

Retail Math for Suppliers

Cheat Sheet





Win With the Right Metrics

For a supplier to be a strong partner to their retailers and buyers, it's important to speak the same language—especially when it comes to numbers. This cheat sheet covers key retail formulas that help suppliers make smarter business decisions, defend shelf space, evaluate pricing strategies, and track profitability. Whether you're prepping for a line review, pitching a new item, or analyzing performance across retailers, these formulas will help you back your story with data.

Sales & Profitability Metrics

Digital Mix (%)

Formula:

$$\text{Digital Mix (\%)} = (\text{Digital Sales} \div \text{Total Sales}) \times 100$$

Scenario:

You're preparing for a line review with Walmart and want to show how much of your product's sales come from Walmart.com versus in-store, to justify pushing more digital marketing or online-exclusive items.

Sales Velocity

Formula:

$$\text{Sales Velocity} = \text{Units Sold} \div (\text{Number of Stores} \times \text{Time Period in Store})$$

Scenario:

During your modular review cycle, your team needs to justify why your item deserves more shelf space. You check your sales velocity to identify which regions your item performs strongest in. If your velocity is significantly higher in the Southeast, for example, you can recommend store expansion in that region.

Average Sell Price (ASP)

Formula:

$$\text{ASP} = \text{Total Sales Revenue} \div \text{Units Sold}$$

Scenario:

You're reviewing price elasticity for a SKU and want to understand the true price shoppers are paying across different regions and promotions — not just listed price. ASP is also helpful during cost change discussions, such as when tariff impacts affect your margins. For example, Walmart may be hesitant to approve a price increase based on customer perception. You pull Average Sell Price data and show that the item sees minimal sales lift during rollbacks or promotions—indicating that customers are willing to pay full price. This insight helps support your case during cost negotiations.

Average Unit Retail (AUR)

Formula:

$$\text{AUR} = \text{Net Sales} \div \text{Number of Units Sold}$$

Scenario:

You're comparing [AUR](#) across multiple retail partners to understand pricing trends and shopper behavior. One item is performing better in-store at a higher AUR than online. This insight helps you fine-tune pricing strategies, adjust marketing investments by channel, and guide future inventory decisions for each retailer.

Dollars per Linear Inch

Formula:

$$\text{Dollars per Linear Inch} = \text{Total Sales Dollars} \div \text{Shelf Space (in linear inches)}$$

Scenario:

Your retailer is doing a shelf reset and asks for justification on why your product should get more space. You show that your product drives higher sales per inch compared to competitors.

Note:

Buyers may use variations of this calculation. For example, a Walmart buyer might calculate it as: **Average Weekly Dollar Sales per Store per Item \div Item Width (in inches)**. This provides a more store-specific view of shelf productivity, helping buyers evaluate which products deliver the most sales value relative to the space they occupy. It's especially useful when comparing multiple items within the same category.

Profit Dollars per Linear Inch

Formula:

$$\text{Profit \$ per Linear Inch} = \text{Gross Profit Dollars} \div \text{Shelf Space (in inches)}$$

Scenario:

You're trying to defend shelf space during a modular update. You demonstrate not just sales volume, but also how your item drives higher profit per inch than lower-margin competitors.

IMU vs. Maintain Margin**Formula:****a. Initial Markup (IMU) %**

$$\text{IMU \%} = ((\text{Retail Price} - \text{Cost}) \div \text{Retail Price}) \times 100$$

b. Maintain Margin %

$$\text{Maintain Margin \%} = ((\text{Actual Selling Price} - \text{Cost}) \div \text{Actual Selling Price}) \times 100$$

Scenario:

A buyer flags that your item is margin-dilutive due to markdowns. You use IMU to show the planned margin and Maintain Margin to track performance and explain variance (e.g., due to promotional plans or competitive pricing shifts).

Penny Profit**Formula:**

$$\text{Penny Profit} = \text{Retail Price} - \text{Cost}$$

Scenario:

You're pitching a new item to a retailer and need to show that—even at a lower price point—it yields a higher penny profit than a slower-moving, higher-priced item they currently carry.

