

Experiment Instructions Appendix

An Experimental Analysis of Contingent Capital with Market-Price Triggers

by

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Overview

a) Each session started with the BASE treatment instructions below on pages 2-8 were read in all sessions and participants made decisions under BASE conditions for the first 5 session periods. These instructions were standard in all treatment with one exception: in the fixed-trigger treatments, no monitors were used. In these sessions all 10 participants were traders, and all references to the monitor were deleted.

b) To economize on explanations we simply explained value-increasing or value decreasing conversions in terms of 'positive corrective actions' or 'negative corrective actions,' that is, monitor interventions that would increase or reduce the value of assets to traders.

Other notes

- The 'positive corrective action' instructions (for value increasing conversions in the *regulator* treatment) appear on pages 9-13. These instructions were used for periods 6-20 in the regulator/value increasing conversion sessions and for periods 6-10 in the prediction market/value increasing conversion sessions.
- The 'negative corrective action' instructions (for value decreasing conversions) appear on pages 14-18. These instructions were used for periods 6-20 in the regulator/value decreasing conversion sessions and for periods 6-10 in the prediction market/value decreasing conversion sessions.
- The 'positive corrective action with a prediction market' instructions appear on pages 19-24. These were used to introduce periods 11-20 of the prediction market sessions with a value increasing conversion
- The 'negative corrective action with a prediction market' instructions appear on pages 25-30. These were used to introduce periods 11-20 of the prediction market sessions with a value decreasing conversion.
- The 'fixed rule positive corrective action' instructions appear on pages 31-34. These instructions were used to introduce either periods 6-15 or 16-25 of the fixed trigger treatments (for the case of a value increasing conversion).
- The 'fixed rule negative corrective action' instructions appear on pages 35-38. These instructions were used to introduce either periods 6-15 or 16-25 of the fixed trigger treatments (for the case of a value decreasing conversion).

Experiment Instructions (BASE)

Overview: Welcome! Thank you for coming to today's session. This is an experiment in the economics of decision-making. Various foundations have provided funds for this research. The instructions are simple, and if you follow them carefully and make good decisions, you may earn a considerable amount of money that will be paid to you in CASH at the end of the experiment. Your earnings will be determined partly by your decisions and partly by the decisions of others.

- A. **General Description.** Today's experiment consists of two types of people, *Traders* and *Monitors*. *Traders* earn money from buying and selling units of an abstract stock we'll call an "asset." *Monitors* earn money from correctly guessing the asset's value.
- 1) There will be ten *Traders* and three *Monitors*.
 - 2) The session consists of 21 *trading periods* in which traders buy and sell assets. The trading portion of each period will last 110 seconds.
 - 3) During each trading period
 - a. Traders may buy and/or sell assets.
 - b. Monitors observe contract prices and guess the asset's underlying value.
- B. **Actions and Incentives for Traders.**
- 1) At the outset of each period traders are given a *portfolio* consisting of two assets. Traders are also given a \$16 (lab) loan to purchase assets. Traders repay this loan at the end of each trading period, without interest.
 - 2) The value of each asset to a trader is determined by the trader's *dividend*. The dividend is each asset's *intrinsic value*— that is, each asset held by a trader at the end of a period will be converted into this dividend. Traders' dividends for each period are determined as follows.
 - a. The program takes (draws) a number over the range [\$2.00 \$8.00], each number is equally likely to be selected. The draws were made by a computer prior to the experiment.
 - b. For 6 randomly selected traders, their dividend equals this draw. We call these high value traders.
 - c. For the remaining 4 traders their dividend value will be 60¢ below this draw. We call these low value traders.
 - d. Traders will know only their own dividend in a period. They will not know if they are a high-value or a low-value trader that period. That is, they won't know whether their dividend is high or low relative to the other traders in that period.
 - 3) The dividend of an asset depends on whether it is held by a high-value or a low-value trader. Thus, the same unit may have different dividends for different traders.
 - 4) At the end of each period each trader's portfolio net of their \$16.00 loan is converted to lab dollars: That is, they earn the sum of any cash on hand in excess of the \$16.00 which they have to pay back, plus their dividends for all assets held.

C. Actions and Incentives for Monitors

- 1) At the end of the trading period, monitors observe the *median* of all contract prices. The median price is the price that divides evenly the higher and the lower prices
- 2) Then Monitors guess the high dividend. After all monitors make their guesses, the correct answer will be revealed.
- 3) Monitor payoffs are determined by the accuracy of their guesses. Specifically, monitors will earn
 - a. \$3.00 (lab) if their guess is within 20¢ of the correct answer.
 - b. \$1.00 (lab) if their guess is within 50¢ of the correct answer.
 - c. 0 otherwise.

Specific Instructions/ Screen Displays.

A. Trader's Screen Display.

1. *The Upper Portion of the Screen.* The upper portion of trader T2's screen at the beginning of a period is shown below. This screen conveys information regarding trader identity, the trading period and the trader's portfolio.

Period:		Time Remaining	
2 of 5		107	
Trader: T2			
Assets:	2	Cash on Hand	\$16.00
Dividend	\$4.57	Total Asset Value	\$9.14
		Net Portfolio Value	\$9.14

Question: Observe that the Trader's dividend in the above example is \$4.57. What are the possible dividend values for the other traders? Why?

Question: Observe that the Net Portfolio Value is \$9.14 despite the Trader having cash on hand of \$16.00. Why?

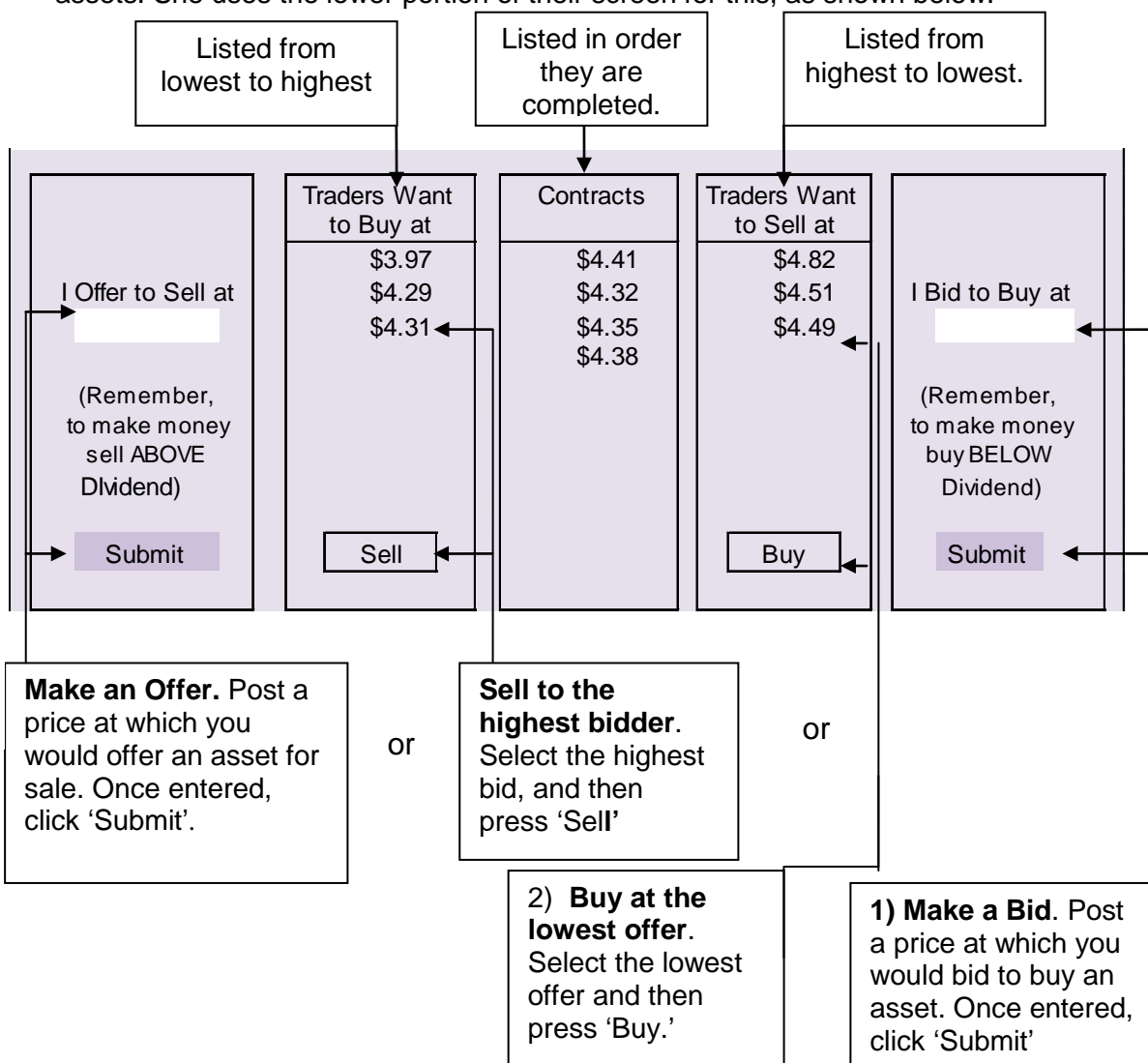
At the end of the period the upper portion of the trader's screen reflects trader earnings, as seen below. Notice below that in period 2, Trader T2 acquired one asset. Her net portfolio value is the sum of the total asset value and her remaining cash on than less the initial \$16 working capital loan. The trader's cumulative earnings for the session are

