wake-up

AI for better pension portfolios

S&P investment tracks

The hidden risks that pension companies don't want you to know about

Kenneth Mischel, Ph.D.

Founder & CEO, WakeUp Pension

24 May 2021

EXECUTIVE SUMMARY

Israeli pension investors have fallen in love with S&P investing. There are now almost NIS 6bn in S&P investment tracks. That's a growth rate of 500% over the past year.

The basic idea behind index investing is: "Don't look for the needle in the haystack. Just buy the haystack!" Since all S&P tracks are "buying the same haystack," we should expect their returns to be quite similar. They are not; the monthly performance dispersion from highest to lowest often exceeds **1%**!

A major reason for the performance disparity is the combination of "synthetic" exposure to the S&P via derivative contracts, combined with different degrees of leverage.

Pension investors need to be aware of this for three reasons:

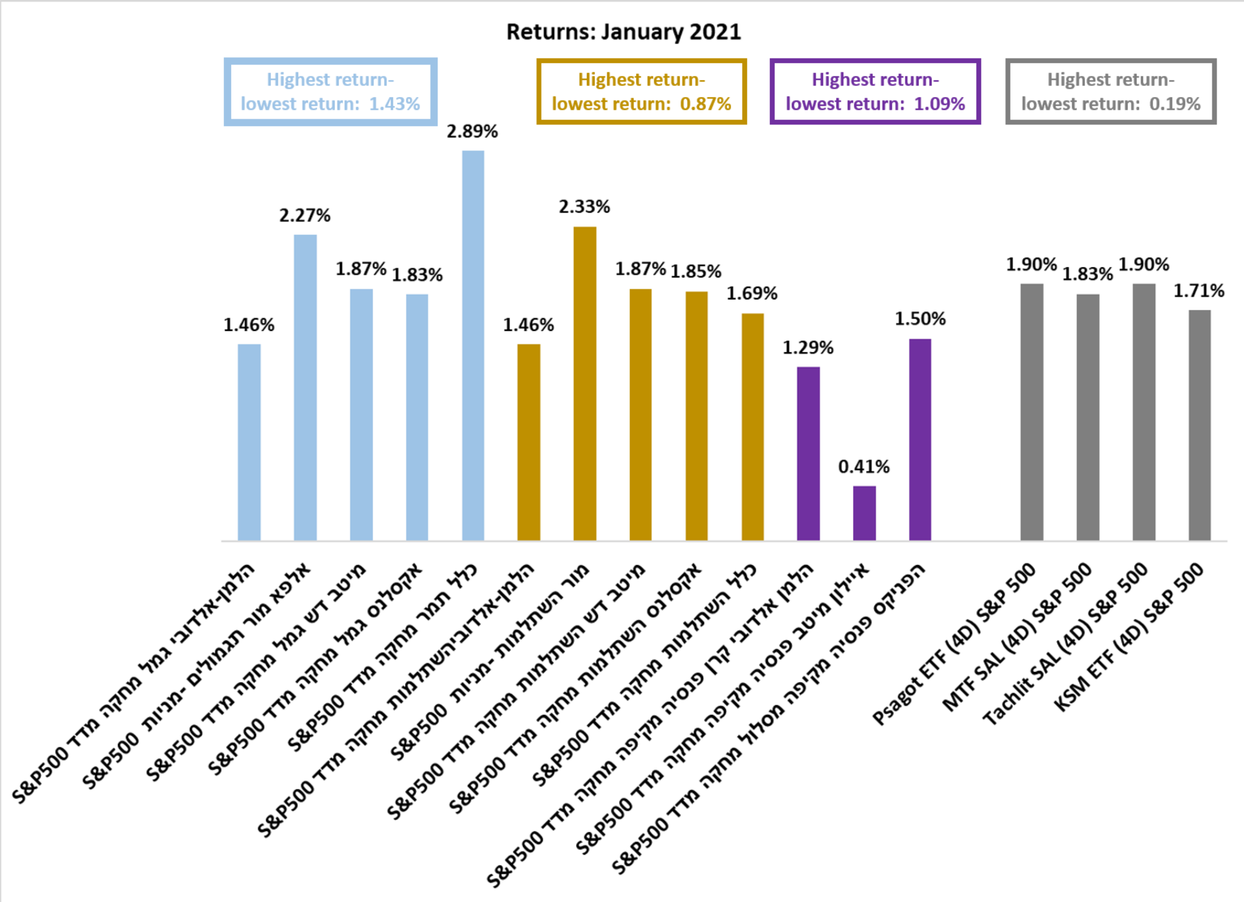
A. The derivative arrangements entail hidden risks
B. For keren pensya S&P tracks, the power of dedicated bonds to offset negative S&P returns can be cancelled out by the leverage
C. You can't mimic the S&P as closely as possible while at the same time striving to earn higher returns than your competitors' S&P tracks earn. S&P tracks seeking to do the second are misleadingly labelled.

