

## **SIMPLE FINANCIAL MODELING - THE MARGINAL INCOME MODEL**

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Often people think about starting a business, but they have no financial or accounting training and are at a loss to financially assess the business they are considering. Described herein is a simple financial model, which can give some structure to thinking about the finances required to start a new business or to become self-employed.

Let's start with the funds you would need to start the business before you do even a single transaction. In the simplest instance let's say you wanted to become a self-employed consultant. Costs you might incur before even making a first business call could include setting up a website, having business cards and stationery printed, and establishing a dedicated phone line with an answering machine for your business. Maybe you even need a computer with more memory. We will call this bucket of funds your *upfront investment*. When you consider starting a business and incur this upfront investment you should think of it as funds which you are risking for your startup which may never be recovered, i.e., you should be prepared to lose this money if things don't work out. If you are considering a business opportunity which requires more upfront investment than you can afford and you require funds from other sources such as family, friends, an Angel investor or a bank loan, you must understand these sources are putting their money at risk and therefore would expect a meaningful financial return for the risk they are taking. This is why it is challenging to raise upfront investment because of the risk taken by the investors. Once you've made your upfront investment and actually start your business there typically is going to be a time period where you are spending money to get the business going but haven't yet made enough money in the business to cover this outflow of funds, you are in a period of negative cash flow, i.e., more cash is going out

than is coming in. Let's dissect what's going on here. We're going to look at something called *marginal income*.

To illustrate marginal income let's go back to starting your own consulting business. We'll assume you conduct the business from your residence and your consultancy is currently your only source of income. Further, let's assume your *upfront investment* for business cards, website, etc. is \$2,400. You will have two types of costs, *variable costs* and *fixed costs*, in your business. How do we define variable costs? These are the costs that vary directly with the level of your business activity. They are costs that are only incurred by virtue of your pursuit of a business transaction and/or costs incurred in actually making a delivery of your goods or services. For example, if you were traveling to meet clients to make a sale, to make a presentation or to deliver a report, the cost of that travel would be a variable cost. Other costs that would fall into this category would be entertainment expense, lunches, etc., incurred in dealing with a potential client.

In this example what costs would be in the other cost category, fixed costs? Since your consulting startup is your only source of income the cost of your residence (loan payments, rent, utilities) represent fixed costs. These costs go on regardless of your level of business activity or success.

By way of illustration let's say your fixed costs are \$3,000 a month. In the first month of your consultancy you do a lot of prospecting, but don't manage a sale. Further let's say you spent \$400 of variable cost in pursuit of business. Thus in your first month you have a negative cash flow of \$3,400. Below is a chart of the hypothetical financial performance of your start up month by month for the first nine months.

Months	0	1	2	3	4	5	6	7	8	9
Start-up cost	(2,400)									
Revenue		0	250	750	2,400	3,450	4,000	4,400	5,100	5,600
Variable Costs		400	400	425	450	450	475	450	425	450
MI		(400)	(150)	325	1,950	3,000	3,525	3,950	4,675	5,150
Fixed Costs		3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Cash Flow		(3,400)	(3,150)	(2,675)	(1,050)	0	525	950	1,675	2,150
Cumulative Loss	(2,400)	(5,800)	(8,950)	(11,625)	(12,675)	(12,675)	(12,150)	(11,200)	(9,525)	(7,375)

Now how should we look at these cash flows in our model start up consultancy? First let's concentrate on the *marginal income* (MI), which is defined as the revenue minus the variable costs. Thus we see in the first month our marginal income is a negative \$400, and in the second month we have reduced this to a marginal income of a negative \$150. By the third month we have a positive marginal income of \$325, and so the calculation of marginal income goes for each month.

The next thing we want to look at in our example is how much cash we needed to cover the months until our marginal income covered our fixed costs, which in the example was month five. In months one through five we had an accumulated negative cash flow of  $-\$(3,400+3,150+2,675+1,050+0)$ , for a total *startup operating loss* of \$10,275 until we reached profitability. This along with our *upfront investment* of \$2,400 means our plan calls for a minimum *startup capital* of  $\$10,275 + \$2,400 = \$12,675$ .