also displayed. Once you've reviewed your earnings press 'Continue'.

Period: 2 of 5		Time Remaining 0	
Trader: T2			
Assets:	3	Cash on Hand:	\$11.90
Dividend	\$4.57	Total Asset Value	\$13.71
	Period Earnings:	Net Portfolio Value	\$9.61
	Cumulative Earnings:		\$14.37

Question: Notice that Trader T2 finished the period with a Portfolio Value of \$9.61. She started the period with only \$9.14. How did she increase her earnings?

2. Trading Assets. A trader increases her net portfolio value by buying and selling assets. She uses the lower portion of their screen for this, as shown below.



Note: Traders may submit new offers and bids as often as they like

Question: Suppose a Trader's dividend is \$4.80.

- If she saw other traders offering to sell for \$4.49 and bidding to buy for \$4.31 (as shown above) should she consider buying or selling?
- How much she could earn in this case?

Question: Suppose a Trader's dividend is \$4.20.

- If other traders offering to sell for \$4.49 and bidding to buy for \$4.31 (as shown above) should she consider buying or selling?
- What is the maximum amount she could earn in this case?

B. Monitor Screen Displays. The monitor does nothing until the trading period concludes. When the period ends, the monitor sees the median contract price.

Period: <div style="text-align: center; border: 1px solid black; width: 100px; margin: 0 auto;">2 of 5</div>	Time Remaining: 23
Monitor: M1	
<div style="border: 1px solid black; padding: 2px; text-align: center;">Median Contract</div> <div style="border: 1px solid black; height: 20px; margin-top: 5px;"></div>	High Dividend Guess: <div style="border: 1px solid black; width: 60px; height: 20px; display: inline-block; margin-left: 10px;"></div>

Monitor actions. When the trading period concludes the median contract price is displayed. The monitor then guesses Dividend for high-value Traders and presses the Confirm button.

Period: <div style="text-align: center; border: 1px solid black; width: 100px; margin: 0 auto;">2 of 5</div>	Time Remaining: 0
Monitor: M1	
<div style="border: 1px solid black; padding: 2px; text-align: center;">Median Contract</div> <div style="border: 1px solid black; padding: 5px; text-align: center; margin-top: 5px;">\$4.40</div>	High Dividend Guess: <div style="border: 1px solid black; width: 60px; height: 20px; display: inline-block; margin-left: 10px;"></div>
<div style="border: 1px solid black; padding: 2px 10px; margin-top: 10px;">Confirm</div>	

Monitor earnings. When all monitors have submitted their guesses, the correct answer is revealed and earnings are calculated, as shown below.

After reviewing earnings, press Continue.

Question: Why does the monitor in the illustration earn \$3.00?

Question: Suppose a Monitor guesses \$7.82 and the correct answer turns out to be \$7.60. How much does the Monitor Earn? Why?

High Redemption Value	
Your Guess:	\$4.41
Actual:	\$4.47
Guess Earnings:	\$3.00
Period Earnings:	
	\$3.00
Cumulative Earnings	
	\$3.50

Question: Suppose a Monitor guesses \$2.48 and the correct answer turns out to be \$4.50. How much does the Monitor Earn? Why?

Quiz of Understanding

1. Suppose you are a Trader and your dividend is \$7.31. What are the possible dividends for the other traders?
2. If the two dividends are \$7.31 and \$7.91 in a period, how many traders will have the \$7.31 dividend and how many will have the \$7.91 dividend?
3. Suppose a Trader has a dividend of \$3.47 and sees a bid to buy of \$3.63. Should the trader consider buying or selling his asset? How much can he earn?
4. Suppose a Trader has a dividend of \$3.47 and sees an offer of \$3.20. Should the trader consider buying or selling his asset? How much can he earn?
5. Suppose a monitor, guesses that the high dividend value is \$2.32 and it turns out that the high dividend is \$2.58. How much does the monitor earn?

Final Details

1. Your identity as a monitor or as a trader will be revealed to you once the experiment starts. Other participants will not know your identity. Your role as a monitor or trader will remain fixed throughout today's session. However, it is important that you DO NOT publicly disclose your identity.
2. To ensure that you understand how the market proceeds we will conduct one practice period. You will not be paid for your decisions in this period. During this practice period, please feel free to raise your hand and ask any questions you might have.
3. Any Questions?

(Following the practice periods).

Thank you again for coming to today's session and bearing with us as we read through the instructions. Now we will begin the session.

1. The first portion of today's session consists of 5 trading periods under the conditions described above. After that we will stop and explain a second condition.
2. Your lab earnings will be converted to U.S. currency at a rate of 12 lab dollars = \$1 U.S. Your total earnings for participating in today's session will be the sum of your earnings from trade or guesses plus the \$6.00 appearance fee.
3. Any final Questions? Please don't ask questions or talk to each other during the next 5 trading periods.

Summary Sheet

Baseline

Traders: Make money by buying and selling assets.

Buying and selling assets: To increase portfolio value,

Buy cheaply (at prices below dividend)

Sell dearly (at prices above dividend)

Dividends:

6 Traders have the High Dividend

4 Traders have the Low Dividend (60¢ below the High Dividend)

Monitors: Make money by guessing the High Dividend.

Guess Accuracy	Earnings (in lab dollars)
Within 20¢	\$ 3.00
Within 50¢	\$ 1.00
More than 50¢	\$ 0.00

Positive Corrective Action Treatment

(To be conducted after 5 periods in the Baseline treatment).

