How I Made $1,000,000

with Portfolio123

Yuval Taylor

How I Made a Million Bucks with Portfolio123

Yuval Taylor

A Publication of Portfolio123

Note: portions of this book have been previously published on the author's blog, Invest(igations); Seeking Alpha; and/or the Portfolio123 blog. These portions have been substantially revised for this publication.

www.Portfolio123.com

Portfolio123

Table of Contents

Portfolio123

Chapter One

Don't Call Me Lucky

When I started investing in stocks and ETFs in early 2014, I was as green as an unpeeled cucumber. I made every mistake in the book, and boy did I lose money. I tried all kinds of approaches, and floundered in every one.

And then, in October 2015, after close to two years of losing money, I suddenly realized what actually works in the stock market: to look at every stock from as many angles as possible to make sure it's safe, sound, and primed to outperform.

I came to that realization through exploring the tools on Portfolio123, the only website where I could actually do this. On other websites, I could find out a lot about a particular stock, but only Portfolio123 allowed me to *rank* stocks on a huge variety of criteria to find the absolute best ones to buy. With screening—which is what other websites offered—I could only judge stocks on a few characteristics at a time. With ranking, I could use dozens at once.

I put all my money into my new strategy in October 2015. In 2016, I made a return of 45% on my investments. In 2017, I made 58%. In 2018, I made 14% while the S&P 500 was down for the year. In 2019, I badly underperformed the market, making only 16%. But occasional underperformance is part of the game, and I still made money.

Also in 2019 I met Marco Salerno, the founder and CEO of Portfolio123, and he offered me a job as product manager. Before then, I had been a subscriber, not an employee. Working at Portfolio123 didn't change the way I was investing. But quitting my old job allowed me to take my retirement fund and invest it in stocks.

2020 was a glorious year for me, with a return of 105%. By now, I have a compound annual growth rate (CAGR) of 42% (from November 2015 through December 2020) and have made $1.78 million.

Some people say that factor-based investing—investing in cheap stocks based primarily on fundamentals—is dead. Some people say that algorithmic investing—the quant approach—can only work for high-frequency traders. Some people say that people who have a good track record with actively managed portfolios are simply lucky and that there's no way to actually beat the market.

Portfolio$1^{\nearrow}2^3$

I think I can prove them wrong.

Consider this. If my success is due only to luck, then it should be possible to duplicate it by picking random stocks.

A CAGR of 42% would indeed be achievable by luck if you only made a few trades per year, because out of, say, fifty picks, ten or twelve might be huge winners. But when you've made thousands of trades over the last five years, there has to be more than luck involved. The chances of getting a 42% CAGR or higher by picking twenty stocks at random every four weeks for the last five years are less than one in a thousand.

In other words, there's only one real reason for my investing success: hard work.

And that work wouldn't have been possible for me without Portfolio123. Portfolio123 had the data, the systems, and the backtesting tools that enabled me to create an algorithm that has beaten the market handily and pretty consistently. And it still does.

This short book tells my story.

Portfolio123

Chapter Two

Every Mistake in the Book

At the end of 2013, I was faced with a conundrum. I had money in the bank from my advance for my next book (I'm a writer) and from the savings of living in Bolivia, where everything costs about a fifth of what it costs in the US (we were there for a year). But there was no obvious (to me, at least) way of investing that money and making it grow—the interest rate on certificates of deposit, which is what I had used in the past, were minimal. So I asked my sister-in-law, who's a banker, what she'd suggest, and she told me about ETFs—exchange-traded funds that were pegged to indexes and thus avoided the fees associated with mutual funds. She suggested a few.

There are a plethora of these on the market, and I had no idea how to choose the right ones to invest in. I'm a systematic person and don't like to put my money in anything I haven't checked out thoroughly. I began to wonder if there wasn't a system I could use to choose ETFs. And that logically led to a hunt for a system for buying and selling ETFs.

Well, if there is a good system, I failed to find it, despite spending practically all my spare time invest(igat)ing. Using two of my retirement accounts along with my savings, I started investing in a variety of ETFs; in the middle of 2014, I started investing in individual stocks as well. But by the end of October 2015, after almost two years of this, I had lost at least 25% of my money. (To put this into context, if I'd followed my sister-in-law's advice and invested in ETFs like SPY, which tracks the S&P 500, I would have gained over 12% instead.) And in order to make up for a 25% loss, you need a 33% gain.

What mistakes did I make? Every single one in the book.

- **I bought and sold based on technical analysis.** Technical analysis is the examination of short-term price movements for patterns that indicate points at which to buy and sell. I used complicated algorithms involving stochastics and other indicators to measure short-term price performance and market sentiment. Some people claim to be very good at this, but I wasn't.