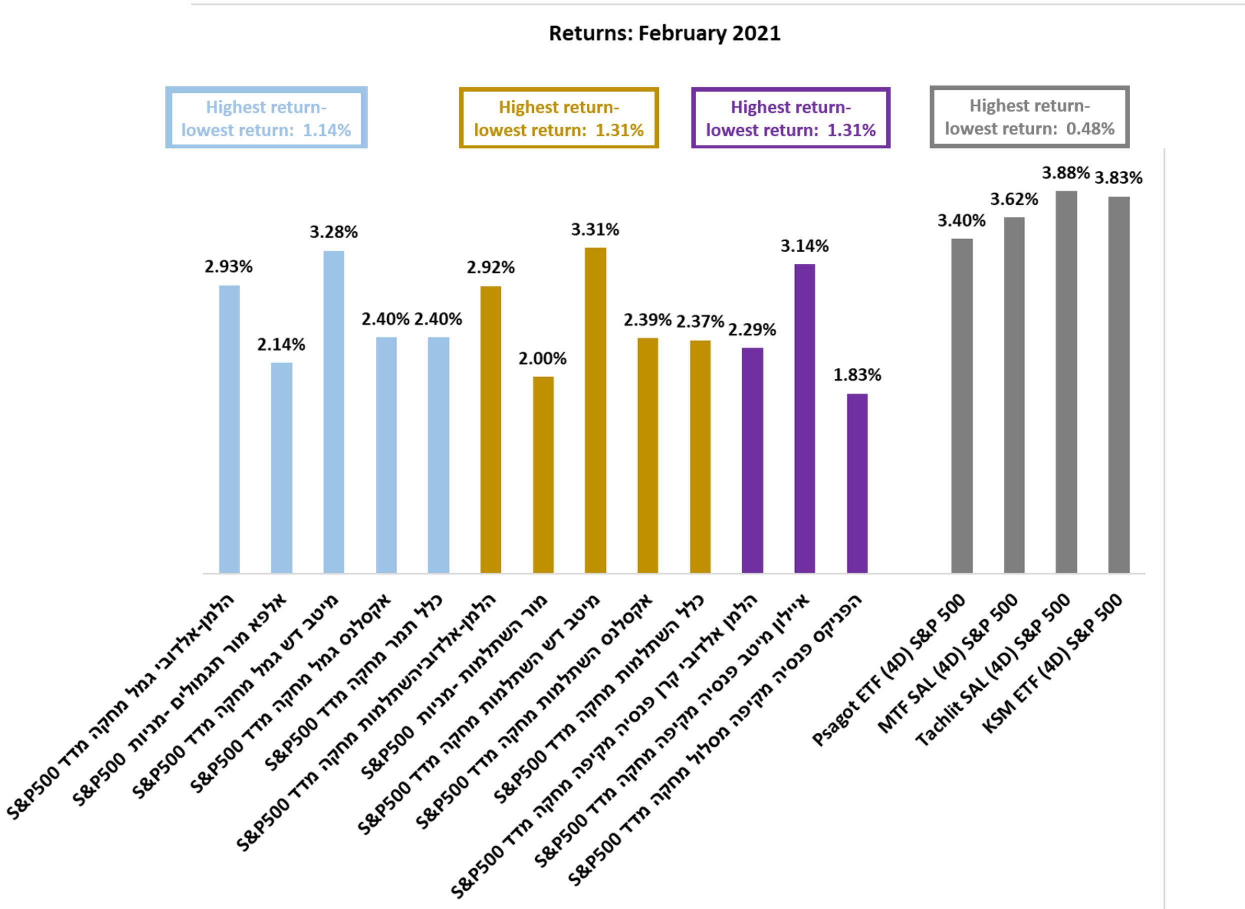
LONG-TERM SAVINGS S&P TRACKS PERFORM DIFFERENTLY FROM ONE ANOTHER AND FROM S&P TRACKING ETFS

