Stock Trading Systems: A Comparison of US and China

- April 30, 2016
- Session 5
- Joel Hasbrouck
  www.stern.nyu.edu/~jhasbrou

1. Regulatory priorities for capital formation and growth.

- The information environment is much more important than the trading conditions.
- “Accounting”, “disclosure” and investor education are more important than market design.

2. Should price limits be symmetric?
Up as well as down?

Volkswagen, October/November, 2008

3. Designated market makers: How can they help limit order markets?

Two BATS books from Wed, Jan 15 2014, about 3pm

Book Viewer BZX BYX

BATS

BAC

Market Quality Statistics

BANK OF AMERICA CORPORATION COM

Orders Accepted	Total Volume
625,378	34,480,757

	TOP OF BOOK		LAST 10 TRADES		
	SHARES	PRICE	TIME	PRICE	SHARES
ASKS	30,004	17.2300	14:59:01	17.1850	100
	34,504	17.2200	14:59:01	17.1800	800
	34,606	17.2100	14:59:01	17.1800	800
	41,208	17.2000	14:59:01	17.1800	100
	42,403	**17.1900**	14:59:01	17.1800	100
BIDS	59,050	**17.1800**	14:59:01	17.1800	200
	42,705	17.1700	14:59:01	17.1800	500
	32,004	17.1600	14:59:01	17.1800	100
	30,904	17.1500	14:59:01	17.1800	100
	26,304	17.1400	14:59:01	17.1800	500

Last updated 14:59:08

Book Viewer BZX BYX

BATS

PRK

Market Quality Statistics

PARK NATL CORP COM

Orders Accepted	Total Volume
5,093	424

	TOP OF BOOK		LAST 10 TRADES		
	SHARES	PRICE	TIME	PRICE	SHARES
ASKS	100	84.92	13:34:20	81.64	100
	100	83.25	10:31:33	81.62	6
	100	82.60	10:31:33	81.75	7
	100	82.00	10:18:14	81.94	100
	100	81.69	10:10:05	81.94	100
BIDS	100	80.95	10:02:28	81.72	11
	100	80.94	09:40:49	81.46	100
	100	80.80			
	100	79.79			
	100	77.82			

