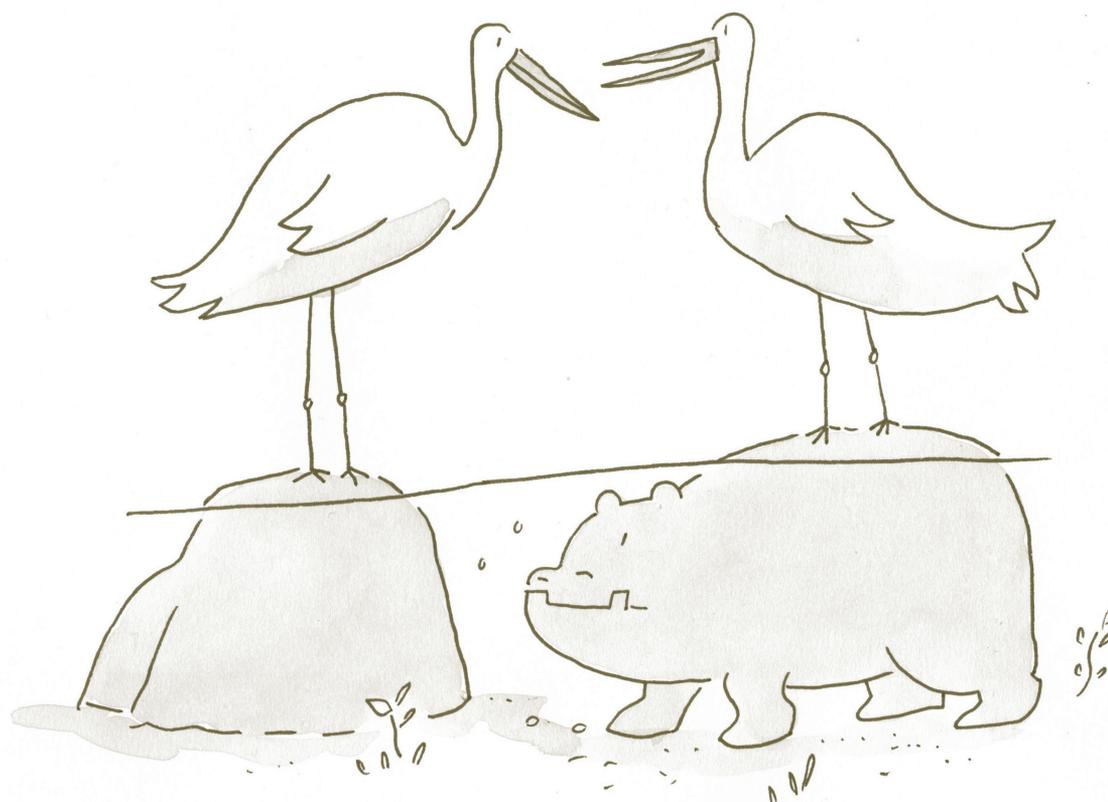


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# THE HIDDEN RISKS *of* PASSIVE INVESTING

The debate over the merits of active versus passive investing is an ongoing one. The conventional arguments in support of passive investing are alluring, in part because of their simplicity. But the foundations of these arguments are often not in sync with real-world application. In this article, we demonstrate that owning passive strategies is not without its own set of dangers, some of which may not be immediately apparent. »



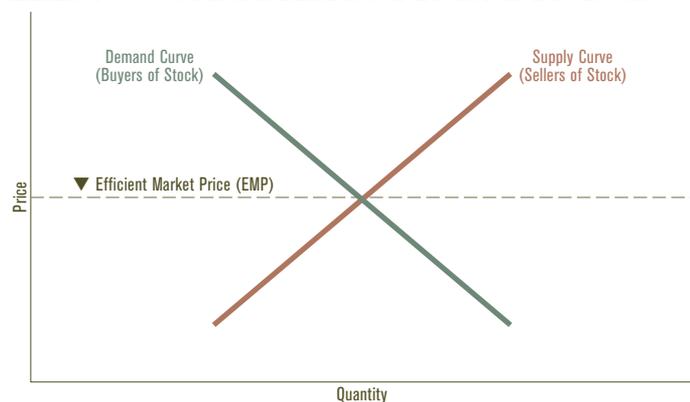
"ISN'T THIS A GREAT SPOT? I COULD  
RELAX HERE ALL DAY."

One of the major arguments for the benefits of passive investing is the Efficient Market Hypothesis (EMH). According to the EMH, the market is informationally efficient, and therefore security prices should always reflect all known information. If this were the case, the quantitative and qualitative analysis that active investors rely on to exploit inefficiencies in the market would be inconsequential. An investor who owns a passive strategy—one that follows a predetermined approach that is indifferent to market pricings (often done by replicating an index)—would have the same or better return than an investor with an active strategy, and would do so with lower fees. If you cannot beat the market, the logic goes, why pay more to try? But this argument overlooks a basic tenet of investing, one that even the most inexperienced of investors is familiar with: the law of supply and demand.

