### **Risk and Return Game**

## **Economics**

The purpose of this game is to illustrate the connection between risk and return, and to show that there is a degree of luck and skill involved in investing money.

Objective: To have the most money at the end of 10 rounds.

The following categories are available for investments, at beginning prices:

\$10 Stocks

\$50 Mutual Fund

\$10 Bonds

\$20 Foreign Currency

\$100 Real Estate

\$1 Derivative Put Fund (option to buy)

\$1 Derivative Call Fund (option to sell)

\$0-\$200 Savings Account (2%)

# Game Procedure:

Each student begins with \$200 in cash. At the beginning of the game, each student will decide how to invest their portfolio. All \$200 must be accounted for. Prices for investments in stocks, mutual funds, bonds, foreign currency and real estate will change over the course of the game.

The game will progress in ten rounds. Each round will consist of 5 phases:

Phase 1: Up or Down Market (coin flip)

Phase 2: Random tick for stocks, bonds, mutual funds, foreign currency and real estate (three-sided dice).

Phase 3: Calculation of individual gains or losses (after inputting data in spreadsheet).

Phase 4: Taxes will be collected on profits (this must also be entered in the spreadsheet).

Phase 5: Asset allocation (students may buy derivatives, and sell and buy investments).

In terms of risk, investments will have the following multiplier effects:

Stocks: 3
Mutual Fund: 2
Foreign Currency: 1.5
Bond: variable
Real Estate: .7

Real Estate: .7 Savings: 0

#### Game Procedures

Each round, the random tick will determine a percentage change, between 0 and 3, up or down. The player will enter this information in the spreadsheet.

The investments will be multiplied by the percent change, and increased or reduced by that amount. For example, a 2% random tick upward will result in an increase of 6% (2x3) in stock values, but an increase of only 1.4% (2x.7) in Real Estate.

Puts and Calls (derivatives) will be exercised after one round and will expire after one round. An expired put or call has a value of 0.

In order to enter a put value (option to buy), a student must have enough money in their savings to exercise the put.

In order to enter a call value (option to sell), a student should have at least as many stocks as the call value—otherwise the extra money will be wasted.

The spreadsheet will use gross profit to calculate any tax based on a percentage, and enter it into the spreadsheet.

### Tax Table:

Your tax if your profits are at least:

0	10	20	30	40	50	75	100	200
0	10%	15%	20%	30%	40%	45%	50%	70%

After each round, the students will examine their portfolio and choose to reallocate their investments to suit their desired risk-return combination. The portfolio total (see running total on the spreadsheet) must be equal to the ending balance from the last round.

# Risk and Return Game N

Name

# **Record Sheet**

<b>Setup</b>		
Quantity	Asset	<u>Value</u>
	Stocks	
	Mutual Fund	
	Foreign Currency	
	Bonds	
	Real Estate	
	Derivative Put Fund (option to buy)	
	Derivative Call Fund (option to sell)	
	Savings Account (2% Fixed)	
Beginning	Net Worth (should equal \$200)	
D 14		
Round 1 Market Dire	ction: UP or DOWN (circle one)	
Random Tic	k: 1 2 3 (circle one)	
Gross Profit	:	
Taxes:		
Net Worth a	fter Taxes:	
Reallocate		
Quantity	Asset	<u>Value</u>
	Stocks	
	Mutual Fund	
	Foreign Currency	
	Bonds	
	Real Estate	
	Derivative Put Fund (option to buy)	
	Derivative Call Fund (option to sell)	
	Savings Account (2% Fixed)	
Beginning	Net Worth (should equal previous net worth after taxes)	
Round 2		
	ction: UP or DOWN (circle one)	
Random Tic	k: 1 2 3 (circle one)	
Gross Profit	:	
Taxes:		
Net Worth a	fter Taxes:	

<u>Reallocate</u>		
<u>Quantity</u>	Asset	<u>Value</u>
	Stocks	
	Mutual Fund	
	Foreign Currency	
	Bonds	
	Real Estate	
	Derivative Put Fund (option to buy)	
	Derivative Call Fund (option to sell)	
	Savings Account (2% Fixed)	
Beginning	Net Worth (should equal previous net worth after taxes)	
Round 3		
Market Direc	tion: UP or DOWN (circle one)	
Random Tick	: 1 2 3 (circle one)	
Gross Profit:		
Taxes:		
Net Worth aft	er Taxes:	
<b>Reallocate</b>		
Quantity	Asset	Value
	Stocks	
	Mutual Fund	
	Foreign Currency	
	Bonds	
	Real Estate	
	Derivative Put Fund (option to buy)	-
	Derivative Call Fund (option to sell) Savings Account (2% Fixed)	
Beginning	Net Worth (should equal previous net worth after taxes)	
Round 4	,	
Market Direc	tion: UP or DOWN (circle one)	
Random Tick	: 1 2 3 (circle one)	
Gross Profit:		
Taxes:		
Net Worth aft	er Taxes:	

<b>Reallocate</b>		
Quantity	Asset	<u>Value</u>
	Stocks	
	Mutual Fund	
	Foreign Currency	
	Bonds	
	Real Estate	
	Derivative Put Fund (option to buy)	
	Derivative Call Fund (option to sell)	
	Savings Account (2% Fixed)	
Beginning	Net Worth (should equal previous net worth after taxes)	
Round 5		
Market Direct	ion: UP or DOWN (circle one)	
Random Tick:	1 2 3 (circle one)	
Gross Profit:		
Taxes:		
Net Worth after	er Taxes:	
Reallocate		
Quantity	Asset	<u>Value</u>
	Stocks	
	Mutual Fund	
	Foreign Currency	
	Bonds	
	Real Estate	
	Derivative Put Fund (option to buy) Derivative Call Fund (option to sell)	
	Savings Account (2% Fixed)	
Beginning	Net Worth (should equal previous net worth after taxes)	
Round 6		
Market Direct	ion: UP or DOWN (circle one)	
Random Tick:	1 2 3 (circle one)	
Gross Profit: Taxes:		
Net Worth after	er Taxes:	

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<b>Reallocate</b>		
Quantity	Asset	<u>Value</u>
	Stocks	
	Mutual Fund	
	Foreign Currency	
	Bonds	
	Real Estate	
	Derivative Put Fund (option to buy)	
	Derivative Call Fund (option to sell)	
	Savings Account (2% Fixed)	
Beginning	Net Worth (should equal previous net worth after taxes)	
Round 9		
Market Direct	ion: UP or DOWN (circle one)	
Random Tick:	1 2 3 (circle one)	
Gross Profit:		
Taxes:	<del></del>	
Net Worth afte	er Taxes:	
Reallocate		
Quantity	Asset	Value
,	Stocks	
	Mutual Fund	
	Foreign Currency	
	Bonds	
	Real Estate	
	Derivative Put Fund (option to buy)	
	Derivative Call Fund (option to sell)	
	Savings Account (2% Fixed)	
Beginning	Net Worth (should equal previous net worth after taxes)	
Round 10		
Market Direct	ion: UP or DOWN (circle one)	
Random Tick:	1 2 3 (circle one)	
Gross Profit:		
Taxes:	<del></del>	
Net Worth after	er Taxes:	
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