

LIFO Case Study for Sample Auto Dealer For 12/31/2024 Year End

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Auto Dealer LIFO Overview

Alternative LIFO method (ALM): Under the ALM, items are defined by model code, and inflation is measured by comparing each model code's current & prior period's invoice base costs for all vehicles on hand at year end. To calculate inflation, the model code & base vehicle cost for each vehicle on hand at year end must be extracted from the invoice to create a schedule of quantities & average year end base vehicle costs by model code. A subsequent mapping of each model code's prior period base vehicle cost is performed, and inflation is calculated by double extending the current year end quantity for each model code against its current/prior invoice base vehicle costs & taking the quotient of the sum of the current & prior period's extensions.

- **Pros**
 - Historically consistently created more inflation & LIFO tax benefit than IPIC method until 2020
 - IRS safe harbor method & used by many auto dealers since its inception
- **Cons**
 - Delays booking annual year end LIFO adjustment & integrating into P12 financial statements compared to IPIC method because the calculation requires for invoices of all vehicles on hand at year end to be available to complete calculation
 - Higher outsourcing costs than IPIC method
 - Interim estimates take more time than IPIC method since inflation is measured by invoice cost
 - Not eligible for heavy duty trucks with GVWR > 14K lbs. (only light duty trucks are eligible; unlike IPIC method which is eligible to be used for all vehicles)
 - Year end calculations require more turnaround time since inflation data typically isn't available until after year end
 - Used vehicle ALM yields materially less inflation & LIFO tax benefits than new vehicle ALM, causing many dealers to choose to not value their used vehicles on LIFO

IPIC method: Under the IPIC method, items are defined by the Bureau of Labor Statistics Consumer/Producer Price Index categories that includes the goods in a company's product mix. For auto dealers, there are three BLS PPIs applicable to their inventory (1. Cars 2. Trucks, SUVs, minivans & crossovers 3. Parts) & four BLS CPIs applicable to their inventory (1. New cars 2. New trucks, SUVs, minivans & crossovers 3. Used vehicles 4. Parts). Since most auto dealers have separate general ledger subledger accounts provide a direct mapping to the 3-4 BLS CPI/PPIs, there's no need to obtain information from each vehicles invoice. Once a schedule of inventory balances by BLS category is prepared, inflation is calculated by calculating a category inflation index for each BLS category, calculating the harmonic dollars weighted quotient by BLS CPI/PPI & taking the quotient of the sum of the inventory balances at specific ID cost & the sum of the harmonic dollars weighted quotients.

- **Pros**
 - Expedites booking annual year end LIFO adjustment & integrating into P12 financial statements because invoice-level detail is not required (all that is required to complete calculation is summarized balances by type)
 - Annual year end LIFO adjustment can be further expedited by using an inflation measurement period that's prior to the year end. For example, a company with a December year end could perform their year end calculation on January 1st by using November BLS CPI/PPI.
 - Interim estimates can be easily performed on demand since they can be made using the most recent BLS inflation rates & the prior period's inventory balance/product mix
 - Can be used for all vehicles, including heavy-duty trucks with GVWR > 14K lbs. (unlike ALM which is only eligible to be used for light-duty trucks)
 - Lower outsourcing costs than ALM
 - IRS safe harbor method & has grown exponentially in popularity over the last three years
- **Con:** Prior to pandemic, created less inflation & tax deferral than ALM

Auto Dealer Tax Savings Opportunities & Simplification Strategies

- **Switch from the ALM to the IPIC method**
 - Can create more inflation & LIFO tax benefits compared to ALM for many makes
 - Materially reduces administrative burden & expedites annual LIFO adjustment process
 - Can also be used for heavy duty vehicles (as opposed to ALM which prohibits heavy duty vehicles from being valued under LIFO)
- **Expand LIFO election scope to include parts and/or used vehicles**
 - If using PPI, the same inflation rates are applied to new & used vehicles, which is often advantageous since ALM & CPI used vehicle inflation is very volatile & susceptible to material LIFO reserve recapture
 - Single BLS category is used to calculate parts inflation, making IPIC method parts inflation calculation much simpler to calculate compared to calculating an internal index