### Supply and demand

To understand the illogic of the EMH argument, let's begin by considering how supply and demand function for active investors. First, assume that stock prices rise above an equilibrium point. When this happens, it will lead to an excess supply of stock, where a larger number of shares will be offered for sale than are demanded by buyers. Since some sellers are willing to accept a lower price, and some buyers will demand a larger quantity at a lower price, prices will fall until supply equals demand. In this system, once the price increases above the equilibrium point, a surplus of shares for sale will induce the price to fall. Similarly, the reverse occurs when the price falls below the equilibrium and causes a shortage—more buyers than sellers will cause it to rise again (Exhibit 1).

**EXHIBIT 1 SUPPLY AND DEMAND CURVE FOR ACTIVE INVESTORS**

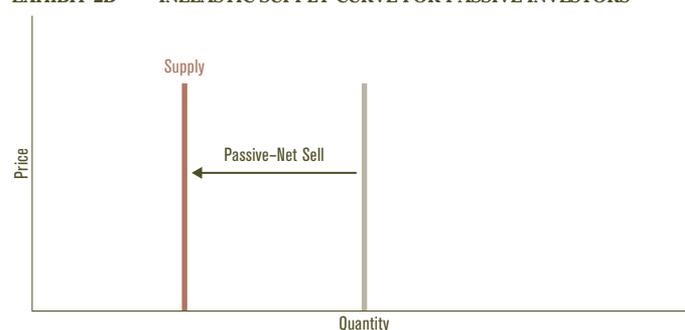


Compare the supply/demand curves of active investors with those of passive investors, as shown in Exhibits 2A and 2B. Managers of passive investment strategies are insensitive to price. They do not purchase a stock because it is attractively priced, but merely because it is part of an index that their strategy tracks. Regardless of how high a price rises or how low it falls, passive investors will not be persuaded to buy or sell and thus will not affect the supply and demand curves. This is known as inelastic supply and demand. Exhibit 2A shows the inelastic demand curve for passive investors, and Exhibit 2B shows the inelastic supply curve.

**EXHIBIT 2A INELASTIC DEMAND CURVE FOR PASSIVE INVESTORS**



**EXHIBIT 2B INELASTIC SUPPLY CURVE FOR PASSIVE INVESTORS**



The quantity of a stock purchased (demanded) or sold (supplied) by passive investors is solely a function of funds flowing into (or out of) their products on a daily basis. When money flows into a passive product, the passive manager buys a predetermined basket of securities based on the index the fund tracks. When an investor redeems funds, the passive manager sells a predetermined basket of securities to raise the necessary cash for the redemption. Because the purchase or sale decision is not based on an estimated value of the security, this structure ultimately undermines system stability. In a market comprising »

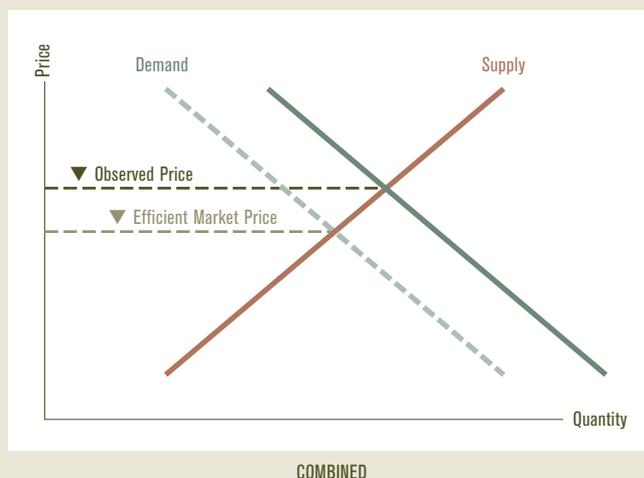
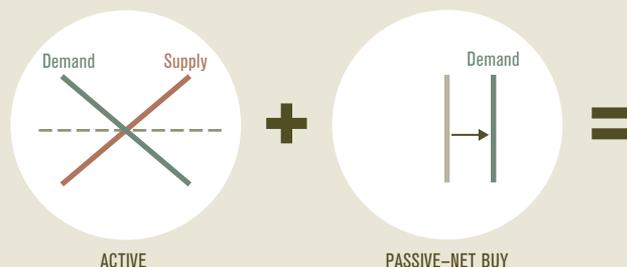
only passive investors, prices would increase without bound any time passive managers collectively purchased stock and decrease to zero any time stock was sold.