Introduction: We now modify the market in one respect: in addition to guessing the high dividend each period, the monitors also make a decision to *intervene* or to *not intervene*.

1. *Changes in Monitors' Incentives:*
 - a. Monitors will now earn \$12.00 (lab) from their intervention decision if
 - they decide to intervene and the high dividend (before intervention) turns out to be less than \$5.
 - they decide to *not* intervene and the high dividend turns out to be more than or equal to \$5.
 - b. After all monitors make their decisions, the choice of one of the three monitors will be randomly selected and implemented in the market.
2. *Changes in Traders' Incentives:* If the chosen monitor picks '*intervention*' all dividends increase by \$2. If the chosen monitor picks '*no intervention*' dividends do not change.

Specific Instructions. Changes relative to the Baseline.

A. Changes in Trader Screens.

1. The upper portion of the trader screen shown below is identical to that shown previously except now a new (blue) row of entries appears. The blue row lists the Dividend, Value of Assets, and Portfolio Value in case the Monitor intervenes.

Period:		Time Remaining:	
2 of 5		107	
Trader:		T2	
Assets:	2	Cash on Hand:	\$16.00
No Intervention			
Dividend	\$4.47	Total Asset Value	\$8.94
		Net Portfolio Value	\$0.00
Intervention			
Dividend	\$6.47	Total Asset Value	\$12.94
		Net Portfolio Value	\$12.94

Notice that the difference between black and blue lines is that the Dividend increases by \$2 per unit in the case of intervention.

Question: When do the BLUE numbers determine dividends? What sort of contract prices would make the blue numbers more likely to be relevant (e.g, high or low)?

2. *End of period.* After trading concludes and monitors make intervention decisions, one of these decisions is implemented in the market. If the selected monitor does not intervene, the no intervention part of the screen is bolded to emphasize the choice, as indicated below. Also Period and Cumulative Earnings appear

Period:	2 of 5	Time Remaining:	0
Trader: T2			
Assets:	4	Cash on Hand:	\$7.92
No Intervention			
Dividend	\$4.47	Total Asset Value	\$17.88
		Period Earnings: Net Portfolio Value	\$9.80
		Cumulative Earnings:	\$15.32
Intervention			
Dividend	\$6.47	Total Asset Value	\$25.88
		Net Portfolio Value	\$17.80

If the selected monitor does intervene, entries in the lower part are bolded, as shown below, and Period and Cumulative Earnings appear.

No Intervention			
Dividend	\$4.47	Total Asset Value	\$17.88
		Portfolio Value	\$9.80
Intervention			
Dividend	\$6.47	Total Asset Value	\$25.88
		Period Earnings: Portfolio Value	\$17.80
		Cumulative Earnings:	\$19.32

Question: Suppose a trader T2 has a 'No Intervention' dividend of \$4.47, and an 'Intervention' dividend of \$6.47, as shown above. Trading starts and she sees contract prices of \$5.23 and \$5.35. If the monitor intervenes, can she increase her portfolio by buying an asset for \$6.00?

Question: Suppose a trader T2 has a 'No Intervention' dividend of \$2.47, and an 'Intervention' dividend of \$4.47. Trading starts and she sees initial contract prices of \$2.73 and \$2.86.

- If the monitor intervenes, can she increase her portfolio by buying an asset for \$3.00?
- Suppose trader T2 considers the possibility that the monitor intervenes to be very high. How much money does a high value trader with a dividend of \$2.47 give up by selling an asset for \$3.00?

B. Changes in the Monitor's Screens. As the screen below shows, in addition to submitting a High Dividend guess, the monitor makes an intervention decision.

Period: <div style="text-align: center; margin-top: 10px;">2 of 5</div>	Time Remaining: 0		
Monitor: M1			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Median Contract</td> </tr> <tr> <td style="padding: 2px 5px; text-align: center;">\$4.40</td> </tr> </table>	Median Contract	\$4.40	<div style="margin-bottom: 10px;"> High Dividend Guess: <input style="width: 80px;" type="text"/> </div> <div> Intervene? <input checked="" type="radio"/> Yes <input checked="" type="radio"/> No </div> <div style="text-align: right; margin-top: 10px;"> <input type="button" value="Confirm"/> </div>
Median Contract			
\$4.40			

The screen below shows that in addition to a return from guessing the high dividend, the monitor earns a return from the intervention decision.

In this example, the Monitor intervened. This decision turned out to be the correct one because the Actual High Dividend was below \$5. Thus the monitor earns \$12 (lab) dollars from her intervention decision. The intervention part of Monitor earnings would be \$0 had she chosen not to intervene in this case.

High Dividend Guess:	\$4.41														
Intervene?	<input checked="" type="radio"/> Yes <input checked="" type="radio"/> No														
<table style="width: 100%;"> <tr> <td colspan="2">High Dividend</td> </tr> <tr> <td style="padding-right: 20px;">Your Guess:</td> <td style="text-align: right;">\$4.41</td> </tr> <tr> <td>Actual:</td> <td style="text-align: right;">\$4.47</td> </tr> <tr> <td>Guess Earnings:</td> <td style="text-align: right;">\$3.00</td> </tr> <tr> <td>Intervention Earnings:</td> <td style="text-align: right;"><u>\$12.00</u></td> </tr> <tr> <td>Period Earnings:</td> <td style="text-align: right;">\$15.00</td> </tr> <tr> <td> Cumulative Earnings</td> <td style="text-align: right;"> \$18.00</td> </tr> </table>		High Dividend		Your Guess:	\$4.41	Actual:	\$4.47	Guess Earnings:	\$3.00	Intervention Earnings:	<u>\$12.00</u>	Period Earnings:	\$15.00	 Cumulative Earnings	 \$18.00
High Dividend															
Your Guess:	\$4.41														
Actual:	\$4.47														
Guess Earnings:	\$3.00														
Intervention Earnings:	<u>\$12.00</u>														
Period Earnings:	\$15.00														
 Cumulative Earnings	 \$18.00														

Question: Suppose a Monitor saw a median contract price of \$3.32 in a period. Would a Monitor likely find an intervention to be profitable in this case? Why or Why not?

Question: Suppose a Monitor saw a median contract price of \$5.32 in a period. Would a Monitor likely find an intervention to be profitable in this case? Why or Why not?

Question: Suppose a Monitor saw a median contract price of \$7.32 in a period. Would a Monitor likely find an intervention to be profitable in this case? Why or Why not?

Quiz of Understanding

1. Suppose a Trader is given a dividend of \$4.37. What is the maximum possible value of that unit to the Trader?
2. Consider a period where the high dividend value is \$2.63. In this case
 - a. What trading prices might a monitor observe?
 - b. What could the monitor infer from contract prices about intervention? Why?
 - c. Suppose a trader with a high dividend value sees another trader offering to sell an asset for \$3.20. Could the trader increase her portfolio value by buying this unit? Is this likely? Why or Why Not?
3. Consider a period where the high dividend value is \$7.89. In this case
 - a. What median contract prices might a monitor observe?
 - b. What could the monitor infer from these prices about intervention? Why?
 - c. Suppose a trader with a high dividend value sees another trader offering to sell an asset for \$9.00. Could the trader increase her portfolio value by buying this unit? Is this likely? Why or Why Not?
4. Suppose a monitor decides to intervene, but the high dividend turns out to be \$5.18.
 - a. How much do traders with high dividend values earn from each asset?
 - b. How much do traders with low dividends earn from each asset?
 - c. What does the monitor earn from her decision to intervene?