Pro Forma LIFO Calculation Comparison Overview

Present Methods

- Sample Auto Dealer has historically valued their new vehicles under the LIFO method, and has valued their parts & used vehicles under a non-LIFO method
- Sample Auto Dealer has historically used the alternative LIFO method (ALM) to value its new vehicles where each vehicle’s current & prior period’s base invoice costs are used to calculate inflation

Proposed Methods

- LIFOPro completed 2024 year end & 20 year pro forma IPIC LIFO calculations using the following assumptions to compare those results to Sample Auto Dealer’s present methods:
 - Using Consumer Price Indexes (CPI) – new vehicles
 - Using Producer Price Indexes (CPI) – all goods
 - Using Producer Price Indexes (PPI) – new vehicles
 - Using Producer Price Indexes (PPI) – all goods (including used vehicles)

Pro Forma LIFO Calculation Comparative Results Summary

Figure 1. Inventory Balances by Type

Type	12/31/2024	12/31/2023
New cars	\$ 551,883	\$ 496,695
New SUVs, trucks & minivans	7,375,527	\$ 6,637,974
Used cars	119,830	\$ 107,847
Used SUVs, trucks & minivans	2,567,017	\$ 2,310,315
Parts	430,016	\$ 387,014
New vehicles Totals	\$ 7,927,410	\$ 7,134,669
All goods Totals	\$ 11,044,273	\$ 9,939,846

Figure 2. 2024 Year End LIFO Calculation Comparative Summary

Inflation Method/Source Election Scope	IPIC PPI	IPIC PPI	IPIC CPI	IPIC CPI	ALM	ALM
	New Only	All Goods	New Only	All Goods	New Only	All Goods
Current Year Inventory at Cost	\$7,927,410	\$11,044,273	\$7,927,410	\$11,044,273	\$7,927,410	\$11,044,273
Prior Year Inventory at Cost	7,134,669	9,939,846	7,134,669	9,939,846	7,134,669	9,939,846
Current Year Inflation Rate	1.8%	1.7%	-0.4%	-1.1%	-1.4%	-2.4%
Current Year Inventory at LIFO	6,143,684	9,216,885	6,297,878	9,495,271	6,370,645	9,625,194
Prior Year Inventory at LIFO	5,477,034	8,282,211	5,477,034	8,282,211	5,477,034	8,282,211
Current Year LIFO Reserve	1,783,726	1,827,388	1,629,532	1,549,002	1,556,765	1,419,079
Prior Year LIFO Reserve	1,657,635	1,657,635	1,657,635	1,657,635	1,657,635	1,657,635
Current Year LIFO Expense (Income)	\$126,091	\$169,753	-\$28,103	-\$108,633	-\$100,870	-\$238,556
2024 Combined Federal/State Tax Rate	35%	35%	35%	35%	35%	35%
2024 LIFO Tax Benefit	\$44,132	\$59,413	-\$9,836	-\$38,021	-\$35,304	-\$83,495

Figure 3. 20 Year Pro Forma LIFO Inflation Calculation Comparative Summary

Inflation Method/Source Election Scope	IPIC PPI	IPIC PPI	IPIC CPI	IPIC CPI	ALM
	New Only	All Goods	New Only	All Goods	New Only
Inflation Frequency: 2005 - 2024	75%	75%	65%	55%	90%
Current Year Inflation Rate	1.8%	1.7%	-0.4%	-1.1%	-1.4%
3 Year Average Annual Inflation Rate	3.9%	3.9%	6.6%	6.2%	2.6%
5 Year Average Annual Inflation Rate	2.2%	2.2%	4.4%	4.5%	1.8%
10 Year Average Annual Inflation Rate	1.9%	1.9%	2.4%	2.2%	1.6%
20 Year Average Annual Inflation Rate	1.4%	1.4%	1.4%	1.3%	1.5%

