIFO inventory balances can now be divided by category inflation indexes to compute the harmonic dollar-weighted extensions.

	(1)	(7)	(8) = (1) / (7)
CPI Code	Y/E FIFO $s	Category Index	Harmonic $-Wtd. Extension
SAF11	7,755,000	1.013954	7,648,280
SAF114	3,055,000	1.029351	2,967,889
SEFN01	3,525,000	1.043922	3,376,690
SEFR02	3,760,000	1.036279	3,628,366
SEFT03	2,820,000	1.057760	2,666,012
SEFW	2,585,000	1.003511	2,575,956
Total	23,500,000		22,863,193

The last step is to divide the total pool FIFO inventory balance by the sum of the harmonic dollar-weighted extensions.

Sum of Y/E FIFO $s		Sum of Extensions		Pool Index
2,585,000	÷	2,575,956	=	1.003511

This pool index will then be multiplied times the previous year's cumulative deflator index to produce the current year's cumulative deflator index for this pool.

Example 2 – PPI: The pool's total FIFO inventory balance is $11,875,000 so the 10% threshold is $1,187,500. Two most-detailed categories—152101 Cigarettes & 15250101 Other tobacco products—exceed the 10% threshold so category inflation & harmonic dollar-weighted extensions are calculated for these categories without using BLS weights. The FIFO inventory balances for all of the other categories are aggregated at successively less-detailed levels. These "roll-ups" continue until all balances are aggregated at the two-digit level. The BLS weights of each category present in inventory is then multiplied times their respective category inflation (the quotient of current-year PPI divided by previous-year PPI) to produce BLS weighted extensions.

	(1)	(2)	(3)
	2004		= (1) * (2)
	BLS	Category	BLS Wtd.
Code	Wts.	Inflation	Extension
15110154	.031	1.008737	0.031271
15110156	.006	1.026527	0.006159
1542	.178	1.053136	0.187458
159404	.023	1.038566	0.023887
15950201	.017	1.036190	0.017615
15950208	.010	1.040098	0.010401
15960313	.017	1.007669	0.017130
159A0901	.044	1.006461	0.044284
159C0101	.030	1.005092	0.030153
Total	0.356		0.368359

The sum of the BLS weighted extensions is divided by the sum of the BLS weights.

Sum of		Sum of		Category
Wtd. Ext.		BLS Wts.		Index
0.368359	÷	0.356	=	1.034716

Each category index—for *152101 Cigarettes*, *15250101 Other tobacco products*, & for the categories aggregated at the 2-digit level—is divided into the respective FIFO balances to calculate harmonic dollar-weighted extensions.

	(4)	(5)	(6)
			= (4) / (5)
			Harmonic
PPI		Category	$-Wtd.

Code	YE FIFO $s	Index	Extension
15-Remaining	500,000	1.034716	483,224
152101	9,875,000	1.062367	9,295,283
15250101	1,500,000	1.058824	1,416,667
	11,875,000		11,195,174

The last step is to divide the total pool FIFO balances by the sum of the harmonic dollar-weighted extensions.

Sum of YE FIFO $s		Sum of Extensions		Pool Index
11,875,000	÷	11,195,174	=	1.060725

This pool index will then be multiplied times the previous year's cumulative deflator index to produce the current year's cumulative deflator index for this pool.

Producer Price Index Usage Considerations

The BLS publishes Preliminary indexes around the 15th of the following month (e.g., Preliminary August indexes are made available around September 15). All indexes are subject to revision four months after their original publication—these are Final indexes. Taxpayers may choose to use either Preliminary or Final indexes, but they must be consistent in their use (i.e., both Current Year indexes & Previous Year indexes must be Preliminary, or both must be Final). As a practical matter, taxpayers should use Preliminary indexes in order to perform IPIC calculations in a timely manner.

Companies using PPI must be aware of the issue of missing indexes. The PPI categories in Table 9 are not a static list because new categories are added & others discontinued on a regular basis. In July & January of each year the BLS publishes an Appendix in the PPI Detailed Report identifying which new categories have been added & which categories have been discontinued. It is not uncommon for the BLS to stop publishing indexes for some categories months before they are officially discontinued. Also, there are categories for which the BLS publishes indexes only sporadically, such as for seasonal produce (e.g., 01110203 Cherries).

