

# Best LIFO Practices, Methods & Calculation Review Report for Sample Company

As of the 12/31/2021 Year End  
Including Book & Tax LIFO Calculations

Prepared by  
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**LIFOPro**

Software & Turnkey Outsourcing Solutions

## LIFO Calculation Review

- **Inflation Index Calculation**
  - LIFOPro reviewed Sample Company's 2019 & 2020 year end Index Excel sheets to verify the accuracy of the Domestic & Imported pool's inflation index calculations
  - No errors were detected in the current year inflation indexes calculated by Sample Company.
- **LIFO Reserve Calculation**
  - LIFOPro reviewed Sample Company's Carryforward & LIFO Calc Excel sheets to verify the accuracy of the cumulative inflation indexes, LIFO layers, increments/decrements & LIFO reserve calculations
  - The following errors were detected:
    - **Cumulative Inflation Index Errors**
      - For the 2019 & 2020 year ends, Sample Company calculated current year indexes of 1.0035 & 1.0002 for the imported/purchased pool. See Cell S21 values of index Excel sheets of 2019 & 2020 year end Excel LIFO work files.
      - For the 12/31/15 – 12/31/20 year ends, Sample Company used the same 0.9943 current year index to calculate the cumulative indexes for the last six years for the imported/purchased pool when the current year indexes of 1.0035 & 1.0002 should have been used, which understated Sample Company's cumulative indexes for each of those periods. See Current Year Index values shown in cells Z11:AE11 & AG18:AL18 of PurPool & Imported Excel sheets of 2020 year end Excel LIFO work file.
      - For 2019 & 2020 year ends, cumulative index calculation error created a net LIFO reserve understatement of approximately \$65K
    - **LIFO Layer History Errors**
      - **Book LIFO**
        - **Manufacturing Pool (Domestic)**
          - Starting in 2010, the sum of the layers at base year costs by year used to calculate the LIFO reserve does not tie to the correct current year inventory at base year cost amounts. See Cells AH23:AR23 & AH54:AR54 of the Dom Excel sheet of the 2020 year end Excel LIFO work file.
          - The cumulative effect of the above errors caused the Manufacturing pool's book LIFO reserve to be understated by about \$1.8 million as of the 2020 year end
        - **Purchased Pool (Imported)**
          - Starting in 2005, the sum of the layers at base year costs by year used to calculate the LIFO reserve does not tie to the correct current year inventory at base year cost amounts. See Cells W24:AL24 & W55:AL55 of the Imported Excel sheet of the 2020 year end Excel LIFO work file.
          - The cumulative effect of the above errors caused the Manufacturing pool's book LIFO reserve to be overstated by about \$1.4 million as of the 2020 year end
        - **Combined:** on a combined basis, the book LIFO layer history errors resulted in a cumulative book LIFO reserve understatement of \$400K as of the 2020 year end. See Figure 1 on Page 4 for comparative details of the error.
      - **Tax LIFO**
        - Sec. 263A UNICAP costs were applied & integrated into the calculation of the layers at base year cost
        - UNICAP costs are only to be applied to the layers at LIFO cost
        - Subsequent layers at base year cost & layers at LIFO cost calculations made by Sample Company were erroneously made due to including UNICAP costs in the base year cost computation
          - The cumulative effect of the error caused the Manufacturing pool's tax LIFO reserve to be overstated by about \$890K as of the 2020 year end. See Figure 2 on Page 4 for comparative details of the error.

## Methods Compliance Review

- Sample Company did not provide copies of their IRS LIFO Election Form 970 & LIFO-related accounting method change Form 3115s. Accordingly, LIFOPro can not confirm whether Sample Company is in compliance with the LIFO Submethods elected in prior IRS filings.
- Based on reviewing Sample Company's 2018 – 2021 year end LIFO calculation documentation, LIFOPro confirmed the same LIFO Submethodologies have been consistently applied for periods reviewed.

## Best LIFO Practices Review

- **Inflation Measurement Source**
  - **Present method:** Sample Company presently uses an internal inflation measurement source to calculate their current year inflation index (internal indexes).
  - **Proposed method:**
    - Many companies use external indexes for the following reasons (IPIC PPI):
      - Often provides more inflation & tax savings compared to internal indexes
      - New items are given the same inflation index as preexisting items, which will provide for more inflation to be calculated in periods of inflation compared to internally calculated inflation indexes that set new item prior year item cost equal to the current year item cost
      - IRS safe harbor method that provides audit protection from prior period errors
  - **Pro forma external vs. internal index calculation comparison**
    - LIFOPro assigned Bureau of Labor Statistics Producer Price Index categories to Sample Company's items on hand for the 2021 year end to compare the external index inflation results to Sample Company's internal indexes
    - Using the IPIC method & PPI, the 2021 calculation resulted in 16% inflation that created \$1.2M of LIFO expense. Compared to the 2% internal index deflation that created \$110K of LIFO expense, the IPIC method results created 13% more inflation & \$1.1M more LIFO expense than Sample Company's internal index for the 2021 year end. See Figures 3 – 4 on Page 5 below.

