

Stock markets: making a secondary market work

266: Financial Markets and Institutions

Jon Faust

<http://e105.org/e266>

February 14, 2017

► Review

- We've discussed what equities are and broad facts about how equity values behave
- We've discussed models of equity valuation
- And we've discussed how actual values are sometimes hard to account for using our economic models.

► Secondary markets

- Secondary market is where folks go to buy or sell financial instruments already in the hands of the public.

► Secondary markets

- Well-functioning secondary markets are essential to supporting broad holding of any class of securities
stocks, bonds, etc.
- Key feature of well-functioning is being 'highly liquid'

► Definition: liquid market

- A market for a security is liquid if there is usually a well-understood 'fair market price' and you can reliably buy or sell the securities at something close to the fair market price on short notice and at low transactions cost.

► Put simply...

- When folks buy a financial instrument, they want to be confident that they would be able to sell it for a ‘fair’ price and with low transactions costs should they need to do so.
- The less liquid the secondary market, the bigger the expected return premium they will require to hold the instrument.

... the ‘liquidity premium’ we’ve mentioned regularly

► **Liquidity: It’s a matter of degree ...**

- How clear is it what the fair price is? How reliably can I get the fair price? How much better price might I get if I waited an hour or a day?
- All else equal, the lower the liquidity of the secondary market, the lower the price—that is, the higher the expected return.

► **Basic information problems**

- Buyers and sellers are dispersed throughout the economy
- Arms’ length buyers and sellers don’t know how to contact each other
- And neither may be really clear on what the fair value is

► **In short:**

- Me: I’ll sell it to you for \$5.
- You: Wow, that’s low. Maybe I should snap this up. But wait. Maybe he knows something I don’t? I’ll offer \$3.
- This problem arises in stock markets, housing markets, used car markets, ...
... essentially all markets where there is an important degree of uncertainty about the value of the item exchanged.

► **Financial market institutions...**

- Under these conditions, we would expect to get an array of institutions popping up to facilitate the functioning of the secondary market.
- Several varieties of (imperfect) fixes for the problem.
- 1. Experts in providing information about fair value
house value appraisers, **Ratings agencies** for bonds, valuation consultants for antiques, your local auto mechanic
- 2. Folks who stand willing to buy and/or sell at any time
pawn shops, collectors, pickers, **market makers**

► **In the old days: Organized physical exchanges**

- 3. Widely-known physical market places where a high volume of buyers and sellers congregate
Organized flea markets, **stock exchanges**, gun shows, swap meets, Christy's auction house. go

<http://www.christies.com/>

► **Organized physical exchanges**

- The idea is that if a reasonably large group of buyers and sellers have one spot where they tend to congregate, a 'fair price' is likely to emerge for standard competitive reasons

- Of course, more recently we have virtual market places on the web

ebay and a zillion other auction sites

- And many equivalent computerized markets for financial instruments

NASDAQ was the first prominent example of a largely computerized financial market, now all stock markets have a very important electronic side.

► **But still...**

- Most of us have day jobs, and so even if we know that there is a flea market or stock market we could go to in order to sell/buy our item, we don't have the time or specific knowledge to do so.

- Thus, we get agents cropping up who, for a fee, will conduct the transaction in the market.

stock brokers, ebay valet, real estate agents (buyer's and seller's agents) go

<http://sellforme.ebay.com/>

► **Do these institutions solve asymmetric information?**

► **No.**

- There is only one solution to asymmetric information:

The original parties to the trade come to know everything relevant to the trade

- But learning is really hard and really costly

Check your tuition bill.

► **The key to secondary market institutions**

- Market institutions need to raise the likelihood buyers and sellers can get a fair price **without the buyers and sellers ever having to go through the pain and expense of becoming fully informed.**

- You should be realizing: this will rely to a large extent on faith and reputation.

Hmmm. That sounds precarious. . .

► **Scammers being what they are. . .**

- You should expect scammers to proliferate

People who claim to be playing one of the market-facilitating roles, but really are just out to screw folks.

- Bucket shops, fake reviewers on the web, appraisers on the take, colluding market makers, etc.

► **A few bad apples?**

- I am not claiming that these scammers predominate, only that asymmetric information makes room for them

. . . and where there is room, they will appear

- And if they shatter the faith in the market institutions, the flow of equity finance will be much less efficient.

