What's Behind the Numbers?

Inventory Impairments

Agenda

IFRS

- Lower of cost or net realizable value (LCNRV)
- Measuring LCNRV impairments
- Entries
- Impairment reversals

US GAAP

- Lower of cost or market (LCM) when market known
- Determining market
- Measuring impairments
- Entries
- Consequences
- Company disclosures
- Take-aways

Lower of Cost or Net Realizable Value (LCNRV)

Under IFRS, Inventory is stated at the lower of cost or net realizable value, where cost is determined using FIFO or weighted average and net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

Paragraphs 6 and 25, IASB 2

Determining Lower of Cost or NRV and IFRS Impairment

Example

- ***Context***

  On April 30 RSTT's supplier announces a decrease in the replacement cost of RSTT's products, from $20 per unit to $12 unit, due to an anticipated decrease in consumer demand: the tops are no longer expected to be fashionable. RSTT plans to lower the sales price from $30 to $15 on May 1.

  RSTT determines that the cost to complete and dispose of the inventories is $2 and thus the expected net realizable value is $13.

- ***Lower of cost or net realizable value***

Inventory carrying value before impairment adjustment	$20
Net realizable value	$13
Lower of cost or net realizable value	$13

- ***Impairment***

Adjustment needed to reduce carrying value to LCNRV	$7

Determining Lower-of-Cost-or-Net-Realizable-Value Adjustments

Ran Sui's Trendy Tops: April

FIFO pre-impairment

	Units				Total
March 31	27	27 @ $17		=	$459
Purchase, April 2	50		50 @ $20	=	$1,000
Sales, March	(40)	(27) @ $17	+ (13) @ $20	=	($719)
April 30, pre impairment	37		37 @ $20	=	$740

LCNRV adjustment

FIFO cost, April 30	37		37 @ $20	=	$740
NRV, April 30	37		37 @ $13	=	$481
LCNRV, April 30	37		37 @ $13	=	$481
FIFO adjustment, April 30	37		37 @ ($7)	=	($259)
FIFO adjusted carrying value	37		37 @ $13	=	$481

Cost of sales after LCNRV adjustment

FIFO cgs pre-impairment	$719
LCNRV impairment	$259
FIFO cgs after impairment	$978

Determining Lower-of-Cost-or-Net-Realizable-Value Adjustments

Ran Sui's Trendy Tops: April

FIFO pre-impairment

	Units					Total
March 31	27	27 @ $17			=	$459
Purchase, April 2	50			50 @ $20	=	$1,000
Sales, March	(40)	(27) @ $17	+	(13) @ $20	=	($719)
April 30, pre impairment	37			37 @ $20	=	$740

LCNRV adjustment

	Units				Total
FIFO cost, April 30	37		37 @ $20	=	$740
NRV, April 30	37		37 @ $13	=	$481
LCNRV, April 30	37		37 @ $13	=	$481
FIFO adjustment, April 30	37		37 @ ($7)	=	($259)
FIFO adjusted carrying value	37		37 @ $13	=	$481

Cost of sales after LCNRV adjustment

FIFO cgs pre-impairment	$719
LCNRV impairment	$259
FIFO cgs after impairment	$978

Inventories Entries

Ran Sui's Trendy Tops: April (Periodic System)

	Assets				=	LIABILITIES		+	OWNERS' EQUITY
	+	FIFO Inventory							
	+	FIFO Inventory	-	LCNRV impairment	=	+	AP	-	FIFO cost of sales
April 1 balance	+	$459	-	$0	≠	+	?	-	$0
April 2 purchase	+	+ 1,000	-		=	+	+ 1,000	-	
April pre-impairment cost of sales at FIFO	+	- 719	-		=	+		-	+ 719
LCNRV impairment	+		-	+ 259	=	+		-	+ 259
Other	+		-		≠	+	?		
April 31 trial balance	+	+ 740	-	+ 259	≠	+	?	-	+ 978

Impairment Reversals

Under IFRS, inventory impairments can be reversed when the conditions that gave rise to them no longer exist or there is evidence of an increase in net realizable value. However, inventory can’t be stated above its pre-impairment cost.

Paragraphs 33, IASB 2

US GAAP: Determining LCM when "market" is known

Determining Lower of Cost or Market (LCM) and Impairment

Example

- ***Context***

  On April 30 RSTT's supplier announces a decrease in the replacement cost of RSTT's products, from $20 per unit to $12 unit, due to an anticipated decrease in consumer demand: the tops are no longer expected to be fashionable. RSTT plans to lower the sales price from $30 to $15 on May 1.