Last updated 14:48:37

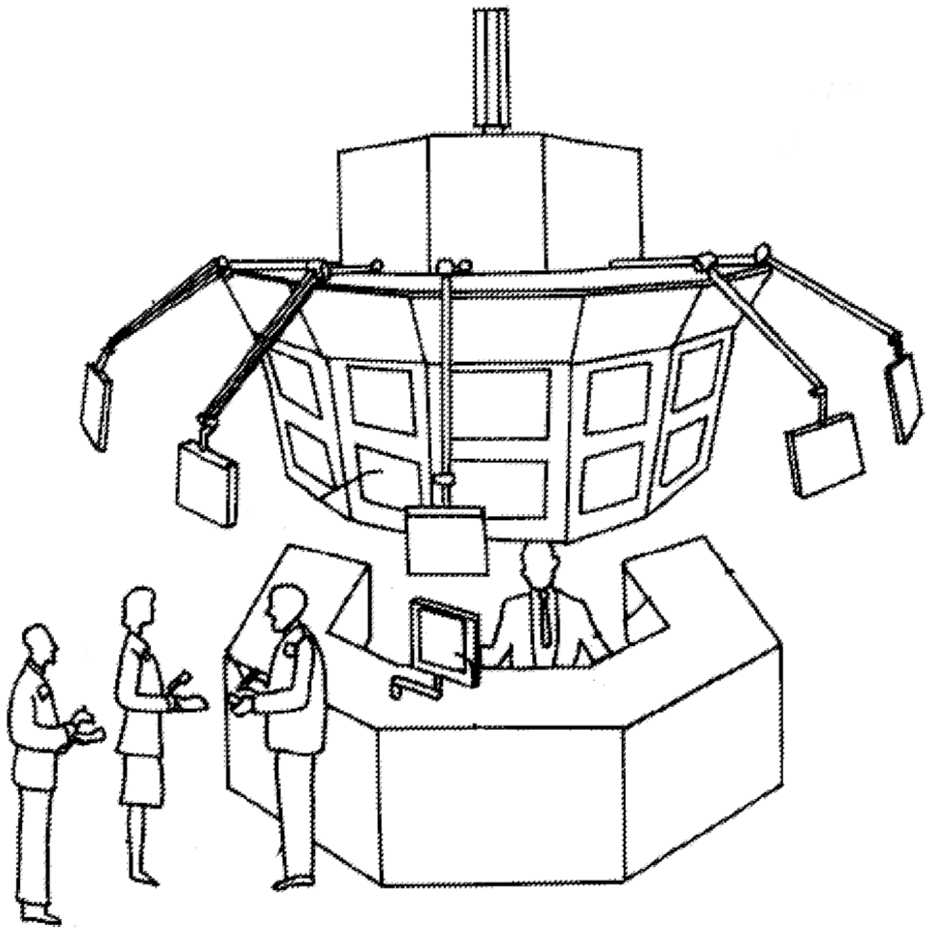
Designated Market Makers

- The BAC book is liquid; the PRK book is not.
- An exchange wants to attract orders and trading volume.
    - If the limit order book is thin/empty, customers will go elsewhere.
- The exchange may engage/encourage a dealer to provide continuous liquidity (posting bids and asks if there are no customers)

The NYSE specialist

- The specialist was (prior to 2005) an NYSE member who stood at the center of trading.
- Over time a well-defined set of rules and procedures evolved to govern specialist trading.
  - These rules are often referenced today as a touchstone for regulation.
- Each listed stock had one specialist.
- Because the NYSE had a near monopoly on trading in its listed stocks, the specialist was central to the market (and very powerful).

The NYSE specialist in action



- NYSE trading occurred at a post.
- The specialist stood outside of the U-shaped desk. (His clerk was on the insider.)
- The parties to trading were the specialist and one or more members (“the crowd”).
- Orders were delivered electronically, but execution was under the control of the specialist.
- The specialist’s overarching responsibility was “maintaining a fair and orderly market.”

The specialist's affirmative obligations

- He would always post a bid and ask (at a narrow spread).
- He would provide price continuity (avoiding large price jumps)
  - A sequence of trades: $50, 50\frac{1}{8}, 50\frac{1}{4}, \ldots 50\frac{7}{8}, 51$ is okay.
  - A sequence $50, 51$ is not okay.
  - If there was bad news, the specialist would have to bridge transition, usually by making small sales on his own account.

The specialist’s negative prohibitions

- Public priority.
  - If the specialist were bidding 50, and a customer put in a limit order to buy at 50, the customer’s bid would have priority over the specialist’s.
- Couldn’t trade in a “destabilizing” fashion (buying on an uptick, selling on a downtick).
  - This might move the market: the specialist was supposed to be a neutral intermediary.

The specialist’s rights

- Only the specialist knew the contents of the limit order book.
- The specialist had a first-look at incoming orders.
- These advantages enabled most specialists to reap sizeable trading profits.

The decline of the specialist system

- In 1997 the tick size went from 1/8 to 1/16, and then in 2001 to $0.01.
  - The bid-ask spreads narrowed, and trading revenue declined.
- Around 2005, the NYSE became an automated market.
  - The specialist lost the right of first refusal.
- In April, 2005, seven specialist firms were the target of a U.S. civil action.
  - Criminal charges followed against individuals, but most of these were dropped.
- The NYSE still has “specialists” but they are now called *designated market makers*.

The Designated Market Makers

- Still responsible …
  - For maintaining a fair and orderly market, and
  - Posting bid and ask quotes.
- The DMM does not get an advance look at the order.
- The DMM trades “at parity” with the customer.
  - He no longer “yields” to them.
- Fewer restrictions on “trading in a destabilizing fashion”

Can the specialist/DMM stabilize a market?

- Can provision of price continuity cushion adverse market shocks?
- Market break of 1987
  - Most specialists bought as prices declined … but some sold (or sold short).
  - Some specialist units lost large amounts of money.
  - The specialist buying was viewed as appropriate, but completely insufficient to stem a decline.

How do high-frequency traders behave as market makers?

- They are proprietary traders: nobody expects them to stabilize the market.
- In the Flash Crash of 2010, performance was mixed.
  - Some firms continued to make markets.
  - Some withdrew.
  - Some aggressively sold, accelerating the decline.
- At best we hope that the current generation of HFT's will cushion small, temporary shocks.

Market makers can provide liquidity, but not stability.

- How should they be compensated?
- Europe: paid by the listing company
- US: give them certain trading priviledges.