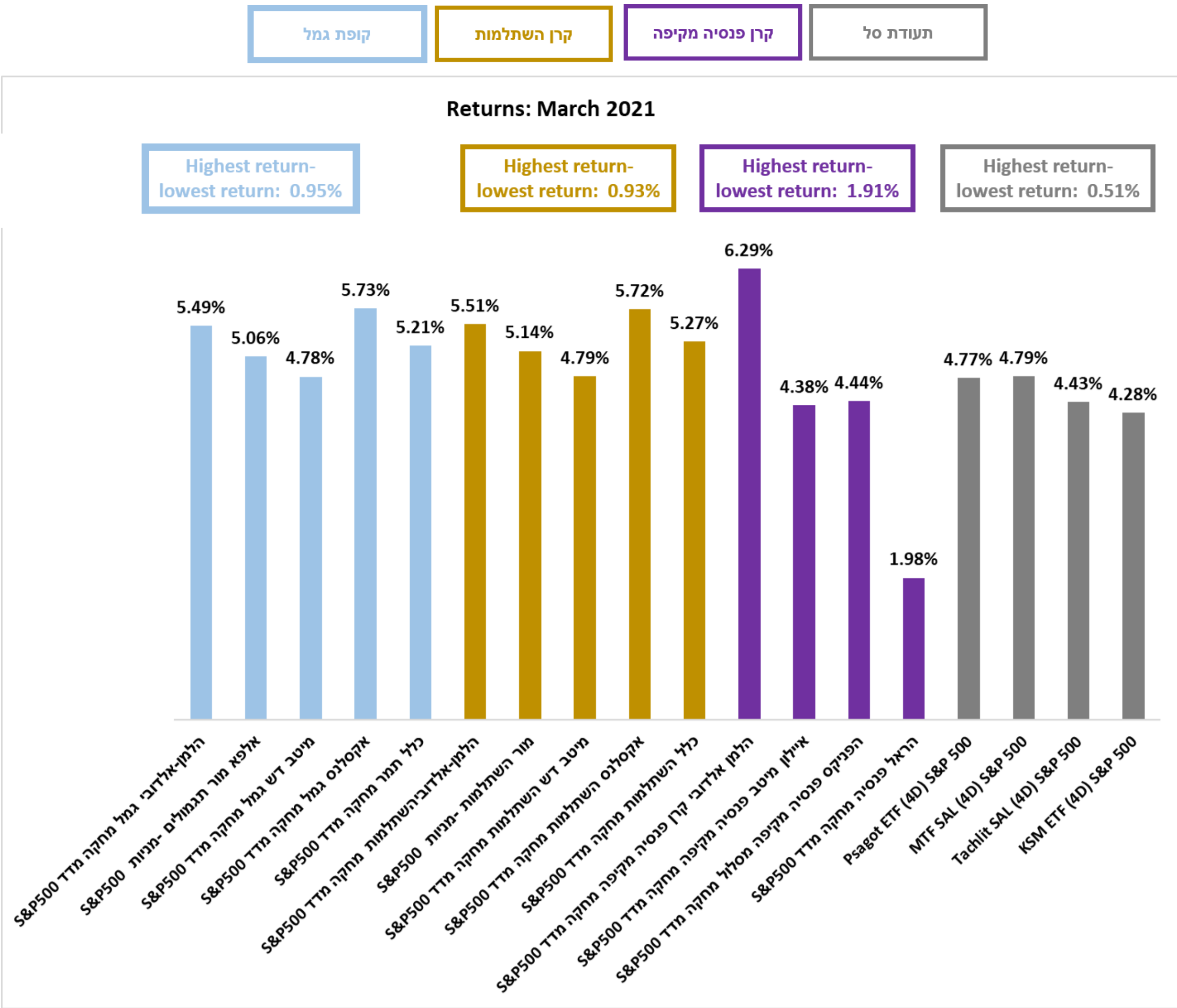
Since S&P tracks are all "buying the same haystack," we should expect their performances to be quite similar. They are not, especially when contrasted with comparable S&P ETFs trading on the Tel Aviv stock exchange:

wake-up

AI for better pension portfolios







Data sources: pensyanet, gemelnet and Tel Aviv Stock Exchange[1]

THE CAUSES OF THE PERFORMANCE DISPARITY ARE "SYNTHETIC" EXPOSURE VIA DERIVATIVES COMBINED WITH LEVERAGE

What are the causes of these performance disparities?

