Process Costing-FIFO Method

Appendix 4A

FIFO vs. Weighted-Average Method

The FIFO method (generally considered more accurate than the weighted-average method) differs from the weighted-average method in two ways:

1. The computation of equivalent units.
2. The way in which the costs of beginning inventory are treated.

Equivalent Units – FIFO Method

Let's revisit the Smith Company example. Here is information concerning the Assembly Department for the month of June.

		Percent Completed	
	Units	Materials	Conversion
Work in process, June 1	300	40%	20%
Units started into production in June	6,000		
Units completed and transferred out of Department A during June	5,400		
Work in process, June 30	900	60%	30%

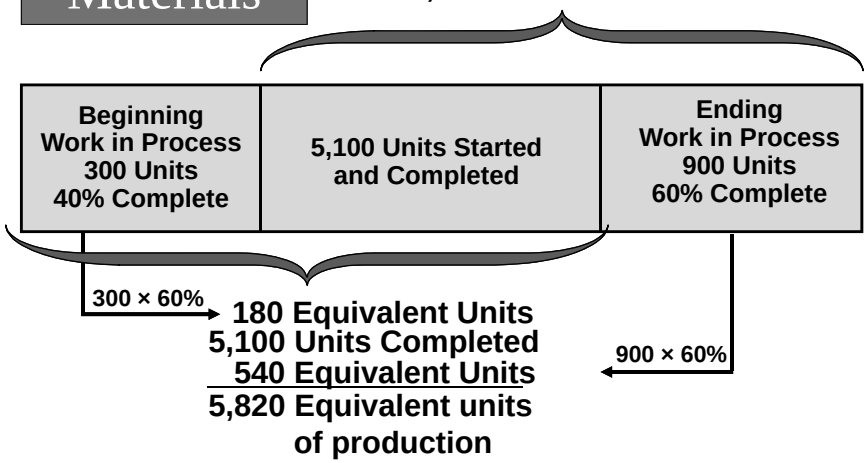
Equivalent Units – FIFO Method

Step 3: Add the equivalent units in ending Work in Process Inventory.

	Materials	Conversion
To complete beginning Work in Process:		
Materials: 300 units × (100% - 40%)	_____	
Conversion: 300 units × (100% - 20%)		_____
Units started and completed during June	_____	_____
Ending Work in Process		
Materials: 900 units × 60% complete	_____	
Conversion: 900 units × 30% complete	_____	_____
Equivalent units of production	_____	_____

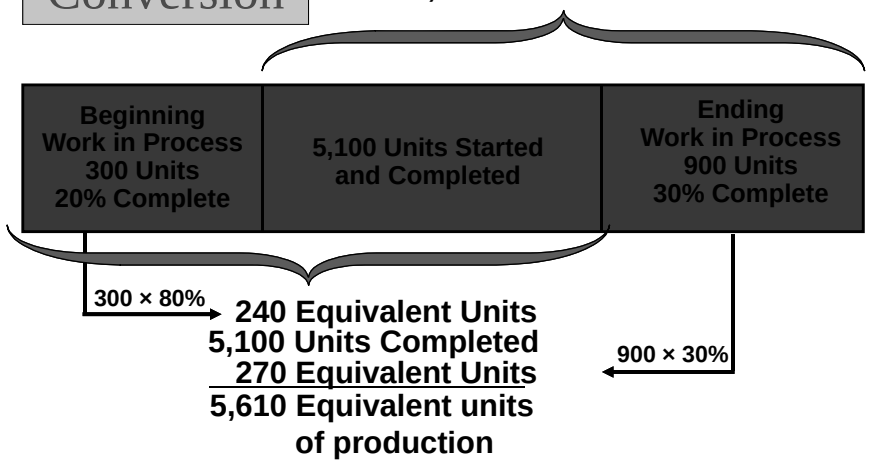
FIFO Example

Materials



FIFO Example

Conversion



Equivalent Units: Weighted-Average vs. FIFO

As shown below, the equivalent units in beginning inventory are subtracted from the equivalent units of production per the weighted-average method to obtain the equivalent units of production under the FIFO method.

	Materials	Conversion
Equivalent units - weighted-average method	5,940	5,670
Less equivalent units in beginning inventory:		
300 units × 40%	120	
300 units × 20%		60
Equivalent units - FIFO method	5,820	5,610

Cost per Equivalent Unit - FIFO

Let's revisit the Smith Company Assembly Department for the month of June to prepare our production report.

Beginning work in process:		**400 units**
Materials: 40% complete	$	6,119
Conversion: 20% complete	$	3,920
Production started during June		**6,000 units**
Production completed during June		**5,400 units**
Costs added to production in June		
Materials cost	$	118,621
Conversion cost	$	81,130
Ending work in process		**900 units**
Materials: 60% complete		
Conversion: 30% complete		

Cost per Equivalent Unit - FIFO

The formula for computing the cost per equivalent unit under FIFO method is:

$$\text{Cost per equivalent unit} = \frac{\text{Cost added during the period}}{\text{Equivalent units of production}}$$

Cost per Equivalent Unit - FIFO

	Total Cost	Materials	Conversion
Cost added in June	$ 199,751	$ 118,621	$ 81,130
Equivalent units		5,820	5,610
Cost per equivalent unit		$ 20.3816	$ 14.4617

$118,621 ÷ 5,820

$81,130 ÷ 5,610

Total cost per equivalent unit = $20.3816 + $14.4617 = $34.8433

Applying Costs - FIFO

Step 3: Compute the cost of ending Work in Process Inventory.

Assembly Department Cost of Ending WIP Inventory	Materials	Conversion	Total
Ending WIP inventory:			
Equivalent units			
Cost per equivalent unit			
Cost of Ending WIP inventory			

Cost of Units Transferred Out

Step 1: Record the cost in *beginning* Work in Process Inventory.

Step 2: Compute the *cost to complete* the units in beginning Work in Process Inventory.

Step 3: Compute the cost of units *started and completed* this period.

Step 4: Compute the total cost of *units transferred out*.

Assembly Department Cost of Units Transferred Out in June	Materials	Conversion	Total
Cost of Units Transferred Out:			
Cost in beginning WIP inventory	$ 6,119	$ 3,920	$ 10,039
Cost to complete beginning WIP			
Equivalent units to complete	180	240	
Cost per equivalent unit	$ 20.3816	$ 14.4617	
Cost to complete beginning WIP	$ 3,669	$ 3,471	7,140
Cost of units started and completed:			
Units started and completed	5,100	5,100	
Cost per equivalent unit	$ 20.3816	$ 14.4617	
Cost of units started and completed	$ 103,946	$ 73,755	177,701
Cost of Units Transferred Out			$ 194,880

Reconciling Costs

Assembly Department Cost Reconciliation for June		
Costs to be accounted for:		
Cost of beginning Work in Process Inventory	$	10,039
Costs added to production during the period		199,751
Total cost to be accounted for	$	209,790
Cost accounted for as follows:		
Cost of ending Work in Process Inventory	$	14,911
Cost of units transferred out		194,880
Total cost accounted for*	$	209,791

* $1 rounding error.

A Comparison of Costing Methods

In a lean production environment, FIFO and weighted-average methods yield similar unit costs.

When considering cost control, FIFO is superior to weighted-average because it does not mix costs of the current period with costs of the prior period.