Determining Your Break-Even Point

by Leslie Shiner

Like many small contractors, you probably want your business to grow and produce more profit. But growth entails risks, including the possibility that hiring more managers or office people could increase overhead to such an extent that profit declines. Buying expensive equipment or moving the office from your house into rented space could have the same effect.

Still, if you want more profit, your company will most likely have to grow. The smart thing to do is to minimize your risk by going into it with a plan.

A Question of Volume

The part of the plan I want to talk about is not as sexy as the part most contractors want to think about — who they're going to hire, where their office will be, or what new equipment they are going to buy. I want to talk about the financial part — namely, determining how much volume your company must do to support the added overhead.

One way to evaluate whether to add overhead is by creating a break-even analysis. Although this may sound complex, it can be boiled down to a simple formula, which I'll discuss later. First, though, you need to understand the theory behind the calculations.

Job costs vary according to the size of the job, but overhead is fixed. If you're going to increase overhead, you need to increase your volume of work; otherwise, your net profit will decline. The question is this: By how much does volume need to increase?

Table 1. Current Financials

Income	$500,000	100%
Direct Expenses (COGS)		
Material	$ 95,000	19%
Labor (with burden)	$ 105,000	21%
Sub	$ 125,000	25%
Total Direct Expenses	$ 325,000	65%
Gross Profit	$ 175,000	35%
Overhead		
Office Labor	$ 30,000	6%
Rent, Office, etc.	$ 75,000	15%
Other Overhead	$ 0	0%
Total Overhead	$ 105,000	21%
Net Profit	$ 70,000	14%

Gross Margin

Let's look at the numbers. If a $100,000 job costs $65,000 to produce, you will have a $35,000 gross profit. That $35,000 can be used to pay the company's overhead costs as well as the owner's profit. Reflected as a percentage, this gross margin is 35 percent of income. If the company completes two of these jobs, you would expect a gross profit of $70,000 (35 percent of $200,000).

Once you determine your gross margin per job and can hit that number consistently (or at least on average), the rest is easy. It's simply a matter of taking the gross-margin number and working backward to the volume that will cover overhead and leave you with the desired amount of net profit. Here's the formula:

overhead ÷ gross margin = volume

Let's say, for example, that your margin is 35 percent and you want to rent an office that will add $21,000 a year to overhead. You would need to increase your yearly volume by $60,000 ($21,000 ÷ 35 percent = $60,000). If you rent that office and do not increase volume by $60,000, your net profit will fall.

Need for accurate statements. Knowing this, you can create what-if scenarios that show what the financial consequences would be for various changes to volume, overhead, or margin. This works only if you have accurate financial statements and understand what's in them (see "Looking Beyond the Bottom Line," *Business,* 6/05).

The statements must clearly distinguish between direct and overhead costs. Direct costs are tied directly to the job

and are subtracted from income to determine gross profit. Overhead costs are the costs to run the company and are subtracted from gross profit to determine net profit.

The financial statement should include a subtotal for gross profit and show the amounts in percentages as well as in dollars. For a sole proprietor, the financial statement would look something like the table on the previous page (Table 1). Notice that in the example the contractor has a net profit of $70,000, which represents 14 percent of total income.

Set-Aside Profit

The next step in performing a break-even analysis is to restate the financial statement as a break-even statement.

There is no net profit in a break-even statement. Instead, you take what would have been net profit, call it "set-aside profit," and move it into the section for overhead. The financial statement below (Table 2) shows how this would look.

Why it matters. Moving net profit into the overhead section may seem strange, but there are a couple of reasons for doing so.

First, it makes it possible to perform the break-even calculation with simple math. Second, it forces you to plan. If you are a sole proprietor, you probably don't draw a regular paycheck; instead, you pay yourself with profit. If there isn't any, you don't get paid.

So, in this context, "breaking even" means paying everything — direct expenses plus overhead *and* the owner. Far too many contractors think "breaking even" means covering their job (direct) expenses; they fail to adequately account for overhead and profit.

How much? The amount of set-aside profit is up to you; it could be an actual salary or what it would cost to hire someone else to do your job. Whichever approach you choose, that amount needs to be left over after the direct expenses and other overhead items are paid. Once you have transferred net profit into the overhead section, you can determine the break-even volume for your company. The formula follows:

total overhead ÷ gross margin
= volume to break even

This should look familiar — it's the same formula as the one described earlier, except this time we're looking at the break-even volume for the entire company, not just the volume needed to support a particular overhead cost. For the company shown in the tables on the previous pages, the calculation would be $175,000 ÷ 35 percent = $500,000.