Final Details

1. There will be 15 periods in this treatment. At the conclusion of this treatment the experiment will end, and you will be paid.
2. Your earnings will be the sum of your appearance fee, your earnings from the first part and your earnings from this second part.
3. Are there any further questions? If not, we will begin. Again, thank you for your participation!

Summary Supplement

Positive Corrective Action

Traders: Make money by buying and selling assets.

-To increase portfolio value,

Buy cheaply (at prices below the dividend)

Sell dearly (at prices above the dividend)

Dividends:

6 Traders have the High Dividend

4 Traders have the Low Dividend (60¢ below the High Dividend)

If the selected monitor intervenes, ALL Dividend values increase by \$2.00.

Monitors: Make money by guessing the High Dividend and by making an intervention decision.

Earnings from guessing the high dividend:

Guess Accuracy	Earnings (in lab dollars)
Within 20¢	\$ 3.00
Within 50¢	\$ 1.00
More than 50¢	\$ 0.00

Earnings from Intervention are \$12 from the correct intervention decision. That is,

- a) Intervening when the high dividend is below \$5, and
- b) Not Intervening when the high dividend is greater than or equal to \$5.

Negative Corrective Action Treatment

(To be conducted after 5 periods in the Baseline treatment).

Introduction: We now modify the market in one respect: in addition to guessing the high dividend each period, the monitors also make a decision to *intervene* or to *not intervene*.

1. *Changes in Monitors' Incentives:*
 - a. Monitors will now earn \$6.00 (lab) from their intervention decision if
 - they decide to intervene and the high dividend (before intervention) turns out to be less than \$5.
 - they decide to *not* intervene and the high dividend turns out to be more than or equal to \$5.
 - b. After all monitors make their decisions, the choice of one of the three monitors will be randomly selected and implemented in the market.
2. *Changes in Traders' Incentives:* If the chosen monitor picks '*intervention*' all dividends fall by \$2. If the chosen monitor picks '*no intervention*' dividends do not change.

Specific Instructions. Changes relative to the Baseline.

A. Changes in Trader Screens.

1. The upper portion of the trader screen shown below is identical to that shown previously except now a new (blue) row of entries appears. The blue row lists the Dividend, Value of Assets, and Portfolio Value in case the Monitor intervenes.

Period:		Time Remaining:	
2 of 5		107	
Trader:		T2	
Assets:	2	Cash on Hand:	\$16.00
No Intervention			
Dividend	\$4.47	Total Asset Value	\$8.94
		Net Portfolio Value	\$0.00
Intervention			
Dividend	\$2.47	Total Asset Value	\$4.94
		Net Portfolio Value	\$4.94

Notice that the difference between black and blue lines is that the Dividend increases by \$2 per unit in the case of intervention.

Question: When do the BLUE numbers determine dividends? What sort of contract prices should make the BLUE numbers more likely to be relevant (e.g., high or low)?

2. *End of period.* After trading concludes and monitors make intervention decisions, one of these decisions is implemented in the market. If the selected monitor does not intervene, the no intervention part of the screen is bolded to emphasize the choice, as indicated below. Also Period and Cumulative Earnings appear.

Period: 2 of 5		Time Remaining: 0	
Trader:		T2	
Assets:	4	Cash on Hand:	\$7.32
No Intervention			
Dividend	\$4.47	Total Asset Value	\$17.88
		Period Earnings: Net Portfolio Value	\$9.20
		Cumulative Earnings:	\$15.32
Intervention			
Dividend	\$2.47	Total Asset Value	\$9.88
		Net Portfolio Value	\$1.20

If the selected monitor does intervene, entries in the lower part are bolded, as shown below, and Period and Cumulative Earnings appear.

Assets:	4	Cash on Hand:	\$7.32
No Intervention			
Redemption Value	\$4.47		
Total Asset Value	\$17.88	Portfolio Value	\$9.20
Intervention			
Dividend	\$2.47	Total Asset Value	\$9.88
		Period Earnings: Portfolio Value	\$1.20
		Cumulative Earnings:	\$7.32

Question: Suppose a trader T2 has a 'No Intervention' dividend of \$4.47, and an 'Intervention' dividend of \$2.47 as shown above. Trading starts and she sees contract prices of \$4.25 and \$4.20. If she expects the monitor to intervene, would she increase her portfolio by selling an asset for \$4.10?

Question: Suppose a trader T2 has a 'No Intervention' dividend of \$5.47, and an 'Intervention' dividend of \$3.47. Trading starts and she sees initial contract prices of \$5.24 and \$5.20.

- If she expects the monitor to intervene, can she increase her portfolio by selling an asset for \$4.90?
- Suppose trader T2 considers the possibility that the monitor intervenes to be quite high. How much money does a high value trader with a pre-intervention dividend \$4.47 give up by buying an asset for \$3.00?

B. Changes in the Monitor's Screens. As the screen below shows, in addition to submitting a High Dividend guess, the monitor makes an intervention decision.

Period: 2 of 5		Time Remaining: 0	
Monitor: M1			
Median Contract	High Dividend Guess: <input style="width: 80%;" type="text"/>		
\$4.40	Intervene? <input checked="" type="radio"/> Yes <input checked="" type="radio"/> No		
<input type="button" value="Confirm"/>			

The screen below shows that in addition to a return from guessing the high dividend, the monitor earns a return from the intervention decision.

In this example, the Monitor intervened. This decision turned out to be the correct one because the Actual High Dividend was below \$5. Thus the monitor earns \$12 (lab) dollars from her intervention decision. The intervention part of Monitor earnings would be \$0 had she chosen not to intervene in this case.

High Dividend Guess:	\$4.41														
Intervene?	<input checked="" type="radio"/> Yes <input checked="" type="radio"/> No														
<table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">High Dividend</td> </tr> <tr> <td style="padding-left: 20px;">Your Guess:</td> <td style="text-align: right;">\$4.41</td> </tr> <tr> <td style="padding-left: 20px;">Actual:</td> <td style="text-align: right;">\$4.47</td> </tr> <tr> <td style="padding-left: 20px;">Guess Earnings:</td> <td style="text-align: right;">\$3.00</td> </tr> <tr> <td style="padding-left: 20px;">Intervention Earnings:</td> <td style="text-align: right;"><u>\$12.00</u></td> </tr> <tr> <td style="padding-left: 20px;">Period Earnings:</td> <td style="text-align: right;">\$15.00</td> </tr> <tr> <td style="padding-left: 20px;">Cumulative Earnings</td> <td style="text-align: right;">\$18.00</td> </tr> </table>		High Dividend		Your Guess:	\$4.41	Actual:	\$4.47	Guess Earnings:	\$3.00	Intervention Earnings:	<u>\$12.00</u>	Period Earnings:	\$15.00	Cumulative Earnings	\$18.00
High Dividend															
Your Guess:	\$4.41														
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Question: Suppose a Monitor saw a median contract price of \$3.32 in a period. Would a Monitor likely find an intervention to be profitable in this case? Why or Why not?

Question: Suppose a Monitor saw a median contract price of \$5.32 in a period. Would a Monitor likely find an intervention to be profitable in this case? Why or Why not?

Question: Suppose a Monitor saw a median contract price of \$7.32 in a period. Would a Monitor likely find an intervention to be profitable in this case? Why or Why not?

