5 Financial Statement Issues that are Unique to Manufacturers

Unlike retailers, manufacturers have three unique inventory categories: Raw Materials, Work in Process, and Finished Goods. Below is the inventory section from the balance sheet of an actual company:

INVENTORIES	
RAW MATERIAL	11,736,735
WORK-IN-PROCESS	7,196,938
FINISHED GOODS	2,161,627

For this company, observe that the finished goods is just a small piece of the overall inventory. Finished goods represent the cost of completed products awaiting sale to a customer. But, this company has a more significant amount of raw materials (the components that will be used in manufacturing units that are not yet started) and work in process. Work in process is the account most in need of clarification. This account is for goods that are in production but not yet complete; it contains an accumulation of monies spent on direct material (i.e., the raw materials that have been put into production), direct labor, and applied manufacturing overhead.

Your earlier studies should have ingrained these formulations: Beginning Inventory + Purchases = Cost of Goods Available for Sale, and Cost of Goods Available for Sale – Ending Inventory = Cost of Goods Sold. If you need a refresher, look at the Current Assets book. Of course, these relations were necessary to calculate the cost of goods sold for a company with only one category of inventory.

For a manufacturer with three inventory categories, these "logical" formulations must take on a repetitive nature for each category of inventory. Typically, this entails a detailed set of calculations/ schedules for each of the respective inventory categories. Don't be intimidated by the number of schedules, as they are all based on the same concept.

5.1 Schedule of Raw Materials

Focusing first on raw material, a company must determine how much of the available supply was transferred into production during the period. The schedule below illustrates this process for Katrina's Trinkets, a fictitious manufacturer of inexpensive jewelry.

KATRINA'S TRINKETS **Schedule of Raw Materials** **For the Year Ending December 31, 20X6**	
Beginning raw materials inventory, Jan. 1	$ 135,000
Plus: Net purchases of raw materials	620,000
Raw materials available	$ 755,000
Less: Ending raw materials inventory, Dec. 31	160,000
Raw materials transferred to work in process (to schedule of work in process)	$ 595,000

The amounts in the schedule are all "made up" to support the example, but in a real world scenario, the beginning and ending inventory amounts would be supported by a physical inventory and the purchases determined from accounting records. Or, Katrina might utilize a sophisticated perpetual system that tracks the raw material as it is placed into production. Either way, the schedule summarizes the activity for the period and concludes with the dollar amount attributed to direct materials that have flowed into the production cycle. This material transferred to production appears in the schedule of work in process that follows.

5.2 Schedule of Work in Process

The following schedule presents calculations that pertain to work in process. Pay attention to its details, noting that (1) direct materials flow in from the schedule of raw materials, (2) the conversion costs (direct labor and overhead) are added into the mix, and (3) the cost of completed units to be transferred into finished goods is called cost of goods manufactured. The amounts are assumed, but would be derived from accounting records and/or by a physical counting process.

KATRINA'S TRINKETS
Schedule of Work in Process
For the Year Ending December 31, 20X6

Beginning work in process inventory, Jan. 1			$ 425,000
Plus: Additions to work in process			
Direct materials (from schedule of raw materials)		$ 595,000	
Direct labor		405,000	
Factory overhead			
Indirect material	$ 15,000		
Indirect labor	13,000		
Factory utilities	80,000		
Factory depreciation	70,000		
Factory insurance, maintenance, and taxes	22,000	200,000	$1,200,000
Total manufacturing costs			$1,625,000
Less: Ending work in process inventory, Dec. 31			625,000
Cost of goods manufactured (to schedule of cost of goods sold)			$1,000,000

5.3 Schedule of Cost of Goods Manufactured

The schedules of raw materials and work in process are often combined into a single schedule of cost of goods manufactured. This schedule contains no new information from that presented on the prior page; it is just a combination and slight rearrangement of the separate schedules.

KATRINA'S TRINKETS
Schedule of Cost of Goods Manufactured
For the Year Ending December 31, 20X6

Direct materials:		
Beginning raw materials inventory, Jan. 1	$ 135,000	
Plus: Net purchases of raw materials	620,000	
Raw materials available	$ 755,000	
Less: Ending raw materials inventory, Dec. 31	160,000	
Raw materials transferred to production		$ 595,000
Direct labor		405,000
Factory overhead		
Indirect materials	$ 15,000	
Indirect labor	13,000	
Factory utilities	80,000	
Factory depreciation	70,000	
Factory insurance, maintenance, and taxes	22,000	200,000
Total manufacturing costs		$1,200,000
Beginning work in process inventory, Jan. 1		425,000
		$1,625,000
Less: Ending work in process inventory, Dec. 31		625,000
Cost of goods manufactured		$1,000,000

5.4 Schedule of Cost of Goods Sold

The determination of cost of goods sold is made via an examination of changes in finished goods:

KATRINA'S TRINKETS **Schedule of Cost of Goods Sold** **For the Year Ending December 31, 20X6**	
Beginning finished goods inventory, Jan. 1	$ 250,000
Plus: Cost of goods manufactured (from schedule of work in process)	1,000,000
Goods available for sale	$ 1,250,000
Less: Finished goods inventory, Dec. 31	190,000
Cost of goods sold (to income statement)	$ 1,060,000