- **I changed my strategy every few months.** I would be convinced I'd found a strategy that worked, and then a few weeks later I'd realize it had a fundamental flaw, so I'd fix it. Or I'd replace it with a better strategy. The only way to invest profitably is to implement a

Portfolio

strategy that you're completely sure will work and stick with it, making *incremental* improvements to avoid too much buying and selling.

- **I chose ETFs based on past performance.** The past performance of an ETF may or may not indicate future performance, depending on what factors the index depends on. There are a few index funds that will always outperform a few others—SPY will always outperform SH in the long run—but past performance is not the best way to figure that out. There has to be a *reason* why the fund has performed well in the past and that same reason must be valid in the future.

- **I only invested in companies with high ethical standards**. This may well be an ethically and financially counterproductive move. When you buy a company's shares on the open market, the company doesn't see a dime from that transaction. So holding the shares of gun manufacturers and fracking companies doesn't benefit those companies at all. In addition, if there's something about a company that you disagree with, holding shares in that company allows you to vote against that policy at a shareholders meeting. If you ignore ethical standards and just concentrate on buying stocks that will make you money, you'll be able to donate more to charitable organizations or political causes.

- **I used stock screeners based on faulty data without thoroughly evaluating the stocks I was buying.** Screening for stocks that satisfy a handful of criteria means that you're failing to look at other equally important criteria. And most data providers on the Internet—the ones you don't pay for—give you numbers based on outdated statements and faulty calculations. If you compared the number of fully diluted shares of a hundred companies as stated on their latest earnings statements to the numbers on public websites (or given by your broker), you'd probably find about 5% of them were wildly inaccurate, and without an accurate measurement of shares, you can't figure out anything about their earnings per share or their relative value.

- **I based my choices on past Sharpe ratios.** The Sharpe ratio is a measurement of "risk-adjusted returns" that, when you think it through, makes about as much sense as "Jabberwocky." There are at least seven problems with the Sharpe ratio. First, it relies on an arithmetic mean, while everything in finance should rely on a

Portfolio

geometric mean. Second, variance and standard deviation are poor measures of risk. Third, changes in the numerator are linear while changes in the denominator are hyperbolic. Fourth, negative correlations with the chosen "risk-free rate" (usually a good thing) will *lower* the Sharpe ratio. Fifth, using standard deviation as a measure relies on an assumption of normally distributed returns, while stock market returns often have very fat tails. Sixth, a short-term bond ETF will almost always have a higher Sharpe ratio than an equity ETF, even though the bond ETF will have a return that's a tiny fraction of the equity ETF. Seventh, a portfolio with a Sharpe ratio of –0.5 will have a *higher* standard deviation (and therefore higher risk profile) than a portfolio with the same return but a Sharpe Ratio of –1: Sharpe ratios don't work for portfolios with returns that are less than the risk-free rate.

- **I bought things whose price was going up and sold them when their price fell.** Probably every beginning investor does this, and a lot of experienced ones do too. It's human nature, but it's bad investing. You look at a stock chart and you see periods when a stock's price goes up and you think, aha, that's a *trend*. If I can buy when the trend starts and sell when it ends, then I've made money! Unfortunately, this ignores the principle of short-term mean reversion. Studies show that over the last ninety years, stocks that have gone up in price over the last few weeks are more likely to go down over the next few weeks than to continue going up. The opposite is true as well. Why does short-term mean reversion happen? It's because most investors overreact to news, buying or selling a stock in quantity. After a few days, wiser investors take advantage of the sudden price move, so the price moves back to the norm. I did a little experiment about this. Let's say that over the past twenty years you ranked all the stocks in the Russell 3000 according to how well they did over the past two weeks, and you bought the top 20%, rebalancing weekly. Ignoring transaction costs (market impact and bid-ask spreads), which would definitely break your back, your annualized return would be 4.4%. Now let's say you bought the worst 20%, the stocks that have fallen the most in the last two weeks. Again ignoring transaction costs, you would have beaten the market handily, with an annualized return of 15.3%. Now let's say you bought the worst 20% but only if the volume of trades has increased over the past two weeks, thus indicating an overreaction to market news. Now you're really in the money: you'd

Portfolio 1 2 3

be making 20.1% annually. (Warning: don't try to actually make this your strategy! Transaction costs would likely eat up every penny of your profit, and then some.) One's natural instinct is to sell a stock when its price is falling and hold onto it while it's rising, or to buy a stock when its price is rising and take a pass on it when its price is falling. It takes a lot of emotional control not to do this, but the only way to make money is to buy a stock when its price is low and sell it when its price is high. If you buy when a stock's price rises and sell when it falls, you're *definitely* not buying it when its price is lowest and selling it when its price is highest. If you do this consistently, it will kill your returns.

- **I used stops and got whipsawed.** A stop is an order to sell a stock if it goes down by a certain amount. Getting whipsawed is selling when the stock goes down only to see it go up again, losing money in the process. This happens a lot because of short-term mean reversion. Everyone on the Internet advises you to use stops to protect your profit. Don't. The price you bought a stock for has absolutely nothing to do with its prospects.

