Volume versus Margin

By Diana Klemme, Vice President, Grain Service Corp., Atlanta GA

Mike pulls up to the elevator and shuts off his pickup's engine. Another harvest day is underway. As the trucks and wagons begin to arrive and farmers stop in for some morning coffee, Mike sits in his office looking over the year-end financials.

Volume is up — although local crops were smaller — but the fiscal year grain results are disappointing. Now Mike wonders how this year will turn out. The owners want to see a bigger return, the new facility nearby has been outbidding Mike, and some farmers are starting to grumble.

Mike switches on his computer and opens a spreadsheet file. He wants to look at this situation objectively. Mike is already working on ways to see more customers, and he thinks that will help maintain volume. But does matching the competitor's bids make sense also? Mike is concerned he'll lose some bushels if he doesn't cut his margin a little. But could he possibly come out ahead by handling *less* volume?

He pauses and jots the numbers he needs to consider:

- estimated volume at different handling margins
- possible handling margins
- variable cost of handling a bushel.

Figuring the variable cost is difficult. Mike thinks to himself for a moment, "What costs do I incur only if I put grain through this house. I have certain fixed costs no matter whether the elevator sits idle, so I'll figure them first: electricity for the lights, wages for full-time employment, depreciation, etc. So what's left must be the variable costs: electricity to run the legs and conveyors, repairs, any overtime labor, fuel for trucks, fumigants and so on. These costs are hard to break out, so I need to run scenarios using two or three different variable costs per bushel and see a range of outcomes. I also know that the variable cost might decline a little on higher volume

Table One: *What is the effect on revenue if I raise or lower my bid margin and change my handling volume?*

Variable handling cost/bu. $0.025

Volume Bu.		Bid Margin		Gross $		Variable cost total		$ toward fixed cost	per bu.
1,000,000	x	$0.050	=	$50,000	-	$25,000	=	$25,000	$0.025
900,000	x	$0.055	=	$49,500	-	$22,500	=	$27,000	$0.030
800,000	x	$0.060	=	$48,000	-	$20,000	=	$28,000	$0.035
700,000	x	$0.065	=	$45,500	-	$17,500	=	$28,000	$0.040
600,000	x	$0.070	=	$42,000	-	$15,000	=	$27,000	$0.045
500,000	x	$0.075	=	$37,500	-	$12,500	=	$25,000	$0.050

but I can only tweak this so far."

(Table 1) He enters a starting volume number, some possible handling ("back-to-back") margins, an estimated variable cost of handling each bushel and then plugs in the formulas.

Mike sets up the spreadsheet so he can easily change the volume and margins. He quickly determines that working on a slightly higher margin may cost him some volume, but it won't cost him dollars. Higher volume would bring in more gross dollars, but depending on the variable cost per bushel, Mike's net revenue may be better at lower volumes. In this situation Mike defines "net" as the revenue left after variable costs and the revenue available to cover fixed and other overhead, and provide a return for the business.

His spreadsheet shows that handling 1 million bushels at a 5¢ margin earns him less than handling 600,000 bushels at a 7¢ margin after allowing for the variable cost.

There's more to consider, however. At harvest, Mike fills bins and holds grain (hedged) for basis appreciation. He figures this year he should net (after interest) about 12¢ to 15¢/bushel. So he adds more columns to the spreadsheet. (Table 2).

Now the results show that reducing his back-to-back margin to get more volume is effective when filling bins with company-owned grain (but only if he would have missed the bushels otherwise). The dollars earned from the basis appreciation quickly offset the reduced revenue from the lower handling margin. It isn't logical to cut margins just to fill faster than his competitor.

Mike realizes that he needs to be more cautious once the bins are full, and he can't earn basis appreciation. At that time he should widen his bid margin, even though he may risk losing a few bushels.

He's also shocked to see just how few dollars his back-to-back margin really brings to the business. If he handled 5 million bushels at a 6¢ gross margin and 2¢ variable cost, it still only brings $200,000 toward fixed costs. But these situations assume nothing goes wrong. Mike's 1 million bushel scenario "nets" just $25,000, for a margin of 2.5 ¢/bushel.

The challenge is to find the point where increasing the back-to-back margin doesn't cost the elevator too much volume.

Mike resolves to do this more often. Quantifying possible scenarios and outcomes clears his thinking. He's resolved to stand the line more and not push bids so readily.

Some may look at this spreadsheet and see a different story: The higher volume still brings dollars to the table as long as you cover variable costs. Then you can focus on the related benefits. Some elevators make much of their money on "mix and blend," for example, and volume can help that.

Running an elevator costs a lot of money. The grain industry has long been noted for its fear of losing volume and the belief that improving volume is an accomplishment to be rewarded. Many facilities have chased competitors and pushed bids to the point where the handling revenue isn't even enough to sustain the business.

Footnote: The handling margins and basis appreciation figures shown in the tables are strictly for illustration. These numbers should not be taken as a recommendation for any individual business. F&G

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Table Two: *What if I can hedge and hold the grain and earn basis revenue (after interest)?*

Variable handling cost/bu. $0.025 *Net basis gain/bu.* $0.12

Volume Bu.		Bid Margin		Gross $		Variable cost total		$ towards fixed cost		Est. net basis return	Total	per bu.
1,000,000	x	$0.050	=	$50,000	-	$25,000	=	$25,000	+	$120,000	$145,000	$0.145
900,000	x	$0.055	=	$49,500	-	$22,500	=	$27,000	+	$108,000	$135,000	$0.150
800,000	x	$0.060	=	$48,000	-	$20,000	=	$28,000	+	$96,000	$124,000	$0.155
700,000	x	$0.065	=	$45,500	-	$17,500	=	$28,000	+	$84,000	$112,000	$0.160
600,000	x	$0.070	=	$42,000	-	$15,000	=	$27,000	+	$72,000	$99,000	$0.165
500,000	x	$0.075	=	$37,500	-	$12,500	=	$25,000	+	$60,000	$85,000	$0.170