

Price Optimization: A practical approach to open questions

Motivation

Pricing is a fundamental aspect of financial modeling and it determines how much a company will receive in exchange for its product or service. Given a set of constraints, a business can use a variety of pricing strategies to maximize their profits and maintain the competitiveness. For some business models such as our Cost + Model where the cost is locked at a certain level but the market always fluctuates, it requires companies to monitor and adjust their prices regularly.

Given that our unknowns now include a set of different currency pairs, a properly standardized approach to price each currency pair is crucial. How to evaluate your pricing set? How to determine which is the optimal solution? Furthermore, with more than three pairs of currencies, it's almost impossible to manually implement a suitable price set.

A simple study case

Table 1

CCY	Cost	Market Price	Customer Price
USDMYR	3.0	3.5	P1 = ?
SGDMYR	2.8	2.0	P2 = ?

Criteria for an optimal pricing solution

Look at our Table 1, we can see that the price pair (P1, P2) can take many different values. For example, we could set $P1 = 4.0$ and $P2 = 3.0$ and we could derive quickly from it a profit of $(4 - 3) + (3 - 2.8) = 1.2$ MYR for each pair of USD and SGD sold to customers.

Alternatively, if we do not want to be so aggressive and since our SGDMYR is far above the current market rate, we think that customer's sensitivity towards the price will make sales

revenue drop. Therefore, we consider reducing our price instead of making a profit from this currency pair. Notice that the case where we might want to sell below our cost is not rare in the Cost⁺ or any other similar models. In this case, we choose $P1 = 4.3$ and $P2 = 2.7$, so that the total profit is still the same, at 1.2 MYR per USD and SGD sold. However, the difference between two ways is when we compare it with the market price. In the first price set, the price is above the market 0.5MYR and 1.0MYR for USDMYR and SGDMYR price respectively. The second way leaves us with 0.8MYR for USDMYR and 0.7MYR for SGDMYR. Which one is better? It is not entirely abstract and solely based on personal opinion while we could set up several rules or standards for it.

First, bear in mind that, we always want to earn the most possible from each transactions made. We can easily set up our rule number one is “maximum the profit” in our possible range. To earn more profit from a certain amount of foreign currencies sell, the only way we could do is increasing our price. We want it to be at least above the cost – the buying price which is locked when we first trade it with the bank or any other suppliers.

However, there are many limitations for increasing the price. First of all, it makes the price uncompetitive resulting in lost sales and poor revenue opportunity. What if the market movement is against us? It means the rate is going down and our unrealized P&L is negative. Keeping increasing the price above the market is probably not a wise move. Adding up the price without consideration of how it is in compare with the market potentially means lost sales. Knowing the constraints helps us form the second criteria of optimal price is the competitiveness which is determined by the difference between our price and the mid-market rate. We do not want to be too far above or below but somewhere around the market price.

One final consideration when we have more than one currency pair offered, with the same total revenue and the sum of price difference with the market, as our case study above, between (0.5, 1.0) and (0.7, 0.8) spreads from the market, which is the ‘fair’ settlement? A balance must be struck among the mark-up on various currency pairs provided. It is also the third rule of thumb to determine our price set.

In summary, it is said to be the optimal price solutions when we have:

1. A maximum possible profit
2. A minimum possible difference from the market price
3. A balance in spread distribution

A manual process is impossible

Trials and errors are highly not recommended in this case due to the fact that the market fluctuation is highly uncertain nature. It's beyond human capability to do real-time re-evaluation every second. You can consider adjusting your price at a periodic interval of time but it also has limitations. You cannot make an action at the critical time while the market price changes vigorously and there is no guarantee that your choice of spread is the best one based on your criteria. In practice, trials and errors or brute-force searching in computing

terms is your last resort when you cannot find a better way to do like finding a password of a random person. You have no other choice except trying every alphabetical characters and natural numbers combinations until you get the right one.

Price Optimization Model – An automatic solution

The model is built to solve all the above issues and takes the advantages of computer power to get rid of all the tedious calculations. You do not need to worry too much about exposure to FX risk because your price will be adjusted dynamically together with the market's movement. It does not only give a systematic way to approach the problems but also assures that all the pre-set conditions are satisfied. An automatic spread implementation offers a flexibility to choose your net profit level for each volume of transactions while catering to your customer's price sensitivity and finally provides material benefit to the bottom line.

Summary

- Pricing is an open-ended question that demands a full, meaningful answer using subject's own knowledge.
- Naively applying an arbitrary estimation may result in counter effects.
- The price optimization tool is customizable based on different scenarios and, correspondingly, achieve the maximum possible net income target.
- Moreover, it is dynamically adjustable based on the market, therefore, the company can have a peace in mind that their price is applied properly based on the prior instructions given.

DISCLAIMER

The information and opinions in this report are for our clients only and are not intended as an offer or solicitation with respect to purchase or sale of any currency or financial instrument. While this research is based on sources that is believed by EZFX to be reliable, we do not guarantee its accuracy or completeness and it should not be relied on as such. EZFX does not assume any liability for any direct, indirect or consequential loss that may result from the reliance by any person upon any such information or opinions. It does not constitute a personal nor professional recommendation or take into account the particular investment objectives, financial situations, or needs of the individual clients. All opinions and information contained in this report are subject to change without notice.

These materials are prepared solely for distribution into jurisdictions where such distribution is permitted by law. The information in this report is confidential and may be legally privileged. This report is for the use of our clients only and may not be redistributed, reproduced or passed on to any other person or published, in part or in whole, for any purpose, without the prior, written consent of EZFX Pte. Ltd.

© 2015 EZFX Pte. Ltd. All rights reserved.