Chapter 5

INTERCOMPANY PROFIT TRANSACTIONS — INVENTORIES

Answers to Questions

1 Profits and losses on sales between affiliated companies are realized for consolidated statement purposes when the purchasing affiliate resells the merchandise to parties outside of the consolidated entity. If all merchandise sold to affiliates is resold to outside parties in the same period, there will be no unrealized profit to eliminate in preparing the consolidated financial statements.

2 Gross profit, rather than net profit, is the concept that should be used in computing unrealized inventory profits according to *SFAS No. 160 (This treatment was also prescribed by ARB No. 51).*

3 The amount of unrealized profit to be eliminated in the preparation of consolidated financial statements is not affected by the existence of a noncontrolling interest. All unrealized profit must be eliminated. In the case of upstream sales, however, the unrealized profit should be allocated between controlling and noncontrolling interests.

4 The elimination of intercompany sales and purchases does not affect consolidated net income. This is because equal amounts are deducted from sales and cost of sales and the net effect on consolidated net income is nil. The importance of the elimination lies in a correct statement of consolidated sales and cost of sales.

5 Consolidated working capital is not affected by the elimination of intercompany accounts receivable and accounts payable balances. Since equal amounts are deducted from current assets and current liabilities, the effect on the computation "current assets less current liabilities" is nil.

6 Upstream sales are sales from subsidiary to parent company. Downstream sales are sales from parent company to subsidiary. The importance of this designation lies in the fact that the profit or loss on such transactions is the selling affiliate's profit or loss. In the case of unrealized profit or loss on downstream sales, all the profit or loss is assigned to the parent company-seller. But unrealized profit or loss on upstream sales is profit or loss of the subsidiary-seller and is assigned to the parent company and noncontrolling interest in relation to their proportionate holdings.

7 Yes. If unrealized profits are not eliminated at year end, consolidated net income will be overstated. The ending inventory of one year becomes the beginning inventory of the next year, and unrealized profits in the beginning inventory will understate consolidated net income. The analysis of the effect of unrealized inventory profits on consolidated net income is basically the same as the analysis for inventory errors. Like inventory errors, errors in eliminating unrealized profits are self-correcting over any two accounting periods. Consolidated net income for 2011 is not affected.

8 The noncontrolling interest share is affected by upstream sales if the merchandise has not been resold by the parent company to outside parties by the end of the accounting period. This is because the noncontrolling interest share is based on the income of the subsidiary. If the subsidiary has unrealized profit from intercompany sales, its realized income will be less than its reported income. The noncontrolling interest share should be based on the realized income of the subsidiary.

9 A parent company's investment income and investment accounts are adjusted for unrealized profits on intercompany sales to subsidiaries in accordance with the one-line consolidation concept. The parent company reduces its investment and investment income accounts for the full amount of the unrealized profits in the year of intercompany sale. When the goods are sold to outside parties by the subsidiary, the profits of the parent company are realized and the parent company increases its investment and investment income accounts.

10 Combined cost of goods sold is overstated when there are unrealized profits in the beginning inventory and understated when there are unrealized profits in the ending inventory. The elimination of unrealized profits in the beginning inventory reduces (credits) cost of goods sold and the elimination of unrealized profits in the ending inventory increases (debits) cost of goods sold.

11 The effect of unrealized profits on consolidated cost of goods sold is not affected either by a noncontrolling interest or by the direction of the intercompany sales. All unrealized profit from both upstream and downstream sales is eliminated from consolidated cost of goods sold.

12 Unrealized profit in the beginning inventory is reflected in an overstatement of cost of sales and is eliminated by reducing (crediting) cost of sales and debiting the investment account if a correct equity method has been used and the intercompany sales are downstream. In the case of upstream sales, cost of sales is credited and the noncontrolling interest and the investment account are debited proportionately. When the parent company does not adjust its investment account for unrealized profits from intercompany sales, the above debits to the investment account would be to retained earnings.

13 There are two equally good approaches for computing noncontrolling interest share when there are unrealized profits from upstream sales in both beginning and ending inventories. One approach is to compute realized income of the subsidiary by adding unrealized profits in the beginning inventory to reported subsidiary net income and deducting unrealized profits in the ending inventory. The noncontrolling interest share is then equal to the realized income of the subsidiary multiplied by the noncontrolling interest percentage.