Of course, in reality, active and passive managers coexist within the total market. This requires that the supply and demand curves for all investors be combined to understand the impact on supply or demand for any given security. According to the EMH, efficient market prices should reflect the median opinion of informed active investors. But Exhibit 3 illustrates how the collective actions of

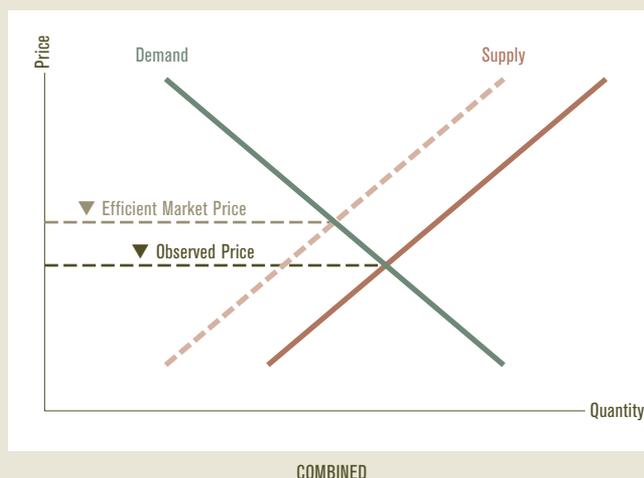
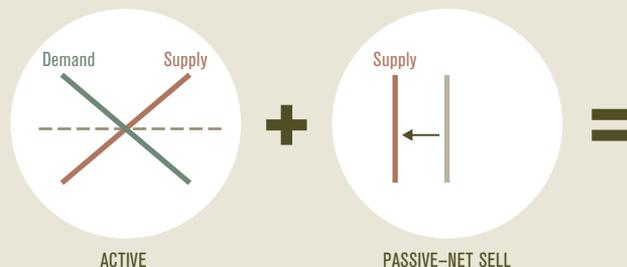
uninformed and price-agnostic passive investors can move markets away from this efficient market price. When passive investors are buying, the combined demand curve will shift to the right by the amount the passive managers collectively buy. This in turn will shift the supply/demand equilibrium upward—active managers will sell, creating more supply to meet the passive demand. The observed market price will then be higher than the efficient market price, as determined by active investors alone. The opposite occurs when passive investors collectively sell a particular security. »

### EXHIBIT 3 SUPPLY AND DEMAND CURVES FOR ACTIVE AND PASSIVE INVESTORS

When passive investors buy more than they sell, the demand in the marketplace increases. In order to entice active investors to sell (so that passive investors can buy from them), the price of the security must be raised—even though its estimated value has not changed.



When passive investors sell more than they buy, the supply in the marketplace increases. In order to entice active investors to buy (so that passive investors can sell to them), the price of the security must be lowered—even though its estimated value has not changed.



### *Theory in practice*

As passive ownership cycles between over-owning and under-owning securities, it will distort efficient market pricing. Yahoo! offers one of the clearest examples of this. On December 7, 1999, the internet browser company was to be added to the S&P 500 after the close of the trading session. This meant that all passive investors tracking the index needed to buy the stock as part of their strategy. But only about 10% of the stock was freely available to trade hands at the time (most Yahoo! shares were held by employees, venture capitalists, and other investors who were restricted from selling). Therefore, there was a very limited supply of stock to meet significant passive investor demand. In order to convince enough knowledgeable active shareholders that the shares they held were overvalued—and to persuade them either to sell their holdings or to sell the stock short—the price had to go up. Since so few shares were owned by active investors, the price increase was magnified. On that day, Yahoo! stock rose by \$67.25 per share, or 24%. No company-specific news could otherwise account for this increase. Passive investors holding an S&P 500 tracking strategy now owned Yahoo! at a premium—not because managers expected the price to go up more, but simply because the security had been added to the index.

This trend was not limited to Yahoo! At the millennium, passive strategies over-owned mega-cap stocks generally and large-cap technology specifically. Active investors

counterbalanced this by under-owning these sectors, but they did not under-own simply because they were pushed into it by the over-ownership of passive investors. Remember, active managers are not forced to sell to meet passive demand. Instead, their under-ownership reflects that, on average, they had decided the shares of the passively over-owned mega-cap technology companies were relatively overpriced. Assets continued to flow into passive strategies, pushing prices higher, and active managers suffered a loss relative to the benchmark. But when the tech bubble burst, the reverse occurred; stock prices fell back to Earth, generating a gain for active management. The 2000-02 period of active outperformance was primarily built on unwinding the excesses of the prior six years.

### *Risks worth considering*

More and more investors are now directing a share of their assets into passive strategies. Many do so because they consider the passive approach to asset management to be a safe and effective alternative to active investing for maximizing long-term performance net of fees. But no investment strategy is without some risk. The inelastic supply and demand curves of passive investors and the mispricing created by fund flows into or out of passive investment strategies are just a few of the liabilities hidden within passive investing. If you are considering passive investments, ask yourself whether these are risks you are comfortable taking. ■