The question, "What is my S&P investment track invested in?," might seem quite simple, but it is not! One reason for this is the way the tracks gain exposure to the S&P.

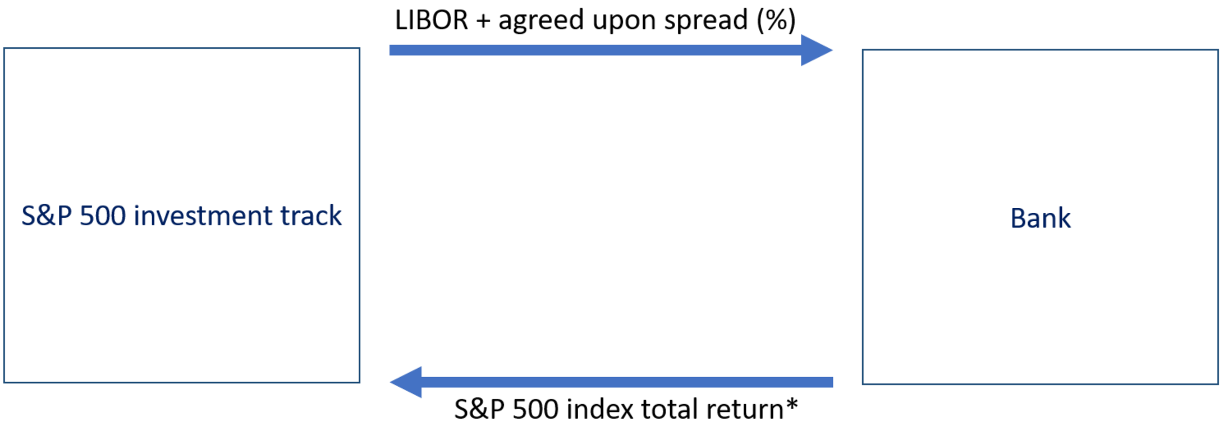
One way of gaining exposure is "physical", or, direct. When this occurs, the investment track purchases some combination of a) ETF's tracking the S&P 500

---

[1] ETF monthly returns are calculated by the formula: (Closing price on the last trading day of the month- Closing price on the last trading day of the previous month)/Closing price on the last trading day of the previous month.

index, b) index mutual funds tracking the S&P 500 index, c) a basket of stocks whose performance closely tracks the S&P 500 index.

A second way is to gain "synthetic" exposure via derivative contracts. When this happens, an investment track enters an arrangement with a bank called a total return swap, in which the bank passes the S&P investment track the S&P 500 total return in exchange for receiving LIBOR (London Interbank Offering Rate) plus an agreed upon additional spread (%):



*If the total return turns out to be negative, the pension fund must pay the bank

Does the mix of ways in which an S&P tracks gains exposure to the S&P matter? Very much so, because inherent in a total return swap contract is leverage.