Why are we looking at this marginal income figure month by month? We look at the business in this way because we have fixed

costs of \$3000 a month, which our marginal income must, more than cover for us to begin to have a profitable business. We see in this hypothetical model that by month five we have actually reached a *breakeven run rate* of business that is; our \$3,450 in revenue covers both our variable and fixed costs. After month 5 we are actually beginning to turn a profit, that is, the marginal income is now exceeding the fixed costs.

Let's say for the moment the figures shown in the table were not the results of our startup business, but our business plan, or perhaps more properly "Roadmap", of how we expect to go. The term Roadmap is used because in a startup there is so much uncertainty in how things will go, particularly around revenues and their timing, the term "business plan" seems a bit fixed. There will likely be many bumps and detours in following your roadmap. Our roadmap shows we would need \$12,675 to reach a point where the business could sustain itself. Generally speaking in a startup roadmap or budget there need to be contingency funds set aside because even in the best of planning there generally are still unforeseen events which either add to the costs experienced or the time required to reach a breakeven run rate. So in the example discussed it would be prudent to have more than \$12,675 set aside as startup capital.

In our example the business has reached profitability and is accumulating profits. If it continues with this success it will eventually accumulate profits equal to the invested startup capital and will have truly broken even. While taxes and accounting nuances alter this picture in terms of precision, the business fundamentals hold true and help provide a conceptual framework for assessing the financial attributes of a business opportunity. Of course the overarching principle in any business start-up assessment is: Is there a real unfulfilled market need or at least one underserved by the competition?

This model can be applied to much more complex business opportunities than being a self-employed consultant. The definitions and principles used apply for any business. For example, if your interest was in starting a restaurant, the model would show you your startup capital to be quite large relatively speaking, your marginal income per transaction to be low and your fixed costs to be relatively high, all implying that your minimum startup capital needs to be relatively large, necessitating very careful budgeting. It might also lead to the conclusion outside investors are needed for the startup capital. Because of the risks for the capital they would invest, it implies they would want to have a significant share of the return, in other words, a significant share of the ownership. Further, most likely they would be looking for a business which if successful is scalable, which in this case means not just investing in a single restaurant, but investing in the potential for growing a chain of restaurants built on the same model or franchising.

Besides looking at the cost side of a startup and the capital that may be required, this simple model can also help with pricing decisions. When the price of a new good or service isn't abundantly clear, playing with the pricing in your business model and its impact with respect to how many transactions will be necessary to generate a marginal income which can cover your fixed expenses may help point you to a pricing strategy. In other words, it allows you to look at the trade-off between pricing for a relatively high marginal income for lower volume versus pricing at a lower marginal income but planning for much higher sales volumes.

The model also helps make the important distinction between variable and fixed costs, and ultimately, how the cumulative marginal income, the price of a transaction less the variable costs of the transaction, in an accounting period needs to cover the fixed costs in that period. In the case of a restaurant clearly the food is a

variable cost, varying directly with transaction. A cost item like staff is slightly more complicated. Some of the staff may be considered variable cost because they only work part-time as volume dictates, but the cook has to be considered a fixed expense since he/she has to be available to prepare the food whether or not there are any customers.

Of course, in the end financially modeling a business is more complex than has been presented here. For example in this model we didn't consider business taxes and issues such as the depreciation of capital equipment, etc. However, this simple model does provide a way to think about the principal financial issues of starting up a business, which include but aren't limited to:

- \_The upfront investment, which in most instances should be considered entirely at risk if things don't go as planned
- \_Startup operating losses
- \_Minimum capital requirements, including allowing for some financial reserve
- \_Classifying costs into two categories, variable and fixed
- \_Identifying the marginal income expected in the business and how many transactions will be required to cover the fixed costs
- \_Time required to attain a breakeven run rate
- \_Time to breakeven on the capital invested in the business
- \_Pricing the product or service
- \_Investing to lower costs and improve marginal income vs. accepting lower marginal income through contract manufacturing, etc., but preserving more funds in reserve for more staying power .