

periodic inventory system

Calculate inventory cost under the periodic inventory system using various costing methods

احتساب كلفة الخزين في ظل نظام الجرد الدوري باستخدام طرق الكلفة المختلفة

Illustration 1

Samer Company began July, 2011 with 2 DVDs (Basic Excel Training DVD) in inventory. It had 3 DVDs at the end of July. The company plans on selling each DVD for \$80 to its customers. Table below gives the inventory data for DVD:

July.1	Inventory	2 units @ \$ 40 each
5	Purchase	6 units @ \$45 each
15	Sale	4 units .
26	Purchase	9 units @ \$47 each
31	Sale	10 units .

1 – Periodic Inventory Record – First-in, first-out (FIFO) .

Cost of goods available for sale =

July.1	Inventory	2 units * 40	= 80
5	Purchase	6 units * 45	= 270
26	Purchase	9 units * 47	= 423
<hr/>			
		17 units	773

Cost of goods sold = 14 units (4 + 10)

$$2 * 40 = 80$$

$$6 * 45 = 270$$

$$6 * 47 = 282$$

$$14 \quad 632$$

Cost of goods available for sale - Cost of goods sold = Ending inventory

$$773 \quad - \quad 632 \quad = \quad 141 \quad \text{Amount}$$

$$17 \quad - \quad 14 \quad = \quad 3 \quad \text{units} * 47 = 141 \$$$

Under FIFO, the ending inventory comes from the newest—the most recent—purchases, which cost \$47 per unit. Periodic and perpetual are always the same for FIFO because FIFO sells oldest inventory acquisitions first. Therefore, it does not matter when FIFO is calculated; the first purchase will always be the same whether we calculate cost of goods sold on the sale date (Perpetual) or at the end of the period (Periodic) .

اولا - في ظل هذه الطريقة فان خزير اخر المدة يأتي من الوحدات الاحدث للمشتريات والتي هي بكلفة \$47 للوحدة. طريقة فايفو في نظامي الجرد الدوري والمستمر دائما تعطي نفس النتائج لان الوحدات المشتراة قديما هي التي تباع اولاً. لذلك فلا فرق ان اعتمدت طريقة فايفو فان المشتريات الاولى هي دائما نفسها فيما اذا احتسبت كلفة البضاعة المباعة في تاريخ البيع (في الجرد المستمر) او في نهاية الفترة (في الجرد الدوري).

نظام الجرد الدوري - طريقة مايرد اخرا يصرف اولاً (LIFO) - Periodic Inventory Record – First- out, first-in (LIFO)

Cost of goods available for sale =

July.1	Inventory	2 units	*	40	=	80
5	Purchase	6 units	*	45	=	270
26	Purchase	9 units	*	47	=	423
		17 units				773

Cost of goods sold = 14 units (4+ 10)

$$9 * 47 = 423$$

$$5 * 45 = 225$$

$$14 \quad 648$$

Cost of goods available for sale - Cost of goods sold = Ending inventory

$$773 \quad - \quad 648 \quad = \quad 125$$

$$17 \quad - \quad 14 \quad = \quad 3$$

$$1 * 45 = 45$$

$$2 * 40 = 80$$

$$3 \quad 125$$

Under LIFO, the ending inventory comes from the oldest cost of the period—in this case the beginning inventory of two units that cost \$40 per unit, plus one unit of the first purchase at \$45 equal \$125 the cost of ending inventory.

في ظل هذه الطريقة فان خزير اخر المدة يأتي من الكلف الاقدم للفترة - في هذه الحالة خزير اول المدة والذي يتكون من وحدتين بكلفة \$40 للوحدة + وحدة واحدة من اول المشتريات بكلفة \$45 يساوي \$125 كلفة خزير اخر المدة.

3- Periodic Inventory Record – Average Cost نظام الجرد الدوري - طريقة متوسط الكلفة

In the average-cost method, we compute a single average cost per unit for the entire period:

في ظل هذه الطريقة نحسب معدل كلفة واحد للفترة ككل:

Cost of goods available for sale =

July.1	Inventory	2 units	*	40	=	80
5	Purchase	6 units	*	45	=	270
26	Purchase	9 units	*	47	=	423
units		17				773

$$\begin{array}{rclclcl} \text{Cost of goods available} & \div & \text{Number of units available} & = & \text{Average cost per unit} \\ \$773 & \div & 17 \text{ units} & = & \$45.47 \end{array}$$

$$\text{Cost of goods sold} = 14 * 45.47 = 636.5$$

$$\begin{array}{rclclcl} \text{Cost of goods available for sale} & - & \text{Cost of goods sold} & = & \text{Ending inventory} \\ 773 & - & 636 & = & 137 \quad (3 * 45.7) \end{array}$$

