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Inside the Engine Room: Tracking the Trackers during the COVID-19 Crisis

A conversation between the DWS Research Institute and Julien Boulliat, DWS' Head of Index Investing Portfolio Management in Europe and Asia. After a tumultuous first quarter, Julien discusses the subtleties of index tracking at the best of times, the added difficulties in these extreme times, and the way his team managed to navigate these choppy waters.

Julien, despite the word "passive" in their job titles, is it fair to say that passive portfolio managers are actually very active in their attempts to track their indices?

It is fair, and I agree, the use of the word "passive" when it comes to the task of tracking an index is a misnomer. It may be true much of the time, at least in the equity space and for fully replicated funds that the portfolio managers "simply" try to hold the exact same securities as the index. But this only means that rebalancing periods, when stocks are added or removed to the benchmarks, are especially busy, while it doesn't mean we relax the rest of the time. What are some of our main concerns? Well, even in very calm markets we have to deal with constant creations and redemptions, corporate actions, dividend payments, cash balances, and potentially rolling currency positions in the case of a currency hedged fund, a particular expertise of ours – all while keeping a very close eye on fund costs, risk analysis and performance attribution. There is considerable skill and expertise required in properly managing a passive vehicle, and, frankly, many market participants probably don't fully realise everything that is involved.

You said "at least in the equity space". Does that imply something different about fixed income?

Yes, fixed income can often be quite different for the simple reason that some of the indices have so many bonds in them, and because sometimes the individual bonds are hard to source. So what some passive fixed income portfolio managers are required to do, by necessity, is to try to use a technique known as "optimized sampling" to track their indices. Put simply, that means they will use far fewer bonds, but carefully balance risk metrics like the duration, yield, credit quality, and sector composition of those bonds to match the risk of the underlying index as a whole. Of course, anytime you add or remove any security, all the moving parts change. It makes managing the portfolio rather like solving a Rubik's cube, where changing one side influences others too.

It's also true on the equity side, for optimised portfolios, that we try to match the risk characteristics of the benchmark in terms of countries, sectors, industries, stocks, the market's liquidity profile, and risk factors.

Julien, two key numbers for passive investors to be aware of are tracking difference, and tracking error. Can you tell us what they are, and why they are important?

Yes, of course. Tracking difference (TD) is simply the difference between the return of a fund and its index over a given period. So, for example, if an index were up by 10% in a year, and a fund that tracked it were up by 10.1%then the tracking difference would be 0.10%, or ten basis points. Tracking error (TE), on the other hand, is a measure of risk. Specifically, the risk of the active return between the fund and the index. So, to calculate TE, you take the difference in returns between the fund and the index using a certain periodicity (daily, weekly, etc.), over a certain window, and calculate its standard deviation, which is always expressed in annual terms. That's TE. So, as an investor, you need to make sure that you minimise your TE while maximising your TD. The TD might be positive due to a better fund tax treatment outweighing the impact of the fees for example. However, while TD could be either positive or negative, as a volatility number, TE will always have to be positive, unfortunately.

Is one more important than the other?

They're both important. But, some investors might conclude that one is more important to them than the other, depending on perhaps their investment horizon, or their need, or frequency to get in and out of a fund at levels that are more likely to be very close to the index. However, since you're asking me the question in my capacity as a passive portfolio manager, I would probably tell you that TE is really the metric we care about most, and that's for a simple reason – it accurately reflects our ability to track the benchmark precisely, by controlling for the deviation of our portfolio vs. that benchmark in any market conditions. That makes it the best arbiter of our skill. For example, there are many things that determine TD, such as the fund's management fee, its stock loan revenue, the domicile and tax treatment of the fund, and its trading costs, but these are largely business decisions, and not portfolio manager decisions, though we will of course help in determining them. However, since TE is largely in our hands, we like to use that as the predominant measure of the value we bring to investors as portfolio managers.

So, given the emphasis you put on it, as perhaps the single most useful number in quantifying manager skill, let's focus on tracking error in more detail. How thrown off can it be by timing differences for international funds?

Well, that's an interesting question. And you have to be a little bit careful in that case. First of all, let's acknowledge that, yes, there are plenty of examples where an ETF is trading in a market, and tracking another market which is now closed. That happens every day for countless funds. And investors seem to want, and appreciate, the ability to trade those markets in their home economies even when the underlying market is shut. But, of course, if you compared, say, the closing price of a Japanese index, to the closing price of an ETF trading in London that tracks that index, it could look as though the fund were doing a poor job. And it would likely just be a matter of timing. The London and Tokyo stock exchanges have trading sessions that never overlap for example. One answer, if you want to get a better handle of the manager's true TE for that fund is to compare the index return with the Net Asset Value (NAV) return of the fund. What that will do is take the closing prices of the securities in the ETF in their local market - Japan in this case – and compare those to the index, which will also be based on the same closing prices. Now, any differences won't be attributable to timings, but simply to manager skill in tracking the indices. Some data providers show both "price TEs", and "NAV TEs", so just beware of what you're looking at.