## Recommendations

- **Switch to IPIC method**
  - For the 2021 year end, a change to the IPIC method would create \$1.1M more LIFO expense. Using a 30% combined federal & state tax rate, this represents \$340K in after-tax cash savings from applying a switch to the IPIC method.
  - Change to IPIC method is automatic approval & is attached to 2021 year end Form 1120
  - Change to IPIC method would provide Sample Company audit protection from prior period's LIFO calculation errors since IPIC method is an IRS safe harbor method
- **Obtain turnkey outsourcing solutions**
  - Avoid all the hassles of LIFO while preserving tax deferral/savings
  - Avoid the need to maintain in-house LIFO expertise and/or resources & reduce administrative/IT burden by partnering with the LIFO experts
  - Eliminate error-prone spreadsheet formulas & Excel schedules & replace them with standardized, user-friendly reports
  - Guarantee calculation accuracy, eliminate errors & audit risk
  - Increase reporting transparency & understandability
  - Simplify calculation policies/procedures & reporting
- **Implement recommended changes**
  - LIFOPro would manage all aspects related to switch to IPIC method, including LIFO calculation, report delivery & IRS Forms preparation required to apply changes in accounting method
  - See turnkey outsourcing solutions fee quote for details of engagement scope, documentation requirements, deliverables timing & outsourcing costs

Figure 1. 2005 – 2020 Year End Book LIFO Reserve Comparison: As Filed vs. Corrected

Year	FIFO Inventory Balance	As Filed			As Corrected			Difference	
		LIFO Inventory Balance	LIFO Reserve	LIFO Expense (Income)	LIFO Inventory Balance	Corrected LIFO Reserve	LIFO Expense (Income)	LIFO Reserve	LIFO Expense
2004	\$ 13,123,246	\$ 7,083,962	\$ 6,039,284		\$ 7,084,527	\$ 6,038,719		\$ 565	\$ 565
2005	12,902,043	6,149,994	6,752,049	712,765	6,405,408	6,496,635	457,916	255,414	254,849
2006	15,607,872	7,930,227	7,677,645	925,596	8,269,950	7,337,922	841,287	339,723	84,309
2007	13,652,867	5,411,760	8,241,107	563,462	5,732,553	7,920,314	582,392	320,793	(18,930)
2008	16,442,226	7,872,035	8,570,191	329,084	8,194,996	8,247,230	326,916	322,961	2,168
2009	16,260,696	7,590,216	8,670,480	100,290	7,883,732	8,376,964	129,734	293,516	(29,444)
2010	20,536,315	11,313,377	9,222,938	552,457	11,419,259	9,117,056	740,092	105,882	(187,635)
2011	21,591,820	12,214,584	9,377,237	154,299	12,320,464	9,271,356	154,300	105,881	(1)
2012	19,658,616	9,530,712	10,127,905	750,668	9,516,818	10,141,798	870,442	(13,894)	(119,774)
2013	21,363,368	11,434,757	9,928,610	(199,294)	11,420,865	9,942,503	(199,296)	(13,892)	1
2014	19,417,264	9,294,732	10,122,533	193,922	9,280,711	10,136,553	194,050	(14,021)	(128)
2015	15,588,404	6,447,998	9,140,406	(982,127)	6,319,899	9,268,505	(868,049)	(128,099)	(114,078)
2016	16,687,116	6,462,840	10,224,276	1,083,870	6,677,184	10,009,932	741,428	214,344	342,442
2017	14,551,338	6,462,352	8,088,986	(2,135,289)	5,416,786	9,134,552	(875,380)	(1,045,566)	(1,259,909)
2018	14,340,408	6,516,860	8,034,479	(54,508)	4,861,062	9,479,346	344,793	(1,444,867)	(399,301)
2019	13,918,765	6,519,440	8,436,212	401,734	4,730,430	9,188,335	(291,011)	(752,122)	692,745
2020	\$ 15,154,218	\$ 6,558,305	\$ 8,595,914	\$ 159,701	\$ 6,151,855	\$ 9,002,363	\$ (185,971)	\$ (406,450)	\$ 345,673