- **I relied on backtests using very limited samples.** I didn't know about Portfolio123. I came to inaccurate conclusions using very limited data.

- **I bought stocks based on their "value" without regard to their growth prospects or quality.** All investments should be evaluated thoroughly from a variety of angles.

In the end, I learned from my mistakes and turned it all around . . .

Portfolio123

Why Ranking Crushes Screening

In late 2015, after screening stocks and ETFs using a variety of platforms, I suddenly realized why none of my screens were actually working.

Let's say I screen the stocks in the S&P 1500 by the following criteria (all for the last twelve months):

- sales greater than enterprise value;

- sales growth between 0% and 15%;

- net profit margin greater than 5%.

Tested on Portfolio123 since 1/1/2000 with a four-week holding period and a slippage of 0.25% per transaction, this screener gets a pretty nice annualized return of 12.84% with an average portfolio of 39 stocks.

Now let's say I run another screener for S&P 1500 stocks.

- I want stocks with falling earnings: the current quarter's EPS estimate should be lower than the GAAP EPS in the same quarter last year.

- I want stocks with a trailing twelve-month unlevered free cash flow of less than zero, just to make sure they're completely worthless if using discounted cash flow analysis.

- And I want stocks with decreasing volume: last week's average volume has to be lower than the average volume three weeks ago.

This is a *horrible* group of stocks. Tested since 1/1/2000 with a four-week holding period and a slippage of 0.25%, this screener gets a terrible annualized return of –0.22% with an average portfolio of 32 stocks.

Now let's take the case of Marten Transportation (MRTN). In April 2020, it passed the first screener with flying colors. It had sales of $863 million and an EV of only $770 million, making it a good bargain. It had a nice healthy profit margin of 7.1%. Its sales went up by 7.9% compared to last year.

Marten, however, also passed the second screener with flying colors. Its EPS estimate was only $0.22, less than its GAAP EPS of $0.28 for the same

Portfolio123

quarter last year. Its capital expenditures were almost $30 million more than its cash flow from operations. And its average volume was only about two-thirds what it was three weeks earlier.

Have you ever wondered why, when you create a stock screener, your results are never nearly as rosy as your backtested results? *This* is why. *Every stock can be chosen by an infinite number of stock screeners that screen for different criteria.* Some will show that the stock is a sure-fire winner; others will show that it's a sure-fire loser. There's no way to evaluate a stock—whether it be MRTN or any other—solely on the basis of a screener. This is what I call the paradox of stock screeners.

The lesson? *Don't rely only on stock screeners to pick stocks.*

What you want to do is to evaluate every stock you choose from as many angles as possible. Screeners can't do that. If you use more than five or six criteria in your screener, you're only going to get a few stocks that pass them all. What about all the other criteria that are important to stock market performance? No screener can cover them all without eliminating every stock.

But there is a way to solve this problem. Instead of binary screening criteria, use ranking systems.

Here's the difference. Let's say you have six equally weighted factors. A screener will accept or reject each stock depending on how you set the limits for each factor. If a stock doesn't pass the criteria for just one factor, it is eliminated even if it was exceptional according to every other factor. A ranking system, on the other hand, will assign a percentile rank to each stock, and then average those ranks and assign percentile ranks to those averages to get a final number. The stocks with the highest ranks will have the highest average percentiles of the factors. A stock screener can only look at a few factors; a ranking system can take into account a huge number of them. I regularly use ranking systems that rank based on eighty different criteria.

Why so many?

A few years ago I met an investor who was planning to use a very simple value-based investment model that he'd created. He backtested it and got decent excess returns. But the very first company his system picked was one whose insiders were selling like there was no tomorrow. I looked at this company and saw that it was indeed a great value by most of the conventional measures. But its growth was poor and its earnings quality was awful.

"My advice," I told him, "is to build not a simple model, but a complex one. You want to take into account not just value, but quality, growth,

sentiment, and size. The more things you take into account, the better off your investments will perform in real time."

But this investor, however, doesn't like complicated models, feeling that they're the result of curve-fitting. And he has a point. There is something quite attractive about simplicity.

But the reason I've sextupled my money in five years is because I've minimized my risk by evaluating my investments from so many different angles. It's impossible to insulate oneself against stocks that will lose value, but the best insurance is to evaluate every pick as carefully as possible. That's what most of the great investors have done. If a few simple rules worked, those rules would render all stock market speculation obsolete overnight.

The more complex and well-thought-out your system is, the more likely you are to beat the market. Most investors don't implement a few rules and sit back and think, ah, yes, I'm done now. They constantly tinker, trying to anticipate what the market is going to throw them next. Also, it's more fun that way.