The other approach is to compute the noncontrolling interest percentage in reported subsidiary net income, in unrealized profits in beginning inventory, and in unrealized profits in ending inventory. Noncontrolling interest share is then computed by adding the noncontrolling interest percentage in unrealized profits in the beginning inventory to the noncontrolling interest share of reported income, and subtracting the noncontrolling interest percentage relating to the unrealized profits in the ending inventory.

14 The assumption that unrealized profits in an ending inventory are realized in the succeeding period is a convenience, but it does not result in incorrect measurements of consolidated net income as long as the unrealized profits at any statement date are correctly determined. This is because any unrealized profits in beginning inventory that are considered realized are credited to cost of sales. The same items will appear as unrealized profits in the ending inventory if they remain unsold, and the elimination of these items results in debiting cost of sales for the same amount. Thus, the working paper effects are offsetting as illustrated in the following working paper entries, which assume $5,000 unrealized profits from downstream sales.

Investment in subsidiary (retained earnings)	5,000	
Cost of sales		5,000
To eliminate unrealized profit in beginning inventory.		
Cost of sales	5,000	
Inventory		5,000
To eliminate unrealized profit in ending inventory.		

SOLUTIONS TO EXERCISES

Solution E5-1

1	a	**5**	c
2	d	**6**	a
3	a	**7**	a
4	c	**8**	c

Solution E5-2 [AICPA adapted]

1 a

2 c
Unrealized profits from intercompany sales with Kent are eliminated from the ending inventory: $320,000 combined current assets less $12,000 unrealized profit ($60,000 × 20%).

3 c
Combined cost of sales of $750,000 less $250,000 intercompany sales

Solution E5-3

1 d

Philly's separate income (in thousands)	$1,000
Add: Share of Silvio's income ($500 × 100%)	500
Add: Realization of profit deferred in 2009 $1,500 - ($1,500/150%)	500
Less: Unrealized profit in 2010 inventory $1,200 - ($1,200/150%)	(400)
Controlling share of consolidated net income	$1,600

2 d

Combined sales	$1,400
Less: Intercompany sales	(50)
Consolidated sales	$1,350

3 c

Combined cost of sales	$ 680
Less: Intercompany purchases	(50)
Less: Unrealized profit in beginning inventory	(4)
Add: Unrealized profit in ending inventory	10
Consolidated cost of sales	$ 636

Solution E5-4

1 b

Pride's share of Sedita's income ($60,000 × 80%)	$ 48,000
Less: Unrealized profit in ending inventory ($20,000 × 50% unsold × 80% owned)	(8,000)
Income from Sedita	$ 40,000

2 d

Combined cost of sales	$ 450,000
Less: Intercompany sales	(100,000)
Add: Unrealized profit in ending inventory	10,000
Consolidated cost of sales	$ 360,000

3 b

Reported income of Sedita	$ 60,000
Unrealized profit	(10,000)
Sedita's realized income	50,000
Noncontrolling interest percentage	20%
Noncontrolling interest share	$ 10,000

Solution E5-5

1 c

Combined sales	$1,800,000
Less: Intercompany sales	(400,000)
Consolidated sales	$1,400,000

2 c

Unrealized profit in beginning inventory	
$100,000 - ($100,000/125%)	$ 20,000
Unrealized profit in ending inventory	
$125,000 - ($125,000/125%)	$ 25,000

3 b

Combined cost of goods sold	$1,440,000
Less: Intercompany sales	(400,000)
Less: Unrealized profit in beginning inventory	
$100,000 - ($100,000/125%)	(20,000)
Add: Unrealized profit in ending inventory	
$125,000 - ($125,000/125%)	25,000
Consolidated cost of goods sold	$1,045,000

Solution E5-6

1 a

Patti's separate income	$200,000
Add: Income from Susan (below)	144,500
Controlling share of consolidated net income	$344,500
Susan's reported income	$200,000
Less: Patents amortization	(20,000)
Add: Unrealized profit in beginning inventory [$112,500 - ($112,500/150%)]	37,500
Less: Unrealized profit in ending inventory [$33,000 - ($33,000/150%)]	(11,000)
Susan's adjusted and realized income	$206,500
Patti's 70% controlling share of Susan's realized income	$144,500
Noncontrolling interest share (30%)	$ 61,950

2 c

Packman's share of Slocum's reported net loss ($150,000 loss × 60%)	$(90,000)
Add: Unrealized profit in ending inventory ($200,000 × 1/4 unsold)	(50,000)
Income from Slocum	(140,000)
Packman's separate income	300,000
Controlling share of consolidated net income	$160,000