  RSTT determines that the $12 replacement cost is the correct "market" value for the LCM impairment test (following the procedures described shortly).

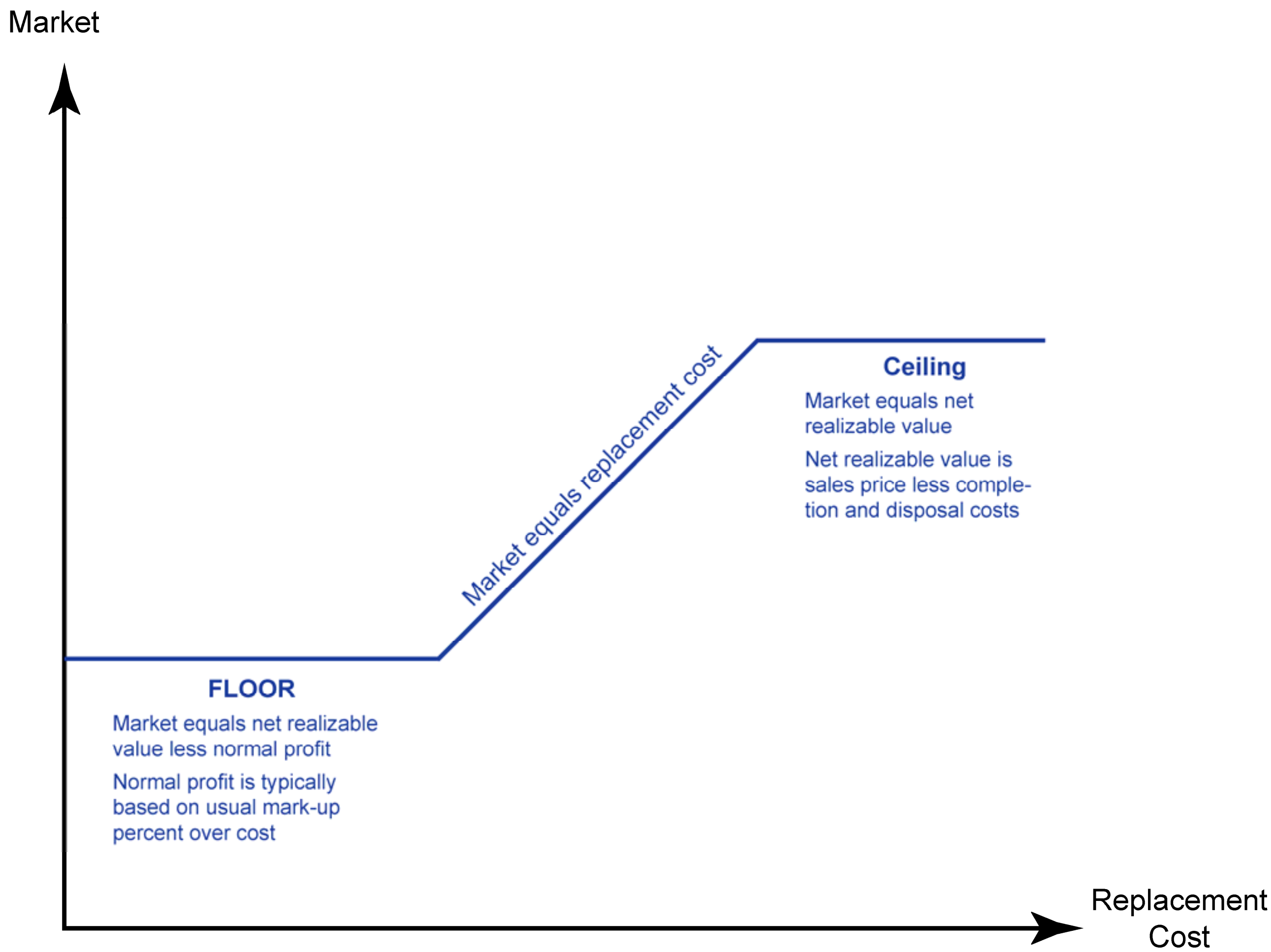
- ***Lower of cost or market***

Inventory carrying value before LCM adjustment	$20
Market	$12
Lower of cost or market	$12

