

# Free Lunches and the Food Truck Revolution

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by Ben Inker  
of GMO

Over the past year or so, there has been a welcome change to the culinary landscape of the Boston financial district. After two decades of wandering to largely the same old haunts for lunch, I am now faced with a whole new set of inexpensive and tasty choices literally outside our door, changing daily as the food trucks perform their mysterious nightly dance. And while part of me may worry about the general advisability of having a burning wood-fired oven built into a small truck and another part may worry about the long-term impact to my weight and arteries from eating the pizza that comes out of said oven, my taste buds are thrilled, and my wallet has no complaints either. We at GMO have been accused at times of believing that either the world never changes or that when it does change, those changes are generally bad. Well, it may just be the dumplings talking (available on Fridays on the Greenway by Rowes Wharf, \$8 for four dumplings along with fried rice and homemade Asian slaw, \$1 more if you want to add a spring roll with ginger soy sauce), but the world has indeed changed, and it is good! Food trucks seem to be a genuinely disruptive innovation, lowering the cost of entry for the restaurant business, fighting the tyranny of location, taking advantage of other innovations – every food truck I’ve been to accepts credit cards via Square – and encouraging experimentation, new ideas, and most importantly, better lunches for me and others who work in culinarily challenged areas.

While I’m sure you are happy for me and my newfound culinary contentment, you may well be wondering whether this has any relevance for investing. I believe it does, and the relevance is this: investors spend far too much of their time looking for a free lunch, when they should be looking for the investing equivalent of an inexpensive and tasty food truck meal instead. Tasty food truck meals are far easier to find, and you are much less likely to discover that they come with strings attached that you didn’t think of until it was too late. So what are investing free lunches? Arbitrage opportunities, sources of high returns uncorrelated with the important risks to investors, portfolio construction techniques that reduce those risks without reducing returns, exploitable market inefficiencies that other investors are strangely willing to share the existence of with you. In common parlance, Alpha. I have used the capital A there as a signifier that there is something special about this particular Greek letter that gives it a fascination for investors well beyond what is ascribed to beta, gamma, delta, or the other symbols that finance has appropriated. My colleague Edmund Bellord suggested in a recent team meeting that we replace the term "Alpha" with "Magic Beans" in our conversations to add the proper element of skepticism when the term comes up. This is not to say that Alpha doesn’t exist. There are indeed occasional arbitrage opportunities, the markets do sometimes offer up sources of return uncorrelated to risks we should all care about, and we would be among the last to claim that markets are efficient. But finding Alpha is hard, everybody is on the lookout for it, and as all diligent analysts can tell you, most of the time that an opportunity starts out looking like Alpha, it winds up seeming more mundane as you do more research.

## Put Selling and Merger Arbitrage - No Free Lunches Here

Just because an opportunity isn’t a free lunch, however, doesn’t mean it isn’t a tasty food truck meal, and such a meal can easily be an important part of your balanced diet ... er, portfolio. So what do I mean by this? To some degree, the difference between a free lunch and a tasty food truck meal is a matter of mind-set. I’ll take the example of put selling, even though some of you may be bored of reading my musing on that particular topic by now. Some investors and strategists have suggested that put selling is a free lunch, and on the face of it, they seem to have a point, as you can see in Table 1, which compares holding the S&P 500 with selling one-month at-the-money (ATM) puts on the S&P 500 since 1983:

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One-month puts have provided basically the same return after our estimated transaction costs as a buy and hold of the S&P 500, with a beta of about 0.5, volatility two-thirds that of the index, a Sharpe ratio 50% higher, and a CAPM alpha of 2.6%. To explain these, some strategists have invoked behavioral factors – irrational dislike of the limited upside of the strategy or other investor foibles. To our minds, no such explanations are necessary. Beta and standard deviation are lousy risk measures for a put selling strategy, because almost all of the volatility of the strategy is "bad" volatility. At the end of the day, an investor selling puts on the S&P 500 is taking the same risk as the investor who buys the S&P 500 – both lose money at more or less the same rate when the S&P 500 goes down. If the reason why the stock market has a long-