3 b

Santini's reported net income	$300,000
Add: Realized profit in beginning inventory $150,000 - ($150,000/1.25)	30,000
Less: Deferred profit in ending inventory $200,000 - ($200,000/1.25)	(40,000)
Income from Santini	$290,000
Parnell's 75% controlling share of Santini's income	$217,500
Noncontrolling interest share (25%)	$ 72,500

Solution E5-7

Pycus Corporation and Subsidiary
Consolidated Income Statement
for the year ended December 31, 2009
(in thousands)

Sales ($400 + $100 - $40 intercompany sales)	$ 460
Cost of sales ($200 + $60 - $40 intercompany purchases + $10 unrealized profit in ending inventory)	(230)
Gross profit	230
Other expenses ($100 + $30)	(130)
Cnsolidated net income	100
Less: Noncontrolling interest share ($10 × 20%)	(2)
Controlling share of consolidated net income	$ 98

Solution E5-8

(in thousands)	2009	2010	2011
Pansy's separate income	$600	$800	$700
Add: 80% of Sheridan's reported income	800	880	760
Add: Realization of profits in beginning inventory		60	80
Less: Unrealized profits in ending Inventory	(60)	(80)	(40)
Controlling share of consolidated NI	$1340	$1660	$1500

Solution E5-9

Papillion Corporation and Subsidiary
Consolidated Income Statement
December 31, 2011
(in thousands)

Sales ($1,000 + $500 - $90 intercompany)	$1,410
Cost of sales ($400 + $250 - $90 intercompany - $10 unrealized profit in beginning inventory + $15 unrealized profit in ending inventory	(565)
Gross profit	845
Depreciation expense	(170)
Other expenses ($90 + $60)	(150)
Total consolidated income	525
Less: Noncontrolling interest share ($150 + $10 profit in beginning inventory - $15 profit in end. inventory) × 20%	(29)
Controlling interest share of consolidated net income	$ 496

Supporting computations

Cost of investment in Saiki at January 1, 2010	$ 600
Implied fair value of Saiki ($600 / 80%)	$ 750
Book value of Saiki	(700)
Goodwill	$ 50

Solution E5-10

1 *Noncontrolling interest share*

Seven's reported net income	$ 50,000
Add: Intercompany profit from upstream sales in beginning inventory	5,000
Less: Intercompany profit from upstream sales in ending inventory	(10,000)
Seven's adjusted and realized income	$ 45,000
Noncontrolling interest share (40%)	$ 18,000

2 *Consolidated sales*

Combined sales	$1,250,000
Less: Intercompany sales	100,000
Consolidated sales	$1,150,000

Consolidated cost of sales

Combined cost of sales	$ 650,000
Less: Intercompany sales	(100,000)
Add: Intercompany profit in ending inventory	10,000
Less: Intercompany profit in beginning inventory	(5,000)
Consolidated cost of sales	$ 555,000

Total Consolidated Income

Combined income	$ 300,000
Less: Intercompany profit in ending inventory	(10,000)
Add: Intercompany profit in beginning inventory	5,000
Total Consolidated Income	$ 295,000

Solution E5-11

1 b

Income as reported	$ 200,000
Add: Realization of profits in beginning inventory $120,000 - ($120,000/1.2)	20,000
Less: Unrealized profits in ending inventory $360,000 - ($360,000/1.2)	(60,000)
Realized income	160,000
Percent ownership	60%
Income from Suey	$ 96,000

2 c

Suey's equity as reported ($3,400,000 + $2,100,000)	$5,500,000
Less: Unrealized profit in ending inventory	(60,000)
Realized equity	5,440,000
Noncontrolling share	40%
Noncontrolling interest December 31, 2011	$2,176,000

3 b

Realized equity	$5,440,000
Controlling share	60%
Investment balance December 31, 2011	$3,264,000

Note: The excess fair value over book value is fully amortized. Therefore, the investment balance of $3,264,000 plus the noncontrolling interest of $2,176,000 is equal to the $5,440,000 realized equity at the balance sheet date.