Profit Rate**Formula:**

$$\text{Profit Rate (\%)} = (\text{Profit Dollars} \div \text{Sales Dollars}) \times 100$$

Scenario:

A buyer is focused on improving their category margin. You highlight your SKU's profit rate to prove it's not just a volume driver but also adds value to category profitability.

First Cost vs. Store Cost**Formula:****a. First Cost**

The price the supplier charges the retailer for the product, not including additional expenses like freight or overhead.

b. Store Cost

$$\text{Store Cost} = \text{First Cost} + \text{Freight} + \text{Duties} + \text{Handling} + \text{Allocated Overhead}$$

Scenario:

You're renegotiating cost with a buyer and they're quoting "store cost" (also called "landed cost") including freight and fees. You need to break down how that compares to your first cost and clarify which version is impacting their margin.

Gross Margin Return on Inventory Investment (GMROI)

Formula:

$$\text{Gross Margin} = [(\text{Revenue} - \text{Cost of Goods Sold}) \div \text{Revenue}] \times 100$$

Scenario:

You're renegotiating your cost structure with a retailer. To support your case, you show how your product maintains a healthy [gross margin](#)—even with recent price shifts—making it a reliable contributor to the retailer's profitability goals.

Inventory & Merchandising Metrics

Inventory Accuracy

Formula:

$$\text{Inventory Accuracy} = \text{Physical inventory} \div \text{Recorded Inventory}$$

Scenario:

Your retailer flags shrink issues or phantom inventory for your item. You compare system inventory to physical counts at key DCs or stores to identify gaps—helping uncover lost product, mis-scanned cases, or replenishment errors.

Storage Utilization Rate

Formula:

$$\text{Storage Utilization Rate} = \text{Inventory cube} \div \text{Total Warehouse Cube}$$

Scenario:

You're reviewing warehouse efficiency and want to justify expanding or reorganizing storage space. You calculate the storage utilization rate to show how much of your current warehouse capacity is in use—and whether it's nearing capacity or underutilized.

Inventory Days of Supply

Formula:

$$\text{Inventory Days of Supply} = \frac{\text{On-Hand Finished Inventory Goods Value}}{\text{Total Annual Cost of Goods Sold (COGS)}}$$

Scenario:

You're discussing replenishment strategy with a demand planner and need to show how long your current inventory will last at the current rate of sales. Calculating days of supply helps you balance between avoiding stockouts and minimizing excess inventory.

Economic Order Quantity (EOQ)

Formula:

$$\text{EOQ} = \sqrt{2 \times D \times S \div H}$$

Definitions:

- D = annual demand
- S = setup costs
- H = annual holding cost

Scenario:

You're evaluating your inventory ordering strategy to minimize total costs. By calculating the EOQ, you determine the optimal order quantity that balances ordering costs with holding costs, ensuring efficient inventory management and cost savings.

Logistics & Fulfillment Metrics

Perfect Order Percentage

Formula:
$$\text{Perfect Order Percentage} = (\% \text{ Orders On Time} \times \% \text{ Orders Shipped Complete} \times \% \text{ Orders Shipped with No Damage} \times \% \text{ Orders with Correct Documentation})$$
Scenario:

You're preparing for a business review with a key retailer. To demonstrate your operational excellence, you highlight your high Perfect Order Percentage—showing that you're not just delivering on time, but also in full, undamaged, and with all required documentation. This metric also serves as a powerful internal benchmark. By measuring Perfect Order Percentage across different retailers, your team can identify performance gaps and set improvement goals that span your entire supply chain.

Total Order Cycle Time

Formula:

$$\text{Total Order Cycle Time} = \text{Time of Order Received by the Customer} - (\text{Time of Order Placed} \div \text{Total Number of Orders Shipped})$$

Scenario:

A retailer flags consistent late deliveries. By calculating Total Order Cycle Time regularly, you identify delays happening during processing. This metric is also essential when setting up new ship points with a retailer. It helps determine your lead time—from PO cut date to arrival at the distribution center—so you can provide accurate shipping windows and reduce risk of non-compliance right from launch.

