Socialism ho!

One of the discussions that pops up from time to time is at what percentage you should sell items. Some people like to go full capitalist and try to squeeze every little drop of pix out a sale, selling at 115-125% (the tagline *is* ‘capitalism ho!’, after all). While others prefer to be kinder to the customers and sell at 105-110%, which in the short-term nets you direct profits but has major long-term benefits in terms of merchant levels and customer rep. However, while the position has always made more sense to me, I’ve never seen any real data to support it, so I thought I’d get some myself.

## Summary (or tl;dr)

I did 2-week runs with a ‘low’ and ‘high’ percentage, 108% and 120%, respectively. Here are the main results.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | week 1 | | week 2 | |
|  | low | high | low | high |
| transactions (act) | 77 | 74 | 187 | 177 |
| merchant xp (mxp) | 2233 | 1269 | 7546 | 3811 |
| mxp rate (mxp/act) | 29 | 17 | 40 (48) | 21 (24) |
| merchant level | 9 | 6 | 16 | 11 |
| money | 28412 | 15720 | 112813 | 63750 |
| money/act |  |  |  |  |
| customer rep (hearts) | 6 | 1 | 19 (13) | 8 (7) |
| assets |  |  | 413950 | 249190 |

As you can see, the lower percentage wins out on pretty much all points. With roughly the same amount of transactions, the low run has 70% more of everything in week 1, and 100% more in week 2. The main thing here is that with increased merchant level and customer rep, you can get the more expensive items sooner, and customers will be able to afford them as well. All of that translates to much, much more money overall, even though relatively speaking you lose out on 10% profit on each act.

So basically, yes, sell at a lower rate. HAGGLING AND MISSING SALES COMBOS ARE BAD!

## Ground rules and conditions

Recettear is a game with many variables that don’t have official names, or variables that aren’t even visible in the game unless you know what to look for. The [wikia](http://recettear.wikia.com/wiki/Recettear_Wiki) does a good job of being the unofficial manual, but just to be clear, here are some of the jargon I use.

* Merchant xp (mxp). The amount of merchant experience.
* Merchant level (mlvl). Merchant levels give you access to things like higher-level items and fusions, store expansions, advanced orders and vendors. As it happens, the amount of merchant XP you need to level up is mxp(L) = 25(L2 + L – 2). Except for mlvl 2, where it’s 50.
* Transaction (act). A transaction is the act of selling to or buying from customers. Since this is where you actually earn money and/or XP, I prefer this unit of measurement over days or timeslots. For buys, I’ll put a number inside brackets.
* Pin bonus. The base mxp for an act is 10, but if you get close to the expected price you’ll get a near pin (15 base mxp) or even a just pin (30 base xp).
* Just combo. If you get a sequence of successful acts, you get an exponentially growing mxp bonus, from 2, 4, 8 up to 128. If you break the combo, it resets. Do not break the combo. No, really, do *not* break the combo!
* Customer reputation (rep). Customer rep is the one of the most important stats in the game, as it directly relates to a customer’s budget. Unfortunately, it is also a semi-hidden variable. It’s measured in hearts and you’d be wise to track this manually. [heart pic]
  + News effects. There are 4 news effects that relate to the price of items and their desirability.
  + Price up (high/red). Prices are increased (240% / [105%])
  + Price down (low/blue). Prices are decreased (50% / [30%])
  + Price crash (deep blue). Item is off the market. This can happen if you sell like 20 or so of the same item in a few days.
* Item boom/craze (boom). Certain items are sought after, and if you fill your display with them, you can probably sell 7-10 of those items in a timeslot. Great for XP, and sometimes for money as well. A boom for red items may net you this week’s target in one go, so keep a lookout for those.

There’s also something you probably need to know about how I play.