Solution E5-12

Pullen Corporation and Subsidiary
Consolidated Income Statement
for the year ended December 31, 2009

Sales ($1,380,000 - $120,000 intercompany sales)	$1,260,000
Cost of sales ($920,000 - $120,000 - $5,000[a] + $12,000[b])	(807,000)
Gross profit	453,000
Operating expenses	(160,000)
Total consolidated income	293,000
Less: Noncontrolling interest share [$40,000 - ($12,000 × .2)]	(37,600)
Controlling share of consolidated net income	$ 255,400

[a] Unrealized profit in beginning inventory (downstream) ($180,000 - $160,000) × .25 = $5,000

[b] Unrealized profit in ending inventory (upstream ($120,000 - $90,000) × .4 = $12,000

SOLUTIONS TO PROBLEMS

Solution P5-1

Proctor Corporation and Subsidiary
Consolidated Statement of Income and Retained Earnings
for the year ended December 31, 2010

Sales ($2,600,000 + $1,300,000 - $160,000 intercompany sales)	$3,740,000
Less: Cost of sales ($1,600,000 + $780,000 - $160,000 intercompany purchases - $24,000 unrealized profit in beginning inventory + $32,000 unrealized profit in ending inventory)	(2,228,000)
Gross profit	1,512,000
Other expenses ($680,000 + $320,000)	(1,000,000)
Income before noncontrolling interest	512,000
Noncontrolling interest share($200,000+$24,000 - $32,000) × 10%	(19,200)
Controlling share of consolidated net income	492,800
Add: Beginning consolidated retained earnings	738,400
Less: Dividends for the year	(200,000)
Consolidated retained earnings December 31	$ 1,031,200

Solution P5-2

1 *Consolidated cost of sales — 2011*

Combined cost of sales ($625,000 + $300,000)	$ 925,000
Less: Intercompany purchases	(300,000)
Add: Profit in ending inventory	24,000
Less: Profit in beginning inventory	(12,000)
Consolidated cost of sales	$ 637,000

2 *Noncontrolling interest share — 2011*

Slam's net income ($600,000 - $300,000 - $150,000)	$ 150,000
Add: Profit in beginning inventory	12,000
Less: Profit in ending inventory	(24,000)
Slam's realized income	138,000
Noncontrolling interest percentage	10%
Noncontrolling interest share	$ 13,800

Solution P5-2 (continued)

3 *Consolidated Controlling share of NI— 2011*

Consolidated sales ($900,000 + $600,000 - $300,000)	$1,200,000
Less: Consolidated cost of sales	(637,000)
Less: Consolidated expenses ($225,000 + $150,000)	(375,000)
Less: Noncontrolling interest share	(13,800)
Controlling share of consolidated net income	$ 174,200

Alternatively,

Putt's separate income	$ 50,000
Add: Income from Slam	124,200
Controlling share of consolidated net income	$ 174,200

4 *Noncontrolling interest at December 31, 2011*

Equity of Slam December 31, 2011	$ 520,000
Less: Unrealized profit in ending inventory	(24,000)
Noncontrolling interest percentage	10%
Noncontrolling interest December 31	$ 49,600

Solution P5-3

1 *Inventories appearing in consolidated balance sheet at December 31, 2010*

Beginning inventory — Potter ($60,000 - $4,000a)	$ 56,000
Beginning inventory — Scan ($38,750 - $7,750b)	31,000
Beginning inventory — Tray ($24,000 - 0)	24,000
Inventories December 31	$111,000

Intercompany profit:

a Potter:

Inventory acquired intercompany ($60,000 × 40%)	$ 24,000
Cost of intercompany inventory ($24,000/1.2)	(20,000)
Unrealized profit in Potter's inventory	$ 4,000

b Scan:

Inventory acquired intercompany ($38,750 × 100%)	$ 38,750
Cost of intercompany inventory ($38,750/1.25)	(31,000)
Unrealized profit in Scan's inventory	$ 7,750

2 *Inventories appearing in consolidated balance sheet at December 31, 2011*

Ending inventory — Potter ($54,000 - $4,500c)	$ 49,500
Ending inventory — Scan ($31,250 - $6,250d)	25,000
Ending inventory — Tray ($36,000 - 0)	36,000
Inventories December 31	$110,500

Intercompany profit:

c Potter:

Inventory acquired intercompany ($54,000 × 50%)	$ 27,000
Cost of intercompany inventory ($27,000/1.2)	(22,500)
Unrealized profit in Potter's inventory	$ 4,500

d Scan:

Inventory acquired intercompany ($31,250 × 100%)	$ 31,250
Cost of intercompany inventory ($31,250/1.25)	(25,000)
Unrealized profit in Scan's inventory	$ 6,250