► **So, the government**

- Thus, we get government and private sector institutions to help resolve the scammer problems

Licensing of agents and brokers; fraud laws; bucket shop laws; oversight of organized markets

- SEC,CFTC,ETC.

(that last one is a pun).

► **End of big think, on to particulars**

► **Liquid markets and liquidity providers**

- Above all else, a liquid market requires that at most times there are a large number of potential buyers and sellers willing to trade near whatever happens to be the fair price.
- Businesses pop up that are known as ‘liquidity providers’ or ‘market makers’
- But how do these businesses make money?

► **Liquidity providers and the ‘fair price’**

- In practice, the fair price is two prices, a bid price and an ask price.
- Bid: the price at which you can sell shares to the market
- Ask: the price for which you can buy shares from the market.

► **Bid and ask**

- Bid is always less than the ask
- The spread between is the bid-ask spread.
- The ‘liquidity providers’ buy at the bid price and sell at the ask price
and earn the spread
- And they may also earn some fees for trading from the those running the market.

► **Mechanics of Buying and selling**

► ...

- So let’s suppose we have a place to trade the asset and there are a bunch of liquidity providers, so there is something like a ‘fair’ bid and ask price.
- Let’s get concrete about the process of buying and selling.

► **Buying/selling shares**

► **Step 1: Folks buy and sell shares by placing order with a broker.**

► **Placing an order**

- See the reading
trading basics go
<http://www.sec.gov/investor/alerts/trading101basics.pdf>
- When you place an order with your broker, you can be specific about the quantity transacted or the price, but not both.

► **Standard orders**

- Market order: Buy 5 shares at whatever price you can get
I know I’ll get 5 shares, but I’m not sure what price I’ll pay
- Limit order: Buy 5 shares, but pay no more than \$7.50 per share.
I know the most I’ll pay, but I’ll either get 5 or 0 shares, not sure which.
- Stop order: if the market price falls below \$7.50, sell my 5 shares for whatever you can get
That is, place a market sell order if the price falls below the threshold.
- Here you are not sure if you’ll sell; and if you do, you don’t know how much you’ll sell for

Once the price passes \$7.50, it may move (much) further before your broker can sell.

► **There are other orders**

- I want you to know the buy and sell versions of market, limit, and stop orders.
- See the reading provided.

► **Who cares?**

- When buying and/or selling a stock that is widely traded most of the details about buying and selling don't matter much.

You'll probably get a fair price (that is, if you are scammed it won't be by much)

► **But, see the flash crash.**

- Flash crash: prices dropped precipitously for a few minutes then recovered
- If you had a sell stop order in place, you could have gotten a very bad price for shares that really didn't change value much over a half hour.

► **Aside:: a note about the flash crash**

- Many of the worst trades—the craziest sale prices—in the flash crash were cancelled ex post trades that more than 60 percent below what seemed to be the fair price were 'broken'
- Organized markets have rules, but also much discretion, regarding when to break (cancel) trades that seem 'unfair' in some sense.
- They have these rules to build confidence that folks won't get screwed (very much or very often)

► **Step 2: Broker gets trade executed.**

► **Step 2: Broker gets trade executed**

- Broker can take several routes here
See the reading on trade execution go
<http://www.sec.gov/investor/pubs/tradexec.htm>

► **Obligation to get a good deal**

- Broker has obligation to get you the best price
... highest if you are selling; lowest if you are buying.

- But there may be lots of centers of trading for a given security.
- Q: With all these different routes for execution, how would you (or your broker) know if you are getting the best price?

A: You don't, and neither does your broker

► **NBBO: a partial fix**

- Remember: we want folks to be confident that there is a 'fair price' and that they are getting something close to that.
- SEC requires collecting and reporting of a National Best Bid and Offer (NBBO) across various entities
- Brokers required to provide you a price at least as good as this outcome
- Alternative trading systems (ATSs) are not registered exchanges but required to get you something generally as good as the NBBO

► **Very complicated, but ...**

- The goal here is to convince the broad public that a 'fair price' is established and that when they trade, they'll get something close to that.

