Locked-in Range Analysis

Why most traders
must lose money
in the futures market (Forex)

Tom Leksey

The author is convinced that trading should be based on the reasons for price changes, otherwise it's Lucky-trading. The book describes the reasons for price changes of futures and the new cause-and-effect method of analysis.

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Foreword

It is common for reasonable people to learn from their mistakes or from the mistakes of others, realizing the causes and effects of actions that lead to undesirable results. Knowing the statistics of those who "earn" on market speculation, each is certain that he is not like the others and that everything will turn out for him. And they are not even considering to leave this "way of making money". While losing more and more money and time to find out "why trading is not for them", people are being devoured by their failures because to accept a failure for them is equivalent to recognizing themselves an asshole.

Taking the reason for "why most traders must lose money in the futures market", as a consequence, you truly realize your lack of advantages over the other market participants in the endless "exchange wars", when one does not mind to yield this "battle" to others.

Chapter 1. Preparing to Analyze

1.1 Why Do We Analyze Futures Instead of Forex?

Starting with the Bretton Woods currency system (1944), the US dollar has been the main international reserve currency, so the quotes of other countries' currencies are expressed through the US dollar.

Types of currency quotes:

- Direct quote in relation to the US dollar (the value of a currency unit is expressed in the amount of US dollars)

Example: EUR/USD 1.0680 means 1 EUR = 1.0680 USD

- Indirect quote (the value of the US dollar is expressed in the quantity of the quoted currency)

Example: USD/CAD 1.3090 means 1 USD = 1.3090 CAD

- Cross quote (the ratio between the two currencies, which is determined based on the rates of these currencies relative to a third currency)

Example: EUR/USD 1.0680, GBP/USD 1.2470 means EUR/GBP 0.8565 (1.0680/1.2470)

Based on the location of conducting currency transactions, there is exchange market and over-the-counter market.

	Exchange Market	OTC Market
Source of quote (Price)	trade result	dealer discretion
Rules and regulations	yes	no
Standardized contracts	yes	no
Display of trading results	yes	no
Example	CME Group futures	Forex market

Table 1. Comparison of exchange and over-the-counter market

Unlike exchange market, in the over-the-counter market there is no central marketplace (the exchange clearing house), where all information about the transactions, on the prices reached by the parties, is received. In addition, there is nobody that would control and regulate the activities of all participants in the trading process. Therefore, different exchange dealers may have different quotes of the same traded instrument (such as currency). Nevertheless, the prices from exchange trades, on the relevant basic commodities for the nearest most liquid futures contracts, are used for the formation of over-the-counter quotes (WM/Reuters benchmark rates are used as standard rates for determining the OTC exchange rate).

Since Forex market is an over-the-counter market, and the transactions made in it (demand and supply) cannot influence the change in quotes, futures on the relevant currencies should be used for analysis and forecasting.

Forex		CME Currency Futures	
Currency Pair	Types of Quotes	Futures	Daily Volume (the number of contracts traded)
EUR/USD	Direct	Euro FX	214,274
USD/JPY	Indirect	Japanese Yen	171,516
GBP/USD	Direct	British Pound	103,863
AUD/USD	Direct	Australian Dollar	76,774
USD/CAD	Indirect	Canadian Dollar	59,144

Table 2. The most liquid CME currency futures contracts as of 01.02.2017 and the corresponding Forex currency pairs. Volume data source: cmegroup.com

Charts of Forex indirect quotes are a mirror image of the relevant futures charts. Charts of Forex cross quotes (Examples: AUD/CAD; AUD/JPY; CAD/JPY; EUR/AUD; EUR/CAD; EUR/GBP; EUR/JPY; GBP/AUD; GBP/CAD; GBP/JPY) are the mathematical relationships of direct and indirect quotes, therefore, those who trade cross quotes are Lucky-traders.

1.2 An Introductory Guide to Futures

What Are Futures?

Standardized (according to quality, quantity, delivery time and place) contracts, for the purchase and sale of financial instruments or physical commodities, for future delivery on a regulated commodity futures exchange.