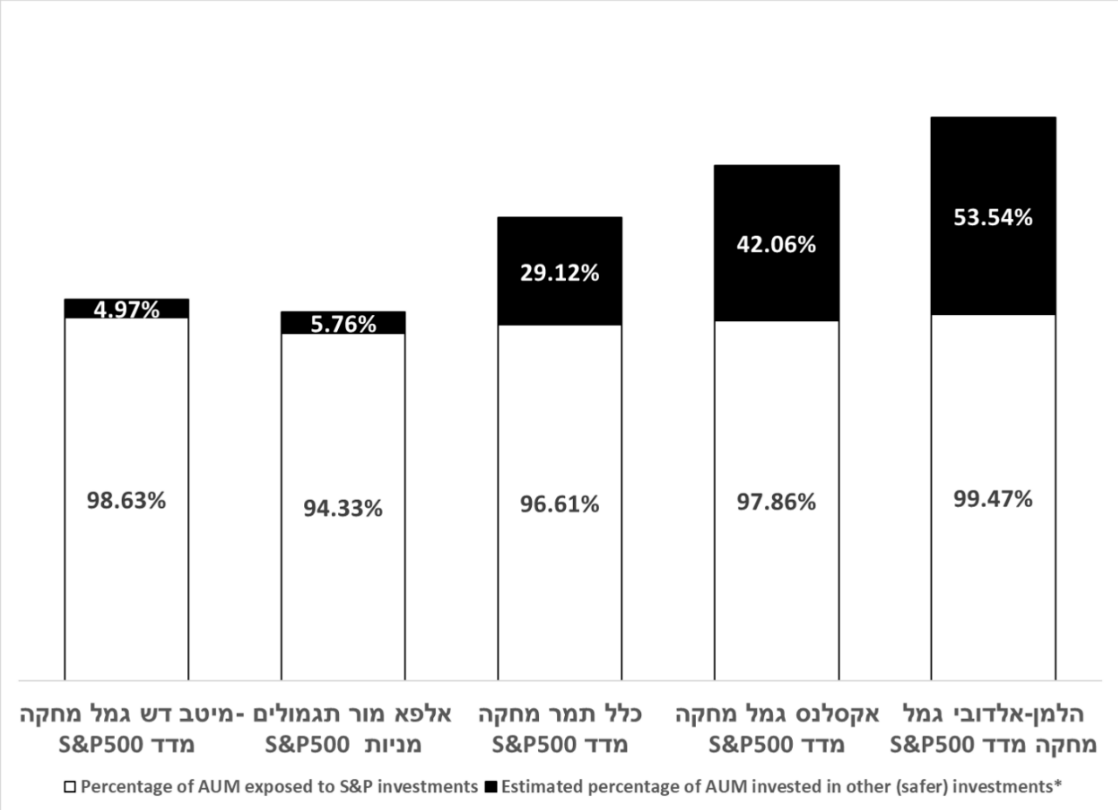
Pension investors – and their advisors – do not have access to these total return swap agreements, so they cannot determine their specific details. That said, if these total return swaps are typical, the investment tracks are required to put down between 5%-20% of the "notional value" (i.e., contract size) in collateral -- -- ***not the 100% the investment track would have to put down if it purchased exposure to the S&P directly.*** Essentially, the bank is purchasing most of the haystack for the investment track and passing its total returns over to it, receiving a "financing rate" of LIBOR + agreed upon spread in return for providing the investment track this service.

What do S&P investment tracks that avail themselves of synthetic exposure to the S&P do with the money they don't have to put down? The answer is that they typically put it to work, investing uninvested AUM in safer investments to earn larger returns than the S&P (and their competitors!).

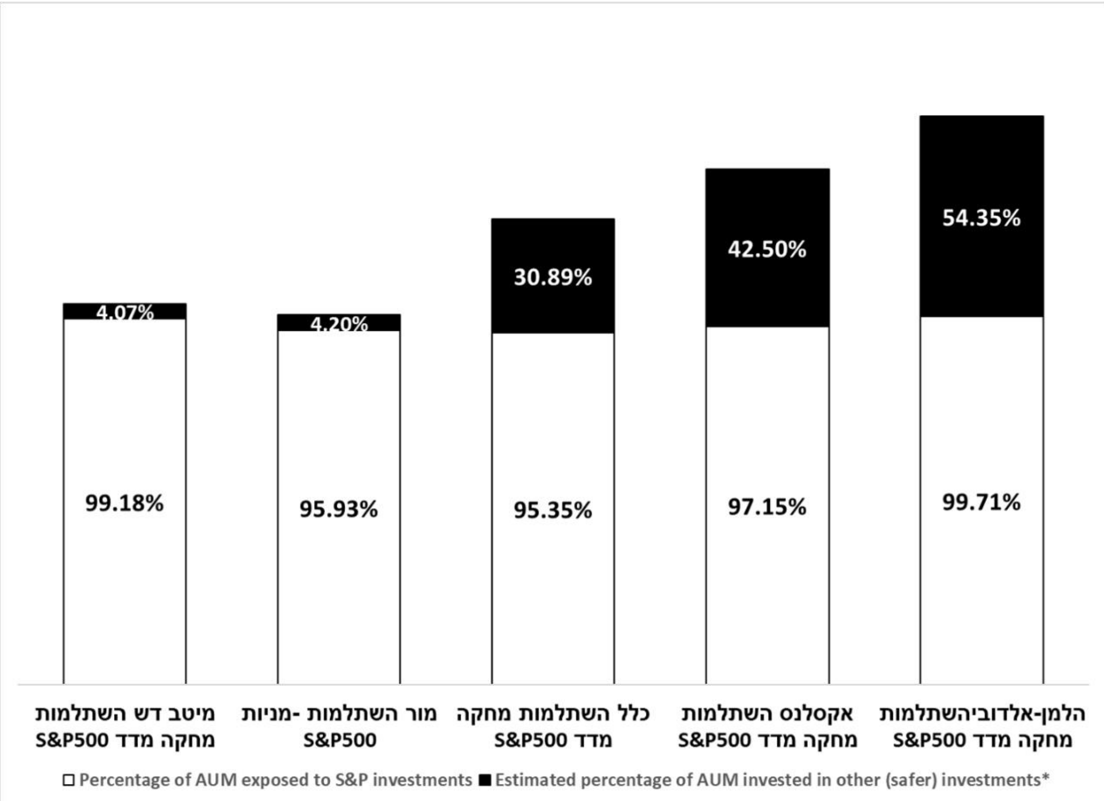
We infer clear evidence of this practice in March 2021 for:

