

All financial advisers will tell you that investments with higher expected returns have higher risk. They're right. However, some financial advisers will tell you that investments with higher risk always have higher expected returns, and they are wrong. Some risk investments have high expected returns, and some don't. They're simply risky. I saw this graph in a textbook on personal finance that I was reading. The graph shows the relationship between expected return and risk for US Treasury bills, notes, and bonds, common stocks, real estate, options, futures, and precious metals. The biggest problem with the graph is that the expected return on options and futures isn't higher than that of common stocks. The expected return on options and futures is zero.

For every dollar that one investor makes trading options and futures, another investor loses a dollar. Yes, these investments are risky, but they're not on average high return. Precious metals are also risky, and their expected return, it's hard to estimate, but I'd put it well below common stocks. I discuss options, futures, and gold in greater detail in another course video. Finally, the expected return listed here for real estate is much higher than the historical returns for real estate in the US.

Let's move it down the line. Why aren't there investments with high expected returns and low risk? Because of market forces. Suppose that there are two investments, shares in Company A and Company B. Shares in both companies have the same risk, that is about the same likelihood of losses when the economy does poorly. Let's say both companies are expected to earn on average \$10-a-year per-share. And to keep things simple, that the price of each stock will rise by \$10 a share. However, a share of Company A's stock is trading for \$50 and a share of Company B for \$100. So a share of A has an expected return of \$10 divided by its price \$50, which equals 20% a year. And I share of B has an expected return of \$10 divided by \$100, or 10% a year. Who would buy B, when they could buy A? What's going to happen? Investors are going to buy shares of company A, and sell shares of Company B until the share prices and the expected returns of both companies are about the same. If the price of A rises to \$67 and the price of B falls to \$67, both companies will be earning a return of \$10 divided by \$67, or 15%.

If market forces eliminate investments with high returns and low risk, why don't they eliminate investments with low returns and higher risk? The reason is because the market generally adjusts prices only for risks that most investors can't avoid through diversification. There's no reward for taking unnecessary risks. A single stock is riskier than a portfolio of stocks, but there's no additional reward for holding undiversified portfolio of one stock. Owning an undiversified portfolio is like not wearing your seat belt-- all risk, no reward. And consider futures contracts. Suppose there are two investors. One buys a three-month futures contract for gold at a price of \$1,200 an ounce, and the other sells a three-month futures contract for gold at a price of \$1,200 an ounce. Since the price of gold is volatile, these are both risky investments. However, the gains of one investor are going exactly equal the losses of the other, so the average expected return on the two investment is zero, minus some small transactions costs. If both investors are trading for speculation, they're each making a high-risk investment with a low expected return.

What do we mean by expected return? The expected return is an average of all possible returns you might get with each outcome weighted by its probability. Probabilities are usually estimated from past returns. Of course, there's no guarantee that the future will look like the past, so one should also adjust for how the world and markets have changed. Indeed many financial economists expect that US common stocks will not perform as well in the next 50 years as they did in the last 50. Is the expected return the return you should expect to get? No, unless you're putting your money in a savings account or buying US Treasury bills, you're going to earn more or less than the expected return. And remember, don't let someone tell you that just because an investment is risky it's likely to earn a high return. Some risky investments have high expected returns, some are simply risky.