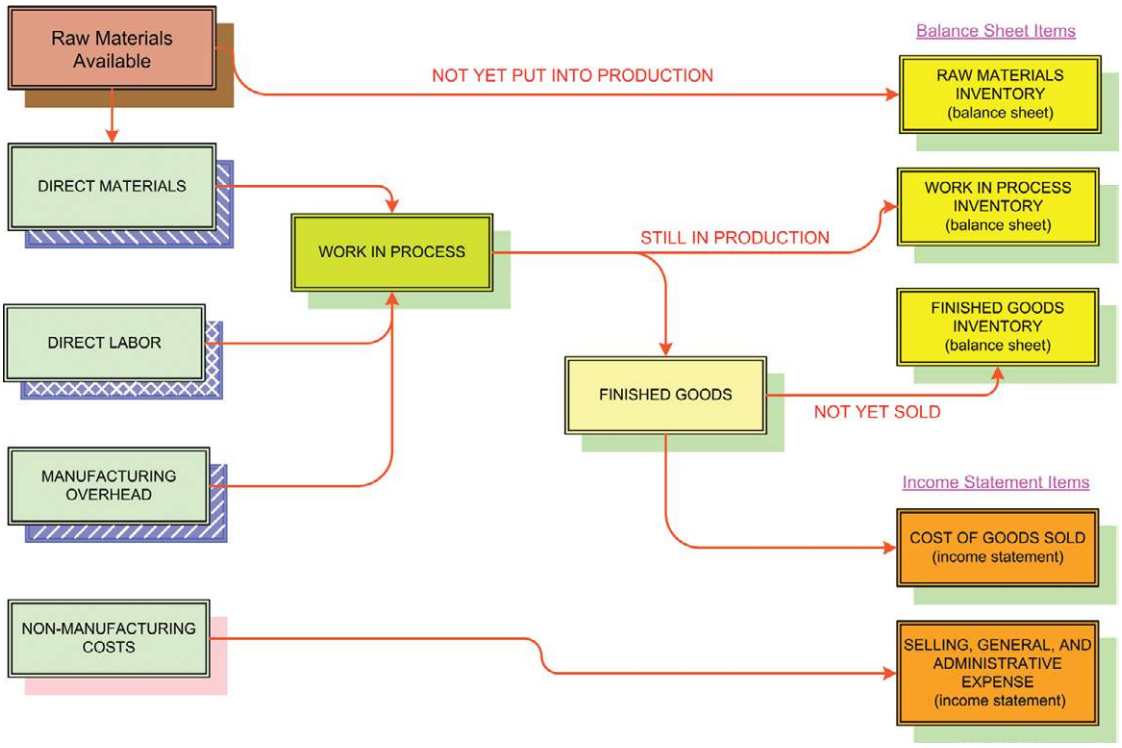
5.5 The Income Statement

An income statement for a manufacturer will appear quite similar to that of a merchandising company. The cost of goods sold number within the income statement is taken from the preceding schedules, and is found in the income statement below. All of the supporting schedules that were presented leading up to the income statement are ordinarily "internal use only" type documents. The details are rarely needed by external financial statement users who focus on the income statement. In fact, some trade secrets could be lost by publicly revealing the level of detail found in the schedules. For example, a competitor may be curious to know the labor cost incurred in producing a product, or a customer may think that the finished product price is too high relative to the raw material cost (e.g., have you ever wondered how much it really costs to produce a pair of $100+ shoes?).

KATRINA'S TRINKETS **Income Statement** **For the Year Ending December 31, 20X6**		
Sales		$ 1,980,000
Cost of goods sold		1,060,000
Gross profit		$ 920,000
Operating expenses		
Selling	$ 330,000	
General & administrative	270,000	600,000
Net income		$ 320,000

