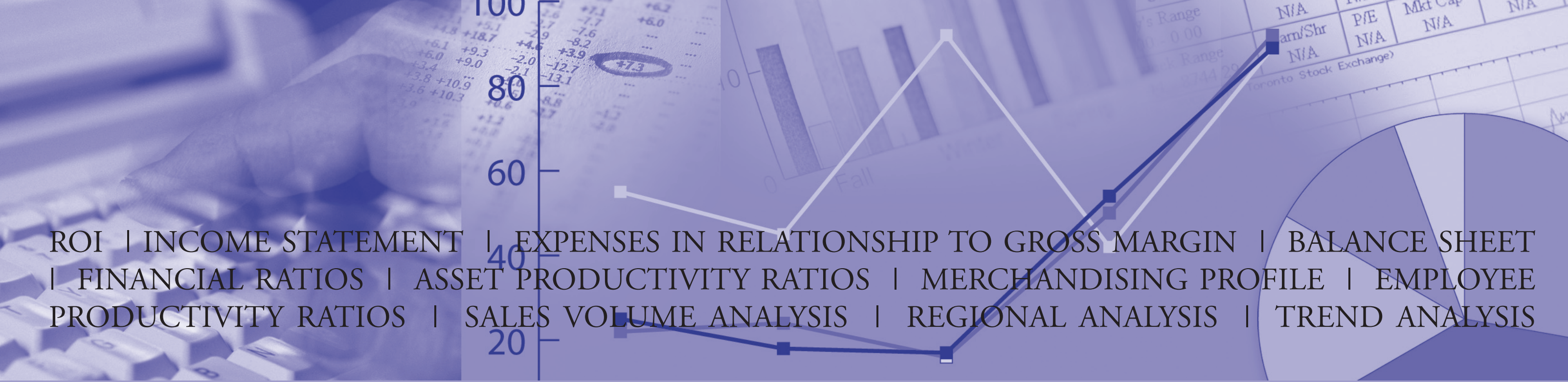

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Vol. 16, No. 4

2007

Profit Improvement Report

"GMROI: Good Intentions Gone Awry"

Sponsored By the Door and Hardware Institute
and the Foundation for the Advancement of Life Safety and Security

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Prepared for DHI
Vol. 16, No. 4
December, 2007

GMROI:
Good Intentions Gone Awry

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GMROI is one of the foundations of inventory management for distributors. The term GMROI stands for Gross Margin Return on Inventory. The enthusiasm for GMROI rests upon the fact that it allows firms to make inventory decisions from a return on investment perspective.[1]

The sad truth is that despite the hoopla, GMROI actually produces biased financial results which can lead to counter-productive actions. If anything, using GMROI makes inventory management decisions less accurate.

This report examines the GMROI issue from two perspectives.

- **The Computational Bias**—An examination of why GMROI results may lead to incorrect decisions.
- **Suggestions for Action**—An identification of some very difficult, but necessary, steps to drive higher profits from the inventory investment.

The Computational Bias

The theory behind GMROI is unassailable. The ratio attempts to measure the return (gross margin) produced from every dollar of investment (inventory). In this way, individual items, departments and suppliers can be evaluated from an ROI perspective.

Computationally, GMROI is the gross margin dollars generated by a specific item (or department or supplier) during the course of the year divided by its average inventory investment over the year. In practice, very few firms calculate GMROI directly. Instead, most firms actually calculate an approximation of GMROI, more correctly called the Turn & Earn Ratio. The two ratios share basic DNA, so the exact form of the computation is not a problem as long as the firm uses the same method consistently.

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[1] This report can only provide an overview of the GMROI issue. For a much more complete discussion, see *Saying Goodbye to GMROI*, www.profitplanninggroup.com., seminar section.

GMROI (via the Turn & Earn formula) is the Gross Margin Percentage times the Inventory Turnover Ratio. The typical DHI member has sales of $8,000,000, and cost of goods sold of $5,600,000 resulting in $2,400,000 of gross margin. It also has inventory of $765,000. The firm thus has a gross margin of 30.0% ($2,400,000 ÷ $8,000,000) and an inventory turnover of 7.3 times ($5,600,000 ÷ $765,000). Combining the two produces a GMROI of 219.6% for the firm.