Who Trades Futures?

Conventionally, traders are divided into two main categories, hedgers and speculators. Hedgers use the futures market to manage (to reduce or limit) price risk associated with an adverse price change. (Examples: airlines hedging fuel costs; jewelry manufacturers hedging the cost of gold and silver; farmers sell futures on the raised crops to hedge against a drop in commodity prices;). Speculators, on the other hand, accept that risk in an attempt to profit from favorable price movement. While futures help hedgers manage their exposure to price risk, the market would not be possible without the participation of speculators. They provide the bulk of market liquidity, which allows the hedger to enter and exit the market in an efficient manner.

Why Trade Futures?

In addition to hedging, futures trading provides the trader (risk-taking investor) with greater flexibility because of luquidity and capital efficiency because of leverage.

Leverage is an amount of money deposited by both the buyer and seller of a futures contract to ensure their performance of the contract terms. The performance bond may represent only a fraction of the total value of the contract, often 2 to 12 %, making futures a highly leveraged trading instrument. Therefore, futures contracts represent a large contract value that can be controlled with a relatively small amount of capital.

What does it mean?

The Euro FX futures contract could have a value of 125,000 EURO, but you would be able to buy or sell this contract by posting a performance bond of about 2,750 USD, which is only 2% of the contract value (EUR/USD 1.1000).

Liquidity

A condition that describes the ability to execute orders of any size quickly and efficiently without a substantial affect on the price.

Liquidity can be described in terms of volume and open interest (abbr. OI). Each unit of volume represents a complete transaction. When one trader buys a contract and another trader sells the same contract, that transaction is recorded as one contract traded. Open interest represents the total number of contracts, either long or short, that have been entered into and not yet offset or fulfilled by delivery. Each open transaction has a buyer and seller, but for calculation of open interest only one side of the contract is counted. Volume and open interest are reported daily and are used by traders to determine the level of activity in a market for a given day or a price movement.

To quickly gauge the liquidity of a market, traders may look at 1) the distance between the best bid and ask prices (bid-ask Spread), 2) the number of limit orders pending in the market at each bid and ask level (Level II) and 3) the frequency with which trades take place (Time & Sales).

Trading in liquid markets, where there is enough volume for you to enter and exit your orders without substantially affecting price, will help to ensure that you can exit a position just as easily as you enter it.

Type of Order

Market Order

The simplest and most common type is the market order. When you place a market order, you agree to either buy or sell at the best available price.

Stop Order

An order that becomes a market order when a particular price level is reached. A sell stop is placed below the market; a buy stop is placed above the market. Sometimes referred to as stop loss order.

Limit Order

An order that allows the buyer to define the maximum price to pay and the seller the minimum price to accept (the limit price). A limit order remains on the book (Level II) until the order is either executed, canceled or expires.

Market Regulation

Futures markets are regulated (Example: CFTC, NFA) to foster open, competitive and efficient futures markets, and to protect market users and the public from any fraud, manipulation or abusive practices.

Contract Specification

Futures contract specification includes, but is no limited to:

Contract Size

Each futures contract has a standardized size that does not change.

Contract Value

Contract value is calculated by multiplying the size of the contract by the current price.

Product Code

The first two letters of a CME Globex (CME Group's electronic trading platform, providing users across the globe with virtually 24-hour access to global markets) ticker symbol represent the underlying futures contract. The next letter in the ticker represents the month that the contract expires. The final number is representative of the the year the contract expires. Example: 6EH7 is a Euro FX (6E), March (X) 2017 (7) contract.

Contract Month

The month in which a futures contract expires. Delivery month is indicated by a letter: F – January; G – February; H – March; J – April; K – May; M – June; N – July; Q – August; U – September; V – October; X – November; Z – December;

Contract month contains the last trading day (settlement date) on which a futures contract may trade or be closed before delivery.