Keep-it-simple investors have a different approach. As the investor I met pointed out, in investing, you're aiming at a moving target. Technology, interest rates, core beliefs: everything's changing. The more rules you have, the more likely you are to put your foot on shifting ground. The safe approach, according to him, is to have just a few, effective rules.

But this gets back to my paradox. A few effective rules are inevitably going to ignore something horrible about a stock. Weighing a lot of different criteria is the safest approach.

What matters most, of course, is whether your rules make financial sense. When you buy stock in a company, you want to know how likely that company is to beat expectations. How are you going to find that out if all you're focusing on is two or three things about it? Looking at companies from a lot of different angles isn't curve-fitting, it's common sense. But those "angles" can't be arbitrary ones. They have to be well-researched and deeply thought through.

If you try using ranking systems, you'll quickly see that performance tends to improve as you add more well-thought-out factors. And unlike with screeners, there's no reason not to do so. You can load your ranking system with absolutely everything you consider important in a stock, and it will serve as a de facto stock evaluator.

I'm not saying that you should never use stock screeners. In fact, I screen out stocks with low liquidity, high bid-ask spreads, and companies

Portfolio123

from corrupt countries. But if I can rank them on a factor, I don't screen them on that factor.

I am not a wizard at financial accounting. I have not trained to be a stock analyst. I just know that if I'm going to spend tens of thousands of dollars on something, that something better be good. I treat every investment like a precious object, evaluating it from eighty different angles before I buy it, and selling it, usually at a profit, only when I need the cash to buy an even more precious object.

Using stock screeners, I not only lagged my benchmark, I lost tens of thousands of dollars of my hard-earned money. But since November 2015, when I suddenly understood that stock screening relied on a fallacy and started using ranking instead, I've made a million bucks.

And how do you actually rank stocks? There's only one company that enables you to do so at a reasonable price: Portfolio123.

So retire your screeners and use a [ranking system](#) to thoroughly evaluate your stocks. You won't regret it.
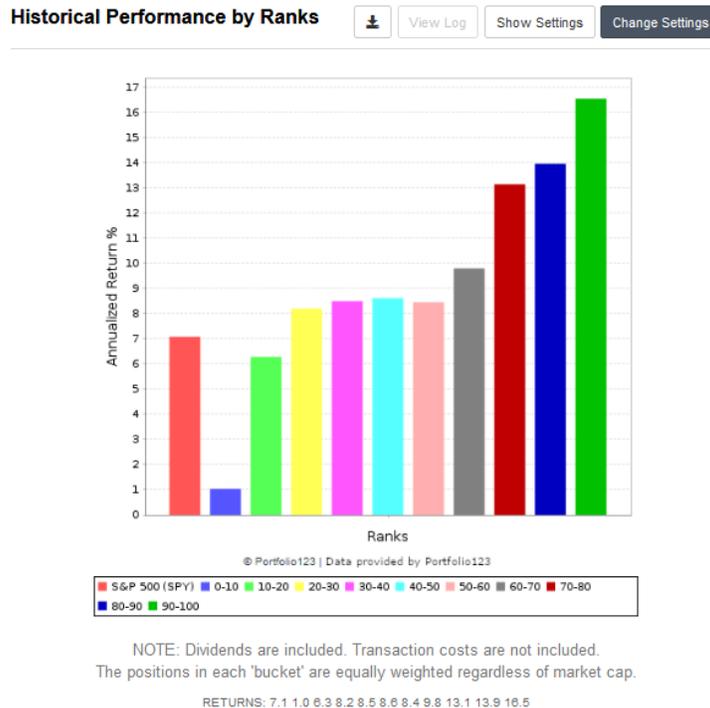
Chapter Four

Designing Factors with an Edge

A *factor* is simply a reason to buy or sell a stock. Massive growth potential? That's a factor. Wide moat? That's a factor. Genius CEO? Even that's a factor.

But you're never going to get an edge using factors like those. For one thing, there's no way to measure them. For another, everybody and their grandmother uses them. If you want an edge, you have to think differently. Just buying stocks with strong growth records and low P/E isn't going to make you a million bucks.

Here's how I started thinking about factors.

Portfolio123 has this wonderful tool called <u>rank performance</u>. You type in a factor—or a bunch of factors. You choose a universe of stocks to test it on. You press a few buttons, and presto: a chart comes out looking like this:

Historical Performance by Ranks

NOTE: Dividends are included. Transaction costs are not included.
The positions in each 'bucket' are equally weighted regardless of market cap.

RETURNS: 7.1 1.0 6.3 8.2 8.5 8.6 8.4 9.8 13.1 13.9 16.5

What does this mean? This means that if you break down the entire universe of stocks which you're testing into ten equal groups based on the stocks' rank for this factor and bought all the stocks in each of these groups,

Portfolio$\overset{2}{\underset{\sim}{\iota}}\overset{3}{\wedge}$

and then every four weeks (or shorter or longer) you sold them all and bought more stocks based on the same factor and the same groups, this would be the performance of each group. So if you find a factor that performs like *this*, that's a damn good factor to put into your system. (Sometimes a *collection* of factors performs like this. Check out, for example, the Portfolio123 "Core: Sentiment" ranking system, which I use every day.)

