necessary and sufficient conditions for the marginal contribution of a market participant to price informativeness to be positive. At the heart of the conditions lies interdependence of values: whether and how a new market participant impacts price informativeness depends upon the effect that his participation has on the comovement in values among all traders, measured by the average correlation. Price can become more informative with a new trader even if values become, on average, less aligned in the larger market. Further, while how much traders can learn through market is governed by the average correlation of values, the

2 A Model of Double Auction

that de..nes the values of all traders— a typical feature in many asset-pricing or macro

Often one can identify distinct groups of agents, such that correlation of values among hold for any data-generating process that gives rise to an equicommonal correlation matrix C.

A Sequence of Auctions.

Double Auction. We study double auctions based on the canonical uniform-price mechanism. Traders submit strictly downward-sloping (net) demand schedules, fq ceteris paribus, the class of double auctions that share the same commonality and have

For = 0, the upper bound is de…ned as the limit of (8) as ! 0, i.e., $^{+}(0; ^{2})$ 0. Moreover, in no stochastic process can the average correlation be smaller than the lower bound of[9]

$$( ) = \frac{1}{I \quad 1} = \frac{1}{2} (1$$

and the posterior expectation E(js ; p) can be wo0d(r)11(i)6tst96(e)9(n)-315aos

E(js ; p

Proposition 3 (Aggregation of Private Information) In a small double auction, (The Lack of) Monotonicity in Price Informativeness. We provide general conditions that allow assessment of the marginal impact of a new trader on the informativeness of equilibrium price. To measure price informativeness, we look at how much inference of all pro…les (;) that give rise to price informativeness equal to $^{+}$. When price is perfectly uninformative ($^{+}$ = 0) for any market size , as it is, for instance, in auctions with independent private values (= 0), the 0

from prices need not advance with market size. To assess the extent of ine¢ ciency of learn-in how e¢ ciently they aggregate the information availableninf(a)38ee isortes, In the large auction, price reveals no other information contained in the signals other than i, the residual R

The common value component X represents the comovement of all values in large auctions. From a trader's perspective, its informational content about might vary from

is not zero. Lemma 4 characterizes the inference coe¢ cient c in terms of coe¢ cients .

Lemma 4 fn the linear conditional expectation E (yjs ; p

component. Transmitting "local" information contained in residuals or noise represents the advantage of small auctions over large auctions. The loss of information in large auctions occurs whenever a correlation matrix C producers who submit supply schedules. The solution concept is symmetric linear Bayesian Nash (competitive rational expectations) equilibrium.

A model of oligopolistic industry with I strategic (price-taking) producers, who submit

[12]

Applying the projection theorem and the method of undetermined coe¢ cients, one can …nd the inference coe¢ cients c and c ,

$$c = \frac{1}{1 \quad + \;^2};\qquad (35)$$

$$c = \frac{(2 \quad)}{1 \quad +} \frac{^2}{1 \quad + \;^2}:\qquad (36)$$

Using (29), the equilibrium bid

$$q\ (p) = \frac{1}{(\ + \ )} [c\ E(\ ) + c\ s\ + (1 \quad c\ )\,p]:\qquad (37)$$

In equilibrium, the residual supply of trader i (i.e., a horizontal sum of bids of traders other than i) has the slope $= (1 \quad)(@q\ (p)=@p)$ F11 87 32433 0 Td [( )]TJ ... /F2 11 ... Td [( )]TJ/F5 11 ... Td [(+)]TJ/F2 11 ... /F5 11 ... /F4 11 ... /F2 11 ...

$$q\ (p) = \frac{(\quad c\ )\,c}{(1 \quad c\ )} E(\ )22(+)]$$

/F2 11 9551 7 01 668 088 Td [()]TJ/F4 11 9551 9 3790 Td [()]TJ/F2 11 9551 1 19550 …

Proof 4 Proposition 3 (

where a = ^{2} + ^{2} and b = ^{2}. Its inverse is given by

V

de...ned by

Proof 6 Corollary 1 (Price Informativeness in Large Markets) Using (53), in large markets,

$$\lim_{! 1} {}^{+} = \frac{{}^{2}\ {}^{2}}{(\ {}^{2} + 1)\ \ {}^{2}} : \tag{57}$$

X

and is the same for all equicommonal correlation matrices with commonality