Figure 4. LIFO Submethods Recommendations

Description	Present Methods	Proposed Methods
Index Computation Method	Dollar-value	Dollar-value
Inflation Comparison Period Method	Link-chain	Link-chain
LIFO Election Scope	New vehicles Alternative LIFO Method (ALM)	All inventories External Indexes (IPIC Method) BLS categories applicable to goods on hand IPIC Pooling Method
Inflation Measurement Source	Model code Vehicle Pool Method	
Item Definition Method		
LIFO Pooling Method		
Number of LIFO Pools	1	1
IPIC Submethods Recommendations		
Description	Present Methods	Proposed Methods
BLS Index Type		Producer Price Index (PPI)
10% or non-10% Method		Non 10% Method
Appropriate Month		TBD
Appropriate Month Selection Type		Annual selection
Preliminary or Final Indexes		Preliminary
Preliminary Index Release Version		1st Release

Pro Forma LIFO Calculation Findings

Present Methods

- **2024 year end (See Figure 2 below):**
 - Sample Auto Dealer’s 2024 year end LIFO calculation using the alternative LIFO method for new vehicles only resulted in 1.4% deflation that created \$100,870 of LIFO income (CY vs. PY LIFO reserve decrease)
 - The 2024 year end LIFO calculation using the alternative LIFO method for new & used vehicles and internal indexes for parts resulted in 2.4% deflation that created \$238,556 of LIFO income
- **20 Year Analysis (See Figure 3 below)**
 - The alternative LIFO method created a 20 year average annual inflation rate of 1.5%
 - There was 90% inflation frequency where the alternative LIFO method yielded inflation in 18 of the past 20 years

Proposed Methods

- **2024 year end (See Figure 2 below):** Sample Auto Dealers 2024 year end IPIC Method LIFO calculation results were as follows:
 - PPI – new vehicles: 1.8% inflation & \$126,091 of LIFO expense
 - PPI – all goods: 1.7% inflation & \$169,753 of LIFO expense
 - CPI – new vehicles: -0.4% deflation & \$28,103 of LIFO income
 - CPI – all goods: -1.1% deflation & \$108,633 of LIFO income
- **20 Year Analysis (See Figure 3 below):**
 - Depending on whether CPI/PPI was used and the LIFO election scope, the IPIC method created a 20 year average annual inflation rate of between 1.3% - 1.4%
 - Depending on whether CPI/PPI was used and the LIFO election scope, there was between 55% - 75% inflation frequency where the IPIC method yielded inflation in between 11 to 15 of the past 20 years

Recommendations

- **Switch from ALM to IPIC method & consider expanding election scope to include used vehicles**
 - Assuming LIFO election scope remains as is (new vehicles & parts on LIFO), IPIC method using PPI is projected to provide \$230K more LIFO expense & \$80K more LIFO tax benefit than the alternative LIFO method for the 2024 year end
 - If the LIFO election scope were to be expanded to include used vehicles, IPIC method using PPI is projected to provide \$270K more LIFO expense & \$90K more LIFO tax benefit than the alternative LIFO method for the 2024 year end
 - Future LIFO tax benefits under IPIC method can be expected to be comparable to the alternative LIFO method since short term historical IPIC inflation has been better than ALM & long term inflation has been comparable
 - IPIC method simplifies LIFO calculation & minimizes administrative burden
- **Outsource LIFO calculation**
 - LIFOPro manages all aspects of your company's LIFO calculation, including:
 - Year end LIFO calculation & LIFOPro PDF report electronic delivery providing all amounts required to record LIFO journal entry & prepare P12 financials on a LIFO basis
 - Net inventory method adjustments for dealers netting trade discounts & advertising expenses against vehicle costs
 - BLS category assignments
 - Rebase LIFO layer history as required by IRS Regs. when switching to IPIC method
 - Up to three interim estimates at no additional cost
 - IRS forms preparation for accounting method changes
 - §263A UNICAP costs
 - Maximize LIFO tax benefits from LIFO while minimizing the work
 - Guarantee LIFO calculation accuracy & eliminate IRS audit risk

Application of Recommended Changes

- Use above amounts to report estimated LIFO figure for all goods on P12 financial statements
- Send LIFOPro final 12/31/24 inventory balances by type
- Use 12/31/24 LIFOPro report amounts to report final LIFO figure for all goods on P13 financial statements
- Attach Form 3115/970 & statement package provided by LIFOPro to 2024 year end tax return

