Can betas be negative? (and other well used interview questions)

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Here is a favorite question among corporate finance interviewers: " Can betas be negative? And if so, what exactly do they tell us?" The reason negative betas pose a conundrum to many finance students is that they seem to go against intuition. After all, if a beta of one is average risk and a beta of zero is riskless, how can an investment have negative risk?

Here is the answer. Yes, betas can be negative. To see how and why, consider what betas measure: the risk added by an investment to a well diversified portfoli0. By that definition, any investment that when added to a portfolio, makes the overall risk of the portfolio go down, has a negative beta. A more intuitive way of thinking about this is that a negative beta investment represents insurance against some macro economic risk that affects the rest of your portfolio adversely. A standard example that is offered for a negative beta investment is gold, which acts as a hedge against higher inflation (which devastates financial investments such as stocks and bonds). It is also true that puts on stocks and selling forward contracts against indices will have negative betas.

What are the consequences of a negative beta? The expected return on that investment will be less than the riskfree rate; the nominal returns on gold over the last 40 years have been 2% less,on average annually, than the riskfree rate. However, that makes complete sense if you think of it as buying insurance. You are paying for the insurance by settling for a very low or even negative return.

Are there actual investments out there that have negative betas? I know that there are stocks with negative regression betas, but those are the mostly the result of something strange happening during the period of the regression - an extended lawsuit or acquisition battle throwing off the correlation with the market- rather the true betas. In fact, in my fifteen years of updating betas by sector, I have still not found a sector with a negative beta. Furthermore, even assets that, in theory, could have negative betas (gold, for instance) seem to have positive betas when securitized (gold shares, gold ETF). There seems to be something about the securitization process that makes real assets behave more like financial assets.