term return above cash is the nature and timing of the losses that periodically befall investors who own it, put selling has all of the same downside, and therefore should offer the same basic upside. It happens to do that in a different manner – through the collection of option premiums instead of participating in the gains of the stock market – but as my colleague Sam Wilderman points out, it is dangerous to confuse the manner investors get paid with the reason why they get paid. Purveyors of option strategies are apt to talk about the "variance risk premium" and "capturing short-term mean reversion" when analyzing put selling returns. But while these two factors do explain how put selling delivers its returns to investors, they arguably do little to help anyone understand why the returns exist. Variance risk premium (VRP) is a term used to explain the observation that implied volatilities on the S&P 500 and other equity indices are generally higher than the realized volatility of those markets. You can put together strategies that are designed to specifically try to capture the VRP and structure them in a way so that, most of the time, they have little stock market beta. But if you stop and think a bit about why the VRP exists, it starts to become clear that those strategies might not be a good idea. If implied volatilities were an unbiased estimate of future realized volatility for the market, puts and calls would have similar expected returns. We know from put-call parity that being short a put option and long a call option should give the same return above cash as a long investment in the market. If implied volatilities were "fair," the call and put would each be expected to give half the return of the market. Because the put embodies the ugly risk of stocks and the call embodies the pleasant upside, this would be a strange outcome. Why would you expect to get paid half as much as the stock market, in buying a call, while taking none of the downside? The way to shift the returns to the put, where they belong, requires implied volatility to be higher than an unbiased expectation of future volatility, and that gap creates the variance risk premium. Selling volatility therefore should make money over time, but stock markets tend to show much more downside volatility than upside. If you are short volatility, you will find that most of the time you make a little money and periodically you lose a bunch as volatility spikes, and those spikes will almost invariably come when the market is falling. Your VRP trade therefore looks a lot like being short a put, although in this case an out-of-the-money put instead of an at-the-money.<sup>1</sup> Selling out-of-the-money (OTM) puts often seems like a wonderful strategy, chugging away making money consistently with little volatility until, suddenly, it doesn't. Table 2 shows the characteristics of a 5% OTM put selling strategy.

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It looks wonderful! Beta and volatility are basically half that of ATM puts, and the strategy has an even higher Sharpe ratio than ATM puts, one that most hedge fund managers would be very happy to achieve. It looks, on the face of it, like exactly the sort of strategy that one should be leveraging up instead of owning dumb old equities. The trouble is, while the strategy seldom loses money, when it does lose is exactly when you'd prefer it didn't. Table 3 shows you a month and day that most people peddling option selling strategies won't talk to you about. In part, this is because the main options database that most people use for their analyses only goes back to 1996. But it is quite possible to get options data on S&P 500 futures going back to 1983, so ignoring October 19, 1987 is also about hiding an unpleasant truth.

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The 27.8% loss for the day of October 19, 1987 is a 76 standard deviation event for the OTM put selling strategy.<sup>2</sup> While everyone "knows" that put selling does not have normally distributed returns, you can also bet that no one looking at the statistics of a strategy would say to themselves, "You know, I'd really better stress test my portfolio against a 76 standard deviation event just to be on the safe side." But the simple truth is that plenty of strategies that look low-risk much of the time have the potential for profoundly larger losses if something odd, but possible, happens in the financial markets. You would never want to lever such a strategy based on its historical return characteristics, because you cannot be confident you understand the risks based on that limited sample. There are plenty of downturns in which a 5% OTM put selling strategy winds up losing far less than a long equity strategy, but there are some where it is worse, so treating it as one-third the "risk" of a long equity strategy is potentially deadly to your financial well-being.

This is all a long-winded way of saying that put selling is not a free lunch, and something to be levered only by the exceptionally brave, foolhardy, or those who take very seriously the incentives created by a 1 and 20% fee structure. But we still think put selling, in an unlevered form, can at times be a tasty food truck meal. Once you recognize that the reason you are getting paid for selling puts is because you are taking equity downside risk, but the manner in which you get paid is different from owning the market, there may well be some times when the payment for equity downside is better from put selling than owning the stock market. While it would be odd if put selling always gave a better return per unit of "risk" than owning the market, the different return pattern means that some of the time it almost certainly will, and we would contend that a situation in which valuations are higher than normal but not at nosebleed levels may well be such a time.

In a similar vein, merger arbitrage turns out not to be a true arbitrage and therefore not a free lunch, either. Like OTM puts, merger arbitrage looks to have a low correlation with the stock market in normal times, but the correlation rises uncomfortably in times of market stress, which is when you really wish it wouldn't. Merger arbitrage professionals will talk about getting paid for taking the risk of deals falling

through, and that their skill is in better handicapping the likelihood of the deal completing or completing at a higher price than the original offer. The gap between the current price and deal price is indeed the manner in which investors are paid in merger arbitrage, and the skill that a manager has does come from his/her ability to better analyze the probabilities and prices than the other guy. But we would argue that the reason why there is a decent return to the activity of merger arbitrage is that the circumstances in which lots of deals are likely to fail at the same time is one of significant market stress – when credit markets freeze up, equity markets are falling, and acquirers either find themselves unable to raise the money they need to complete a deal or have simply changed their priorities from empire building to survival. But this still leaves merger arbitrage a potentially tasty food truck meal, because of the timing of when it is attractively priced. There are a fair number of hedge funds out there pursuing merger arbitrage strategies, but their capital is finite, and the size and number of deals changes over time. Merger arbitrage is likely to be priced to give interesting returns when the size of the deal pool is large relative to the capital devoted to the activity, which is likely to be when stocks have been rising for a while and executives and investors are feeling confident about the future. This is probably a time when the expected return to owning stocks has fallen, and may well also be a time when investor confidence is reducing the expected return to selling puts directly.