Tick Size

The minimum price change in a futures contract is measured in ticks. A tick is the smallest amount that the price of a particular contract can fluctuate.

| Product | | | | Tick | |
Name	Code	Contract Month	Settlement	Size	Value
Euro FX	6E	HMUZ	Deliverable	0.00005	$6.25/contract
Japanese Yen	6J	HMUZ	Deliverable	0.0000005	$6.25/contract
British Pound	6B	HMUZ	Deliverable	0.0001	$6.25/contract
Australian Dollar	6A	HMUZ	Deliverable	0.0001	$10.00/contract
Canadian Dollar	6C	HMUZ	Deliverable	0.00005	$5.00/contract
Swiss Franc	6S	HMUZ	Deliverable	0.0001	$12.50/contract
E-mini S&P 500	ES	HMUZ	Cash settled	0.25	$12.50/contract
E-mini NASDAQ	NQ	HMUZ	Cash settled	0.25	$5.00/contract
E-mini Dow	YM	HMUZ	Cash settled	1.00	$5.00/contract
Crude Oil	CL	FGHJKMNQUVXZ	Deliverable	0.01	$10.00/contract
Gold	GC	GJMQVZ	Deliverable	0.10	$10.00/contract
Silver	SI	HKNUZ	Deliverable	0.005	$25.00/contract

Table 3. Contract specifications of most liquid currency, equity, energy, metals futures. Commodities contract months are the most active months for delivery according to volume and open interests. Specifications for all products traded through CME Group can be found at cmegroup.com

Settlement

Cash Settlement

At the end of the contract the holder of the position is simply debited or credited the difference between their entry price and the final settlement. (Example: the purchaser of an E-mini S&P 500 future is unable to take ownership of the index at expiration.)

Physical Delivery

At the end of the contract the holder of the position will either have to deliver the physical commodity (if short) or take delivery (if long). The delivery payment is based on the contract's final settlement price.

The holder of the open long (buy) / short (sell) positions must inform their clearing firm that he intends to make delivery. Clearing firm is required to report to CME Clearing (the exchange clearing house) all open positions that will be delivered. CME Clearing then matches long clearing firm (or firms) to the short clearing firm, begins with long positions entered on the oldest vintage date.

1.3 Role and Capabilities of a Market Maker

Who Are Market Makers? (Definition by CME Group)

A market maker (one type of speculator) is an authorized customer permissioned to quote both the buy and sell side in a given market (while all other market participants may open positions only in one direction – unidirectional). The main function of the market maker is to provide liquidity to the marketplace (contractual agreement with CME), usually in exchange for a reduction in trading fees. Market makers often profit from capturing the spread, the small difference between the bid and offer prices over a large number of transactions.

Modern futures market cannot function without such a professional participant as a market maker, since 24-hour trades include illiquid periods when there are sharp imbalances in supply and demand, and if the market is allowed to determine prices independently in such periods, then we can observe increased volatility and price manipulation, which can be very significant and would be regarded by market participants as an increased trade risk, equivalent to an illiquid instrument; therefore, the stock exchange, in our case its CME Group, is interested in the presence of market makers, providing them with privileges in exchange for compliance with the established obligations to provide and maintain liquidity.

Responsibilities of Market Makers

During the specified period of the trading session (American, Asian-Pacific, European), the market makers must continuously maintain two-way futures quotes, observing the minimum volume of own orders agreed with the exchange and the spread between bid-ask quotes (widening of spread for periods of increased volatility is possible).

As counterparties to each transaction in terms of pricing, market makers must take the opposite side of your trade. In other words, whenever you sell, they must buy from you, and vice versa.

IMPORTANT. Why do market makers act as counterparties for most orders, but not for all? The rest of the transactions may temporarily be accumulated by other market participants, both with speculators and hedgers; however, over time, all open positions will pass on to market makers, when one of the parties of a transaction, in which the market maker does not participate, decides to close the position.

Capabilities of Market Makers

To understand the capabilities of market makers, one should know the limited market depth available to any participant: 1) Data featuring the nearest (best) placed 10 bid and 10 ask limit orders shows the price and number of contracts (Level 2). 2) Data featuring each transaction made shows the price, time, and number of contracts (Time & Sales).