But then there are other factors that perform like *this*:

Historical Performance by Ranks

NOTE: Dividends are included. Transaction costs are not included.
The positions in each 'bucket' are equally weighted regardless of market cap.

RETURNS: 7.1 6.8 11.3 13.1 13.6 12.9 12.5 10.5 9.5 7.5 2.2
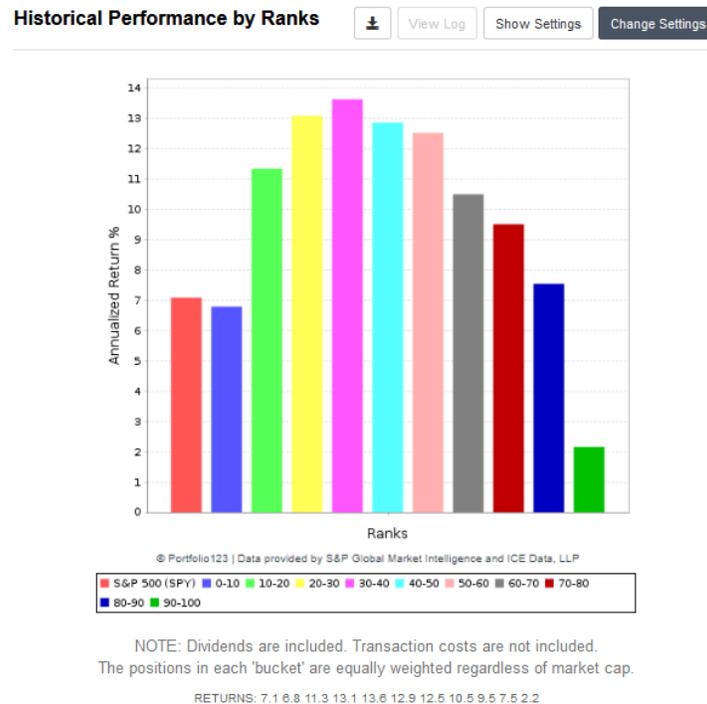
This is almost as powerful a factor as the other one in terms of the difference between the highest and the lowest deciles. But you need to use it differently. For this factor, you want to look for *middling* values, not the highest or the lowest.

Now using factors like *these* may give you an edge. Nobody in either academia or investment firms are looking for companies with *middling* values of such-and-such. It was using factors like these that really got me off to a good start.

But there was something else I quickly learned about factor design: you have to understand accounting.

After all, when you invest in companies based on their fundamentals, you're investing based on their reporting of various dollar amounts. And that reporting is based on a large number of arcane rules and accounting

Portfolio123

conventions. If you don't understand those numbers fully, you're bound to make some mistakes in designing factors.

And, of course, you want to take full advantage of factors that other people have designed but that aren't yet in wide use.

So a *huge* part of my investing success is due to my self-education in all of this.

Luckily, Portfolio123 made this education easier. Marc Gerstein, Portfolio123's director of research at the time, offered a superb strategy design course, which is housed on their website: [Portfolio123 Virtual Strategy Design Class](#).

I also read all the books and articles about investing that I could get a hold of. Especially valuable to me were Seeking Alpha's articles about individual stocks and Frederik Vanhaverbeke's book *Excess Returns*. But I also read a lot of academic papers about "anomalies," which is what academics call factors that actually work. It seemed that every time I read something or experimented with the various tools on Portfolio123, I came up with a new factor to try. Some of them worked, some of them didn't, but exploring them all was fun and fascinating.

Chapter Five

Backtesting the Right Way

There are three keys to my investment success: factor design, ranking, and backtesting. We've briefly covered the first two.

There are right ways and wrong ways to backtest—and to interpret the results of your backtest. I'm going to tell you what I do and what I don't do.

My first question when I started running backtests was a simple one: what is the correlation between the performance of various strategies in two different time periods? If there's no correlation at all, then backtesting is a waste of time.

For example, let's say that there's a small correlation between the relative performance of various strategies over various ten-year periods and the relative performance of those same strategies over the following three-year periods. That would mean that the best strategies to adopt for a three-year period would be the ones that performed best over the previous ten years. And that in turn can justify the use of backtesting.

Now let's say that there's no correlation at all between the relative performance of various strategies over various five-year periods and the relative performance of those same strategies over the following five-year periods. That would mean that backtesting over the last five years would be totally useless in picking a strategy for the next five years.

And the follow-up question struck me as essential too: what can I do to increase those correlations? Do the correlations hold up better if I increase the number of stocks the strategies hold? Do they hold up better if I use risk-adjusted performance measures (at least for the earlier periods) rather than simply overall return? Do they hold up better if I expand the earlier time period to twenty years, or shorten it to three? Will a rolling backtest or a rank performance bucket test give me better or worse results than a simulation?