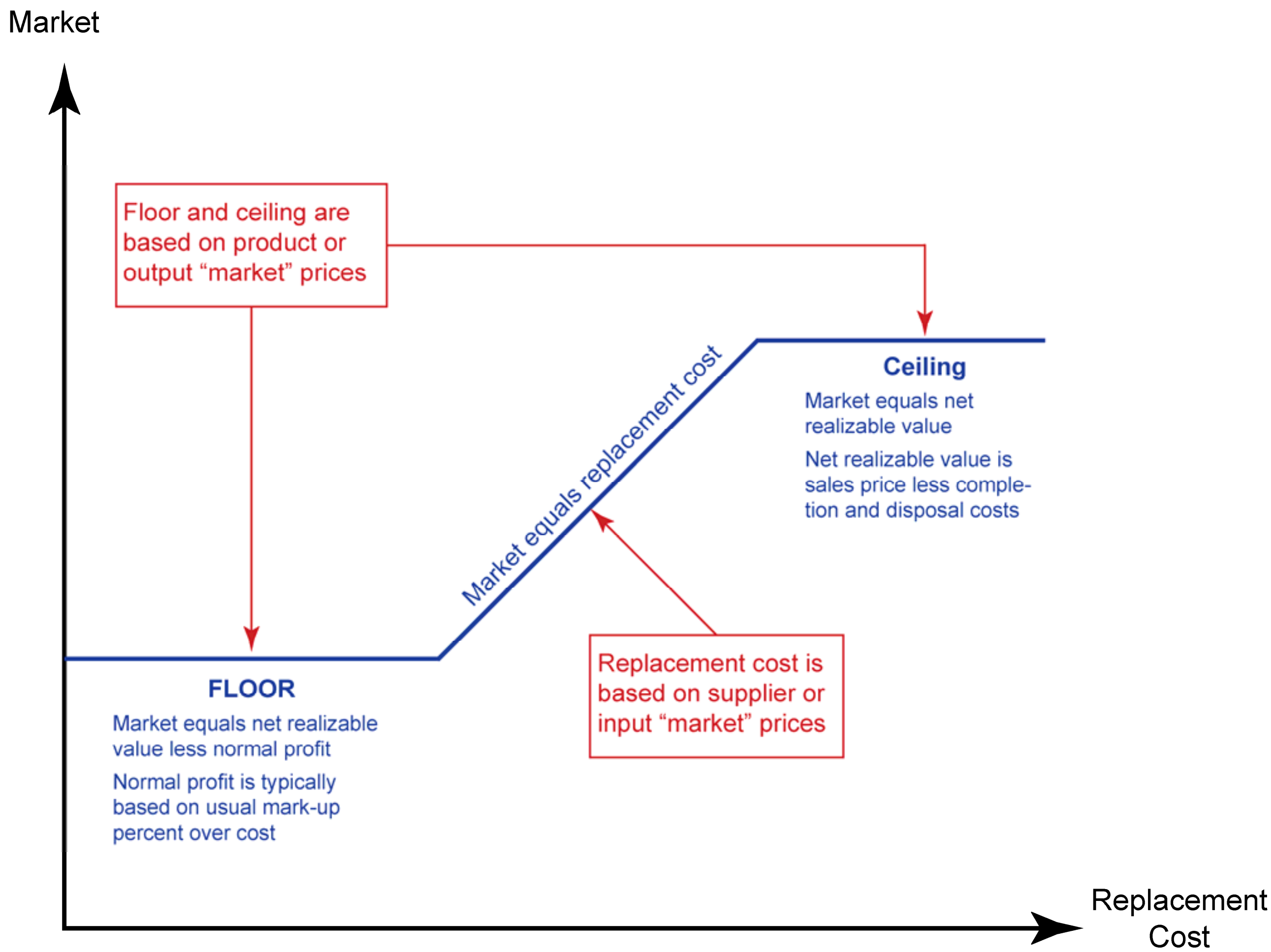
- ***Impairment***

Adjustment needed to reduce carrying value to LCM	$8

US GAAP: Determining market: replacement cost, ceiling and floor



US GAAP: Determining market: two markets



US GAAP: Determining market: Ran Sui's Trendy Tops

Ran Sui's Trendy Tops, April 30

Input markets– resource suppliers

- *Replacement Cost (RC)*
  - Drops from $20/unit to $12/unit

Output markets– customers

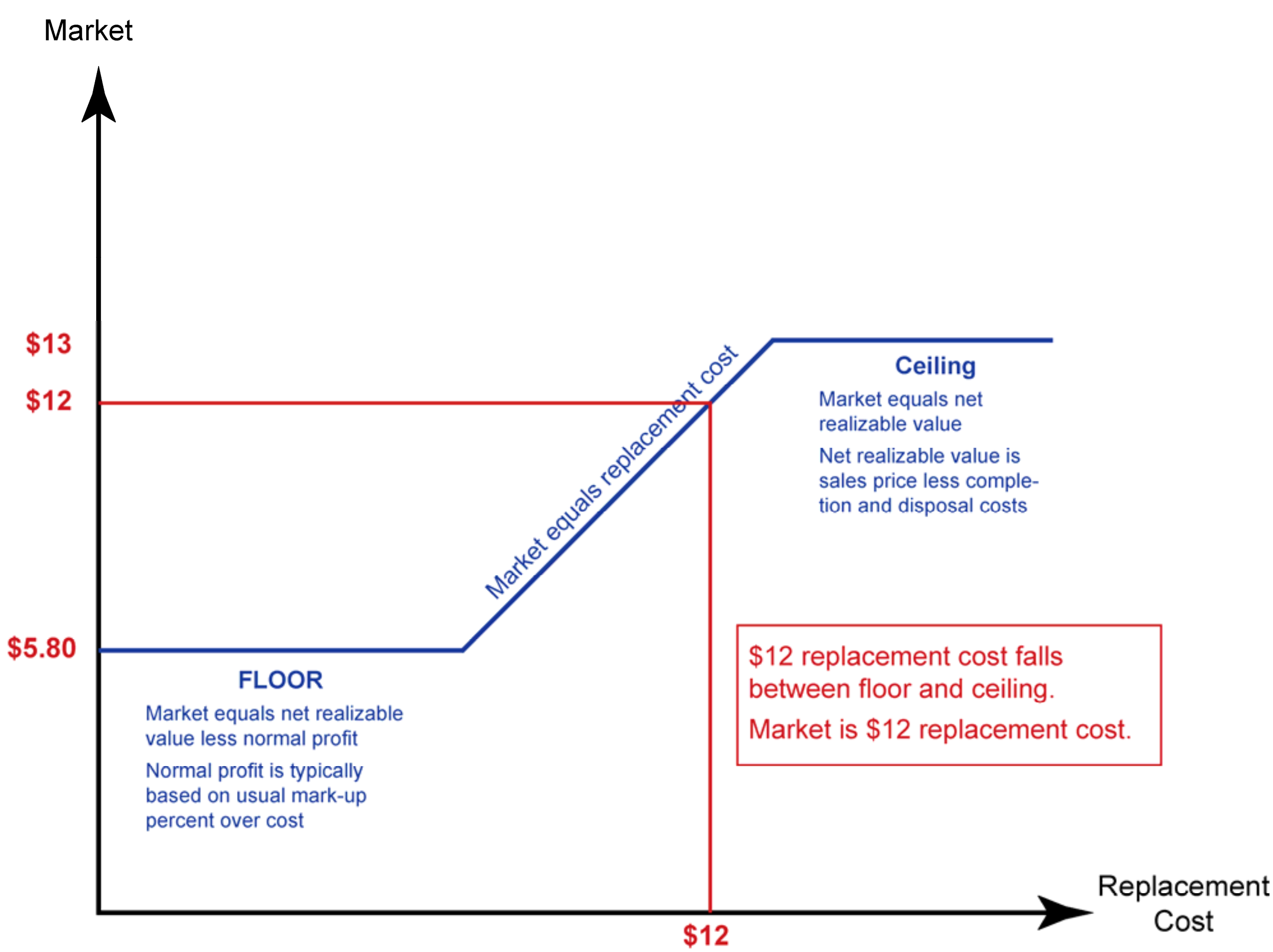
- *Sales price*
  - Drops from $30/unit to $15/unit
- *Net Realizable Value (NRV)—ceiling*
  - Sales price less total completion and disposal costs

Sales price	$15
Completion and disposal costs	$2
Net realizable value	$13

- *Net realizable value less normal profit—floor*
  - If normal profit is a 150% markup of cost, X, then:

Net realizable value less normal profit	X
Normal profit	+1.5 X
Net realizable value	$13

  - NRV less normal profit = X = $5.20



US GAAP: Determining market: Why is NRV the ceiling?