CME Group market makers use the full market depth available to the exchange, namely:

1) Data featuring all existing placed limited orders.
2) Data featuring all existing placed stop orders.
3) Data featuring all open positions: price, volume, and side of order (buy/sell).

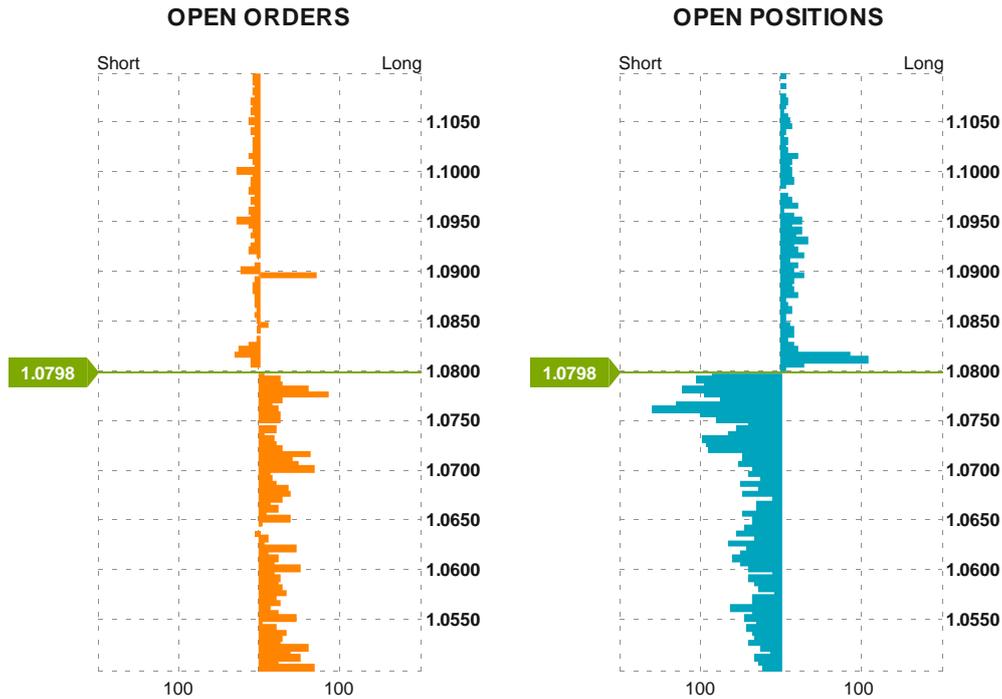**OPEN ORDERS**

OPEN POSITIONS

Figure 1. Net Positions (buy+sell) Marketmaker Order Book (Open orders, Open positions)

Market makers collectively create a market for each futures, centrally managing its common pool of positions to prevent conflicts of interest that would arise when working separately, when instead of earning the spread and self-quoting, market makers would get a large volume of positions that would not have a counterparty to close before the expiration of the futures. (Example: Speculator buys 1 cash settlement contract on the market, and his counterparty is Market Maker #1; then, the same speculator decides to exit the position and sell his contract; this time, his counterparty is Market Maker #2. As a result, the speculator does not have a position, and the market makers have 2 open positions that they can close only with each other; in this case, one of them will suffer losses.)

Position Limits

CFTC monitors compliance with Commission or exchange speculative limits, which help prevent traders from accumulating large positions that could destabilize a market.

Product Name	All Month Level	Single Month Level	Delivery Month Level	Reporting Level
Euro FX	10,000	-	-	200
Japanese Yen	10,000	-	-	200
British Pound	10,000	-	-	200
Australian Dollar	6,000	-	-	200
Canadian Dollar	6,000	-	-	200
Swiss Franc	10,000	-	-	200
E-mini S&P 500	60,000	-	-	100
E-mini NASDAQ 100	50,000	-	-	25
E-mini Dow	100,000	-	-	200
Crude Oil	20,000	10,000	3,000	350
Gold	6,000	6,000	3,000	50
Silver	6,000	6,000	1,500	25

Table 4. Limits of max number of open positions by one account. Source: cmegroup.com

All Month Level / Single Month / Delivery Month will be calculated on a Net positions (the difference between total open long and open short positions in a given asset held by one account).

