

## Appendix D: results for session without fundamentalist traders

In this appendix we briefly present some quantitative results on the extra session without fundamentalist traders, which was described in Section 5.5. Average earnings in these four groups were 32664 points. The sample mean and sample average of realized prices are represented in the following table.

| Mean and variance |                |                 |
|-------------------|----------------|-----------------|
| 1-51              |                |                 |
|                   | sample average | sample variance |
| group 11          | 54.79          | 807.27          |
| group 12          | 56.09          | 544.15          |
| group 13          | 56.37          | 588.41          |
| group 14          | 58.67          | 20.75           |

Table 1: Measures for individual prediction strategies

The next table quantifies the coordination on a common prediction strategy.

| group | avg. individual error<br>$\frac{1}{240} \sum_{h,t} (p_{ht}^e - p_t)^2$ | avg. dispersion error<br>$\frac{1}{240} \sum_{h,t} (p_{ht}^e - \bar{p}_t^e)^2$ | avg. common error<br>$\frac{1}{40} \sum_t (\bar{p}_t^e - p_t)^2$ |
|-------|--|--|--|
| 11    | 431.20   | 68.47 (16%)  | 362.74 (84%)   |
| 12    | 391.00   | 67.42 (17%)  | 323.58 (83%)   |
| 13    | 453.90   | 132.32 (29%)   | 321.59 (71%)   |
| 14    | 2.01   | 0.76 (38%)   | 1.25 (62%)   |

Table 2: Measures for individual prediction strategies

Again the largest part of the forecast error can be attributed to the average common error (on average 75%). We also estimated individual prediction strategies. The estimated relationships have the following general structure

$$p_{h,t+1}^e = \alpha_h + \sum_{i=1}^4 \beta_{hi} p_{t-i} + \sum_{j=0}^3 \gamma_{hj} p_{ht-j}^e.$$

This was estimated on data from the experiment from  $t = 11$  to  $t = 51$ . The first 10 periods are neglected in order to allow for some coordination or learning. Table Table 3 presents the estimation results. The constant term

is always part of the regression although sometimes it is not significantly different from 0. These cases are indicated with a \*. We tried to fit the simplest model, so that there is no serial correlation in the residuals at the 5% significance level.

|          |          |           |           |           |           |            |            |       |
|----------|----------|-----------|-----------|-----------|-----------|------------|------------|-------|
| group 11 | $\alpha$ | $\beta_1$ | $\beta_2$ | $\beta_3$ | $\beta_4$ | $\gamma_0$ | $\gamma_1$ | $R^2$ |
| part. 1  | 10.02    | 3.29      | -1.07     |           |           | -1.41      |            | 0.89  |
| part. 2  | 14.59    | 1.71      | -1.01     |           |           |            |            | 0.82  |
| part. 3  | 8.40*    |           | 0.57      |           |           | 1.72       | -1.48      | 0.88  |
| part. 4  | 3.14*    | 1.72      | -1.30     | 0.50      |           |            |            | 0.90  |
| part. 5  | 8.39     | 1.63      | -0.77     |           |           |            |            | 0.92  |
| part. 6  | 12.98    | 1.60      | -0.84     |           |           |            |            | 0.80  |
| group 12 | $\alpha$ | $\beta_1$ | $\beta_2$ | $\beta_3$ | $\beta_4$ | $\gamma_0$ | $\gamma_1$ | $R^2$ |
| part. 1  | 17.99    | 1.61      | -0.94     |           |           |            |            | 0.81  |
| part. 2  | 17.58    | 0.54      |           |           |           | 0.77       | -0.63      | 0.77  |
| part. 3  | 17.95    | 1.31      | -0.61     |           |           |            |            | 0.74  |
| part. 4  | 6.81*    | 1.53      | -1.16     | 0.48      |           |            |            | 0.80  |
| part. 5  | 26.04    | 1.58      | -1.90     | 1.58      | -0.74     |            |            | 0.60  |
| part. 6  | 11.15*   | 1.75      | -1.57     | 0.63      |           |            |            | 0.81  |
| group 13 | $\alpha$ | $\beta_1$ | $\beta_2$ | $\beta_3$ | $\beta_4$ | $\gamma_0$ | $\gamma_1$ | $R^2$ |
| part. 1  | 17.43    | 1.79      |           |           |           |            | -1.04      | 0.71  |
| part. 2  | 9.74     | 1.41      |           |           |           |            | -0.56      | 0.88  |
| part. 3  | 22.54    | 0.47      |           |           |           | 0.66       | -0.62      | 0.56  |
| part. 4  | 21.53    | 1.34      | -0.67     |           |           |            |            | 0.75  |
| part. 5  | 17.47    | 1.56      | -0.88     |           |           |            |            | 0.74  |
| part. 6  | 8.14     | 1.57      | -0.72     |           |           |            |            | 0.92  |
| group 14 | $\alpha$ | $\beta_1$ | $\beta_2$ | $\beta_3$ | $\beta_4$ | $\gamma_0$ | $\gamma_1$ | $R^2$ |
| part. 1  | -4.98    | 1.73      | -0.65     |           |           |            |            | 0.98  |
| part. 2  | -1.37*   | 1.77      | -0.74     |           |           |            |            | 0.99  |
| part. 3  | 1.63*    | 1.80      | -0.83     |           |           |            |            | 0.98  |
| part. 4  | 3.33*    | 2.10      | -1.15     |           |           |            |            | 0.82  |
| part. 5  | 2.67*    | 1.80      | -1.23     |           |           | 0.38       |            | 0.97  |
| part. 6  | 1.06*    | 0.80      |           |           |           | 0.19       |            | 0.98  |

Table 3: Estimated individual prediction strategies for groups 11 to 14

Remarks:

1. The estimates indicated by a \* are not significantly different from 0 at the 5% level.
2. Group 14: for participant 6 the null hypothesis of adaptive expectations cannot be rejected.

|          | $AR(1)$ | $AR(2)$ | $AR(3)$ | Adaptive | Other             |
|----------|---------|---------|---------|----------|-------------------|
| group 11 | 0       | 3       | 1       | 0        | $B(2,0), B(2,1)$  |
| group 12 | 0       | 2       | 2       | 0        | $AR(4), B(1,1)$   |
| group 13 | 0       | 3       | 0       | 0        | $3 \times B(1,1)$ |
| group 14 | 0       | 4       | 0       | 1        | $B(2,0)$          |
| total    | 0       | 12      | 3       | 1        | 8                 |

Table 4: Estimation results for individual prediction strategies

The following table summarizes the results.

Note that in each group a majority of the agents uses an autoregressive predictor. In fact, exactly two thirds of the prediction strategies can be described by an  $AR(2)$ ,  $AR(3)$  or  $AR(4)$  rule.