Moving your strategy between owning stocks, selling puts, and merger arbitrage, as GMO does in its Total Equities Strategy and we are looking to do in our Benchmark-Free Allocation Strategy, doesn't allow an investor to avoid taking losses in the bad events for equities, but it can expand the percentage of the time that you are getting paid enough for taking equity risk that it makes sense to do so.

### **Food Trucks in the Fixed Income Markets**

The fixed income markets are likewise short of free lunches but offer up some attractive food truck meals. If equities and equity-like strategies largely embody a single risk – let's call it depression risk for simplicity's sake – there are a few different risks that exist in the fixed income world – some securities load on depression risk, some inflation risk, and some liquidity risk. Further complicating things is the fact that fixed income instruments can package these risks in a multitude of different ways. Our fixed income team tends to think in terms of four risk premia: default risk, term premium, liquidity premium, and volatility premium. The point of thinking this way is not that all of these risks are entirely different, or different from equity risk, but rather to be constantly on the lookout for how much you are getting paid for those various risks at different times. We can therefore build a fixed income portfolio, not with the idea that we can avoid all risk, but with the idea that we want to preferentially take the risks we are being well compensated for.

Default risk, as perhaps the simplest example, is in many ways similar to OTM put selling. It embodies depression risk where the risk of loss is more remote than with equities due to the seniority of debt securities in the capital structure. Volatility risk can actually embody a couple of different risks, as some kinds of fixed income volatility are analogous to equity volatility and other kinds are more related to term premium (which embodies unexpected inflation risk) and yet others are linked to liquidity risk. While these nuances make building a really good fixed income portfolio a more complicated process in some ways than it is for equities, it is still far easier to turn it all into a tasty food truck meal where your concern is being adequately compensated for the risks you are taking, rather than trying to build a free lunch where your returns come somehow without any of those risks hitching a ride.

### **Today's Lunchtime Selection**

So what does the world look like today through the lens of the food truck? We don't believe equities look all that tasty, although there is significant dispersion. U.S. small caps seem to offer the stock equivalent of a case of salmonella – plenty of depression risk and valuations that seem to promise little or no medium-term return even if the economy does fine. We think high quality stocks in the U.S. at least offer a healthy filling meal, if a dull one, while European value stocks and emerging market equities seem the tastiest available entrees, although neither appears to be a true lunchtime bargain. Put selling appears closer to being a decently tasty meal, although we'd recommend going with foreign cuisine, as put selling on U.S. stocks seems probably the least appealing truck in the bunch. We believe merger arbitrage, while slow to return after the nasty food truck fire of 2008, is back and offering a pretty tasty lunch for a reasonable price, and probably deserves to move back into your lunchtime rotation.

On the fixed income side, default risk seems generally unappetizing, with CCC bonds, at a spread of about 6.5% over treasuries, offering the most potential of a post-lunch trip to the emergency room this side of U.S. small cap stocks. We believe BB bonds look like the meal of choice for those who feel the need to dine on default risk, as their spreads at least cover expected losses over the cycle with some room to spare. Liquidity risk looks generally unappetizing, and even for the few items that do look tasty, we can easily imagine the meal not sitting well in a few hours, given how Dodd-Frank has pushed "broker-dealers" into being far more interested in the broker part of the job than the dealer part. Given how much less inventory the dealers are willing to hold, the likelihood of a nasty shock occurring from even a temporary imbalance between the number of buyers and sellers has surely gone up from pre-crisis days. We think term premium

actually looks pretty good in the belly of the U.S. yield curve, with current forward rates pricing in enough rate hikes to give a bit of room for inflation to surprise a little to the upside. Interestingly, while those who dine on equities may be well served going foreign for their investment lunch, on the fixed income side, the U.S. looks just about the most appetizing of the bunch, far preferable to your European or Japanese cuisine options. Implied volatilities are very low across much of fixed income, and while historically you have been well served by selling options in the marketplace, our temptation today would be to buy options rather than sell.

Honestly, the portfolio you can put together out of these dishes today will not win any culinary awards. Getting rich off of your investments looks to be an extremely daunting task in the environment we find ourselves in today. But opportunities to make some money do exist, and if we are not fixated on finding that free lunch, we can make a decent meal if we are reasonably careful about which trucks we stop at and which we pass by.

<sup>1</sup> Forgive me for making the VRP versus out-of-the-money put an assertion rather than a demonstration. Anyone interested in a (much) more detailed treatment of put selling, volatility surfaces, and the relationship between how you are paid in options versus why you are paid, should read Neil Constable's white paper "The Equilibrium Volatility Surface," available on GMO's web site. The math may be a little daunting, but if the equations and three dimensional charts don't scare you off, it does a wonderful job of explaining why the equity option market behaves the way it does.

<sup>2</sup> Actually, that's only true if you are basing your standard deviation on monthly returns, which is pretty common. If you look at the entire sample of daily returns, it is only a 45 standard deviation event.

Disclaimer: The views expressed are the views of Ben Inker through the period ending July 2014, and are subject to change at any time based on market and other conditions.

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