Reportable Positions

Clearing members, futures commission merchants, and foreign brokers (collectively called reporting firms) file daily reports with the Commission. Those reports show the futures positions of traders that hold positions at or above specific reporting levels set by CFTC regulations. When an individual reportable trader is identified to the Commission, the trader is classified either as «commercial» or «non-commercial».

What is Market-Making? (Definition by Tom Leksey)

Market-making (CME Group) is a centralized automated trading system of placing orders from market participants, which has a common pool of Commercial and Non-commercial accounts, which provides liquidity in the futures market, simultaneously opening new positions (buy/sell) and closing already accumulated positions, so that the shares of profit are distributed between each participant in accordance with the established proportions.

According to the latest definition, market maker means all united participants of market-making on CME Group. In contrast to this, multiple (unrelated) market makers can participate in the same stock on the NASDAQ exchange, since the stock does not have an expiration date and counterparties will always appear to close the positions of a single market maker – it is only a matter of time.

1.4 Volume, Open Positions, Delivery

CME Group is the world's leading (by trading volume) financial and commodity derivatives marketplace.

There are many reasons for opening/closing of transactions (hedging, fundamental factors, patterns and levels of support and resistance of technical analysis, trend following, technical indicators and moving averages, intuition, automated algorithmic trading, arbitrage trading, VSA, market profile, volume analysis, COT reports, options analysis, other non-popularized methods of analysis), but it is important to understand that most of the new positions are opened and closed within one trading day or trading session. Therefore, we can observe the same daily "average" traded volume on liquid instruments and a slight change in the open interest at the end of the trading day.

	Euro FX			E-mini S&P 500		
Date	Volume (Globex)	Open Interest		Volume (Globex)	Open Interest	
		At Close	Change		At Close	Change
01.02.2017	214,228	403,947	-1,594	1,565,076	2,861,254	21,768
02.02.2017	191,980	404,132	185	1,417,530	2,850,611	-10,643
03.02.2017	207,062	402,161	-1,971	1,418,576	2,865,691	15,080
06.02.2017	151,779	404,216	2,055	1,167,248	2,874,336	8,645
07.02.2017	175,825	409,178	4,962	1,199,148	2,890,204	15,868
08.02.2017	186,305	402,699	-6,479	1,287,564	2,919,027	28,823
09.02.2017	166,008	402,740	41	1,361,855	2,929,333	10,306
10.02.2017	177,546	403,278	538	1,178,739	2,945,199	15,866
13.02.2017	138,977	407,912	4,634	1,225,250	2,992,654	47,455
14.02.2017	203,533	406,350	-1,562	1,398,820	3,018,235	25,581
15.02.2017	211,898	406,182	-168	1,551,015	3,063,815	45,580
16.02.2017	208,753	411,880	5,698	1,744,339	3,069,707	5,892
17.02.2017	159,949	412,016	136	1,400,140	3,046,087	-23,620
21.02.2017	247,077	417,129	5,113	1,642,732	3,056,454	10,367
22.02.2017	240,499	415,010	-2,119	1,298,910	3,058,886	2,432
23.02.2017	170,152	416,460	1,450	1,569,663	3,074,209	15,323
24.02.2017	209,067	421,943	5,483	1,556,523	3,090,189	15,980
27.02.2017	174,989	426,509	4,566	1,167,605	3,115,578	25,389
28.02.2017	207,213	431,635	5,126	1,614,343	3,117,551	1,973

Table 5. Daily data on the volume and open interest of March 2017 futures contracts. Period: 02.2017. Data source: cmegroup.com

To open any transaction through CME Globex, a request for a New Order is sent to the exchange, which includes, but is not limited to: Unique account identifier, Unique order identifier assigned by client system (clearing member firm), Order quantity, Order type, Side of order (Buy/Sell), Instrument identifier (Future Example: 6EH7). When a New order is filled CME Globex assigned OrderID (order identifier). The CME Globex order identifier from your initial order entry is what you (your reporting firm) would use when you need to modify or cancel (close) that order.