Figure 5. Pro Forma 20 Year Inflation Comparison Summary

Table	PPI	PPI	CPI	CPI	ALM
Scope		All		All	
Period	New	Goods	New	Goods	New
2005	-5.4%	-5.2%	-1.7%	-0.8%	
2006	1.8%	1.9%	-1.9%	-1.7%	
2007	-1.6%	-1.5%	-0.2%	0.1%	
2008	2.6%	2.6%	-5.1%	-5.4%	0.5%
2009	2.0%	1.9%	6.4%	6.9%	3.8%
2010	-0.5%	-0.4%	0.8%	1.6%	3.0%
2011	3.1%	3.1%	2.4%	2.9%	1.3%
2012	3.1%	3.0%	2.1%	1.0%	1.8%
2013	1.8%	1.7%	1.3%	1.3%	1.1%
2014	1.8%	1.7%	1.2%	-0.3%	0.3%
2015	1.6%	1.5%	0.6%	0.5%	0.9%
2016	2.6%	2.5%	0.6%	-0.5%	2.8%
2017	0.9%	0.9%	-0.2%	-0.4%	1.7%
2018	0.8%	0.8%	-0.6%	0.0%	1.6%
2019	-0.2%	-0.3%	0.3%	0.1%	1.2%
2020	-0.1%	-0.1%	2.0%	3.7%	-0.2%
2021	3.4%	3.4%	11.7%	17.0%	1.0%
2022	6.4%	6.4%	6.0%	2.1%	6.6%
2023	1.8%	1.8%	2.0%	-0.5%	0.4%
2024	1.8%	1.7%	-0.4%	-1.1%	-1.4%
20Y Avg	1.4%	1.4%	1.4%	1.3%	1.5%

Note: 20 year pro forma IPIC calculations use Sample Auto Dealer's 2024 product mix; ALM inflation rates are actual historical results. Periods without an inflation rate represent years where there was no layer & no inflation index available in Sample Auto Dealer's historical LIFO schedules.

Figure 6. Bureau of Labor Statistics Consumer/Producer Price Index Inflation History

BLS Table Name BLS Code BLS Category Description / Inflation Measurement Period	Producer Price Indexes (PPI)				Consumer Price Indexes (CPI)			
	141101 Passenger cars	141105 Trucks, truck tractors, & bus chassis 14,000 lb or less, incl. minivans & SUVs	141106 Trucks, over 14,000 lbs GVW	1412 Motor vehicle parts & equipment	SS45021 New trucks	SS45011 New cars	SETA02 Used cars and trucks	SETC Motor vehicle parts & equipment
11 Months Ended Nov. '24	1.7%	1.8%	1.7%	0.3%	-0.4%	-0.8%	-3.4%	1.2%
12 Months Ended Dec. '23	-3.0%	1.0%	2.0%	1.6%	1.1%	0.4%	-1.3%	-1.2%
12 Months Ended Dec. '22	1.9%	6.8%	1.9%	3.7%	6.0%	6.2%	-8.8%	9.9%
12 Months Ended Dec. '21	2.1%	3.5%	1.5%	5.3%	11.6%	12.0%	37.3%	11.3%
12 Months Ended Dec. '20	1.1%	-0.2%	1.2%	0.8%	1.9%	2.1%	10.0%	0.4%
12 Months Ended Dec. '19	0.4%	-0.3%	0.6%	-0.9%	0.3%	0.1%	-0.7%	1.8%
12 Months Ended Dec. '18	0.0%	0.8%	1.1%	1.8%	-0.7%	0.2%	1.4%	2.2%
12 Months Ended Dec. '17	-0.4%	1.0%	1.9%	0.5%	-0.1%	-1.1%	-1.0%	-0.5%
12 Months Ended Dec. '16	-0.1%	2.8%	2.0%	-0.2%	0.6%	-0.2%	-3.5%	-1.0%
12 Months Ended Dec. '15	2.1%	1.6%	2.8%	-0.4%	0.7%	-0.4%	0.4%	-0.3%
12 Months Ended Dec. '14	1.2%	1.8%	1.1%	0.1%	1.3%	-0.1%	-4.2%	-0.7%
12 Months Ended Dec. '13	-0.5%	2.0%	2.3%	0.2%	1.4%	-0.6%	-4.5%	-2.1%
12 Months Ended Dec. '12	0.3%	3.3%	2.3%	0.5%	2.1%	1.1%	-3.2%	0.9%
12 Months Ended Dec. '11	2.3%	3.2%	2.4%	2.2%	2.3%	4.0%	-0.8%	5.9%
12 Months Ended Dec. '10	-2.2%	-0.3%	3.0%	1.2%	1.0%	-1.1%	1.1%	3.3%
12 Months Ended Dec. '09	0.1%	2.1%	3.7%	-1.1%	6.6%	3.6%	1.7%	1.3%
12 Months Ended Dec. '08	3.1%	2.5%	3.6%	3.1%	-5.3%	-1.1%	1.9%	7.4%
12 Months Ended Dec. '07	-1.2%	-1.6%	4.0%	0.8%	-0.2%	-0.4%	2.0%	3.7%
12 Months Ended Dec. '06	-0.5%	2.0%	3.6%	3.1%	-2.0%	0.2%	1.8%	4.8%
12 Months Ended Dec. '05	-3.4%	-5.6%	6.4%	1.1%	-1.9%	0.8%	0.2%	3.7%
3 Year Annual Average	0.3%	3.7%	1.8%	3.5%	6.2%	6.1%	7.3%	6.5%
5 Year Annual Average	0.5%	2.1%	1.6%	2.2%	4.0%	4.0%	6.0%	4.2%
10 Year Annual Average	0.5%	1.9%	1.6%	1.2%	2.3%	1.9%	2.3%	2.1%
20 Year Annual Average	0.3%	1.3%	2.4%	1.2%	1.3%	1.3%	1.7%	2.6%
20Y Inflation Frequency Rate: '05 - '24	55%	75%	100%	80%	65%	55%	50%	70%