Figure 2. Tax LIFO Reserve Comparison: As Filed vs. Corrected

Year	FIFO Inventory Balance	As Filed			As Corrected			Difference	
		LIFO Inventory Balance	LIFO Reserve	LIFO Expense (Income)	LIFO Inventory Balance	LIFO Reserve	LIFO Expense (Income)	LIFO Reserve	LIFO Expense
1992	\$ 11,411,029	\$ 9,710,849	\$ 1,700,180	\$ 1,700,180	\$ 10,858,428	\$ 552,601	\$ 552,601	\$ 1,147,579	\$ 1,147,579
1993	11,232,391	9,398,465	1,833,926	133,746	10,560,450	671,941	119,340	1,161,985	14,406
1994	12,218,333	9,930,675	2,287,658	453,731	11,072,696	1,145,637	473,696	1,142,021	(19,965)
1995	11,848,621	8,989,424	2,859,197	571,539	10,170,686	1,677,935	532,298	1,181,262	39,241
1996	12,587,500	9,204,605	3,382,895	523,698	10,376,181	2,211,319	533,384	1,171,576	(9,686)
1997	15,707,730	12,595,418	3,112,312	(270,582)	13,196,038	2,511,692	300,373	600,620	(570,955)
1998	14,126,846	10,485,661	3,641,185	528,873	11,599,210	2,527,636	15,944	1,113,549	512,929
1999	19,458,536	16,448,986	3,009,550	(631,635)	16,344,028	3,114,508	586,872	(104,958)	(1,218,507)
2000	17,727,515	13,599,922	4,127,593	1,118,043	14,512,281	3,215,234	100,726	912,359	1,017,317
2001	15,311,691	11,468,674	3,843,017	(284,577)	12,464,586	2,847,105	(368,129)	995,912	83,552
2002	13,318,190	9,679,330	3,638,860	(204,157)	10,541,726	2,776,464	(70,641)	862,396	(133,516)
2003	13,454,148	9,694,546	3,759,602	120,743	10,292,204	3,161,944	385,480	597,658	(264,737)
2004	13,123,246	7,840,115	5,283,131	1,523,528	8,684,764	4,438,482	1,276,538	844,649	246,990
2005	12,902,043	7,200,435	5,701,608	418,477	7,801,834	5,100,209	661,727	601,399	(243,250)
2006	15,607,872	9,862,967	5,744,905	43,297	10,021,824	5,586,048	485,839	158,857	(442,542)
2007	13,652,867	6,643,922	7,008,945	1,264,040	7,196,006	6,456,861	870,813	552,084	393,227
2008	16,442,226	9,820,354	6,621,872	(387,073)	9,930,286	6,511,940	55,079	109,932	(442,152)
2009	16,260,696	10,301,689	5,959,007	(662,865)	9,762,166	6,498,530	(13,410)	(539,523)	(649,455)
2010	20,536,315	15,092,108	5,444,207	(514,800)	13,865,314	6,671,001	172,471	(1,226,794)	(687,271)
2011	21,591,820	15,622,868	5,968,952	524,745	14,391,884	7,199,936	528,935	(1,230,984)	(4,190)
2012	19,658,616	13,145,909	6,512,707	543,755	11,840,773	7,817,843	617,907	(1,305,136)	(74,152)
2013	21,363,368	15,046,443	6,316,925	(195,782)	13,372,698	7,990,670	172,827	(1,673,745)	(368,609)
2014	19,417,264	12,314,761	7,102,503	785,578	11,214,374	8,202,890	212,220	(1,100,387)	573,358
2015	15,588,404	8,020,929	7,567,475	464,972	7,687,108	7,901,296	(301,594)	(333,821)	766,566
2016	16,687,116	9,363,181	7,323,935	(243,540)	8,731,020	7,956,096	54,800	(632,161)	(298,340)
2017	14,551,338	6,970,786	7,580,552	256,617	7,231,972	7,319,366	(636,730)	261,186	893,347
2018	14,551,338	6,666,825	7,884,513	303,961	6,975,558	7,575,780	256,414	308,733	47,547
2019	14,551,338	6,676,172	7,875,166	(9,347)	6,984,038	7,567,300	(8,480)	307,866	(867)
2020	\$ 15,154,218	\$ 6,778,294	\$ 8,375,924	\$ 500,758	\$ 7,666,103	\$ 7,488,115	\$ (79,185)	\$ 887,809	\$ 579,943

Figure 3. 12/31/21 LIFO Calculation Inflation Measurement Source Comparison: External vs. Internal Indexes