Since the market maker accumulates all open interest (Chapter 1.3), the use of inside exchange information of OI, based on OrderID, allows to understand when to accumulate new positions and when to close the existing ones, so as not to remain with open positions that have not been closed, due to the absence of counterparties, on the last trading day of the

contract. Therefore, if the number of open positions increases at a certain price, the market maker accumulates and saves these positions at this price; if the number of open positions reduces at a certain price, the market maker closes an equal number of its open positions at the relevant price, so that the number of open positions of market participants and market maker's accumulated positions is equal. (Example: Futures open positions are equal to 50,000 contracts; the market maker acts as the second party on all positions; when the number of open positions decreases to 49,999 the market maker will close 1 available position at the price at which the closing took place, but from the opposite side of the order).

OI daily report is published in Final Daily Bulletin at 10:00 AM Chicago Time and delayed by one trading day.

The *Change* column in Table 5 does not show a complete change in OI during the day, as the value of open positions (At Close) is constantly updated: open positions close / new positions open, changing opinions about the market and reversal of positions to opposite, position volume reduction / position volume increase, closing of positions at targets (planned price) / closing of positions at stop losses (achievement of maximum loss) / closing of positions on margin call (compulsory closing by a broker when there is not enough funds to maintain the position on the trading account). The value of open interest as a predictive tool consists precisely in the changes in open interest, allowing to determine the degree of interest of market participants. To understand what changes occur with OI during the day, Locked-in Range Analysis (abbr. LRA) is used.

Futures differ from forwards in that they are not concluded for the purpose of fulfilling the obligation provided for in the contract: as a rule, market participants tend to end their obligations by making a reverse transaction until the occurrence of fulfillment of futures obligations. Therefore, approaching the expiration of a contract, open positions that will not be delivered will be rolled over to the nearest liquid contract, retaining the purposes.

| Date | Euro FX Contract Month | | | |
| | March 2017 | | June 2017 | |
	Open Interest	Change	Open Interest	Change
01.03.2017	411,683	-1,527	19,553	2,390
02.03.2017	406,778	-4,905	31,762	12,209
03.03.2017	384,929	-21,849	52,502	20,740
06.03.2017	350,188	-34,741	83,797	31,295
07.03.2017	292,332	-57,856	141,017	57,220
08.03.2017	207,841	-84,491	243,386	102,369
09.03.2017	105,381	-102,460	334,243	90,857
10.03.2017	92,914	-12,467	378,096	43,853
13.03.2017	84,316	-8,598	380,314	2,218
14.03.2017	Settlement		377,732	-2,528

Table 6. Changes of OI during roll over to a new contract. Data source: cmegroup.com

The number of contracts for physical delivery on liquid futures is always less than the average open interest and makes up only an insignificant part of the total traded volume for the entire contract maturity term.

Instrument	Delivery Month	Physical Delivery	Max OI	% PD	Total Volume	% PD
Euro FX	March 2017	88,632	413,210	21.4	10,894,164	0.81
Japanese Yen	March 2017	66,726	221,608	30.1	8,556,113	0.78
British Pound	March 2017	44,904	233,916	19.2	5,945,827	0.76
Australian Dollar	March 2017	55,910	137,216	40.7	4,592,184	1.22
Canadian Dollar	March 2017	51,014	129,398	39.4	3,430,162	1.49
Swiss Franc	March 2017	27,719	56,216	49.3	1,159,171	2.39
Crude Oil	March 2017	1,769	637,496	0.3	10,180,696	0.02
Gold	February 2017	6,023	282,871	2.1	7,531,549	0.08
Silver	March 2017	3,872	135,934	2.8	3,319,177	0.12

Table 7. The percentage of physical delivery with the maximum open interest and the total contract volume. Date source: cmegroup.com

According to the rules of the exchange, any market participant whose open positions remained after the last trading day of the contract, must go out for delivery and fulfill obligations to buy (take delivery of) or sell (make delivery of) the underlying asset. Therefore, market-making participants always act as counterparties to the delivery of its accumulated open interest and deal with the storage of related assets. Currency and securities are kept in safes, precious metals are stored in exchange warehouses, and crude oil is stored in its own and leased oil depots (tankers).