IRS LIFO Regs. Requirements for Missing PPI Indexes

The IRS IPIC LIFO Regulations issued in January, 2002 specify that what we call the "Substitute Index Method" be used for categories for which indexes are missing (for either the current or prior year for the applicable index month) but for which the categories have not been discontinued (what we refer to as "sporadic index categories"). We believe the use of the Substitute Index Method is also the most practical way to handle missing indexes for categories discontinued for which a replacement category is not added by the BLS until the same month.

Regulations § 1.472-8(e)(3)(iii)(D)(4) states that "...If the BLS has revised the applicable BLS table for a taxable year, a taxpayer must compute the category inflation index for each BLS category for which the taxpayer cannot compute a category inflation index in accordance with paragraph (e)(3)(iii)(D)(3) of this section (affected BLS category) using a reasonable method, provided the method is used consistently for all affected BLS categories within a particular taxable year." This Reg. paragraph goes on to say "The compound category inflation index described in paragraph (e)(3)(iii)(D)(4)(ii) of this section is a reasonable method of computing the category inflation index for an affected BLS category.'

The Compound Inflation method entails the multiplication of partial year inflation rates for both the discontinued & replacement categories. We believe this method is not as practical as the Substitute Index Method & the use of the Substitute Index Method will generally produce indexes not significantly different from those calculated using the Compound Category Inflation Index method.

It is important to use a current list of PPI categories in order to minimize the problems associated with missing indexes. LIFO-PRO, Inc. performs extensive research on an ongoing basis to identify discontinued categories & their likely replacements.

IPIC Submethods

Double-Extension v. Link-Chain Index Method

The double-extension method is the term used to describe calculation of cumulative indexes by dividing current year prices by base year prices for individual inventory items. The link-chain method is the term used to describe calculation of current year indexes by dividing current year prices by prior year prices, which is then multiplied by the prior year cumulative index to calculate the current year cumulative index. The prior year link-chain cumulative indexes would have been determined in a similar fashion. Either the double-extension or link-chain methods may be used by IPIC taxpayers. Use of the double-extension method by non-IPIC method retailers is very rare because this method is not practical for companies with rapid turnover of inventory items. In our opinion, the double-extension method should never be elected for IPIC taxpayers because discontinuation of CPI or PPI index categories will require complicated index calculations that are avoided if the link-chain method is used. Use of the double-extension method can also cause greatly distorted inflation or deflation rates when there are substantial inventory mix changes from one year to the next solely as a result of the change in mix.

IPIC Index Month Options

The Regs. provide options to certain taxpayers regarding the selection of CPI or PPI index months. Determination of appropriate index months for both IPIC & non-IPIC method taxpayers can be somewhat confusing because past IRS Regs. & other guidance in this area have been neither clear nor consistent. One item of confusion has been the definition of “current-year costs”. This could mean the valuation method(FIFO or average cost) used to determine general ledger inventory balances(gross of the LIFO reserve) or the method used to value LIFO increments. Many taxpayers & CPAs in the past have assumed current-year costs was only the method of valuing LIFO increments because of the pre-December 2005 Form 970 line 6a caption which reads “Method used to figure the cost of goods in the closing inventory over those in the opening inventory”. Such thinking led to the use of “dual indexes” whereby separate indexes were used to: 1) convert year end inventory balances to base year costs (deflator index), & 2) value the current year increment (inflator index). While it is still not clear what the intent of the IRS terminology & rules in this area really were in the past, the new Regs. published in 2002, the new Form 970(as of December 2005) & the Dual Index Methods Proposed Coordinated Issue paper issued in April 2003 by the IRS Inventory Technical Advisor make it clear that:

1. Dual indexes methods are no longer permitted.
2. The term “current-year costs”, at least as it pertains to LIFO taxpayers, refers only to the three time periods during the year (end of year, beginning of year or middle of the year) from which the appropriate index month for the single LIFO index may be selected. IRS LIFO Regs. § 1.472-8(e)(2)(ii) provides these current-year cost method options:

- The actual cost of goods most recently purchased or produced (latest acquisitions).
- The actual cost of the goods purchased or produced during the taxable year in the order of acquisition (earliest acquisitions).
- The average unit cost of all of the goods purchased or produced throughout the taxable year divided by the total number of units purchased or produced (12 month moving average).
- Any other method that clearly reflects income (this option is not applicable for IPIC taxpayers because use of one of the three other options will be more practical).

Since there are PPI & CPI inflation indexes compiled & published for each month, IPIC taxpayers must decide which month's indexes are to be used for pool index calculations. These are referred to as the "appropriate month" in the Regs.