AI for better pension portfolios

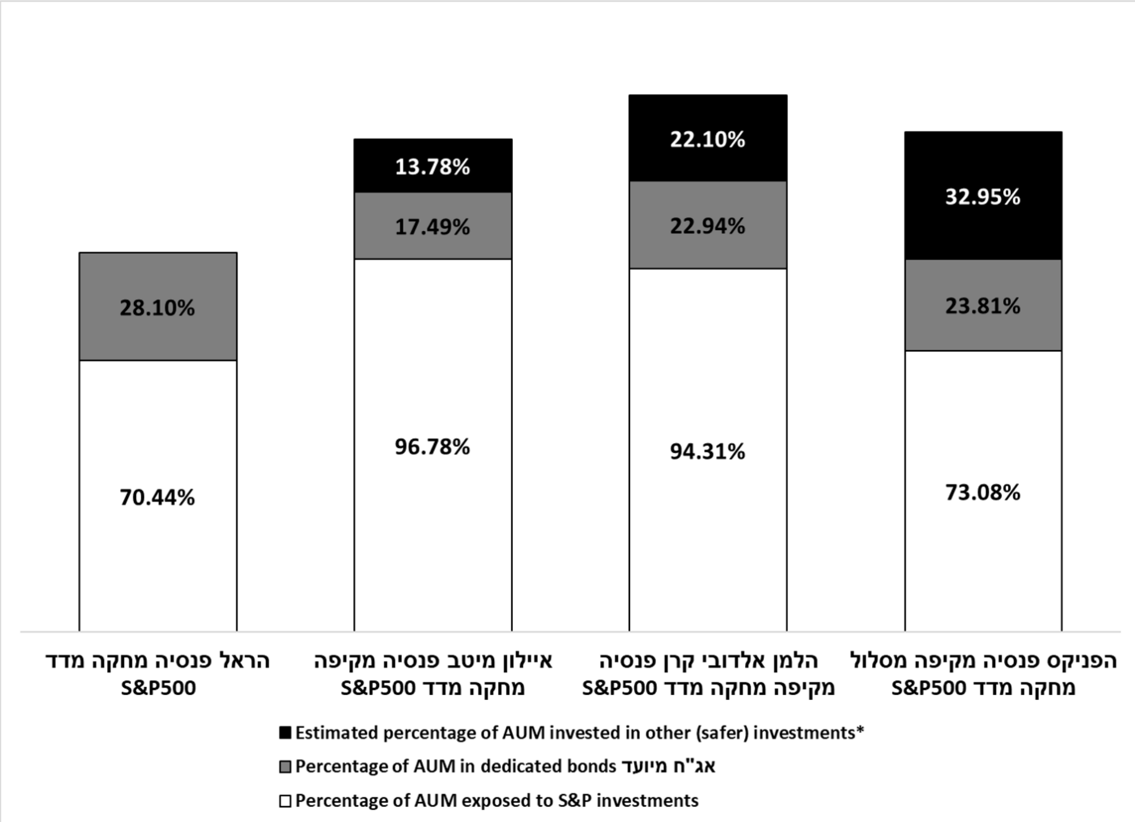
Kupat Gemel S&P tracks



Keren Histhalmut S&P tracks



Keren Pensya Mekifa S&P tracks



*"Safer" investments are tradeable government bonds, negotiable corporate bonds and bond ETFs, non-negotiable corporate bonds, deposits, loans, treasury bills and cash. To estimate the percentage of AUM in safer investments, we assume that S&P tracks are required to place 15% of the notional amounts of total return swaps in collateral accounts.

We can now address the puzzle with which we began: "Why do the S&P tracks perform so differently from one another and from index tracking ETFs trading on the Tel Aviv Stock Exchange?" The key to solving the puzzle is to realize that, despite the common name – מחקה מדד -- and despite the common stated mission – to accurately track the S&P 500 index's total performance – the different tracks perform very differently because they are constructed very differently with different amounts of leverage.

WHY SHOULD PENSION INVESTORS CARE, AND PERHAPS WORRY?

The first reason for awareness is that synthetic exposure to the S&P entails hidden risks. When an investment track gains exposure to the S&P derivatively via a total return swap with a bank, it relies on that bank to deliver it the S&P's total rate of return. If the bank happens to experience financial distress or failure, it may not be able to deliver. While this risk is remote, it is not negligible. As memory of the 2008-2011 financial crisis or even a cursory search on google for bank failures since makes clear, bank crises and failures can and do occasionally happen.

The second reason for awareness and concern is that, for keren pensya S&P tracks, the leverage that goes hand-in-hand with synthetic exposure can counteract the ability of dedicated bonds (אג"ח מיועד) to hedge against poor S&P performance. Suppose that a keren pensya S&P track has NIS 10m in assets under management. One "simple" thing the investment track could do would be to invest NIS 7.3m directly in the S&P via S&P tracking ETFs and index mutual funds and NIS 2.7m in dedicated bonds guaranteed to pay 4.86% annually, or, 0.4% monthly. If the S&P's total return for the month were -10%, the investment track's return for the month would be:

