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EXTENSION

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How Do You Know If Your Business Is Making Money?¹

P.J. van Blokland²

Introduction

This paper shows how to calculate the asking price of a product and what to do when comparing asking price with market prices. The asking price is composed of two sets of costs. The first (traditional) set is made up from cash, depreciation, and overhead costs. The second set includes owner's income taxes and FICA, reinvesting in the firm, principal payments, and owner's salary. These totally make up the asking price of any product using recognized accounting procedures. Asking price is then compared with the four possible market price situations and action recommendations are postulated for each situation.

The Argument

Most firms that grow things are notoriously bad at knowing what to charge for their products. They are better at calculating the vagaries of nature than pricing outputs to cover costs, income, and expansion/growth. This is perhaps because most biological-type education still emphasizes production and neglects accounting. Consequently, this paper will concentrate on three things that all firms must do to operate a business. First, the firm must calculate an "asking" price to cover both basic and unrealized costs associated with income and expansion/growth.

Second, the firm must compare its "asking" price with prevailing market prices for the firm's product. And third, the firm must examine what happens when market prices differ from the firm's asking price.

The procedure to calculate asking price is called budgeting. Once we know the asking price, we can compare it with the market price. If the market price is greater, then we make more money than we expected. If the market price is smaller, then one of two things will happen. Either the firm makes less money than expected, but still makes a profit; or it makes a loss. The question then arises as to whether the loss is short or long term. If it is short term, then the firm can survive. If it is long term, then the firm will probably have to close before it loses all its equity. Thus the asking price indicates whether we should or should not be in that line of business.

Methodology

The paper uses simple numbers to illustrate the essential points involved in making decisions on the firm's future. The percentages and proportions used in the paper are averages from USDA national statistics and are fairly accurate. The outlined procedure is particularly apt for biological firms such as farms, nurseries, and sod industries, and is equally applicable to "downstream" firms such as millers,

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 2. P.J. van Blokland, professor, Department of Food and Resource Economics, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL.

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landscapers, and golf courses. The tie that binds them all is a heavy dependence on decision making based on natural elements and relative neglect of financial information flows.

The Budgeting Procedure for Calculating Asking Price

There are three types of costs involved in any production. These are cash, depreciation, and overhead costs, which make up our conventional total costs. Cash costs are the items for which we pay cash and typically make up at least 75% of the total costs of most biological firms. Examples include labor, chemicals, fertilizers, fuel and repairs, marketing, insurance, rent and interest on loans. Depreciation costs include all the items that the tax authorities allow us to depreciate. These are items that are not completely used up in a single production period such as vehicles, machinery, equipment, buildings and bearing trees. Depreciation typically accounts for around 17% of the total costs of biological firms. Overhead costs are those costs associated with running the firm's office, which includes expenses for office staff, equipment, and furniture; accountant and attorney fees; publications; and business travel and entertainment. These usually make up some 8% of a firm's total costs.

Assume the firm produces units. Say that the per unit cash costs are \$7.50, depreciation is \$1.50, and overhead is \$1.00, for a total cost per unit of \$10.00. If the market price is also \$10, the firm covers its total costs but does not make a profit. In other words, there is no money for firm income or expansion/growth. In business terms, there is no return to management. There are four additional costs to consider, and these four costs are recognized as an essential part of budgeting, under Generally Accepted Accounting Principals or GAAP, for any firm in the world.

These additional costs are

- The owner's income taxes and taxes for social security, medicare, and medicaid (these will be referred to collectively as income taxes). The amount paid depends largely on the government.

- Reinvesting in the firm. This charge is for the firm's expansion/growth, and the amount invested is decided by the owner.
- Principal payments. This amount is usually set by the lender for biological firms, but it should depend on the firm's net cash flow and be set jointly by the owner of the firm and the lenders.
- Withdrawals for owner's salary. These are what the owner wants for his own income/living expenses, and also depend on the firm's owner.

Note that in corporate finance, reinvesting and principal payments are called retained earnings and the owner's salary is called dividends.

These additional costs should be calculated as a proportion of the total costs because the owner has some control over these costs. Assume income taxes are \$0.45 per unit, or a little more than 4% of total costs, which is a reasonable rule of thumb for a biological firm today according to national statistics. Likewise, re-investment is \$1.75, or 17.5% of the total costs, which is perhaps the minimum necessary to keep one of these firms viable today in terms of expansion/growth. Principal payments are \$0.80, or 8% of total costs, which is about as much as these firms can afford to pay under current price conditions. Finally, assume that salary is \$1.00, which represents a 10% return on total costs, or investment in production, which seems reasonable. These four additional costs sum to \$4.00.

The asking price of each unit is therefore the total costs of cash, depreciation, and overhead, or \$10, plus these additional costs of \$4. Thus, the asking price of this firm is \$14.00 per unit. This is the price that the firm needs in order to meet all its costs, including income taxes, expansion/growth and owner's salary.

The Four Possible Scenarios

There are only four possibilities, or scenarios, once we have determined the asking price. Scenario 1 sets the market price greater than the asking price. Scenario 2 sets the market price less than the asking

price but greater than the total costs. Scenario 3 sets the market price less than the asking price, and less than the total costs but greater than the cash costs. And Scenario 4 sets the market price less than both the asking price and the cash costs.