Appropriate Month Selection
The Regs. provide options to taxpayers regarding the selection of CPI or PPI index months depending on their current year cost method & their history of inventory production or purchases throughout the year. These index months are referred to as the appropriate month in the Regs. The Regs. allow retailers using the retail method to only use the month of their year end as their appropriate month. The IRS definition of "retail method" is LIFO calculations for which retail inventory balances are converted to base year retail indexes using retail selling price inflation indexes. This definition differs from the commonly used retail industry term Retail Inventory Method (RIM) which is the method commonly used to reduce retail inventory balances to a cost balance using departmental purchase & price change data. Other taxpayers (other than retailers using the retail method) have the option of electing one of the following two appropriate month selection options:

1. **Annual selection -** Annually determining an appropriate month for each pool. The appropriate month is the month most consistent with the taxpayer's current-year cost method & the taxpayer's history of inventory production or purchases throughout the year. The appropriate month can change from year to year.
2. **Representative appropriate month -** Making an election to use the same representative appropriate month for every year. This representative month must also be a month consistent with the taxpayer's current-year cost method & the taxpayer's history of inventory production or purchases throughout the year.

If the latest acquisitions current-year cost method is selected, the appropriate month will either be the year end month or a month or two earlier than the year end month. If the earliest acquisitions current-year cost method is selected, the appropriate month will be one of the first months of the year.

Reg. § 1.472-8(e)(3)(iii)(B)(3) provides examples of months deemed to be appropriate months for various current-year cost & taxpayer's history of inventory production or purchases throughout the year combinations.

Although various CPAs have touted the ability to use different appropriate months for different pools & different months for different years as an improvement in the New Regs., doing so almost always creates additional complications in the annual index calculations without any compensating tax savings benefit. This is because the cumulative amount of inflation will be the same over time once the IPIC method is adopted & changing the appropriate month from year to year or using different appropriate months for different pools only complicates the calculations by requiring index calculations using either more than or less than 12 months' inflation.

Most companies have historically used the most recent purchases current-year cost method. A fairly common practice for these IPIC taxpayers not required to use the last month of the year as the appropriate month (by virtue of being a retailer using the retail method), is to use an appropriate month earlier than the last month of the year to facilitate quicker LIFO calculations. Before the advent of the BLS Web site which makes PPI & CPI indexes available within about 15 days after month end, this was a useful technique but is not really necessary now. Another planning idea was to elect the earliest acquisitions current-year cost method so that the first month of the year can be used as the appropriate month. This is an option no longer available based on the IRS's clarification of the definition of current-year cost in their 2000 Dual Index Issues Paper.

Method Changes & LIFO Election Expansions

Eligibility to Use the IPIC Method & IRS Filing Requirements

With the issuance of the New IPIC LIFO Regs. in 2002, all taxpayers are eligible to use the IPIC method. A Form 3115 Application for Change in Accounting Method is required to be filed to change from a non-IPIC LIFO method to the IPIC method. This type of change is normally an automatic approval change for which the Form 3115 due date is the same as for the Form 1120 including extension. A Form 970 Application to Use LIFO Inventory Method is required to be filed for changes to the IPIC method even for companies already using a non-IPIC LIFO method. No Form 3115 filing fee is required for automatic approval accounting method changes. Taxpayers not already using the LIFO method need only to file a Form 970 to adopt LIFO (IPIC or otherwise) & the Form 970 due date is the same as for the Form 1120 including extension.

IPIC Method IRS Automatic Approval Changes

The IRS allows a number of automatic approval changes to and within the IPIC method, for these automatic changes, the following applies:

- Change is made on a cut-off basis, meaning that no prior-period adjustments (i.e. §481(a) adjustments) are required & the change is made of as of the year that the IRS Form 3115 Change in Accounting Method is filed; if a company were to switch to the IPIC method for their 12/31/2018 year end, the IPIC method change would be effective as of 01/01/2018 if the IRS Form 3115 is filed with their 2018 year end 1120(s)
- No IRS users fee required to adopt the change
- Form may be filed after the year end, meaning a company can decide to make the change between their tax year end and 1120(s) filing deadline

LIFO Election Scope Expansions

A fairly common practice among retail grocers historically has been to exclude certain departments from LIFO. Perhaps 40% or so of these companies have excluded fresh meats & produce. Many also excluded bakery, deli, floral & pharmacy departments. One of the reasons these departments were not on LIFO was that meat & produce are commodity goods whose prices & inflation indexes can fluctuate greatly which results in unpredictable LIFO expense amounts. Another reason for these departments' exclusion from LIFO is that internal indexes are difficult to calculate for commodity items. The reasons pharmacy inventory would be excluded from LIFO are:1) the high levels of pharmacy inflation has caused some companies to exclude this department from LIFO to avoid the additional book LIFO charge this would require (this reason is much more applicable to publicly traded companies) & 2) having a pharmacy department is relatively new to many companies & they neglected (either intentionally or unintentionally) to expand their LIFO election for this department when it was added.