On-Time Shipping Percentage

Formula:

$$\text{On-Time Shipping Percentage} = \frac{\text{Number of Orders Shipped On Time}}{\text{Total Number of Orders Shipped}}$$

Scenario:

You notice a spike in shipping-related deductions and decide to review your on-time shipping percentage over the past quarter to identify areas of concern. By measuring this frequently, you can identify patterns, improve logistics coordination, and reduce costly compliance fines.

Note:

Walmart tracks supplier's [On Time In Full](#) (OTIF) metrics. Walmart suppliers can access the OTIF Dashboard in Retail Link to monitor their performance and drill into late or incomplete shipments. Improving your

on-time shipping rate directly impacts your OTIF score—and can help prevent avoidable fines.

Order Fill Rate

Formula:

$$\text{Order Fill Rate} = \frac{\text{Total Orders Filled to Customer Request}}{\text{Total Orders Filled}}$$

Scenario:

You start tracking your order fill rate weekly to identify gaps in your fulfillment process. A lower fill rate flags where inventory is falling short of customer demand, helping you adjust production and replenishment more accurately.

Distribution Costs (as % of Sales)

Formula:

$$\text{Distribution Costs} = \frac{\text{Total Distribution Costs}}{\text{Total Sales}}$$

Scenario:

By calculating distribution costs as a percentage of sales, you can evaluate how efficiently your logistics are scaling with revenue and whether cost reduction efforts are needed.

Distribution Costs (Per Unit Shipped)

Formula:

$$\text{Distribution Costs} = \text{Total Distribution Costs} \div \text{Total Units Shipped}$$

Scenario:

You're comparing two 3PL providers and want to evaluate which is more cost-effective. Calculating distribution costs per unit shipped gives you a clear benchmark to assess performance and negotiate better rates.

Deductions & Disputes

Gross Chargeback/Deduction Rate

Formula:

$$\text{Gross Chargeback/Deduction Rate} = \frac{\text{Total Deduction \$}}{\text{Gross Revenue \$}}$$

Scenario:

By calculating your gross deduction rate, you can monitor how much of your revenue is being lost to chargebacks, returns, and disputes. Tracking this metric regularly helps you set realistic goals and identify trends that need root-cause analysis. A best-in-class rate is around 1% or lower.

Net Chargeback/Deduction Rate

Formula:

$$\text{Net Chargeback/Deduction Rate} = \frac{\text{Net Deduction \$}}{\text{Net Revenue \$}}$$

Scenario:

By tracking your net chargeback/deduction rate, you gain insight into how much revenue was lost after recovering what was disputed. Monitoring this rate over time gives a clear picture of how deductions are impacting your business. Aim for 1% or lower to stay competitive.

Win Rate

Formula (Dollar-Based):

$$\text{Win Rate} = \left(\frac{\text{Total Disputed Dollars Approved}}{\text{Total Disputed Dollars Resolved}} \right) \times 100$$

Formula (Count-Based):

$$\text{Win Rate} = \left(\frac{\text{Number of Disputes Won}}{\text{Total Number of Resolved Disputes}} \right) \times 100$$

Scenario:

You're reviewing your deduction recovery performance and see that while your team is winning most disputes by count, the dollar-based win rate tells a different story. By measuring both, you get a full picture of performance: quantity shows consistency, while dollar amount reveals impact. A low \$ win rate might mean you're losing high-value disputes—signaling the need to strengthen your recovery efforts where it counts most.

Average Time to Dispute Resolution

Formula:

$$\text{Average Time to Dispute Resolution} = \text{Sum of (Dispute Resolution Date - Dispute Date)} \div \text{Number of Resolved Disputes}$$

Scenario:

Tracking this over time helps identify trends, which can help to understand when to expect payback/resolution. In addition, monitoring this regularly helps pinpoint bottlenecks and improve workflows, ultimately speeding up resolution and improving supplier-retailer relationships.

For a deep dive on common accounting formulas, definitions, and best practices, check out SupplierWiki's [Accounting Playbook for CPG Suppliers!](#)

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