Ran Sui's Trendy Tops, April 30

Input markets– resource suppliers

- *Replacement Cost (RC)*
  - Drops from $20/unit to $12/unit

Output markets– customers

- *Sales price*
  - Drops from $30/unit to $15/unit
- *Net Realizable Value (NRV)—ceiling*
  - Sales price less total completion and disposal costs

Sales price	$15
Completion and disposal costs	$2
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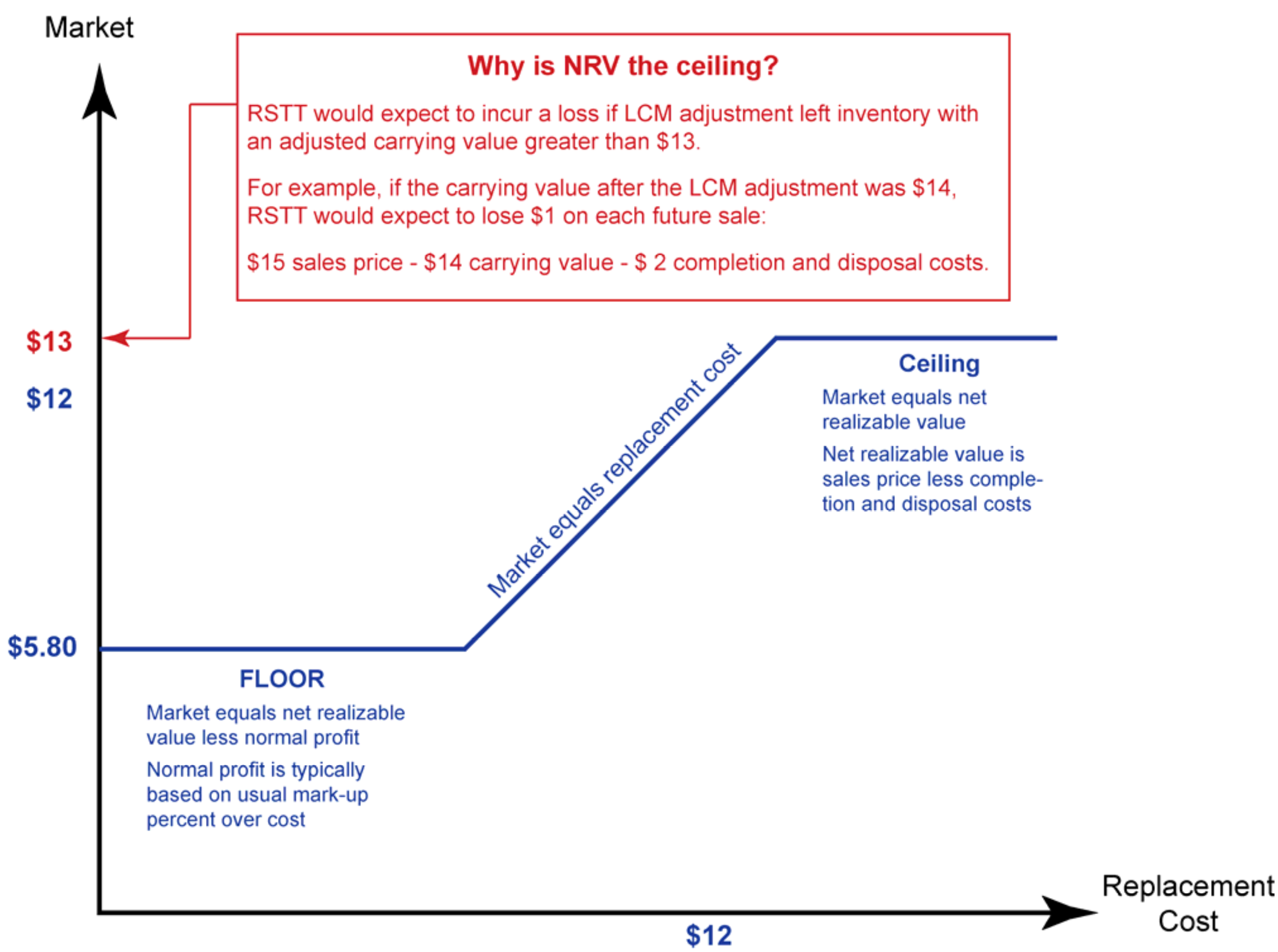

US GAAP: Determining market: Why is NRV less normal profit the floor?