Our recommendation with respect to the LIFO election scope for grocery retailers is that all food & beverage goods be on LIFO because over time all food & beverage categories prices have risen. Meats & produce are typically not a large enough portion of total inventories that their volatile price indexes will greatly affect the total LIFO expense. Use of the IPIC method makes calculation of indexes for commodity items simple, so this reason for excluding departments from LIFO is not applicable for LIFO taxpayers.

IPIC Pooling Method Guidelines

The IPIC method Regs. allow for IPIC LIFO taxpayers to optionally elect to use the IPIC LIFO pooling method. This method is referred to as the IPIC 5% pooling method. Under this method, pools are established for each PPI Table 9 2-digit category or CPI Major Group which includes 5% or greater of the taxpayer's total FIFO inventory balances on LIFO. A single de minimis or all other pool will include the inventory balances represented by the less than 5% 2-digit PPI codes or CPI Major Group. If the total FIFO inventory balances for this all other pool is less than 5%, these 2-digit PPI codes or CPI Major Groups may be included in the largest pool. This determination is made upon election of the IPIC method & the Regs. provide for review of the pools used every other year in which case more or less pools may be required as determined by the same 5% rule.

Use of the IPIC 5% pooling method is not mandatory for companies using the IPIC method. The following are alternative pooling methods provided by the IRS:

- **By line, type, or class of goods** – Wholesalers & retailers can use separate pools for each major line, type, or class of goods. Customary business practices for a particular trade or industry determine what constitutes a major line, type, or class of goods. Authorized by Regs. § 1.472-8(c).

Pooling methods available only to manufacturers & processors:

- **Natural business unit pooling** – A pooling method authorized by Regs. § 1.472-8(b)(1) for manufacturers & processors. A Natural Business Unit(NBU) includes all inventory items related to a product line or related product lines, including raw materials, work in process, & finished goods. Distinct business units require separate pools. A natural business unit may be defined based on divisions established by internal management, separate production facilities or processes, or separate financial records. Manufacturers that also purchase goods for resale are required by the IRS in Rev. Rul. 79-290, Rev. Rul. 82-192 & PLR 8842061 to use separate pools for manufactured goods & goods purchased for resale.
- **Multiple pools** – Companies may group together similar items in a pool even if they are not all within the same natural business unit. Grouping goods together to form a pool may be based on such factors as the similarity or interchangeability of raw materials, the similarity of the production processes, the similarity of the use of the products, standard practices within the trade or industry, & whether the goods are treated similarly by a company's management. Authorized by Regs. § 1.472-8(b)(3)(i).
- **Raw material content** – Goods with similar raw materials, including the raw material content of work-in-process & finished goods may be grouped together to form a pool for manufacturers or processors. Raw materials that are not similar in nature may not be grouped together in the same pool even if they are processed or manufactured into the same finished product. Authorized by Regs. § 1.472-8(b)(3)(ii).

To maximize tax savings, companies should use as few pools as possible because this will reduce the likelihood of decrements because decreases in inventory values will be offset by increases in others

for groupings of inventory items included in the same pool. Decrements result in lower-cost goods being included in cost of goods sold which increases taxable income.