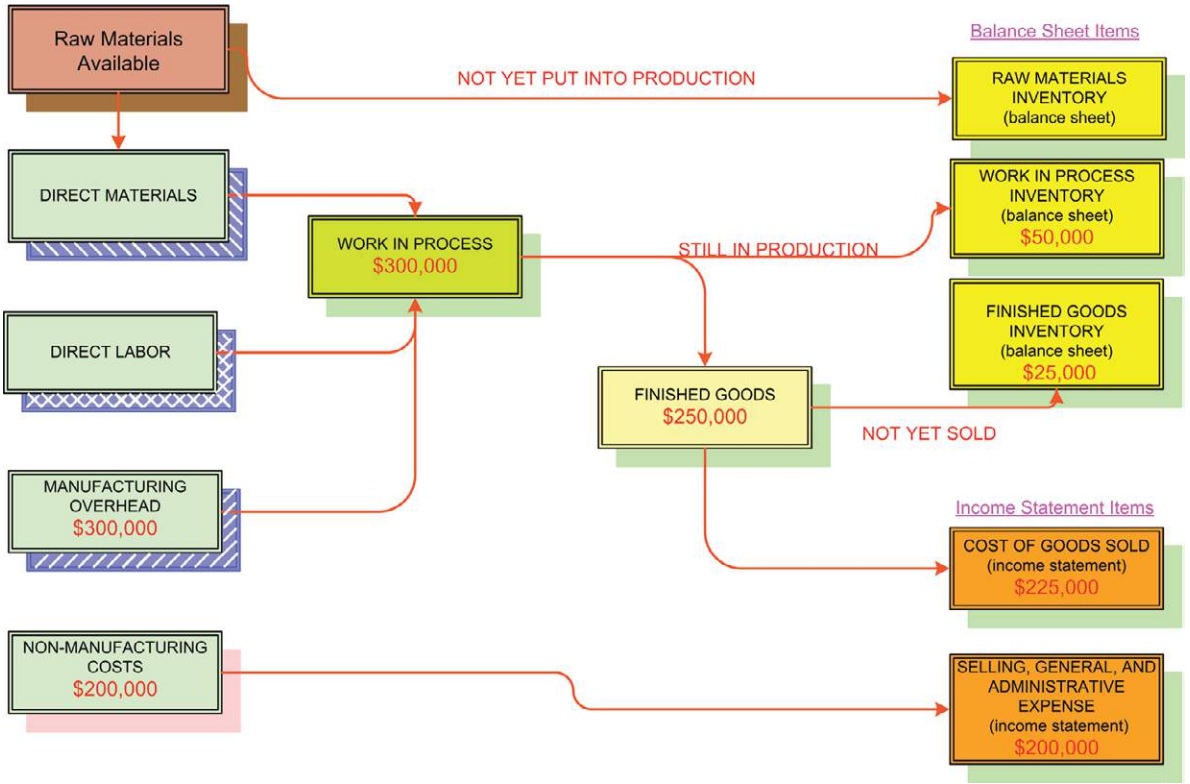
5.6 Reviewing Cost of Flow Concepts for a Manufacturer

Review the following diagram that summarizes the discussion thus far. Notice that costs are listed on the left – the "product costs" have a blue drop shadow and the "period costs" have a pink drop shadow. Further, the "prime costs" of production have a back slash in the blue shadow, while the "conversion costs" have a forward slash in the blue shadow. Yes, the direct labor shadow has both forward and back slashes; remember that it is considered to be both a prime and a conversion cost!



5.7 Critical Thinking About Cost Flow

It is easy to overlook an important aspect of cost flow within a manufacturing operation. Let's see if you have taken note of an important concept! Try to answer this seemingly simple question: Is depreciation an expense? You are probably inclined to say yes. But, the fact of the matter is that the answer depends! Let's think through this with an example. Suppose that Altec Corporation calculated deprecation of $500,000 for 20X1. 60% of this depreciation pertained to the manufacturing plant, and 40% related to the corporate offices. Further, Altec sold 75% of the goods put into production during the year. One third of the remaining goods placed in production were in finished goods awaiting resale, and the other portion was still being processed in the factory. So, what is the accounting implication? How does this all shake out? Let's reexamine the above diagram – this time with the flow of the $500,000 of depreciation superimposed (for this illustration, we are ignoring all other costs and looking only at the depreciation piece):



First, notice that the $500,000 of depreciation cost enters the cost pool on the left; $300,000 attributable to manufacturing ($500,000 × 60%) and $200,000 to nonmanufacturing ($500,000 × 40%). The nonmanufacturing depreciation is a period cost and totally makes its way to expense on the right side of the graphic. But, the manufacturing depreciation follows a more protracted journey. It is assigned to work in process, and 75% of the goods put in process end up being completed and sold by the end of the year. Therefore, $225,000 of the $300,000 ($300,000 × 75%) is charged against income as cost of goods sold. The other $75,000 ($300,000 – $225,000 cost of goods sold) remains somewhere in inventory. In our fact situation, 1/3 of the $75,000 ($25,000) is attributable to completed goods and becomes part of finished goods inventory. The other $50,000 ($75,000 × 2/3) stays in work in process inventory since it is attributable to units still in production.

Confusing enough? The bottom line here is that only $425,000 of the depreciation was charged against income. The other $75,000 was assigned to work in process and finished goods inventory. In short, $500,000 ($300,000 + $200,000) entered on the left, and $500,000 can be found on the right ($50,000 + $25,000 + $225,000 + $200,000). Returning to the seemingly simple question, we see that a cost is not always an expense in the same period. In a manufacturing business, much of the direct material, direct labor, and factory overhead can end up in inventory – at least until that inventory is disposed.

How important are these cost flow concepts? Well, they are important enough that the FASB has specified external reporting rules requiring the allocation of production overhead to inventory. And, for tax purposes, the IRS has specific "uniform capitalization" rules. Under these rules, inventory must absorb direct labor, direct materials, and indirect costs including indirect labor, pensions, employee benefits, indirect materials, purchasing, handling, storage, depreciation, rent, taxes, insurance, utilities, repairs, design cost, tools, and a long list of other factory overhead items. A company's results of operations are sensitive to proper cost assignment, and management accountants are focused on processes for correctly measuring and capturing this information. Subsequent chapters will better acquaint you with this aspect of accounting.