Ran Sui's Trendy Tops, April 30

Input markets– resource suppliers

- *Replacement Cost (RC)*
  - Drops from $20/unit to $12/unit

Output markets– customers

- *Sales price*
  - Drops from $30/unit to $15/unit
- *Net Realizable Value (NRV)—ceiling*
  - Sales price less total completion and disposal costs

Sales price	$15
Completion and disposal costs	$2
Net realizable value	$13

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Net realizable value less normal profit	X
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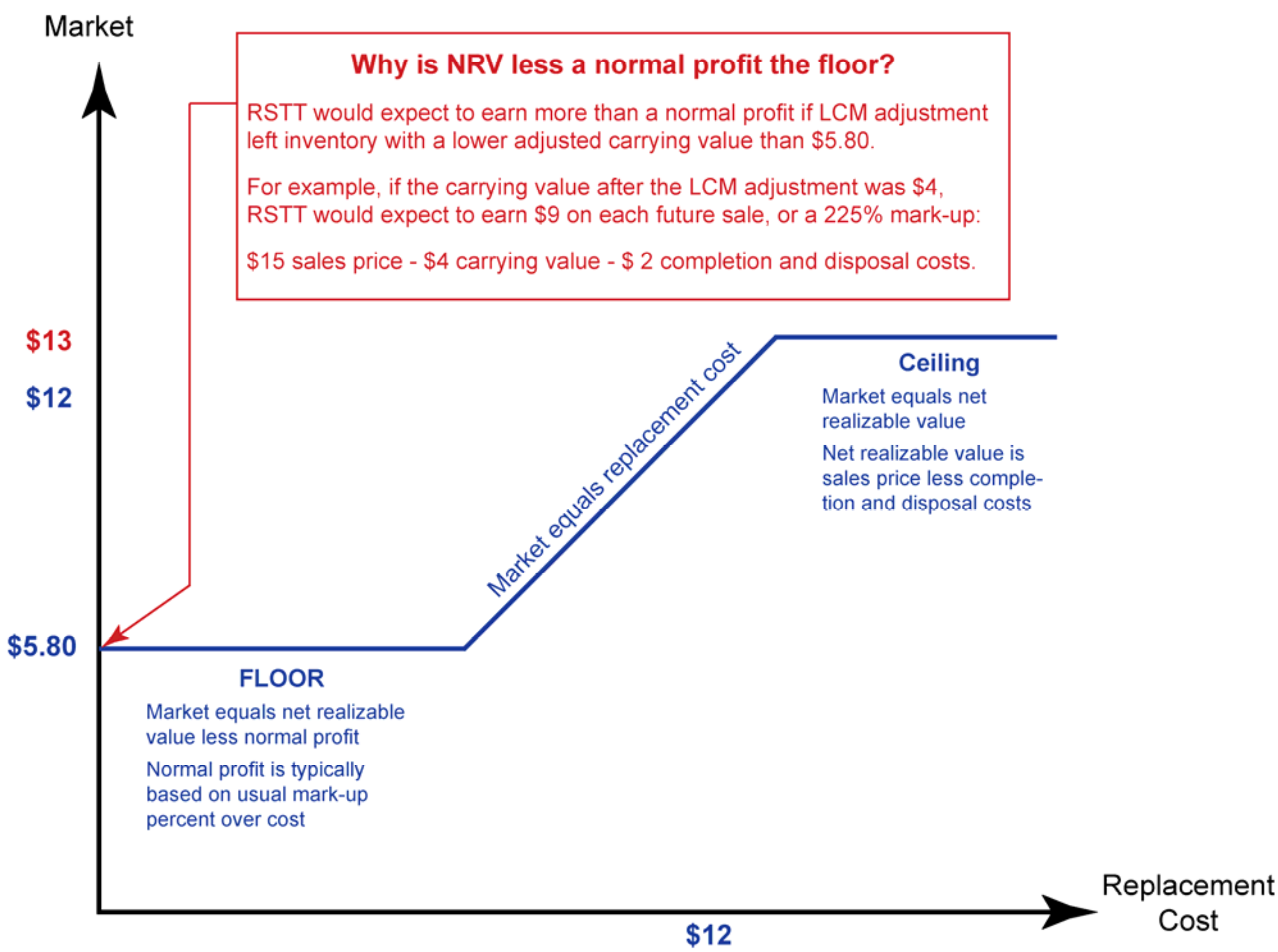

Measures Recorded Before Month-End Adjusting Entry for Impairments

Ran Sui's Trendy Tops: April (Periodic System)

FIFO Periodic

	Units	Input Cost Layers						Total
March 31	27				27 @ $17		=	$459
Purchase, April 2	50					50 @ $20	=	$1,000
Sales, March	(40)				(27) @ $17	+ (13) @ $20	=	($719)
April 30	37					37 @ $20	=	$740