To answer these questions, I needed a ton of data. I had to create a large number of different stock-picking strategies (preferably ones that were *not* based on backtests!) and run them in a number of different ways over as many different time periods as possible.

Portfolio123

From that data I then created a large number of correlation studies. And that took a huge amount of work.

To save you the time and trouble, I'll summarize my findings from these studies as follows:

1. For a three-year forward period, a lookback period of about ten years is optimal. A lookback period of five years is practically useless. A lookback period of twenty years may be less correlative than a shorter period.

2. A backtest of a strategy should hold between two and five times the number of stocks that the strategy holds, but otherwise should attempt to duplicate the strategy as closely as possible.

3. In terms of performance measures, alpha is the best. Even better than alpha is alpha measured after eliminating outliers, but that gets pretty complicated.

4. Backtest your strategy on several different universes. I create five different universes by inserting a line into the universe rules that reads *Mod (StockID, 5) = X*, where X ranges from 0 to 4. This breaks up my universe of stocks into five random groups (Portfolio123 gives all stocks a numerical StockID, and this command divides that ID by 5 and gives you the remainder). That way I can compare how a strategy performs on entirely different groups of stocks. (If you do this, you can ignore rule #2 above because you'll be effectively testing your strategy using five times your portfolio size.)

5. If you get different optimized results from different universes, time periods, performance measures, or backtest types, averaging them together is better than choosing one. In other words, optimize by averaging.

Other backtesting tips:

- Be sure to use realistic slippage. If your transaction costs in real life are high, put those into your simulation.

- Never trust a backtest of a model that only holds five to ten stocks at a time.

- Never expect actual returns that match backtested returns. Backtested returns are optimized for existing data; actual returns are not.

Portfolio123

- Never use hedging or market timing in backtests. If a strategy isn't an all-weather strategy, it'll be more likely to fail.

Why I Invest in Microcaps— And How I Trade Them

A lot of investors avoid microcaps (loosely defined as stocks with a market cap less than $300 million). Why? They say they're hard to trade, their prices are volatile, slippage and market impact present major headaches, and there's just not enough information out there about them to enable investors to easily judge their worth.

I love microcaps. Here are the seven reasons why.

1. **Inefficiencies.** The bigger the company, the more people investing in it, and the more efficiently its stock is going to be priced. The only way I can make alpha is by exploiting market inefficiencies, and there aren't as many in the large-cap space.

2. **Measurability.** I call things that affect the price of a stock but don't show up in financial statements or analyst estimates "unmeasurables." They include the pipe dreams of Elon Musk, the customer-is-always-first philosophy of Jeff Bezos, and the various reasons Yahoo is always playing catch-up to Google. This is the stuff of water-cooler conversation, and when it comes to large companies, they are some of the biggest influences on stock prices. I can't take any of this into account by looking at financial statements. With microcaps, on the other hand, there are few unmeasurables. Almost everything I need to know is in their financial statements.

3. **Expectations.** The only way to make significant money in the stock market is to invest in stocks that beat the expectations of other investors. It's easier to do so with microcaps and small caps than with large caps because most large-cap companies are studied and pored over. Low-volume stocks can be primed to outperform without anyone noticing.

4. **Growth.** The great investor Thomas Rowe Price Jr. believed that companies, like all living things, go through a period of growth and a

period of decline. The most profitable form of investing is in companies with strong potential for growth. Those are mostly (but not exclusively) found in the small and microcap arenas. (So, of course, are companies that have gone through a long decline.) If you look for small companies with strong earnings growth and high profit margins, you're following the path that Price blazed.

5. **Value.** Value investors believe in buying low and selling high. As for buying low, large caps, by definition, aren't cheap. It's harder to find stocks with very low price-to-earnings, price-to-sales, or price-to-book value among large caps than among small caps. For example, 3.8% of the S&P 500 has a price-to-sales ratio of under 0.5, while 11.5% of the Russell 2000 (the top 3,000 stocks in the US by market cap minus the top 1,000) does. As for selling high, large caps' potential for large price increases in a short time period is much lower. 9.9% of the Russell 2000 has doubled in price in the last year, while only 1.2% of the S&P 500 has.

6. **Ethics.** Small businesses are, on the whole, not destroying the environment, exploiting their workers, sheltering their profits overseas, engaging in monopolistic practices, or undercutting their competitors in unethical ways. The same can't be said of large companies.

7. **Curatorship.** I've always enjoyed finding obscure things of value and celebrating them. Now I can do so not just in the music I listen to, the books I read, the films and art I see, and the subjects I write about, but in the companies I invest in.

What about all the disadvantages of microcaps I pointed out above?