* As said, this guide is about two 2-week runs with a low and high percentage. However, it isn’t quite as easy as 108% and 120%, because of the market fluctuations. The full stats are:
  + low run : 50/108/240, [30/70/105]
  + high run : 50/120/250, [30/60/100]
* That’s price low/normal/high and sell and buy percentages. I’ve used these throughout, with the following exceptions:
  + In the high run, the fallback percentage after a haggling was the low-run’s value.
  + In week 2 of the high run, I scaled back the percentage for the girl to 115%, because I started to notice she never went for 120%.
  + Since she’s such a stingy little \*\*\*\*\*, Prime’s values were 70/103/210, [40/70/110] for both high and low runs.
* I kept track of every transaction, the amount of XP I got from it, and when I got hearts. Money I only tracked per timeslot.
* I’ve tried to do the same things every day for both runs to keep the comparison fair, but with the amount of randomness, it’s not exact. In the low run, I got *extremely* lucky in week 2, with having metal and food highs, and sword and apple booms. In the high run, I got a warm boom, but also a food low. The end result is somewhat skewed by these differences. However, if the cases had been reversed, I still would have had better results in the low run.
* I practically live on the following pages:
  + [google doc with budgets](https://docs.google.com/spreadsheet/ccc?key=0AjClmp1qyw-OdDlKdVRtQTVjTVpyV0d4dDRZZ0FJNkE&hl=en_US#gid=30). Without knowing what the starting budgets, you’ll probably miss a lot of combos. It also shows the accepted percentages for sales for each customer.
  + [wikia:Categories](http://recettear.wikia.com/wiki/Categories). Very important when customers start asking for stuff.
  + [wikia:Fusion](http://recettear.wikia.com/wiki/Fusion). To know which dungeon items to keep for high-priced fusions.
  + [wikia:Merchant\_Level](http://recettear.wikia.com/wiki/Merchant_Level). For all things mxp-related.

I’ve been playing this game for quite a while, and as such I know what works and what doesn’t: when to go out and buy stuff, what to save during adventuring and how to make the most out of advanced orders, booms and vendors. As such, the results should be taken as best-case values, not something to expect on your first run.

## Results and discussion

I’m dividing the results into three sections: merchant XP and levels, hearts, and finally money. Even though the eventual goal in the game is to make money, those other two stats actually determine how much money you will make.

### Merchant XP

First up: merchant XP. You get this with every transaction you make, following the scheme discussed earlier. The results of the first 2 weeks is given in Figure 1.

As you can see, the 108% (low) run gains mxp much faster than the 120% (high) run. In the high run, you almost never get pin bonus. You also sometimes break the combo, although not as much as I thought. You should not underestimate the effect a single combo break can have on MXP.

In the first week, the number of transactions per timeslot is still low, so the combo bonus won’t be that high yet. The MXP will mostly be determined by pin bonuses. This results in an MXP rate of about 16 mxp/act and 28 mxp/act for high and low runs, respectively. In the second week, though, there is a shift. You will notice that there’s a sort of staggering in the results, especially for the low run. That’s the combo bonus kicking in. At full combo, you get a 128 mxp bonus, that’s 13 times as high as the base rate! Once you can do 7+ transactions per timeslot, the combo bonus dominates, which is what you see here.

However, that only works if the combo is sustained. Even missing it once, the bonus halves, at best. The total combo bonus for an *n*-stream is C(n) = 2n+1-2. Now consider a 7-act timeslot with a full combo: that’s 254 combo mxp. Miss it once at the start or end, and it reduces to 126. Now break it in the middle, and it’s only 2\*C(3) = 12. Yowzah, that hurts.

And that’s what you see in the graph. For the high run, the MXP just skyrockets at almost 50 mxp/act, while the high run trails behind with only 20-25 mxp/act.

The reason all of this matters is because of the rate at which you gain merchant levels. In particular, the time you can get advanced orders (mlvl 7), more expensive items at the market and guild (mlvl 4, 11), store expansions (mlvl 12) and vendors (mlvl 15).

The availability of higher-tier items is especially important. For example, at tier 2, the best sword you can get is 3000pix. At tier 3, it’s 8000px. So yes, sell your 3000px sword at 120% and get that whopping 50% profit, which would come down to 1500pix. In the meantime, I’ll be selling my 8000 sword at 108% with 3040pix profit. And the differences will only get larger as time goes on.

