

**Homework Assignment 4. Due: Tuesday, February 14.**

1. (3 points) Suppose that you have \$1000 to invest and there are two financial instruments that you can purchase. The returns on each of these instruments depend on oil prices in the following manner:

Instrument A:

Oil Prices	Probability	Return
High	0.2	30%
Average	0.6	10%
Low	0.2	-10%

Instrument B:

Oil Prices	Probability	Return
High	0.2	-5%
Average	0.6	10%
Low	0.2	25%

The price of one unit of each financial instrument is \$100.

- (a) You consider two investment strategies: either invest all your \$1000 in instrument A or invest all your \$1000 in instrument B. For each of these strategies compute the expected return and variance of the return. If you are risk averse, which one you would choose?
- (b) Now suppose that you can buy any combination of the two instruments (10 total) that you like, e.g. you can buy 6 of A and 4 of B, or 1 of A and 9 of B. Propose an investment strategy (a combination of the two instruments) that any risk averse investor would choose over both strategies in part (a)? (You have to show why any risk averse investor would choose it.)
- (c) Now suppose that Instrument B is not available. Instead, you can invest in an instrument C, returns on which do not depend on oil prices and depend on the weather in Iowa:

Instrument C:

Weather in Iowa	Probability	Return
Cold	0.2	35%
Average	0.6	10%
Hot	0.2	-15%

Without doing any calculations, explain how this instrument can be valuable to a risk-averse investor.

2. (3 points) Read the policy debate on inflation policy at [http://www.swlearning.com/economics/policy\\_debates/inflation.html](http://www.swlearning.com/economics/policy_debates/inflation.html) and briefly (one or two paragraphs) summarize what you've read.

3. (2 points) Explain how a car insurance company can eliminate most of the risk that it faces by selling a large number of policies. What is the difference between this type of risk and the risk associated with insuring homes on the coast of Gulf of Mexico?
4. (2 points) Suppose that the interest rate on 3-month Treasury Bills is currently 5%. The interest rate on a 3-month corporate bond is 7%. Now assume that the Fed chairman made an announcement that Fed will not try to stabilize inflation for the next couple of years. What do you think will happen to the yields on the Treasury bills and this corporate bond?