Using the delivery notice, market makers acquire names from an impersonal definition and reveal the degree of participation in the delivery of futures that interest us. While analyzing data of deliveries for different periods and for different futures, the companies with increased participation stand out, among which there are market makers for which it is most advantageous to increase or decrease the stocks of the corresponding assets among all market makers in this period.
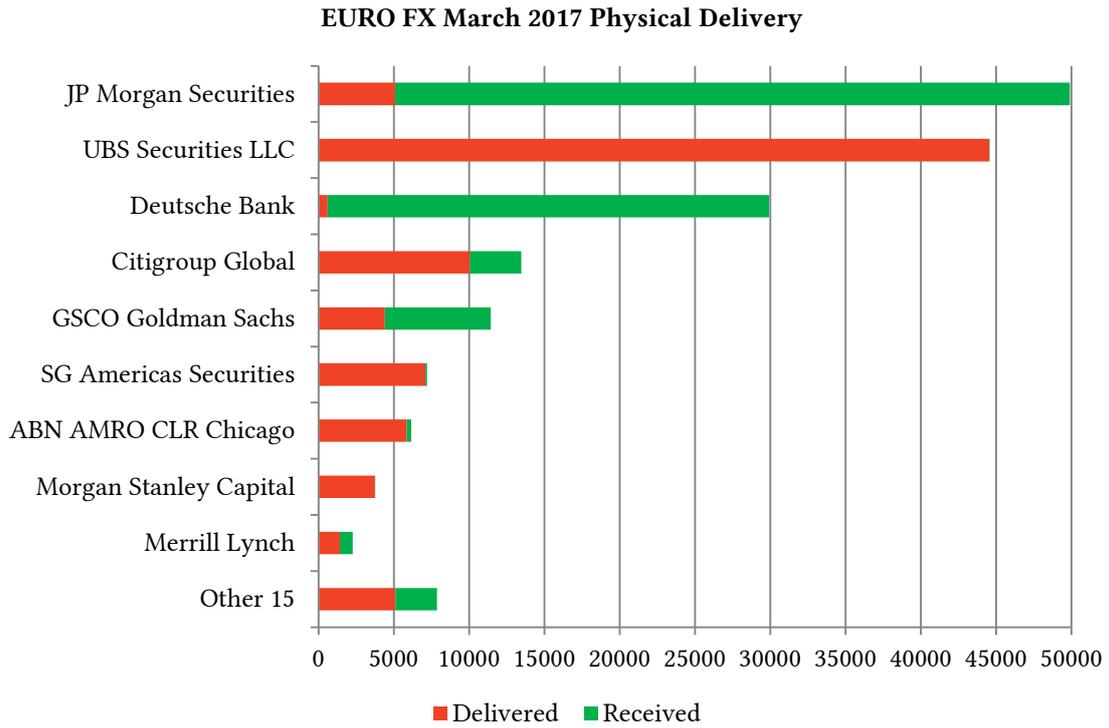
EURO FX March 2017 Physical Delivery