$$-7.19\% = \frac{[NIS\ 7.3m * (-10\%) + NIS\ 2.7m * (0.4\%)]}{NIS\ 10M}$$

Painful, but not as painful as losing 10%. The dedicated bonds reduce the investment track's drawdown.

Contrast this with the more "sophisticated" strategy of using total return swaps and leverage to bring exposure to the S&P up to 100% while still maintaining a 27% investment in dedicated bonds and even investing in additional amount in cash and treasury bills.

Specifically, suppose that:

Investment in S&P tracking ETFs & index mutual funds	NIS 3.3 m
Notional amount of total return swap receiving the total return of the S&P	NIS 6.7 m
Investment in dedicated bonds	NIS 2.7 m
Investment in cash and treasury bills	NIS 2.995 m
Required collateral for the total return swap, as a percentage of notional amount required	15%
Financing rate the bank receives for providing the S&P return in the total return swap	0.09%

The monthly return of the investment track would now be:

$$-9.92\% = \frac{NIS\ 3.3\ m*(-10\%)+NIS\ 6.7\ m*(-10\%-0.09\%)+NIS\ 2.7\ m*(0.4\%)+NIS\ 2.995\ m*0.1\%}{NIS\ 10\ m}$$

The NIS 2.7 m investment in dedicated bonds is still there, but its power to counteract poor S&P performance is now cancelled out by the leverage.

The third reason for concern is the lack of transparency. *You can seek to mimic the S&P performance as accurately as possible, or you can seek to deliver higher returns than your S&P track competitors, but you can't do both at the same time. Both are admirable goals, but only one constitutes passive index investing. Accordingly, S&P tracks labelled as mimicking the index that use leverage gained from synthetic exposure to achieve the second goal are misleadingly labelled*.

At WakeUp Pension, we believe that a better functioning pension investment market requires better transparency, so that pension investors and their advisors can more accurately weigh investment risks and rewards. Such transparency, when combined with technology empowerment, will help restore the dignity to pension investors that they deserve.