LIFO Periodic

	Units	Input Cost Layers						Total
March 31	27	3 @ $10	+ 1 @ $12	+ 23 @ $14			=	$364
Purchase, April 2	50					50 @ $20	=	$1,000
Sales, March	(40)					(40) @ $20	=	($800)
April 30	37	3 @ $10	+ 1 @ $12	+ 23 @ $14 +		+ 10 @ $20	=	$564
		January LIFO Layers		February LIFO		April LIFO Layer		

LIFO Reserve

	March 31		April	
	Units	Cost	Units	Cost
FIFO inventory	27	$459	37	$740
LIFO inventory	27	$364	37	$564
LIFO reserve	27	$95	37	$176

Inventories

	March 31	Apr-11
FIFO inventory	$459	$740
LIFO reserve	$95	$176
LIFO inventory	$364	$564

Cost of Sales

	March	April
FIFO cgs	$1,289	$719
Increase in LIFO reserve	($13)	$81
LIFO cgs	$1,276	$800

Determining Lower-of-Cost-or-Market Adjustments and Consequences for Cost of Sales and LIFO Reserve

Ran Sui's Trendy Tops: April (Periodic System)

FIFO Pre-Impairment

	Units	Input Cost Layers					Total
March 31	27				27 @ $17		= $459
Purchase, April 2	50					50 @ $20	= $1,000
Sales, March	(40)				(27) @ $17	+ (13) @ $20	= ($719)
April 30, pre impairment	37					37 @ $20	= $740

FIFO LCM Adjustment

	Units						Total
FIFO cost, April 30	37					37 @ $20	= $740
Market, April 30	37					37 @ $12	= $444
LCM, April 30	37					37 @ $12	= $444
FIFO adjustment, April 30	37					37 @ ($8)	= ($296)
FIFO adjusted carrying value	37					37 @ $12	= $444

LIFO Pre-Impairment

	Units						Total
March 31	27	3 @ $10	+ 1 @ $12	+ 23 @ $14			= $364
Purchase, April 2	50					50 @ $20	= $1,000
Sales, March	(40)					(40) @ $20	= ($800)
April 30 pre-impairment	37	3 @ $10	+ 1 @ $12	+ 23 @ $14 +		+ 10 @ $20	= $564
		January LIFO Layers		February LIFO Layer		April LIFO Layer	

LIFO LCM Adjustment

	Units						Total
LIFO cost, April 30	37	3 @ $10	+ 1 @ $12	+ 23 @ $14		+ 10 @ $20	= $564
Market, April 30	37	3 @ $12	+ 1 @ $12	+ 23 @ $12		+ 10 @ $12	= $444
LCM, April 30	37	3 @ $10	+ 1 @ $12	+ 23 @ $12		+ 10 @ $12	= $438
LIFO adjustment, April 30	37	3 @ $0	+ 1 @ $0	+ 23 @ ($2)		+ 10 @ ($8)	= ($126)
LIFO adjusted carrying value	37	3 @ $10	+ 1 @ $12	+ 23 @ $12		+ 10 @ $12	= $438

LIFO Reserve Before LCM Adjustment

	March 31		April		Increase	
	Units	Cost	Units	Cost	units	Cost
FIFO inventory	27	$459	37	$740	10	$281
LIFO inventory	27	$364	37	$564	10	$200
LIFO reserve	27	$95	37	$176	10	$81

LIFO Reserve After LCM Adjustments

	March 31		April		Increase	
	Units	Cost	Units	Cost	units	Cost
FIFO inventory	27	$459	37	$444	10	($15)
LIFO inventory	27	$364	37	$438	10	$74
LIFO reserve	27	$95	37	$6	10	($89)

Cost of Sales Before LCM Adjustment

	April
FIFO cgs	$719
Increase in LIFO reserve	$81
LIFO	$800

Cost of Sales After LCM Adjustment

FIFO cgs pre-impairment	$719	
FIFO impairment	$296	
FIFO cgs after impairment	$1,015	
(Decrease) in LIFO reserve due to impairment	($170)	(=-89 - 81)
LIFO cgs after impairment	$926	

Measures Recorded During April, Including LCM Adjustments

Ran Sui's Trendy Tops: April (Periodic System)