Quiz of Understanding

1. Suppose a Trader is given a dividend of \$4.37. What is the maximum possible value of that unit to the Trader?
2. Consider a period where the high dividend value is \$2.63. In this case
 - a. What trading prices might a monitor observe?
 - b. What could the monitor infer from contract prices about intervention? Why?
 - c. Suppose a trader with a high dividend value sees another trader offering to buy an asset for \$1.80. Could the trader increase her portfolio value by selling this unit? Is this likely? Why or Why Not?
3. Consider a period where the high dividend value is \$7.89. In this case
 - a. What median contract prices might a monitor observe?
 - b. What could the monitor infer from these prices about intervention? Why?
 - c. Suppose a trader with a high dividend value sees another trader offering to buy an asset for \$7.00. Could the trader increase her portfolio value by selling this unit? Is this likely? Why or Why Not?
4. Suppose a monitor decides to intervene, but the high dividend turns out to be \$5.18.
 - a. How much do traders with high dividend values earn from each asset?
 - b. How much do traders with low dividends earn from each asset?
 - c. What does the monitor earn from her decision to intervene?

Final Details

1. There will be 15 periods in this treatment. At the conclusion of this treatment the experiment will end, and you will be paid.
2. Your earnings will be the sum of your appearance fee, your earnings from the first part and your earnings from this second part.
3. Are there any further questions? If not, we will begin. Again, thank you for your participation!

Summary Supplement

Negative Corrective Action

Traders: Make money by buying and selling assets.

-To increase portfolio value,

Buy cheaply (at prices below the dividend)

Sell dearly (at prices above the dividend)

Dividends:

6 Traders have the High Dividend

4 Traders have the Low Dividend (60¢ below the High Dividend)

If the selected monitor intervenes, ALL Dividend values fall by \$2.00.

Monitors: Make money by guessing the High Dividend and by making an intervention decision.

Earnings from guessing the high dividend:

Guess Accuracy	Earnings (in lab dollars)
Within 20¢	\$ 3.00
Within 50¢	\$ 1.00
More than 50¢	\$ 0.00

Earnings from Intervention are \$12 from the correct intervention decision. That is,

- a) Intervening when the high dividend is below \$5, and
- b) Not Intervening when the high dividend is greater than or equal to \$5.

Positive Corrective Action Treatment with Prediction Market

(To be conducted after 5 periods in the PCA Treatment).

Introduction: We now modify the positive correction action treatment in one respect: Prior to the commencement of each trading period, traders will exchange ‘Intervention Likelihood Tickets’, the price of which will be publicly displayed to both traders and to the monitors. We describe this change below.

1. *Changes for Traders:* At the beginning of each period, each trader will be given one Intervention Likelihood Ticket (‘ILT’). At the end of the period this ticket is worth \$1 if the monitor intervenes and \$0 otherwise. Traders will be given an opportunity to buy another ticket or to sell their ticket.

2. *Changes for Monitors.* Monitors earn profits by guessing the high fundamental and by making intervention decisions, just as they did previously. Now, however, in addition to the median of all contract prices, Monitors are told the market price for ILT’s. ILT ticket prices should reflect traders’ perceptions at the beginning of the period that an intervention will occur.

- If traders believe that intervention is very likely, the market price for ILT’s should be close to \$1.00, because the tickets are worth \$1 if the selected monitor intervenes.
- If traders believe that intervention is very unlikely, ILT ticket prices should be close to \$0.00, because the tickets are worth \$0 if the selected monitor does not intervene.

Specific Instructions. Changes relative to the PCA treatment.

A. Changes in Trader Screens.

1. Prior to commencing asset trading, traders will be shown their dividend for the period without an intervention (in black lettering) and with intervention (in blue lettering). Given only this information traders must submit a *maximum ILT bid*, that is the most she would pay to buy a ticket from another trader and a *minimum ILT offer*, or the least she would accept to sell her ticket to another trader. *The boxes at the lower right part of the below screen shows where traders enter ILT bids and offers.*

<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> Period: 2 of 5 </div> <div style="text-align: right; margin-bottom: 5px;">Trader: T2</div> <div style="display: flex; justify-content: space-between;"> Assets: 2 <div style="border: 1px solid black; padding: 2px;">No Intervention</div> </div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"> Dividend \$4.47 </div> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Intervention</div> <div style="border: 1px solid black; padding: 2px;"> Dividend \$6.47 </div> </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> Time Remaining: 110 </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> ILT Price: ILT Qty. </div> <div style="border: 1px solid black; padding: 5px;"> <div style="text-align: center; color: red; font-weight: bold;">Intervention Likelihood Tickets</div> <div style="display: flex; justify-content: space-between;"> ILT Qty. 1 <div style="border: 1px solid black; width: 100px; height: 20px; margin-top: 10px;"></div> </div> <div style="margin-top: 5px;"> (Most you would pay for another ILT Max. bid: </div> <div style="margin-top: 5px;"> (Least you would accept to sell your ILT) Min. offer: </div> <div style="margin-top: 10px; color: blue;"> Submit a maximum bid and a minimum offer. Then press ENTER </div> </div>
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The *maximum bid* is the most one trader would pay to buy a ticket from another trader. Since the ticket is worth \$1.00 (in the case that the monitor intervenes) your bid may not exceed \$1.00. Funds to purchase tickets are taken from each trader's working capital.

The *minimum offer* is the least a trader would accept to sell her ticket to another trader. The trader's offer must be at least as great as her bid, since she cannot sell a unit to herself.

2. Determining ILT Sales and the ILT Price. Once all traders have entered ticket bids and offers a 'crossing' occurs. The highest bid is matched with the lowest offer, the second highest bid is matched with the second lowest offer, and so on for all units where the bid exceeds the offer. Via this process *ILT sales quantities* and an *ILT price* are determined.

ILT Sales Quantity: All tickets for which the bid exceeds the offer will trade at a common price.

ILT Price: The ILT price is halfway between the lowest matched bid and the highest matched offer. If the highest bid is less than the lowest ask, no trades occur. In this case, the ILT price is halfway between the highest bid and the lowest ask.

After the crossing of ILT bids and offers, trading begins, as before. The only difference is that the 'ILT price' and 'ILT quantity' entries now appear below the 'time remaining' heading in the upper right portion of the screen.

		Time Remaining: 107	
		ILT Price: \$0.83	ILT Qty 1
Trader:	T2		

3. Interpreting ILT Prices

- If a trader thinks that a monitor is very likely to intervene, the chances are very high that the ticket will be worth one dollar at the end of the period. In this case, a trader would be losing money when selling her ticket much below \$1, and would be making money when buying for anything less than a dollar
- If a trader thinks that a monitor is very unlikely to intervene, the chances are very low that the ticket will be worth one dollar at the end of the period. In this case, a trader would be losing money when buying at price much above \$0, and would be making money when selling for few cents above \$0.
- If a trader thinks that the likelihood of an intervention is somewhere between very low and very high, she can maximize her expected earnings with intermediate ticket bids and asks. For example, if she thinks that chances of an intervention are 50%, then she would maximize her expected earnings by offering to sell her ILT for something above 50¢ and by bidding something less than 50¢ for another traders' ticket.

- Generally, ILT bids and offers reflect each trader's assessment of the likelihood of an intervention. For this reason, the market price of ILT's reflect the group's opinion about the likelihood of an intervention after the close of trade for the period.
- *Some ILT Practice Examples.* (Note for reviewers: Details of this practice appear on the next page)
 - o Suppose that at the start of a market period you see a market fundamental of \$2.47 without an intervention. On the provided paper slip, enter a minimum bid and a maximum offer for your ILT. *Do This now.* The monitor will use your bids and offers to show you how ILT prices and quantities are determined.
 - o Now we'll repeat the process, but assume you see a market fundamental of \$6.63 (without an intervention). Please record your bids and offers. The monitor will again use your bids and to determine sample ILT prices and quantities.

