**Chapter 7**

11. a.



Even though it seems that gold is dominated by stocks, gold might still be an attractive asset to hold as a *part* of a portfolio. If the correlation between gold and stocks is sufficiently low (or even negative), gold will be held as a component in a portfolio, specifically, the optimal tangency portfolio.

1. If the correlation between gold and stocks equals +1, then no one would be willing to hold gold: its return is lower than stocks, its standard deviation is higher, *and*, with perfect correlation, it offers no diversification benefits (such as those described in part *a*). The optimal CAL would be composed of bills and stocks only. Since the set of risk/return combinations of stocks and gold would plot as a straight line with a negative slope (see the following graph), any portfolio that contains gold would be dominated by the stock portfolio.



1. Of course, this situation could not be an equilibrium. As long as no one is willing to hold gold, its price will fall and its expected rate of return will increase until it became sufficiently attractive to include in a portfolio.

12.

*wA* = 0.6667

The expected rate of return for this risk-free portfolio is:

11.667%

Therefore, the risk-free rate is: 11.667%

15. The probability distribution is:

|  |  |
| --- | --- |
| Probability | Rate of Return |
| 0.7 | 100% |
| 0.3 | −50 |

Mean = 55%

Standard deviation = 68.74%

16. *E*(*rP*) = 25.5%