Purchases $1,000

Cost of Sales Before LCM Adjustment

	April
FIFO cgs	$719
Increase in LIFO reserve	$81
LIFO	$800

Cost of Sales After LCM Adjustment

FIFO cgs pre-impairment	$719
FIFO impairment	$296
FIFO cgs after impairment	$1,015
(Decrease) in LIFO reserve due to impairment	($170)
LIFO cgs after impairment	$926

Inventories Entries

Ran Sui's Trendy Tops: April (Periodic System)

	Assets				=	LIABILITIES		+	OWNERS' EQUITY
	+	LIFO Inventory							
	+	FIFO Inventory	-	LIFO Reserve	=	+	AP	-	LIFO cost of sales
April 1 balance	+	$459	-	$95	≠	+	?	-	$0
April 2 purchase	+	+ 1,000	-		=	+	+ 1,000	-	
April sales at FIFO cost	+	- 719	-		=	+		-	+ 719
Pre-impairment increase in LIFO reserve	+		-	+ 81	=	+		-	+ 81
FIFO LCM impairment	+	- 296	-		=	+		-	+ 296
Decrease in LIFO reserve from impairment	+		-	- 170	=	+		-	- 170
Other	+		-		≠	+	?		
April 31 trial balance	+	+ 444	-	+ 176	≠	+	?	-	+ 926

US GAAP: Impairment consequences for income statements and LIFO tax savings

LIFO Versus FIFO Income Statements and LIFO Tax Savings

Ran Sui's Trendy Tops: April (Periodic System)

Income Statements	April	
Revenues	FIFO	LIFO
Total	$1,200	$1,200
Cost of sales		
FIFO cost of sales	$719	$719
Increase (decrease) in LIFO reserve (pre low er-of-cost-or-market adjustment)		$81
Lower-of-cost-or-market adjustment	$296	$126
Total	$1,015	$926
Gross margin	$185	$274
Other expenses	$140	$140
Profits before taxes	$45	$134
Tax expense	$18	$54
Net profits	$27	$80

LIFO Tax Savings	April
Current month	
Tax rate	40%
LIFO reserve increase (decrease)	($89.0)
Current month	($35.6)
Cumulative at month end	
Tax rate	40%
LIFO reserve, month end	$6.0
Cumulative	$2.4

D. Inventories

Inventories are stated at the lower of cost or market. Cost is principally determined using the last-in, first-out (LIFO) method. The value of inventories on the LIFO basis represented about 70% of total inventories at December 31, 2010, 2009 and 2008.

If the FIFO (first-in, first-out) method had been in use, inventories would have been $2,575 million, $3,022 million and $3,216 million higher than reported at December 31, 2010, 2009 and 2008, respectively.

Note 1: Operations and Summary of Significant Accounting Policies
Caterpillar 2010 10-K, page A-12

Lower of cost or market

U.S. Companies typically use FIFO or weighted average for foreign subsidiaries.

The 70% figure can be ignored when converting LIFO measures to FIFO measures: Adding the LIFO reserve to the reported inventories converts the 70% of inventories under LIFO to FIFO. The remaining 30% are already under FIFO.

IFRS: Company disclosures: CNH

Inventories

Inventories are stated at the lower of cost or net realizable value. Cost is determined by the first-in, first-out method. The cost of finished goods and work-in-progress includes the cost of raw materials, other direct costs and production overheads. Net realizable value is the estimate of the selling price in the ordinary course of business, less the cost of completion and selling. Provisions are made for obsolete and slow-moving inventories.

Note 2: Summary of Significant Accounting Policies
CNH 2010 20-F, page F-12,

Lower of cost or net realizable value (LCNRV).

Provisions refers to impairments, also called write-downs.

Take aways

IFRS

- Inventories are impaired or written down when their net realizable values are less than their costs, where costs are based on FIFO or weighted average and net realizable value is the estimated selling price less completion and disposal costs.
- Impairments can be reversed if there is clear evidence the net realizable value has increased, but only up to the pre-impairment cost.

US GAAP

- Inventories are impaired or written down when their market values are less than their cost, where costs are typically based on LIFO, FIFO, weighted average, or a variation of these methods and market is:
    - Replacement cost, providing the replacement cost is less than the net realizable value and greater than the net realizable value less a normal profit.
    - Net realizable value if the replacement cost is greater than the net realizable value.
    - Net realizable value less a normal profit when the replacement cost is less than the net realizable value less a normal profit.
- Impairments aren't reversed under US GAAP.

Take-aways

Where are we heading?

- The How Do You Use the numbers module demonstrates company disclosures related to this video.