Description	Proposed External Indexes	Present Internal Indexes	Difference: Proposed vs. Present
2021 Year End Inflation Rate	15.5%	2.1%	13.4%
2021 Year End LIFO Reserve	\$9,837,497	\$8,709,116	\$1,128,381
2020 Year End LIFO Reserve	\$8,595,914	\$8,595,914	\$0
<b>2021 Year End LIFO Expense (Income)</b>	<b>\$1,241,583</b>	<b>\$113,202</b>	<b>\$1,128,381</b>

Note: LIFO reserve & expense amounts are estimates as the projected LIFO reserve is calculated using the As Filed LIFO layer history schedule. Accordingly, above amounts are subject to change.

Figure 4. Bureau of Labor Statistics Producer Price Indexes for Most Predominant Goods

PPI Code	1015	1063	1141	114902	11490805
BLS PPI Category Description	Foundry And Forge Shop Products	Other Heating Equipment, Non-Electric, Including Parts	Pumps, Compressors, And Equipment	Metal Valves, Except Fluid Power	Filters And Strainers, Except Fluid Power
Inflation Measurement Period					
12 Months Ended Dec. '21	12.2%	17.4%	7.6%	4.9%	8.4%
12 Months Ended Dec. '20	3.0%	0.9%	0.7%	2.8%	-1.6%
12 Months Ended Dec '19	-0.8%	4.1%	1.0%	1.8%	3.6%
12 Months Ended Dec '18	2.3%	4.3%	4.4%	5.7%	1.1%
12 Months Ended Dec '17	0.3%	1.4%	2.5%	2.7%	1.3%
12 Months Ended Dec '16	-0.9%	3.0%	0.8%	2.1%	3.7%
12 Months Ended Dec '15	-1.5%	1.8%	1.3%	1.9%	0.6%
12 Months Ended Dec '14	1.3%	1.6%	2.8%	2.9%	1.6%
12 Months Ended Dec '13	-0.3%	1.5%	2.9%	3.3%	1.9%
12 Months Ended Dec '12	2.8%	2.2%	1.8%	3.6%	2.4%
12 Months Ended Dec '11	4.0%	3.1%	4.5%	7.7%	4.4%
12 Months Ended Dec '10	5.3%	1.0%	1.3%	2.3%	2.2%
12 Months Ended Dec '09	-2.3%	1.9%	0.7%	0.5%	5.0%
12 Months Ended Dec '08	10.5%	5.9%	7.0%	5.6%	3.2%
12 Months Ended Dec '07	4.0%	3.4%	4.2%	6.9%	5.3%
12 Months Ended Dec '06	5.0%	5.1%	4.1%	13.2%	4.9%
12 Months Ended Dec '05	4.7%	1.3%	6.5%	6.3%	2.3%
12 Months Ended Dec '04	8.8%	4.1%	4.6%	5.6%	3.7%
12 Months Ended Dec '03	0.7%	2.2%	1.0%	1.1%	0.0%
12 Months Ended Dec '02	0.1%	-0.4%	2.0%	2.1%	2.1%
<b>3 Year Annual Average</b>	<b>4.7%</b>	<b>7.2%</b>	<b>3.1%</b>	<b>3.2%</b>	<b>3.4%</b>
<b>5 Year Annual Average</b>	<b>3.3%</b>	<b>5.5%</b>	<b>3.2%</b>	<b>3.6%</b>	<b>2.5%</b>
<b>10 Year Annual Average</b>	<b>1.8%</b>	<b>3.7%</b>	<b>2.6%</b>	<b>3.2%</b>	<b>2.3%</b>
<b>20 Year Annual Average</b>	<b>2.9%</b>	<b>3.2%</b>	<b>3.1%</b>	<b>4.1%</b>	<b>2.8%</b>
<b>Years with Inflation: '02 - '21</b>	<b>15 of 20</b>	<b>19 of 20</b>	<b>20 of 20</b>	<b>20 of 20</b>	<b>18 of 20</b>
<b>Percent of Total Inv. Bal.</b>	<b>22%</b>	<b>11%</b>	<b>7%</b>	<b>12%</b>	<b>11%</b>

Note: Percentage of Total Inventory Balance figures shown above equal less than 100% because only the most predominantly-used BLS categories are listed above. Accordingly, other less predominant BLS categories used in the pro forma LIFO calculations are not shown above. Approximately 30 BLS PPI categories were assigned to Sample Company's 2021 year end product mix & used for the inflation calculation.

Source: Bureau of Labor Statistics (BLS) - 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 Company's inventories.