Then apply this average cost to compute ending inventory and cost of goods sold, as shown in the far right column in illustration below:

ثم نستخدم هذا المعدل لاحتساب خزين اخر المدة وكلفة البضاعة المباعة كما مبين في الجدول ادناه:

Illustration: Periodic Inventory System – Inventory Costing Methods

	FIFO	LIFO	Average Cost
Cost of Goods available for sale	\$773	\$773	\$773
Ending Inventory			
FIFO (3 units x \$47)	(141)		
LIFO (2 units x \$40) + (1 units x \$45)		(125)	
Average (3 units x \$45.47)			(137)
Cost of Goods Sold	\$632	\$648	\$636

Journal Entries under Periodic System قيود اليومية وفقا لنظام الجرد الدوري

The accounting in a periodic system is similar to a perpetual system, except for the following aspects:

المحاسبة في نظام الجرد الدوري مشابهة لنظام الجرد المستمر، عدا الامور التالية:

1. The periodic system uses four additional accounts; Purchases, Purchase discounts, Purchase returns and allowances, Freight in. In the perpetual system, all these costs go into the Inventory account.

For Samer Company, the journal entries under the various inventory costing methods (FIFO, LIFO, and average) in a periodic inventory follow the same data in illustration below:

1- نظام الجرد الدوري يستخدم اربع حسابات اضافية؛ المشتريات، خصم المشتريات، مردودات ومسموحات المشتريات، النقل للداخل. في نظام الجرد المستمر كل هذه الحسابات تذهب الى حساب الخزين.

لشركة سامر، فان قيود اليومية وفقا لمختلف طرق تقييم الخزين (الفايفو، اللايفو، المعدل) في نظام الجرد الدوري تتبع نفس القيود في الجدول ادناه:

Illustration: Periodic inventory Journal Entries (All purchases and sales on account)

SAMER COMPANY JOURNAL			
Date 2011	Particulars	Debit	Credit
July 5	Purchases..... Accounts Payable (Purchased inventory on account 6 x \$45)	270	270
15	Accounts receivable..... Sales Revenues (Sales on account 4 x \$80)	320	320
15	No entry for cost of goods sold		
26	Purchases..... Accounts Payable (Purchased inventory on account 9 x \$47)	423	423
31	Accounts receivable..... Sales Revenues (Sales on account 10 x \$80)	800	800
31	No entry for cost of goods sold		

2. The end-of-period entries are more extensive in the periodic system because we must close out the beginning inventory balance and set up the cost of the ending inventory as in illustration below:

2- قيود نهاية الفترة اكثر شمولية في نظام الجرد الدوري لاننا يجب ان نغلق رصيد اول المدة وتنشيت كلفة خزين اخر الفترة كما موضح في الجدول ادناه.

Illustration: Periodic inventory System – FIFO Closing Entries

SAMER COMPANY JOURNAL			
Date 2011	Particulars	Debit	Credit
July 31	Cost of Goods Sold.....	80	
	Inventory (Beginning)		80
	(Transfer beginning inventory to cost of goods sold)		
	Inventory (Ending).....	141	
	Cost of Goods Sold		141
	(Record ending inventory physical count)		
	Cost of Goods Sold.....	693	
	Purchases		693
	(Transfer net purchases to cost of goods sold)		
	Income Summary.....	632	
	Cost of Goods Sold		632
	(Close cost of goods sold)		

3. Cost of goods sold in a periodic system is computed by the formula in following illustration:

3- كلفة البضاعة المباعة في نظام الجرد الدوري تحسب بالمعادلة في الجدول ادناه.

Illustration: Periodic inventory System – Cost of goods sold formula

	Average Cost Method	FIFO Method	LIFO Method
Sales Revenues	\$1,120	\$1,120	\$1,120
<u>Cost of Goods Sold:</u>			
Beginning inventory	\$ 80	\$ 80	\$ 80
Purchases	<u>693</u>	<u>693</u>	<u>693</u>
Cost of goods available for sale	\$773	\$773	\$773
Less: Ending inventory	<u>(137)</u>	<u>(141)</u>	<u>(125)</u>
Cost of goods sold	\$636	\$632	\$648
Gross Profit	\$482	\$488	\$472

Q – 1

Amwaj Company uses a periodic inventory system. For April, when the company sold 600 units, the following information is available.