As for information about them, Portfolio123 provides a wealth of it. You may not get hundred-page annual reports, like you do with large companies. But the information that really matters—the *numbers*—are all in the data on Portfolio123.

And yes, they *are* hard to trade, and yes, there *are* high trading costs. But with a little effort, you can get around that. Here are the tricks I use.

1. When trading microcaps, only use limit orders. Market orders can get you terrible fills. Limit orders won't always get filled, but at least you won't be paying huge spread costs. If you're using Interactive

Brokers, you can use one of their many algorithms (I often use Relative NBBO Peg) instead.

2. If you're placing large orders, break them up into smaller ones. This lessens market impact. If you're using Interactive Brokers, they'll do this for you with a lot of their algorithms.

3. Use conditional orders that don't actually get placed until the price you want to pay is inside the spread. Not all brokers offer this option, but it reduces transaction costs.

4. Try to take advantage of the price improvements that brokers offer. I learned that at Fidelity, you get a great price improvement if you place a limit buy order at the ask or a limit sell order at the bid, while if you place it in between, there's seldom any price improvement. So if I wait until I think the bid is high for the day or the ask is low for the day and place my limit orders accordingly, I get some pretty good fills.

But none of this is essential. For the first few years I traded microcaps, my trade execution was poor and I paid huge fees. But I still made plenty of money. With my accounts at Fidelity, which total millions of dollars right now, I spend hours every week trading, trying to get good fills. But with my accounts at Interactive Brokers, which total only in the tens of thousands (so there's much less market impact), I don't spend much time trading at all, and my track record in those accounts is just as good as my track record at Fidelity.

I started trading in microcaps almost as soon as I started buying stocks. I didn't trade *only* in microcaps, but they've always formed the majority of my portfolio. And they've made me wealthy beyond my wildest dreams.

Chapter Seven

Portfolio Management Dos and Don'ts

Here are my eight rules for portfolio management. You may disagree with them, and you may not be wrong. But this is the way *I* made my money.

1. **Cash is trash, unless you need it.** Separate your investing money from your living money. Do it physically. Keep them in totally separate accounts. If you're running low on cash, transfer some from your investing accounts, and if you've got too much, transfer some into your investing accounts. But don't let a huge amount of cash just sit around idly, waiting for the perfect investing opportunity. And don't let your cash balance get so low that you don't have enough to live on.

2. **Don't let diversification become diworsification.** Yes, you must diversify. Don't put all your money into one stock, or even five stocks. But too many investors *diworsify* (the word is Peter Lynch's). Let's say you can choose between five different strategies. Some investors put a bunch of money into each one. That makes sense if you have no idea which strategy is going to perform the best. But if you backtest and think things through, you might be able to get a good idea. Even better might be to *combine* all the strategies and pick the top-ranked stocks. Personally, I have two strategies that I invest in, and they're quite similar, with a number of stocks held by both. I started out investing in about fifteen stocks at a time; now that my portfolio is so large, I invest in thirty to forty.

3. **Vary the weights of your stocks.** Some stocks simply deserve a much larger share of your portfolio than others, and those should be the stocks that rank the highest. (If you have a lot of money, you might also want to put less money in stocks with high market-impact costs.)

4. **Ease into and out of positions.** Sometimes it's a great idea to invest 10% of your portfolio in one stock in one day, especially right after an earnings report. But usually it's not. The market impact can be

Portfolio123

considerable, and the stock might rank lower or higher in a few days or a week. It's best to ease into and out of your positions in most cases. The same goes for selling. If you don't need the money to buy something new, don't sell an old position—just hang onto it, even if the rank has fallen low.

5. **Never sell a stock because it has gone up or gone down a certain percent since you bought it.** Sell stocks *only* according to their ranks and your position size. Never look at percentage gains or losses. The future price of a stock has *nothing* to do with how much you paid for it.

6. **Don't sell a stock if you haven't held it a while.** I hold every stock I buy for a minimum of two or three weeks. Excessive churn results in excessive losses.

7. **Don't short stocks or use hedges or buy and sell options or rely on market timing.** Keep your portfolio simple: a bunch of long-only stocks. Keep it that way through thick and through thin. Even if your portfolio loses a third or half of its value, don't suddenly go to cash or start selling stocks short. The days of the biggest gains always follow the weeks with the biggest losses. You don't want to miss out on those.

8. **Maximize your contributions to retirement accounts.** *Especially* Roth IRAs. In a traditional IRA, you don't have to pay taxes on your capital gains until you withdraw them; in a Roth IRA, you *never* have to pay taxes on your capital gains. Growing your money tax-free is wonderful.

Portfolio 1₂³

Chapter Eight

How Going Into Hock Can Help Make You Money

In early 2020, I realized that my house, which I still owed money on, was basically a huge pool of uninvested cash. At the same time I was facing the prospect of digging into my IRAs in order to pay for my son's college tuition, replace my aging car, and recuperate income losses from my wife's upcoming retirement. I did a huge number of Monte Carlo simulations, and I really didn't see how I could possibly lose in the long run if I got a cash-out refi at a low percentage rate and put that money into stocks instead of taking money out of my IRAs.