For managers with experience using GMROI, the value of this form of the calculation is obvious immediately. If the firm wants to increase GMROI, it has two financial levers to work with—it can try to increase the gross margin percentage or increase the inventory turnover. Either choice should lead the firm to a greater return on the inventory investment.

To get a feel for how GMROI is biased, it is necessary to examine **Exhibit 1.** which reviews three items, cleverly labeled Items A, B and C. As the exhibit indicates, these three items all have identical sales levels. However, they are very different in terms of both their gross margin and inventory investment.

Exhibit 1.
GMROI Results for Three Different SKUs

Financial Results	**Item A**	**Item B**	**Item C**
Dollars			
Net Sales	$50,000	$50,000	$50,000
Cost of Goods Sold	32,000	35,000	38,000
Gross Margin	$18,000	$15,000	$12,000
Average Inventory	$5,737	$4,781	$3,825
Percent of Sales			
Net Sales	100.0	100.0	100.0
Cost of Goods Sold	64.0	70.0	76.0
Gross Margin	36.0	30.0	24.0
Operating Expenses for the Total Firm	28.0	28.0	28.0
Performance Ratios			
Inventory Turnover	5.6	7.3	9.9
GMROI (GM% x Turnover)	200.8	219.6	238.4

Item B in the middle has been designated as typical. It has a gross margin of 30.0% and an inventory turnover of 7.3 times. To understand what is happening in the firm, it is necessary to know that Item B really is exactly typical. Since the typical DHI member has a total firm gross margin of 30.0% and turned its inventory 7.3 times per year, Item B is a microcosm of the total firm.

Item B is flanked by two items with somewhat unique characteristics. Item A generates 20.0% more gross margin dollars than Item B on the same sales, but requires a 20.0% larger investment in inventory. It is a classic high margin/low turnover SKU.

In contrast, Item C is the mirror image of Item A with 20.0% fewer gross margin dollars than Item B, combined with a 20.0% smaller investment in inventory. It is in the low margin/high turnover camp. Clearly, these three items are not equal.

GMROI is almost always used as to identify problem items. It is a “what should we worry about” sort of ratio. The answer, based upon GMROI, is to worry about the items with the lowest return. In Exhibit 1 this turns out to be Item A, with a GMROI of only 200.8%. At the extreme, Item A might even be considered a candidate for elimination given its low GMROI. If not a candidate for elimination, at least a candidate for corrective surgery. However, Item A actually produces the most gross margin dollars of the three items shown.

At the other extreme, Item C with the highest GMROI would be designated as a superstar item. It is the sort of item that management might want to emphasize in its marketing programs. The firm would try to sell all it can to enjoy the benefits of the item’s great GMROI of 238.4%.

It should be remembered that the typical DHI member has an overall gross margin of 30.0%. It also has operating expenses that equal 28.0% of sales. Assuming that all three items have about the same cost structure (they are all in the same merchandise category), then Item C could be well under water as operating expenses actually exceed gross margin. Probably not an item to push.

GMROI will <u>always</u> make low gross margin items look better than they are and make high gross margin items look worse than they are. It is a bias that leads the firm down the wrong profit path. GMROI continues to be a ratio that is based upon a brilliant concept, but is flawed beyond repair in operation.

A Managerial Sidebar:
GMROI vs. Turn & Earn

True GMROI and the Turn & Earn Ratio both attempt to measure the return on the firm's investment in inventory. However, they do involve two somewhat different ratios. When comparisons are being made across industries, it is essential to ensure that the same calculation is being employed in all cases.

The basic difference between the two ratios is as follows. All figures are for a typical DHI member.

GMROI

$$\frac{\text{Gross Margin}}{\text{Inventory}} = \frac{\$2{,}400{,}000}{\$765{,}000} = 313.7\%$$

Turn & Earn

$$\text{Gross Margin \%} \times \text{Inventory Turnover} = 30.0\% \times 7.3 = 219.6\%$$

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