	<u>Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
April 1 inventory	250	\$10	\$ 2,500
April 15 purchase	400	12	4,800
April 23 purchase	<u>350</u>	13	<u>4,550</u>
	1,000		\$11,850

Recorded : Compute the April 30 inventory and the April cost of goods sold using the average cost method.

Q – 2 Assume the following data with regard to inventory for Karam Company:

Aug. 1 Inventory	40 units @ \$10 per unit	\$ 400
8 Purchase	50 units @ \$11 per unit	550
22 Purchase	<u>35 units @ \$12 per unit</u>	<u>420</u>
Goods available for sale	<u>125 units</u>	<u>\$1,370</u>
Aug. 15 Sale	45 units	
28 Sale	<u>25 units</u>	
Inventory, Aug. 31	55 units	

Assuming that the inventory consists of 20 units from the August 8 purchase and 35 units from the purchase of August 22.

Recorded : calculate the cost of ending inventory and cost of goods sold FIFO Method .

Q - 2 Assume the following data with regard to inventory for Karam Company:

Aug. 1 Inventory	40 units @ \$10 per unit	\$ 400
8 Purchase	50 units @ \$11 per unit	550
22 Purchase	35 units @ \$12 per unit	420
Goods available for sale	125 units	\$1,370
Aug. 15 Sale	45 units	
28 Sale	<u>25 units</u>	
Inventory, Aug. 31	55 units	

Assuming that the inventory consists of 40 units from the Aug1 Inventory and 5 from August 8 purchase and 10 units from the purchase of August 22.

Recorded : calculate the cost of ending inventory and cost of goods sold LIFO Method .

Ex. 7:

The following table summarizes the beginning inventory, purchases, and sales of Zaid Company's single product during May:

Date	Item	Units	Cost	Total	Sale Units
May 1	Beginning inventory	2,800	\$20	\$56,000	
8	Purchase	1,200	22	26,400	
10	Sale				\$3,200
24	Purchase	1,600	24	38,400	
Total		5,600		\$120,800	\$3,200

Instructions:

1. Assuming that the company uses the periodic inventory system, compute the cost that should be assigned to ending inventory and to cost of goods sold using (a) the average-cost method, (b) the FIFO method, and (c) the LIFO method.
2. Assuming that the company uses the perpetual inventory system, compute the cost that should be assigned to ending inventory and to cost of goods sold using (a) the average-cost method, (b) the FIFO method, and (c) the LIFO method.
3. Compute inventory turnover and days' inventory on hand under each of the inventory cost flow assumptions in instruction 1. What conclusion can you draw from this comparison?

Ex. 8:

Jabber Company sells one product. Presented below is information for January for the Company.

Jan. 1 Inventory	100 units @ \$6 each
4 Sale	80 units @ \$8 each
11 Purchase	150 units @ \$6.50 each
13 Sale	120 units @ \$8.75 each
20 Purchase	160 units @ \$7 each
27 Sale	100 units @ \$9 each

Jabber uses the FIFO cost flow assumption. All purchases and sales are on account.

Instructions:

- a) Assume Jabber uses a periodic system. Prepare all necessary journal entries, including the end of month closing entry to record cost of goods sold. A physical count indicates that the ending inventory for January is 110 units.
- b) Compute gross profit using the periodic system.

- c) Assume Jabber uses a perpetual system. Prepare all necessary journal entries.
- d) Compute gross profit using the perpetual system.

Ex. 9:

Mazin Inc. had the following transactions in its first month of operations.

Date	Purchases	Sold or Issued	Balance
March 2	2,000 @ \$4.00		2,000 units
15	6,000 @ \$4.40		8,000 units
19		4,000 units	4,000 units
30	2,000 @ \$4.00		6,000 units

Instructions:

- 1- Calculate Goods Available for Sale
- 2- Assume that Mazin Inc.'s 6,000 units of inventory consists of 1,000 units from the March 2 purchase, 3,000 from the March 15 purchase, and 2,000 from the March 30 purchase. Compute the amount of ending inventory and cost of goods sold.
- 3- Use FIFO and LIFO to compute the amount of inventory and cost of goods sold under the perpetual and periodic systems. Show who (FIFO or LIFO) would be get the same amount whether a perpetual or periodic system is used and why?