Source: Bureau of Labor Statistics (BLS) – Consumer Price Indexes & Table 9 Producer Price Indexes (PPI)

Inflation rates shown above represent the BLS PPI Table 9 categories that correspond to the most predominant items in Sample Auto Dealer's inventories.

LIFO Compliance & Reporting Considerations

- **First-time changes to IPIC method & scope expansions**
 - For dealers expanding election scope to include used vehicles and/or parts, P12 financial statements must show estimated LIFO values for both new and used vehicles
 - P12 2024 estimated LIFO value using IPIC method should be incorporated into P12 year end financial statements now if expanding election scope to include used vehicles or parts to ensure LIFO conformity rule compliance
 - Current period inventory balances or estimated year end balances & year to date or 12M ended November CPI/PPI can be used as an easy way to quickly incorporate LIFO estimate into P12 statements
 - 12M ended November PPI can be used to complete final LIFO calculation to facilitate quick close & incorporating final LIFO value into P12 financial statement
 - Change from ALM to IPIC method is automatic approval change & is applied prospectively
 - Change to IPIC method requires for Form 970/3115 to be prepared, which is attached to tax return
- **Subsequent changes following making a switch to IPIC method**
 - Once the switch to IPIC from ALM is made, taxpayer must wait five years until a change back to the ALM can be made under automatic change procedures
 - For dealers switching from ALM to IPIC, a switch can be made from CPI to PPI or PPI to CPI as soon as the second year using the IPIC method (but must wait five years following changing between CPI/PPI for the first time)
- **All dealers**
 - Vast majority of dealers who elected/switched to IPIC method in 2021 used CPI because CPI used vehicles inflation was 37% & provided far more inflation/tax benefits than PPI (PPI inflation was 2% - 4% in 2021)
 - In 2024, there is deflation in the Used vehicles CPI, which will create LIFO income (aka LIFO recapture) for auto dealers using the IPIC CPI method who have used vehicles on LIFO. Since there is 1.7% - 1.8% PPI inflation for vehicles in 2024, many dealers using the IPIC CPI method who have used vehicles on LIFO should consider switching from CPI to PPI for the 2024 year end.