

Treasuries: What lessons might carry over from other markets?

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	S&P index basket securities	
	E-mini futures contract	SPY (Exchange Traded Fund)
"HFT"		
Last sale reporting		
Open order book		
Retail participation		
Trading halts		
Opening and reopening auctions		
Number of trading centers		
Dark markets		

2

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	S&P index basket securities	
	E-mini futures contract	SPY (Exchange Traded Fund)
"HFT"	Yes	Yes
Last sale reporting	Yes	Yes
Open order book	Yes	Yes
Retail participation	Yes	Yes
Trading halts	Yes	Yes
Opening and reopening auctions	Yes?	Yes
Number of trading centers	One	Many
Dark markets	Iceberg orders	Many venues, mechanisms

3

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	S&P index basket securities		
	E-mini futures contract	SPY (Exchange Traded Fund)	On-the run Treasuries
"HFT"	Yes	Yes	Yes
Last sale reporting	Yes	Yes	Why not?
Open order book	Yes	Yes	Why not?
Retail participation	Yes	Yes	Why not?
Trading halts	Yes	Yes	Why not?
Opening and reopening auctions	Yes?	Yes	Why not?
Number of trading centers	One	Many	How many?
Dark markets	Iceberg orders	Many venues, mechanisms	Yes

Last sale reporting of on-the-run treasuries: why not?

5

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- ▶ Dealers would be reluctant to accommodate customers knowing that the trades would be made public before they had a chance to work off their position.
- ▶ Partial exceptions
 - ▶ TRACE doesn't publish sizes larger than \$5 Million.
 - ▶ The London Stock Exchange has a publication delay to large trades.
- ▶ "It wouldn't really help investors get better prices."

finra-markets.morningstar.com/BondCenter, Nov. 6, 2013

6

Most Active Investment Grade Bonds

Issuer Name	Symbol	Coupon	Maturity	Moody's/S&P/Fitch	High	Low	Last	Change	Yield%
AT&T INC	T4013485	4.300%	12/15/2042	A3/A-/A	85.24000	82.53700	85.24000	2.351000	5.300333
MORGAN STANLEY	MS3997659	2.125%	04/25/2018	Baa1/A-/A	100.49900	98.22000	99.12300	-0.293000	2.332918
EXPRESS SCRIPTS HLDG CO	ESRX3954243	2.650%	02/15/2017	Baa3/BBB+/BBB	103.68000	103.55700	103.66400	-0.087000	1.497095
WELLS FARGO & CO NEW MEDIUM TERM SR NTS	WFC4039294	4.125%	08/15/2023	A3/A/A+	102.00000	98.73600	102.00000	2.029200	3.876510
INTERNATIONAL BUSINESS MACHS CORP	IBM.AB	0.875%	10/31/2014	Aa3/AA-/A+	100.59670	100.25000	100.59670	0.003700	0.263538
COOPERATIEVE CENTRALE RAIFFEISEN BOERENL	RABO.BA	3.375%	01/19/2017	Aa2//	106.46000	106.25000	106.44200	-0.092000	1.312290

An open limit order book. Why not?

7

- ▶ US equity markets did not always have this.
 - ▶ SEC's Order Handling Rules, 1996
 - ▶ Reg NMS Access Rule, 2008
- ▶ Brokers must disseminate customers bids and offers.
- ▶ Markets must allow non-member customers to execute against their advertised quotes.
- ▶ Futures markets did not always have this.
 - ▶ The CME's Globex system was originally an "off-hours" market.

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Small investor participation. Why not?

8

- ▶ The treasury encourages participation in the primary market (TreasuryDirect auctions)
- ▶ But trading costs are high in the secondary market.
 - ▶ A recent quote on the OTR 10-yr T-note from a retail broker's web site was 99.671 bid, offered at 99.719
 - ▶ Bid-ask spread of 4.8 bps
- ▶ A typical spread on the SPY is $\$0.01/\$200=0.5$ bps.

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Trading halts/pauses. Why not?

9

- ▶ On Friday, October 16, 2015, trading in about thirty NASDAQ NMS stocks was paused due to “limit-up, limit-down” halts.
 - ▶ They have become routine.

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Opening and re-opening auctions

10

- ▶ Equity markets use a single-price double-auction conducted by the primary listing exchange.
- ▶ Isn't this just like the primary market auction?
- ▶ NO. It must be tightly integrated with the secondary market.

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On- vs. off-the-run

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BATS

Market Quality Statistics [↗](#)

BANK OF AMERICA CORPORATION COM

Orders Accepted: 625,378 Total Volume: 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

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BATS

Market Quality Statistics [↗](#)

PARK NATL CORP COM

Orders Accepted: 5,093 Total Volume: 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

Off-the-run bonds: what is to be done?

12

- ▶ Low activity stocks: the Euronext solutions
 - ▶ Designated market makers paid by the issuer
 - ▶ Periodic call auctions.

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What's left?

13

- ▶ Should the market be consolidated or fragmented?
 - ▶ How do we get the benefits of market-center competition and order competition?
- ▶ Should we allow dark markets?
 - ▶ Dark markets might be preferred by certain trading clienteles.
 - ▶ But they might weaken the lit markets.

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What will stock markets look like in the future? (a slide from the 1990 deck)

14

- ▶ At the moment floor markets appear surprisingly robust.
 - ▶ The NYSE has the lion's share of trading in their listed stocks.
 - ▶ NASDAQ is a dealer market.
 - ▶ The CME, CBT and NYMEX dominate futures trading.
- ▶ But many non-US exchanges use electronic trading.
- ▶ How might the US floor markets "go electronic"?
- ▶ The CBT's Aurora system might just be lighting the way.
 - ▶ Next slide: an Aurora screen shot

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