► **That wraps up the basics; let's go a bit deeper into the weeds**

► **Some details on where trades get executed**

► **1. Route trade to a 'registered exchange'**

- e.g., NYSE, NASDAQ
full list at (you don't need to know these): go
<http://www.sec.gov/divisions/marketreg/mrexchanges.shtml>

► **2. Internalization**

- Execute the trade within the firm by matching incoming buys and sells.

Allows the firm to capture the bid-ask spread

► **3. Alternatives**

- Route trades to certain market making firms.

firms that offer the same price as that on the organized exchanges

- These firms pay to have orders routed their way
 - b/c these orders (this order flow) might give them a hint as to which way the market is moving.
- ECNs: electronic communications networks
- ECNs match buyers and sellers but are not regulated as exchanges.
 - thus, generally have fewer protections and less transparency
- One example in this category is dark pools.

► **Dark pools**

- Distinguished by the fact that there is very little transparency about the trades
 - Its as if folks are trading in a 'dark' room so they don't really know who they are trading with and they don't know what unfilled orders available to be matched

► **Dark pools: Q. Why? A. Asymmetric info.**

► **Dark pools and large sales**

- Suppose you have an unexpected expense and need to sell a large block of stock.
- If you placed a really big sell order on a public market, execution of the trade would probably depress the price you'd get
- In part, the price fall is because folks suspect that you have negative news about the firm and are dumping it.
 - Try as you might, you can't convince them that your motives have nothing to do with the value of the firm.
- Thus, on conventional markets, brokers split up big trades to minimize their impact.
- In a dark pool, a large sell order can be matched with, perhaps, a bunch of smaller buy orders
- The fact that there has been large sell order is never shown to the market

► **How do ATSS affect the 'fair price' on registered markets?**

► **ATSS/dark pools and price discovery**

- A key feature of market institutions is price discovery
 - 'finding' what folks generally accept to be the fair price.
- If there is a high volume of trades AND most go through organized exchanges, we might hope that that NBBO would be a good representation of 'fair.'
- If more and more of the trading volume shifts to ATSS, the quality of the price discovery on the registered exchanges may diminish

- And then folks won't want to trade on the exchanges, and the price discovery may get worse.
- For example, folks might start trying to systematically scam the NBBO
 - E.g., figuring out when the NBBO bid is 'too high' and selling (or vice versa)
- Currently there is lots of concern about price discovery if trading becomes more fragmented.

▶ **Finally, scams: how can this system be exploited**

▶ **Finally, scams:**

- All of these systems may allow for a certain amount of scamming.

▶ **Problem set**

- Question on the problem set asks you to explore a number of market scandals
- The point is that it is hard to put together a system that reliably delivers the 'fair' price
- And given that much asymmetric information remains, folks have a big incentive to manipulate the price to be a bit less fair.

▶ **A key issue very much unresolved: computerized, high frequency trading.**

▶ **Computerized/High frequency trading**

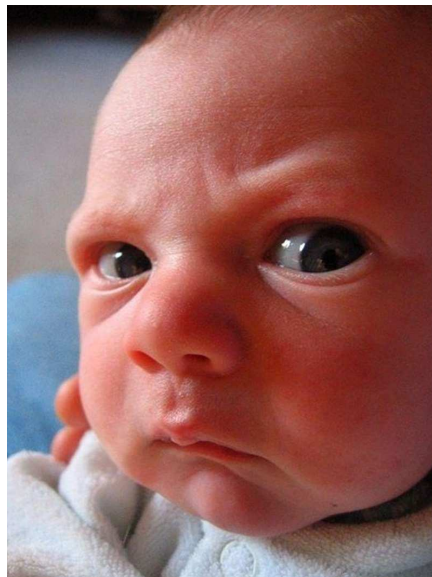
- Computerized trading is where a computer program reacts to market developments and buys and sells based on an computer algorithm.
- These programs can be used to manipulate markets in various ways that would not be possible for human traders
 - e.g., placing and cancelling bids within span of a few milliseconds.
- Many questions about how to regulate this activity by exchanges or through governmental intervention

▶ **So how bad is it?**

▶ **Not this bad**



► But maybe this bad



► More seriously...

► U.S. markets

- Note that U.S. markets are generally viewed as among the best—most liquid, fairest—in the world
- This may be part of the reason that the markets are so large
That is, why market finance is much more prominent than bank finance in the U.S.
- If so, it is because of the particulars of our financial market institutions.