What If Your Margin Slips?

But what happens if your gross margin falls? If it were to fall from 35 percent to, say, 30 percent, your break-even point would no longer be valid. If the regular items in overhead stay the same, you would need to produce more work at the new lower margin to achieve your set-aside profit goal. In that case, the calculation would be $175,000 ÷ 30 percent = $583,333. The financial statement would then look like the table below (Table 3, next page). The direct-expense amounts are not shown because they don't really matter here. All we need to know is that the gross margin is now 30 percent.

If your gross margin fell to 30 percent and you were not able to raise your volume, there would be $150,000 available — instead of $175,000 — to cover total overhead. Where would that $25,000 difference come from? Since overhead costs are fixed, it would come out of the set-aside profit (your pay). The financial statement for this situation is at left (Table 4). The reverse is also true, of course. If you increase the gross margin on a given volume of work and overhead doesn't change, then set-aside profit (or net profit) goes up. Slashing overhead has the same effect.

Table 2. Break-Even Analysis
(35% Gross Margin)

Income	$500,000	100%
Direct Expenses (COGS)		
Material	$ 95,000	19%
Labor (with burden)	$ 105,000	21%
Sub	$ 125,000	25%
Total Direct Expenses	$ 325,000	65%
Gross Profit	$ 175,000	35%
Overhead		
Office Labor	$ 30,000	6%
Rent, Office, etc.	$ 75,000	15%
Set-Aside Profit	$ 70,000	14%
Total Overhead	$ 175,000	35%
Net Profit	$ 0	0%

Table 3. Break-Even Analysis
(30% Gross Margin/Higher Volume)

Income	$583,333	100%
Direct Expenses (COGS)		
Material		
Labor (with burden)		
Sub		
Total Direct Expenses	$408,333	70%
Gross Profit	$175,000	30%
Overhead		
Office Labor	$ 30,000	5%
Rent, Office, etc.	$ 75,000	13%
Set-Aside Profit	$ 70,000	12%
Total Overhead	$175,000	30%
Net Profit	$ 0	0%

Table 4. Break-Even Analysis
(30% Gross Margin/Same Volume)

Income	$500,000	100%
Direct Expenses (COGS)		
Material		
Labor (with burden)		
Sub		
Total Direct Expenses	$ 350,000	70%
Gross Profit	$ 150,000	30%
Overhead		
Office Labor	$ 30,000	6%
Rent, Office, etc.	$ 75,000	15%
Set-Aside Profit	$ 45,000	9%
Total Overhead	$ 150,000	30%
Net Profit	$ 0	0%

Hiring Another Manager

The break-even analysis can also be useful when you're trying to decide whether to bring on an additional project manager. If you, as an owner, are ready to take on a project manager to help you grow, then you need to be sure you can cover both his and your own salary.

What would it cost to replace yourself? If you had a profit of $70,000 and hired a project manager for $70,000 (including comp, insurance, and so on), there would be nothing left for you. For this to work, the project manager would have to help you increase volume to the point where he pays for himself.

How much additional volume would that take? If you continued to meet the 35 percent gross margin, you would need to increase your volume by $200,000 (70,000 ÷ 35 percent). But volume doesn't usually jump that dramatically. So you would need to decide for how long you'd be willing to cover the cost of the project manager. Once volume grew by $200,000, you would be breaking even on the new project manager.

But for a businessperson, it's not enough to break even; you want the project manager to help you boost volume by more than $200,000 — without reducing gross margin.

Playing "What If"

Here are other ways you can play with the numbers shown in the tables above.

What if I hire an office assistant who costs $25,000 per year?

- At a 35 percent margin, my volume must increase by $71,428 (25,000 ÷ 35 percent).
- At a 30 percent margin, it must increase by $83,333 (25,000 ÷ 30 percent).

What if I want to give myself a raise, so I increase my goal for set-aside profit from $70,000 to $100,000?

- At a 35 percent margin, my volume must increase by $85,714 (30,000 ÷ 35 percent).
- At a 30 percent margin, it must increase by $100,000 (30,000 ÷ 30 percent).

I've seen contractors really struggle with these examples. At first they're skeptical, but as they work through the numbers they begin to understand the role of gross profit in their business and realize that construction — at least the financial part — can indeed be boiled down to a numbers game. Once they understand that, they can ask the important question: What volume makes sense for me and my company?

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