Scenario 1

Assume the market price is \$15.00 per unit. Total costs are covered, and there is an additional \$5.00 available to pay the four additional costs, which is \$4.00, so we now have an extra \$1.00. What happens next? The \$15.00 market price will probably result in higher income taxes, so instead of paying \$0.45 per unit for taxes, we pay \$0.50 per unit. We are left with \$4.50 to share among the other three charges to do what we like. We can reinvest more in the firm, pay off the principal quicker, give ourselves a bigger salary, or a combination of all three. The owner makes the allocation decision, which is not an easy one, because the more we allocate to one (e.g., salary), the less we have available for the others.

Scenario 2

Assume the market price is \$13.00 per unit. Total costs are still covered, but there is only \$3.00 left to meet the other costs instead of the \$4.00 we wanted. Obviously taxes will fall, say from \$0.45 per unit to \$0.40. The remaining \$2.60 ($\$3.00 - \0.40) must now be shared among investing, principal, and salaries. What happens next? We may want to meet our principal commitment of \$0.80. If so, we only have \$1.80 ($\$2.60 - \0.80) remaining for reinvesting and salaries. This situation is typical in biological firms. If the market price is lower than our asking price, we tend to sacrifice either investing or salaries, or both. We must decide what to do, knowing that the more we allocate to one, the less that is left for the remainder.

Scenario 3

Assume the market price is \$9.00 per unit. This is insufficient to cover our total costs of \$10.00, so we will inevitably lose money. However, it does cover the \$7.50 cash costs, and therefore leaves \$1.50 ($\$9.00 - \$7.50 = \1.50) to meet some of the depreciation and overhead costs. In the short run, the firm should still produce. If it does produce, it will

lose \$1.00 per unit, or \$10.00 total costs minus \$9.00 market price. In this case we are "living off depreciation."

If it does not produce, it saves its cash costs, but loses the overhead and depreciation costs. Thus it will lose \$1.50 in depreciation because the capital assets will continue to depreciate whether they are used or not, as well as the overhead of \$1.00, which must also be paid regardless of production. So the choice is whether the firm prefers to lose \$1.00 per unit by producing or \$2.50 per unit by not producing. Hence, it must produce. Obviously if this market price turns out to be the typical market price in the future, it cannot continue production *ad infinitum*. But it should continue to produce in the short run.

Scenario 4

Assume that the market price is \$7.00 per unit. This price does not even cover the cash costs of \$7.50 per unit. Consequently the firm should stop production, unless there is some way of reducing cash costs to below \$7.00. Otherwise the firm will deplete its equity until it becomes bankrupt.

Obviously all these scenarios assume that the market price stays fixed. While this may be unrealistic, particularly with growing opportunities for using futures and options markets, the main point is that all these scenarios are applicable to individual market prices. Therefore, any of the four scenarios are relevant, and the suggested action is appropriate for a market price with respect to the asking price. Thus the methodology still works.

Conclusion

Asking price is a vital decision making concept. It forces an integration of production performance via cash costs. It then incorporates the firm's structure through depreciation and overhead. It combines the manager's short-term goals, by including salaries and the long-term objectives of investment and growth, with retained earnings. The firm and its management are then tested by a fair judge, the marketplace, against the price it offers.

Most firms, and biological firms in particular, do not know exactly what they will have to pay for

inputs, so they do the best they can by estimating inputs based on previous experience, past history, and current trends. The asking price is the culmination of enterprise budgeting. However, budgeting is not exact. It is always a forecast of the future, and as this future gradually becomes the present, things change. So should the budget, and consequently so should the asking price. Thus any budget must be altered constantly to incorporate new events so that as the future becomes the present, there are no major surprises for the firm's investors.

The asking price is often the determining factor in deciding what to produce and how to allocate production returns among reinvesting, principal payments, and owner's salary. Even though prediction is difficult, it must be done. Without predicting asking price, the whole concept of firm production is guesswork and hope. Every firm makes most, if not all, of its decisions based on the asking price. Winners stay, losers leave.

This paper has shown that the asking price of a marketable product is more than the costs of producing it. The asking price serves as both a short-term sales trigger and a longer-term comparison of the health of the firm relative to market competition. The firm can only make money if it covers all its costs. It may be surprising, but it is certainly not unusual, that, in this example, adding the four additional costs increases the price above total costs by about 40%. If there were no debt, the increase would be smaller. If the firm had a less aggressive re-investment program, the increase would be less. The point really is not the percentage magnitude of the charges, but the fact that they must be included in budget calculations for the firm and its owner to survive and prosper.

The methodology presented here is recognized under GAAP and practiced by accountants in a similar form in all firms around the world. This allows uniformity, comparison between geographically dispersed firms, and acceptance and conformation to recognized standards, which are necessary for a firm to survive.

Using conventional accounting terms, when total costs are subtracted from the unit's sale price (times the number of units sold), the result is net firm

income for that period (usually a quarter); and when owner's income taxes are subtracted from net firm income, the result is net income, which is the bottom line for all firms. Net income is the source for principal payments, firm reinvesting, and owner's salary. In corporate finance, retained earnings increase the firm's equity, and the remainder is paid out as dividends.

Everything fits together nicely if the asking price includes total costs and the four additional costs. Things do not fit at all if any of the four additional costs are excluded. Therefore, budgeting needs to be done right at the start. This paper has attempted to show how to get to the starting line in good condition.