Figure 1 : Merchant XP vs transactions. Merchant levels are given in green.

### Customer rep and budgets

The second major variable is customer rep. The starting budgets are between 600 and 2400 pix, and you need to be aware of what a customer can afford at all times to avoid breaking the combo. When customers start to like you, you will see a little heart during a transaction, indicating an increase in reputation for that customer. The first heart increases the budget 10-fold, so it is vital that you look out for this. The later hearts only cause a 10% or so increase. What I do is keep track of the hearts in a text file, and guesstimate the budget from that.

How reputation increases can be read in [wikia:Customer\_Reputation](http://recettear.wikia.com/wiki/Customer_Reputation). Basically you get +1, +2, +5 points for normal, near pin or just pin transaction, and -1 for a missed transaction. As you can see, the pins play a large part here. And in the high run, you miss the pins almost every time.

Figure : Customer reputation vs transactions. The ‘low’ heart-rate is pretty steady, for ‘high’, there’s too little data to make predictions.

The rate at which I gained hearts can be seen in Figure 2. For the low run, I get a pretty steady heart-rate of around 1/9 transactions. For the high-run there’s just too few hearts to really be sure.

At the end of the first week, I had just one heart (for Louie) in the high run, and the only reason that happened was that I lucked out and hit a just pin on 110% after haggling. At the end of week 2, I had about 1 heart per customer.

In contrast, I already had 5 customers with increased rep at the end of week 1 in the low run. At the end of week 2, pretty much everyone had 2 or more hearts. The Woman already had 4, and Man had 5.

This difference has a *huge* effect on what you can earn. The tier-2 items will be unlocked at merchant level 4, which you should hit pretty early on. These items will tend to range up to 3000 pix, but without the increased rep, you won’t be able to sell the higher-priced items. The same goes for tier-3 items, and stuff you bring home from dungeoneering.

For example, you get a 21k vase at the end of Jade Way. In the low run, I was able to sell it almost as soon as I got it (in this case day 9). In the high run, I had to wait until day 11.

### Show me the money

I also kept track of the amount of money I had left over at the end of each timeslot. There’s the absolute amount of money I had (Figure 3), and the profit after time spent in the store (Figure 4). In the first week, things are pretty even, but right around day 8 the bonuses that the low run builds up kick in. Even though the high run has more profit per item, the low run consistently beats it in absolute profits simply because you can sell more expensive items. Having access to and being able to sell 20k items is awesome like that. There was also the matter of vendors, which I was able to access at day 14. That is an initial investment, but the additional sales they bring in add greatly to your profits. Just buy up expensive items (store decorations are always good) and put them in vendors.

Admittedly, the figures are slightly exaggerated because I hit on a really, *really* good combo of booms and price-highs, but even without that, the low run would have won out easily. Interestingly, notice that in both cases, I had plenty of money to pay off the weeks’ debts. It’s just that in the low run, I already had enough money to pay off the next week’s debt as well.

Figure : money over time.

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Figure : profit over time. This is the difference over a timeslot spent at the store. And yes, those are 60k+ earnings at the end of week 2 for the low run.

## Conclusions

And there you have it. Selling at around 108% is better in every single way than 120%. Your merchant level raises faster, leading to better items and better store options. Additionally, customer reputation increases much faster, meaning that you can sell those better items as well. All that translates to bigger and profits.

What I did find interesting is that the 120% run did much better than I had expected. I thought that the combo would break more often than it did. Of course, even a single break means 2x to 4x smaller XP, but still, I expected worse. It also did better in terms of money, making the weekly debts handily.

I also expected better from the 108% run. While I only had one combo-break (it seems that damn girl won’t accept 105% for a red item >\_<), I ‘only’ got pin bonuses in about 80% of the cases. Maybe selling at 106% would be even better.

All in all, though, being kind to your customers and not trying to squeeze every little penny from them at every opportunity is way better than hardcore capitalism.