Repooling

If the makeup of pools changes as a result of switching to the IPIC method, reconfiguration of pools, or "repooling" is required. To do this, inventory must be sorted by the categories required (using either the Most-Detailed Categories method or the 10 Percent method) by the new pooling configuration as well as those categories required by the old pooling scheme. The result of this is that portions of individual old pools are allocated to different new pools. A repooling matrix illustrates this below:

Old	-------New Pools & % of old Pools--------					
Pool	1	2	3	4	5	Total
A	20%	25%	30%	15%	10%	100%
B	10%	-	85%	-	5%	100%
C	55%	33%	-	-	12%	100%
D	20%	25%	30%	15%	10%	100%
E	10%	35%	40%	7%	8%	100%
F	5%	40%	10%	10%	35%	100%
G	-	15%	10%	45%	30%	100%
H	2%	-	30%	40%	28%	100%

Old pools B & C are each split into three pieces as shown above, pools G & H are each split into four pieces & the other pools are each split into five pieces. The seven pieces coming from the old pools that now belong in new pool 1 are combined. The same combination procedure is then applied to the other pools. Pool splitting & combination procedures are described in Regs. §1.472-8. The measurement date for the allocation is the year end before the new pooling method is implemented. The repooling matrix percentages are calculated using the FIFO balances as of the year end of the pooling method change despite the fact that the LIFO layer histories being repooled are as of the year end prior to the method change.

Pooling for Separate Corporations

The IRS Regs. require separate sets of LIFO pools to be maintained for each separate corporation regardless of whether consolidated federal tax returns are filed. Qualified Subchapter S subsidiary corporations (Q-Subs) & certain other legal entities may be "disregarded entities" in the eyes of the IRS & separate LIFO pools need not be maintained for disregarded entities for tax purposes.
No such separate set of LIFO pools for different corporations requirement exists for GAAP & book LIFO calculations for a "consolidated" set of pools are not uncommon.

Changing Corporate Status

Companies that change from "C" corporations to Subchapter S corporations are required by the IRS Regs. to recapture their LIFO reserve. This is required for tax purposed only because there is no corresponding GAAP requirement.

Using the IPIC LIFO Method for Financial Reporting

A 1982 AICPA LIFO Issues Paper titled *Simplified LIFO for Financial Reporting Purposes* stated that the IPIC method was an acceptable method for financial reporting unless "it is apparent that the external index structure & its application do not reflect a company's experience." The other GAAP issue when switching from non-IPIC LIFO (internal index) to IPIC LIFO is whether this is a change to a preferable method. In a perfect world, this change should seldom be a preferable method because one

would normally assume that internal indexes are a better measure of a company's inflation than government price indexes. The reason the IPIC method may be preferable for some companies is that most companies use shortcuts in their internal index calculation method that may render those indexes less accurate than external indexes.

It has been our experience that auditors are less likely to object to changes to the IPIC method for financial reporting purposes for private companies but these objections are common for publicly traded companies. We have seen several cases of companies being allowed to make the change to the IPIC method if the historical comparison of pro-forma IPIC method calculations to the actual internal indexes shows the IPIC method producing a similar amount of inflation over the past two or three years as internal index inflation.

While the LIFO conformity rules included in the Regs. Sec. 1.472-2(e) require the use of the LIFO method for financial reporting if it is used for tax purposes, it does not require that the LIFO methods be the same. Most U.S. based publicly traded supermarket chains use internal indexes for financial reporting LIFO & the IPIC method for tax. An often-overlooked aspect of the conformity rule is that while taxpayers cannot have goods on LIFO for tax but not book, there is no reason why taxpayers cannot have more goods on LIFO for book than for tax. A company could reduce their book LIFO expense by having consistently deflationary goods on LIFO for book but not for tax subject to the limitations of Lower-of-Cost-or-Market accounting.

IPIC Method Shortcuts

It is not uncommon for smaller companies to use certain IPIC Regs. provisions but not others. One of the most commonly-used shortcut is what we call "Simplified Simplified LIFO". An example of this is in the grocery industry whose pools are the traditional grocery retail pools such as grocery, meat, produce, HABA (Health and beauty aids), pharmacy, tobacco & alcoholic beverages. This shortcut entails using a single CPI category for each pool. Use of this shortcut allows for the use of a "less-detailed" CPI category which is the best match for that pool, thereby significantly reducing the time otherwise spent assigning the appropriate BLS categories to inventories on an item by item basis (i.e. For example, the *SAF11 Food at home* index is normally used for the grocery pool & the *SAF1121 Meats, poultry & fish* index is used for the meat pool).

Use of this shortcut method will probably not produce substantially higher or lower inflation, in the long run, compared to the proper application of the IPIC method. This is probably why some companies use this, i.e. they think that if the results are about the same as for using the proper methods, there is little chance of IRS adjustment. While this may be true, the IRS could terminate a company's LIFO elections if it does not retain the books & records necessary to recalculate past years' LIFO inventories using the proper methodology. "Inadequate books & records" is a reason specifically listed in the Regs. warranting LIFO termination.