

Average PO Costing Method in ADempiere

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A. Material Costs

Formula :

$$\text{Current Cost} = \frac{((\text{old Current Cost} * \text{old Current Qty}) + (\text{PO Price} * \text{Receipt Qty}))}{(\text{old Current Qty} + \text{Receipt Qty})}$$

$$\text{Current Qty} = \text{old Current Qty} + \text{Receipt Qty}$$

Note: PO Price is converted into accounting currency by the conversion rate on the receipt date.

Example :

<i>Transaction</i>	<i>Current Cost</i>	<i>Current Qty</i>	<i>Description</i>
Beginning	100	10	
Receipt 10pcs@ \$110	105	20	Current Cost = $\frac{((100 * 10) + 1100)}{(10 + 10)}$
Shipment 20pcs	105 (used)	0	When product stock is decrease, current cost is not recalculated.
Receipt 10pcs@ \$120	120	10	Current Cost = $\frac{((105 * 0) + 1200)}{(0 + 10)}$
Physical Inventory 10pcs	120	20	Current Cost = $\frac{((120 * 10) + 1200)}{(10 + 10)}$ When product stock is increase, current cost is recalculated.

Event :

Costs are calculated when you match the PO and the receipt.

B. Landed Costs

Definition :

Landed Costs is the final cost of the product at the time it arrives at your warehouse. There are a number of additional costs you may want to include for specific products. This can include, but are not limited to Freight, Handling and Overhead Costs. Thus Landed Costs is the sum of material costs and all other additional costs you enter. If you're using Average costing, for each additional cost, Adempiere will maintain separate average cost.

Formula :

$$\text{Current Cost} = \frac{((\text{old Current Cost} * \text{old Current Qty}) + (\text{Amount} * \text{Receipt Qty}))}{(\text{On Hand Qty})}$$

$$\text{Current Qty} = \text{On Hand Qty}$$

Note: Amount is the Invoice price distributed by the distribution method you selected.

Example :

<i>Transaction</i>	<i>Current Cost</i>	<i>Current Qty product</i>	<i>Description</i>
Beginning	-	-	
Receipt 10pcs	-	-	
Invoice #1 \$10	10	10	Current Cost = $\frac{((0*0)+100)}{10}$
Receipt 20pcs	10	10	
Invoice #2 Freight \$6	7.33	30	Current Cost = $\frac{((10*10)+(6*20))}{30}$

Event :

Costs are calculated when you post the invoice.

LANDED COSTS TESTING

Case 1: Costs entered twice

In the beginning we have no such product. We purchase at the first time for 100 pcs. There is additional cost “commission” for \$3000.

	On hand Qty	Current Qty	Current Cost	
Beginning	0	-	-	
Receipt 100pcs	100	-	-	
Commission \$3000	100	100	3000	

And then we purchase another batch for 200pcs. We have a lower commission cost this time at \$2000.

	On hand Qty	Current Qty	Current Cost	
Beginning	100	100	3000	
Receipt 200pcs	300	100	3000	
Commission \$2000	300	300	2333.3333	$\frac{((3000*100)+(2000*200))}{300}$

If we add another commission cost to this purchase, for \$1000, the average cost will end up at \$3000 and current qty is still the same (300, not 400).

	On hand Qty	Current Qty	Current Cost	
Beginning	300	300	2333.3333	
Commission \$1000	300	300	3000	$\frac{((2333.3333*300)+(1000*200))}{300}$

Case 2: Cost is entered with zero amount

In the beginning we have no such product. We purchase at the first time for 100 pcs. There is additional cost “commission” for \$3000.

	On hand Qty	Current Qty	Current Cost	
Beginning	0	-	-	
Receipt 100pcs	100	-	-	
Commission \$3000	100	100	3000	

We purchase the second time without any commission cost. Adempiere will adjust the average cost to the new on hand quantity.

	On hand Qty	Current Qty	Current Cost	
Receipt 100pcs	200	100	3000	
Commission \$0	200	200	1500	$((3000*100)+(0*100))/200$

We continue to purchase the third time. This time there is commission cost at \$2000. After that we sell 50 pcs.

	On hand Qty	Current Qty	Current Cost	
Receipt 100pcs	300	200	1500	
Commission \$2000	300	300	1666.6667	$((1500*200)+(2000*100))/300$
Sell 50pcs	250	250	1666.6667	

Lastly, we purchase the forth time. This time too does not have commission cost.

	On hand Qty	Current Qty	Current Cost	
Receipt 1000pcs	1250	250	1666.6667	
Commission \$0	1250	1250	333.3333	$((1666.6667*250)+(0*1000))/1250$

Case 3: Current Qty is Zero

In the beginning we have no such product. We purchase at the first time for 100 pcs. There is additional cost “commission” for \$1000. And we sell out the item, making Current Qty zero.

	On hand Qty	Current Qty	Current Cost	
Beginning	0	-	-	
Receipt 100pcs	100	-	-	

Commission \$1000	100	100	1000	
Sell 100pcs	0	0	1000	

Take notice that Adempiere retains the last current cost while the current qty is already made zero. The cost is only for history purpose and will not be added to the sum of final landed costs.

Afterwards we purchase again 100pcs. The commission cost is \$2000.

	On hand Qty	Current Qty	Current Cost	
Receipt 100pcs	100	0	1000	
Commission \$2000	100	100	2000	$((1000*0)+(2000*100))/100$

If we add another commission cost to this purchase, for \$1000, Adempiere will adjust the average cost as in case 1.

	On hand Qty	Current Qty	Current Cost	
Commission \$1000	100	100	3000	$((2000*100)+(1000*100))/100$

Case 4: Current Cost or Qty is corrupted

When current cost or qty is corrupted, Adempiere will try to correct the average cost.

	On hand Qty	Current Qty	Current Cost	
Beginning	100	80	1000	
Receipt 200pcs	300	80	1000	
Commission \$500	300	200	600	$((800*100)+(500*200))/300$