A Final comment on ILT's: After the exchange of tickets, asset unit trading commences, exactly as before. The only other change occurs at the end of the period after trading closes.

B. Changes in the Monitor's Screens. As the screen below shows, the monitor both makes an intervention decision and makes an intervention decision as before. Notice now, however, that in addition to the Median contract price, the monitor also observes the ILT price. The ILT price of \$0.83 suggests that traders' consider an intervention to be very likely this period.

Period: 2 of 5		Time Remaining	
Monitor: M1			
Median Contract	\$4.40	High Dividend Guess:	<input type="text"/>
ILT Price	\$0.83	Intervene?	<input checked="" type="radio"/> Yes <input checked="" type="radio"/> No
			<input type="button" value="Confirm"/>

C. Practice with an ILT Market.

Question: Suppose a Monitor saw a median contract price of \$4.32 in a period and an ILT price of 87¢. Would a Monitor likely find an intervention to be profitable in this case? Why or Why not?

Question: Suppose a Monitor saw a median contract price of \$7.32 in a period and an ILT price of 7¢. Would a Monitor likely find an intervention to be profitable in this case? Why or Why not?

Question: Suppose a Monitor saw a median contract price of \$5.12 in a period and an ILT price of 83¢. Would a Monitor likely find an intervention to be profitable in this case? Why or Why not? How would matters change if the ILT price was 15¢?

[Note for reviewers. Practice with the ILT market proceeded as follows. First, participants were each handed the following slips.

ILT Practice Sheet

Maximum Bid _____

Minimum Offer _____

Checks;

1) Maximum Bid less than Minimum Offer _____

2) Minimum Offer less than \$1.00 _____

Then they were read one of the fundamental values on the preceding page and asked to write down ILT bids and offers. Once all traders had finished with their sample decisions, the monitor elicited bid and offer information from 4 or 5 traders and inserted them into a spreadsheet displayed on a screen to all participants. Maximum Bids were ranked from highest to lowest, Minimum offers were ranked from lowest to highest, a price was determined and exchanges were announced.]

Quiz of Understanding

1. Consider a period where the high dividend value is \$2.63. In this case
 - a. What sort of ILT price might a monitor observe in this period?
 - b. What could the monitor infer from the ILT price and the median contract price about intervention? Why?
3. Consider a period where the high dividend value is \$7.89. In this case
 - a. What sort of ILT price might a monitor observe in this period?
 - b. What could the monitor infer from the ILT price and the median contract price about intervention? Why?

Final Details

4. There will be 10 periods in this treatment. At the conclusion of this treatment the experiment will end, and you will be paid.
5. Your earnings will be the sum of your appearance fee, your earnings from the first part, your earnings from the second part, and your earnings from this third part.
6. Are there any further questions? If not, we will begin. Again, thank you for your participation!

Summary Supplement

Positive Corrective Action with Prediction Market.

Traders: Make money by buying and selling assets and by buying and selling ILT tickets.

-To increase portfolio value with assets,

Buy cheaply (at prices below the dividend)

Sell dearly (at prices above the dividend)

Dividends:

6 Traders have the High Dividend

4 Traders have the Low Dividend (60¢ below the High Dividend)

If the selected monitor intervenes, ALL Dividend values increase by \$2.00.

- ILT tickets are worth \$1.00 at the end for the period if the monitor intervenes and \$0.00 if the monitor does not intervene.

Monitors: Make money by guessing the High Dividend and by making an intervention decision.

- Earnings from guessing the high dividend:

Guess Accuracy	Earnings (in lab dollars)
Within 20¢	\$ 3.00
Within 50¢	\$ 1.00
More than 50¢	\$ 0.00

- Earnings from Intervention are \$12 from the correct intervention decision. That is,
 - c) Intervening when the high dividend is below \$5, and
 - d) Not Intervening when the high dividend is greater than or equal to \$5.

When making intervention decisions, Monitors see both the median price of assets as well as the market-clearing ILT price.

Negative Corrective Action Treatment with Prediction Market

(To be conducted after 5 periods in the NCA Treatment).

Introduction: We now modify the negative correction action treatment in one respect: Prior to the commencement of each trading period, traders will exchange ‘Intervention Likelihood Tickets’, the price of which will be publicly displayed to both traders and to the monitors. We describe this change below.

1. *Changes for Traders:* At the beginning of each period, each trader will be given one Intervention Likelihood Ticket (‘ILT’). At the end of the period this ticket is worth \$1 if the monitor intervenes and \$0 otherwise. Traders will be given an opportunity to buy another ticket or to sell their ticket.

2. *Changes for Monitors.* Monitors earn profits by guessing the high fundamental and by making intervention decisions, just as they did previously. Now, however, in addition to the median of all contract prices, Monitors are told the market price for ILT’s. ILT ticket prices should reflect traders’ perceptions at the beginning of the period that an intervention will occur.

- If traders believe that intervention is very likely, the market price for ILT’s should be close to \$1.00, because the tickets are worth \$1 if the selected monitor intervenes.
- If traders believe that intervention is very unlikely, ILT ticket prices should be close to \$0.00, because the tickets are worth \$0 if the selected monitor does not intervene.

Specific Instructions. Changes relative to the PCA treatment.

A. Changes in Trader Screens.

1. Prior to commencing asset trading, traders will be shown their dividend for the period without an intervention (in black lettering) and with intervention (in blue lettering). Given only this information traders must submit a *maximum ILT bid*, that is the most she would pay to buy a ticket from another trader and a *minimum ILT offer*, or the least she would accept to sell her ticket to another trader. *The boxes at the lower right part of the below screen shows where traders enter ILT bids and offers.*

Period: 2 of 5	Time Remaining: 110
Trader: T2	ILT Price: ILT Qty.
Assets: 2	Intervention Likelihood Tickets
No Intervention	ILT Qty. 1
Dividend \$4.47	(Most you would pay for another ILT)
Intervention	Max. bid: <input style="width: 50px;" type="text"/>
Dividend \$2.47	(Least you would accept to sell your ILT)
	Min. offer: <input style="width: 50px;" type="text"/>
	Submit a maximum bid and a minimum offer. Then press ENTER

: The *maximum bid* is the most one trader would pay to buy a ticket from another trader. Since the ticket is worth \$1.00 (in the case that the monitor intervenes) your bid may not exceed \$1.00. Funds to purchase tickets are taken from each trader's working capital.

The *minimum offer* is the least a trader would accept to sell her ticket to another trader. The trader's offer must be at least as great as her bid, since she cannot sell a unit to herself.

2. *Determining ILT Sales and the ILT Price.* Once all traders have entered ticket bids and offers a 'crossing' occurs. The highest bid is matched with the lowest offer, the second highest bid is matched with the second lowest offer, and so on for all units where the bid exceeds the offer. Via this process *ILT sales quantities* and an *ILT price* are determined.

ILT Sales Quantity: All tickets for which the bid exceeds the offer will trade at a common price.

ILT Price: The ILT price is halfway between the lowest matched bid and the highest matched offer. If the highest bid is less than the lowest ask, no trades occur. In this case, the ILT price is halfway between the highest bid and the lowest ask.

After the crossing of ILT bids and offers, trading begins, as before. The only difference is that the 'ILT prices' and 'ILT quantity' entries now appear below the 'time remaining' heading in the upper right portion of the screen.