What happens when the underlying market is closed, but an ETF that tracks it in a different country continues to trade - don't tracking errors balloon higher? I am thinking for example of Golden Week in China.

This is similar to the above example but over a longer period. And the same point about the convenience of the ETF acting as a potential price discovery vehicle applies. However, what will be different in this case is that the index level may not change for a number of days, simply because the market is closed. But the ETF of course can, and will, trade. It wouldn't be fair to punish the manager of the fund by levelling a large TE at them. After all, what's their alternative, to refuse to try and track an index that is closed? So, I would agree that now, the price tracking error is likely to suffer. In this particular case, for an ETF tracking Chinese stocks, there is likely no additional NAV TE though as the market will be closed, though the ETF will continue to trade on its home exchange. As no new NAV will be produced, there will therefore be little or no NAV TE impact.

Are some asset classes naturally harder to track than others?

Absolutely. Generally speaking the more illiquid the asset class, the wider prices may be, or the higher the trading costs, or the more acute the challenges of sourcing all the securities. Additionally, there might be restrictions on opening local accounts, trading certain currencies, or other idiosyncratic challenges of investing in certain markets. But in a similar vein to before, these are challenges that most managers will face, so comparing tracking errors is still not flawed; it's the relative differences in TE this time that will shine a spotlight on manager skill.

Julien, has this recent crisis made the job of a passive portfolio manager even more challenging, or has it been a question of business as usual?

The former. Definitely the former. It's actually been, by some margin, the most difficult period that I can remember managing through since the financial crisis in 2008/09. In fact, this time the volatility was even greater than in 2008/09. To give you some context, the actual number of creations and redemptions for Xtrackers ETFs, i.e. the issuance and cancellation of ETF shares, and the receipt or passing out of securities from a fund, for March alone increased by about 175% versus the prior 12-month average. That was for equities. For fixed income it was an increase of about 70% – still very high. And, for the same month, my team traded almost 200,000 individual securities, foreign currencies and financial instruments. That was roughly 150% more than the prior 12-month average. So that's the first point, huge amounts of activity, and huge amount of trading required in response to that.

But now consider the environment within which we had to operate. And, let me try to break it down into the following three categories, or risks – market, liquidity, and operational.

The first is intuitive - it's extremely challenging to hit a target that is moving faster, and further, than usual. Yes, in some cases we were fully replicated which made it easier, but, for the cases that I mentioned before where we might just be using a subset of securities the challenge is clearly far greater.

On top of that, you have to think about the liquidity conditions that we had. Bid offer spreads, i.e. the prices at which securities can be sold and bought respectively, widened considerably, which is the natural reaction when market makers are processing new and unpriced information. And, as well as wider pricing, the trading of some securities in some asset classes, notably high yield fixed income and emerging market debt, almost dried up entirely, with fewer quantities of securities available to buy and sell. So really just a perfect storm of tough market and liquidity conditions.

Finally, to compound all this, we saw occasional difficulties at the index level. Some rebalances were cancelled, or postponed, or added. Dividend payments were cancelled entirely in some cases. And this all led, at times, to pricing issues creeping into indices and NAVs, and exposure misalignments.

And I nearly forgot to mention, and this was really the icing on the cake, we had to overcome all these challenges while going through a situation that I know we're not alone in dealing with, of switching all our systems and procedures over to seamlessly work from home. Fortunately, we were very well prepared in this regard.

How have DWS' passive portfolio management team risen to those challenges so far over the crisis?

Well, I'm proud to say that the team has just had, quite simply, an exemplary crisis. Our investors look to us to track indices – through thick and thin – and that's exactly what we have done. We focused on not only achieving a low tracking error – something that we constantly monitor both in equities and fixed income – but also on managing our average tracking error levels during the recent crisis to our own average tracking error numbers at absolute levels. I couldn't be more pleased with the work of the team, and its results in both of these metrics, during this extraordinary time.[1]

And how did you manage that remarkable performance?

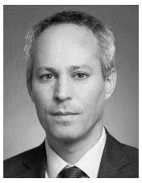
There are many reasons. But, I suppose, put simply, it comes down to having systematic processes and the right systems, using them diligently, and putting them in the hands of a conscientious team. We have a strong IT infrastructure dedicated to passive management which covers the whole portfolio management chain such as risk reporting, attribution and index analysis. Diligent application means focusing every day on risks, controls, and quality checks. And for the team it means increased communication, even more alertness and attention to detail, and leveraging our colleagues and support staff globally.

Any parting thoughts?

Only that I think periods like these are when passive portfolio managers are really able to prove their mettle in doing what they have always said they will for their clients – providing strong tracking of the desired exposures. I am delighted by the way in which we've been able to achieve that for our clients.

[1] Bloomberg L.P. & StateStreet as of March 2020

The Authors



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