The rules for my simulation were as follows. If after four years I made enough money to pay back the principle, I would pay it off. If not, I would hang onto the loan until I had enough money. If ten years had passed, I would pay it off, even if I dug into my IRA to do so.

No matter what investment or market scenario I plugged in, taking out the refi would be better than digging into my retirement accounts. In fewer than 5% of possible cases would it be worse.

So I did it. In late February, I got a cash-out refi for the maximum amount I could get. And I put it all into stocks.

A few weeks later, due to the pandemic stock market crash, my portfolio losses had exceeded, by a huge margin, the entirety of my loan. If you looked at it from one point of view, I had just gambled away my house. That's what I jokingly told my wife at the time. She didn't think it was a very good joke.

But the amount I made on March 19, which is when my portfolio started bouncing back from the crash, was more than a quarter of my loan. It took me until the end of April to claw back to where I was in February, but after that there was no stopping me.

If I hadn't taken out the loan, I would have made about $200,000 less in 2020 than I did. I wouldn't have been able to contribute to my self-employed 401K. I would probably have had to withdraw money from my retirement accounts to pay taxes and tuition.

Portfolio123

In addition, having all that cash from the loan allowed me to start using margin for the first time. I only use a little: my debt-to-equity ratio in that account doesn't usually go above 20%. But it adds a little extra boost to my earnings. And I feel comfortable knowing that my total debt, mortgage included, is only 16% of my entire portfolio.

Chapter Nine

Gambling with an Edge

For me, the key to successful investing is to approach it like you would a game—a deadly serious game, but still a game. In order to win, you have to:

1. Think in terms of probabilities, not in terms of gut instincts. Every choice you make should maximize the probability of an excellent outcome.

2. Keep in reserve what you need to get you through your month-to-month expenses and treat your funds for investing as "play money." If you think of it as real money, you may be unable to justify putting a large percentage of your savings into a single security.

3. View setbacks and temporary defeats as part of the game, not part of your real life. This is tough for investors. This year I lost about 150% of my yearly salary in *one day*; it took me less than a week to make it all back and then some. Expect long periods of underperformance and occasional major losses, and don't panic.

4. Keep a poker face and don't tell others why you're doing what you're doing or how you're getting the results you're getting. (This is a rule I break all the time. Including in this little book. I should know better.) And when you win, don't brag about it. (This is a rule I break all the time too. I should know better.)

5. Make big bets confidently. I often used to put more than ten percent of my portfolio in a single stock; currently, I have over 20% of my portfolio in just three stocks. Don't let diversification become di*wors*ification.

6. Nobody has ever won a game by employing five different strategies at once. Figure out your best strategy or two and stick with them.

7. Never switch strategies, especially not in the middle of a game. Tweak your strategy instead, improving it constantly.

8. Constantly question what you're doing and why you're doing it, but don't take action on the answers you come up with until you're absolutely sure. And even then, sleep on it first.

Portfolio123

9. Research, research, research. Constantly investigate securities, accounting rules, exceptions to your beliefs, process, and all sorts of stuff you've never thought of.

10. Play other, related games. For example, design a strategy for a group of securities you'll never invest in. Enter stock-picking contests. Make small side bets. You'll learn a lot from these challenges.

11. Enjoy every moment. If it's no longer fun, just buy an index fund.

12. Be determined to win, but be even more determined to *play*, in every sense of that word.

13. And remember, money can't buy you happiness or love or friendship or family. Those things come first.

Now if your aim isn't to *win* but simply to do reasonably well while minimizing your risk, don't follow these rules—I'm sure you can come up with ones that better apply to your situation. But if your aim is to *win*— whether that means consistently beating the market, wowing your friends, or gaining a seat in the pantheon of great investors—you need to approach the game as a dedicated and fearless *player*.

Portfolio123

Chapter Ten

The Portfolio123 Advantage

None of my success would have been possible without a subscription to Portfolio123. Absolutely none of it.

Portfolio123 enabled me

- to rank stocks, not just screen them;

- to figure out what factors work and what don't;

- to figure out what kinds of backtests to run;

- to design complicated strategies and backtest them thoroughly;

- to stress-test my backtests by running them in different periods and on different stocks;

- to investigate all sorts of investing conundrums;

- to come to an understanding of market impact and other trading costs;

- to manage my portfolio efficiently;

- to learn a huge amount from fellow investors.

There is simply no other service out there that offers anything *close* to what Portfolio123 offers.

I'm not saying that you'll make a million bucks if you subscribe to Portfolio123. But I know I'm not the only one who has done so. Give it a try.

And feel free to reach out to me at yuval@portfolio123.com if you have any questions. I'd be only too glad to help.