		Time Remaining: 107	
		ILT Price: \$0.83	ILT Qty 1
Trader:	T2		

3. Interpreting ILT Prices

- If a trader thinks that a monitor is very likely to intervene, the chances are very high that the ticket will be worth one dollar at the end of the period. In this case, a trader would be losing money when selling her ticket much below \$1, and would be making money when buying for anything less than a dollar
- If a trader thinks that a monitor is very unlikely to intervene, the chances are very low that the ticket will be worth one dollar at the end of the period. In this case, a trader would be losing money when buying at price much above \$0, and would be making money when selling for few cents above \$0.
- If a trader thinks that the likelihood of an intervention is somewhere between very low and very high, she can maximize her expected earnings with intermediate ticket bids and asks. For example, if she thinks that chances of an intervention are 50%, then she would maximize her expected earnings by offering to sell her ILT for something above 50¢ and by bidding something less than 50¢ for another traders' ticket.

- Generally, ILT bids and offers reflect each trader's assessment of the likelihood of an intervention. For this reason, the market price of ILT's reflect the group's opinion about the likelihood of an intervention after the close of trade for the period.
- *Some ILT Practice Examples. [See note for reviewers on p. 22 above]*
 - o Suppose that at the start of a market period you see a market fundamental of \$2.47 without an intervention. On the provided paper slip, enter a minimum bid and a maximum offer for your ILT. *Do This now.* The monitor will use your bids and offers to show you how ILT prices and quantities are determined.
 - o Now we'll repeat the process, but assume you see a market fundamental of \$6.63 (without an intervention). Please record your bids and offers. The monitor will again use your bids and to determine sample ILT prices and quantities.

A Final comment on ILT's: After the exchange of tickets, asset unit trading commences, exactly as before. The only other change occurs at the end of the period after trading closes.

B. Changes in the Monitor's Screens. As the screen below shows, the monitor both makes an intervention decision and makes an intervention decision as before. Notice now, however, that in addition to the Median contract price, the monitor also observes the ILT price. The ILT price of \$0.83 suggests that traders' consider an intervention to be very likely this period.

Period:		2 of 5		Time Remaining	
Monitor:		M1			
Median Contract	\$4.40	High Dividend Guess:	<input type="text"/>		
ILT Price	\$0.83	Intervene?	<input checked="" type="radio"/> Yes <input type="radio"/> No		
			<input type="button" value="Confirm"/>		

C. Practice with an ILT Market.

Question: Suppose a Monitor saw a median contract price of \$2.32 in a period and an ILT price of 87¢. Would a Monitor likely find an intervention to be profitable in this case? Why or Why not?

Question: Suppose a Monitor saw a median contract price of \$7.32 in a period and an ILT price of 7¢. Would a Monitor likely find an intervention to be profitable in this case? Why or Why not?

Question: Suppose a Monitor saw a median contract price of \$4.82 in a period and an ILT price of 83¢. Would a Monitor likely find an intervention to be profitable in this case? Why or Why not? How would matters change if the ILT price was 15¢?

Quiz of Understanding

1. Consider a period where the high dividend value is \$2.63. In this case
 - a. What sort of ILT price might a monitor observe in this period?
 - b. What could the monitor infer from the ILT price and the median contract price about intervention? Why?
3. Consider a period where the high dividend value is \$7.89. In this case
 - a. What sort of ILT price might a monitor observe in this period?
 - b. What could the monitor infer from the ILT price and the median contract price about intervention? Why?

Final Details

7. There will be 10 periods in this treatment. At the conclusion of this treatment the experiment will end, and you will be paid.
8. Your earnings will be the sum of your appearance fee, your earnings from the first part, your earnings from the second part, and your earnings from this third part.
9. Are there any further questions? If not, we will begin. Again, thank you for your participation!

Summary Supplement

Negative Corrective Action with Prediction Market.

Traders: Make money by buying and selling assets and by buying and selling ILT tickets.

-To increase portfolio value with assets,

Buy cheaply (at prices below the dividend)

Sell dearly (at prices above the dividend)

Dividends:

6 Traders have the High Dividend

4 Traders have the Low Dividend (60¢ below the High Dividend)

If the selected monitor intervenes, ALL Dividend values decrease by \$2.00.

- ILT tickets are worth \$1.00 at the end for the period if the monitor intervenes and \$0.00 if the monitor does not intervene.

Monitors: Make money by guessing the High Dividend and by making an intervention decision.

- Earnings from guessing the high dividend:

Guess Accuracy	Earnings (in lab dollars)
Within 20¢	\$ 3.00
Within 50¢	\$ 1.00
More than 50¢	\$ 0.00

- Earnings from Intervention are \$12 from the correct intervention decision. That is,
 - e) Intervening when the high dividend is below \$5, and
 - f) Not Intervening when the high dividend is greater than or equal to \$5.

When making intervention decisions, Monitors see both the median price of assets as well as the market-clearing ILT price.

Fixed Rule Positive Corrective Action Treatment

(To be conducted after 5 periods in the Baseline treatment).

Introduction: We now modify the market in one respect: if asset prices are sufficiently low, all dividends will increase by \$2. More specifically, if the *median* price of all trades is less than \$5, an intervention will occur that will increase the dividend for all traders by \$2. Otherwise, the dividend will remain unchanged. The median price is the price that divides evenly the higher and the lower prices.

3. *Changes in Traders' Incentives:* if the *median* price of all trades is less than \$5 all dividends increase by \$2. If the *median* price of all trades is more than \$5 dividends do not change.

Specific Instructions. Changes relative to the Baseline.

A. Changes in Trader Screens.

3. The upper portion of the trader screen shown below is identical to that shown previously except now a new (blue) row of entries appears. The blue row lists the Dividend, Value of Assets, and Portfolio Value in case of an intervention following the close of trade.

Period:		Time Remaining:	
2 of 5		107	
Trader:		T2	
Assets:	2	Cash on Hand:	\$16.00
No Intervention			
Dividend	\$4.47	Total Asset Value	\$8.94
		Net Portfolio Value	\$0.00
Intervention			
Dividend	\$6.47	Total Asset Value	\$12.94
		Net Portfolio Value	\$12.94

Notice that the difference between black and blue lines is that the Dividend increases by \$2 per unit in the case of intervention.

Question: When do the BLUE numbers determine dividends? What sort of contract prices would make the blue numbers more likely to be relevant (e.g, high or low)?

4. *End of period.* After trading concludes the median contract price is determined and displayed on traders' screens. If the median contract price \$5.00 or above it is displayed next to the 'No Intervention' heading and the 'No Intervention' part of the screen is bolded for emphases, as indicated below. Also Period and Cumulative Earnings appear

Assets:	4	Cash on Hand:	\$4.92
Median Price	\$5.82	No Intervention	
Dividend	\$5.47	Total Asset Value	\$21.88
		Period Earnings: Portfolio Value	\$10.80
		Cumulative Earnings:	\$19.32
		Intervention	
Dividend	\$7.47	Total Asset Value	\$29.88
		Period Earnings: Portfolio Value	\$18.80

If the median price is below \$5, entries in the lower part are bolded, as shown below, and Period and Cumulative Earnings appear.

Assets:	4	Cash on Hand:	\$8.42
		No Intervention	
Dividend	\$2.47	Total Asset Value	\$9.88
		Period Earnings: Portfolio Value	\$2.30
Median Price	\$4.38	Intervention	
Dividend	\$4.47	Total Asset Value	\$17.88
		Period Earnings: Portfolio Value	\$10.30
		Cumulative Earnings:	\$19.32

Question: Suppose a trader T2 has a 'No Intervention' dividend of \$5.47, and an 'Intervention' dividend of \$7.47 as shown in the upper of the two displays. Trading starts and she sees contract prices of \$6.23 and \$6.35. Can this trader likely increase her portfolio by buying an asset for \$7.00?

Question: Suppose a trader T2 has a 'No Intervention' dividend of \$2.47, and an 'Intervention' dividend of \$4.47, as shown in the lower of the two displays above. Trading starts and she sees initial contract prices of \$2.73 and \$2.86.

- Can she increase her portfolio by buying an asset for \$3.00?
- Suppose trader T2 considers the possibility that of an intervention to be very high. How much money does a high value trader with a dividend of \$2.47 give up by selling an asset for \$3.00?

Quiz of Understanding

2. Suppose a Trader is given a dividend of \$4.37. What is the maximum possible value of that unit to the Trader?
2. Consider a period where the high dividend value is \$2.63. In this case
 - a. What median contract prices might emerge?
 - b. What is the likelihood of an intervention? Why?
 - c. Suppose a trader with a high dividend value sees another trader offering to sell an asset for \$3.20. Could the trader increase her portfolio value by buying this unit? Is this likely? Why or Why Not?
3. Consider a period where the high dividend value is \$7.89. In this case
 - a. What median contract prices might emerge?
 - b. What is the likelihood of an intervention? Why?
 - c. Suppose a trader with a high dividend value sees another trader offering to sell an asset for \$9.00. Could the trader increase her portfolio value by buying this unit? Is this likely? Why or Why Not?

Final Details

10. There will be 10 periods in this treatment. At the conclusion of this treatment a third treatment will be explained.
11. Your earnings will be the sum of your appearance fee, your earnings from the first part, your earnings from this second part and earnings from a third part to be explained later.
12. Are there any further questions? If not, we will begin. Again, thank you for your participation!

Summary Supplement

Fixed Rule Positive Corrective Action

You make money by buying and selling assets.

-To increase portfolio value,

Buy cheaply (at prices below the dividend)

Sell dearly (at prices above the dividend)

Dividends:

6 Traders have the High Dividend

4 Traders have the Low Dividend (60¢ below the High Dividend)

If the median contract price is below \$5.00 an 'intervention' occurs and all Dividend values increase by \$2.00.

If the median contract price is \$5.00 or more 'intervention' does not occur and the value of all dividends remains unchanged.

Fixed Rule Negative Corrective Action Treatment

(To be conducted after 5 periods in the Baseline treatment).

Introduction: We now modify the market in one respect: if asset prices are sufficiently low, all dividends will fall by \$2. More specifically, if the *median* price of all trades is less than \$5, an intervention will occur that will reduce the dividend for all traders by \$2. Otherwise, the dividend will remain unchanged. The median price is the price that divides evenly the higher and the lower prices.

4. *Changes in Traders' Incentives:* If the *median* price of all trades is less than \$5 all dividends fall by \$2. If the *median* price of all trades is more than \$5 dividends do not change.

Specific Instructions. Changes relative to the Baseline.

A. Changes in Trader Screens.


3. The upper portion of the trader screen shown below is identical to that shown previously except now a new (blue) row of entries appears. The blue row lists the Dividend, Value of Assets, and Portfolio Value in case of an intervention following the close of trade.

Period: 2 of 5		Time Remaining: 107	
Trader: T2			
Assets: 2	Cash on Hand:		\$16.00
No Intervention			
Dividend \$4.47	Total Asset Value		\$8.94
	Net Portfolio Value		\$0.00
Intervention			
Dividend \$2.47	Total Asset Value		\$4.94
	Net Portfolio Value		\$4.94


Notice that the difference between black and blue lines is that the Dividend increases by \$2 per unit in the case of intervention.

Question: When do the BLUE numbers determine dividends? What sort of contract prices would make the blue numbers more likely to be relevant (e.g, high or low)?

2. *End of period.* After trading concludes the median contract price is determined and displayed on traders' screens. If the median contract price \$5.00 or above it is displayed next to the 'No Intervention' heading and the 'No Intervention' part of the screen is bolded for emphases, as indicated below. Also Period and Cumulative Earnings appear

Assets:	4	Cash on Hand:	\$4.92
Median Price  \$5.82 No Intervention			
Dividend	\$5.47	Total Asset Value	\$21.88
		Period Earnings: Portfolio Value	\$10.80
		Cumulative Earnings:	\$19.32
Intervention			
Dividend	\$3.47	Total Asset Value	\$13.88
		Period Earnings: Portfolio Value	\$2.80
	Offer Queue	Contracts	Bid Queue

If the selected monitor does intervene, entries in the lower part are bolded, as shown below, and Period and Cumulative Earnings appear.

Assets:	4	Cash on Hand:	\$8.42
No Intervention			
Dividend	\$4.47	Total Asset Value	\$17.88
		Period Earnings: Portfolio Value	\$10.30
Median Price  \$2.60 Intervention			
Dividend	\$2.47	Total Asset Value	\$9.88
		Period Earnings: Portfolio Value	\$2.30
		Cumulative Earnings:	\$19.32

Question: Suppose a trader T2 has a 'No Intervention' dividend of \$4.47, and an 'Intervention' dividend of \$2.47 as shown immediately above. Trading starts and she sees contract prices of \$4.25 and \$4.20. Can this trader likely increase her portfolio by selling an asset for \$4.10?

Question: Suppose a trader T2 has a 'No Intervention' dividend of \$5.47, and an 'Intervention' dividend of \$3.47, as shown in the top panel above. Trading starts and she sees initial contract prices of \$5.24 and \$5.20.

- Can she increase her portfolio by selling an asset for \$4.90?
- Suppose trader T2 considers the possibility that the monitor intervenes to be quite high. How much money does a high value trader with a pre-intervention dividend \$4.47 give up by buying an asset for \$3.00?

Quiz of Understanding

1. Suppose a Trader is given a dividend of \$4.37. What is the maximum possible value of that unit to the Trader?
2. Consider a period where the high dividend value is \$2.63. In this case
 - a. What median contract prices might emerge?
 - b. What is the likelihood of an intervention? Why?
 - c. Suppose a trader with a high dividend value sees another trader offering to buy an asset for \$1.80. Could the trader increase her portfolio value by selling this unit? Is this likely? Why or Why Not?
3. Consider a period where the high dividend value is \$7.89. In this case
 - a. What median contract prices might emerge?
 - b. What is the likelihood of an intervention? Why?
 - c. Suppose a trader with a high dividend value sees another trader offering to buy an asset for \$7.00. Could the trader increase her portfolio value by selling this unit? Is this likely? Why or Why Not?

Final Details

1. There will be 5 periods in this treatment. At the conclusion of this treatment a third treatment will be explained.
2. Your earnings will be the sum of your appearance fee, your earnings from the first part, your earnings from this second part and earnings from a third part to be explained later.
3. Are there any further questions? If not, we will begin. Again, thank you for your participation!

Summary Supplement

Negative Corrective Action

You make money by buying and selling assets.

-To increase portfolio value,

Buy cheaply (at prices below the dividend)

Sell dearly (at prices above the dividend)

Dividends:

6 Traders have the High Dividend

4 Traders have the Low Dividend (60¢ below the High Dividend)

If the median contract price is below \$5.00 an 'intervention' occurs and all Dividend values decrease by \$2.00.

If the median contract price is \$5.00 or more 'intervention' does not occur and the value of all dividends remains unchanged.