Figure 2.1 EURO FX March 2017 futures delivery report. Data source: DNS Report

EURO FX March 2016 Physical Delivery
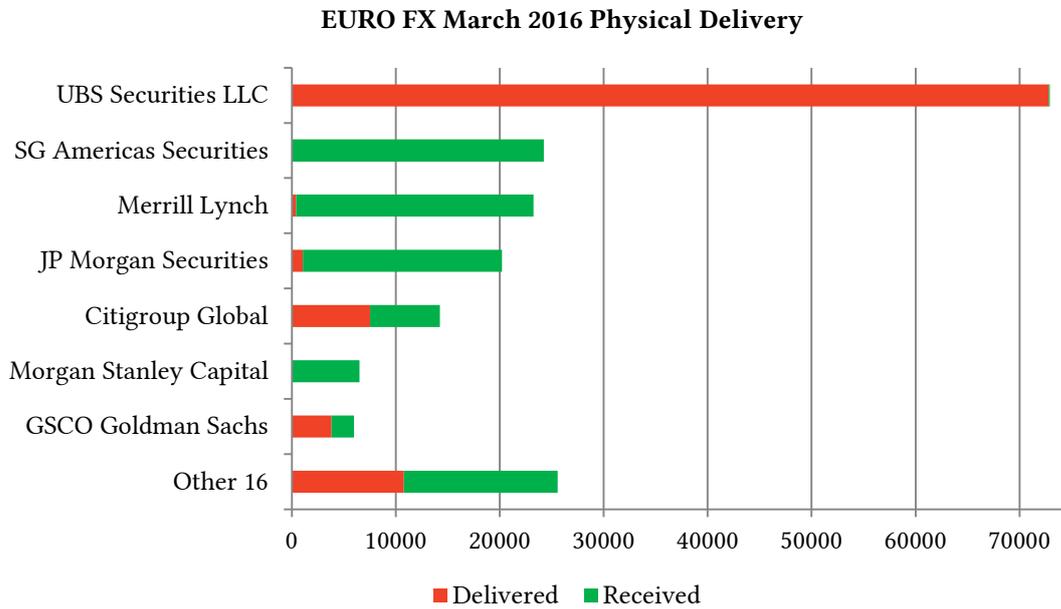
Figure 2.2 EURO FX March 2016 futures delivery report. Data source: DNS Report

EURO FX March 2015 Physical Delivery
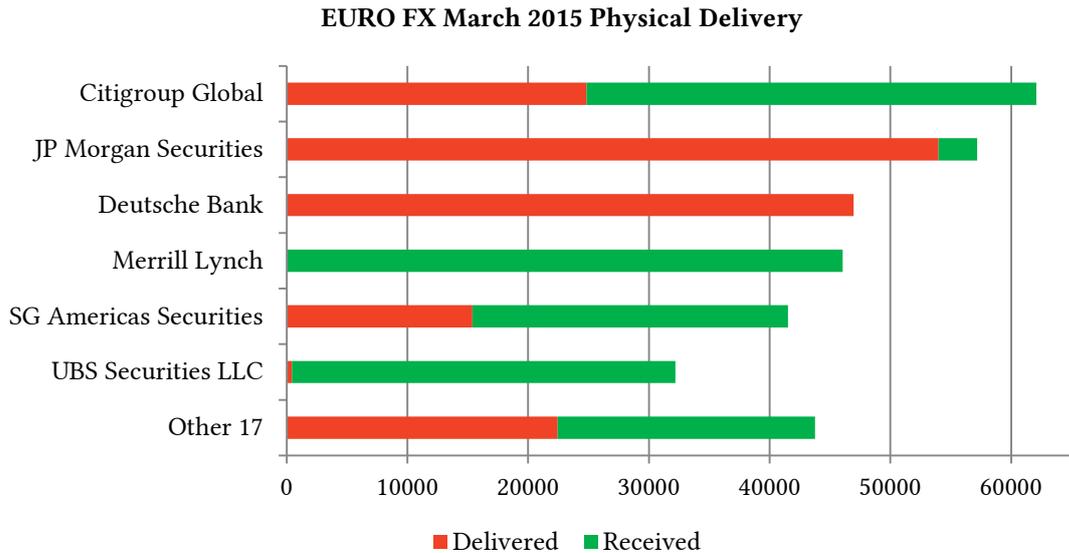
Figure 2.3 EURO FX March 2015 futures delivery report. Data source: DNS Report

Japanese Yen March 2017 Physical Delivery
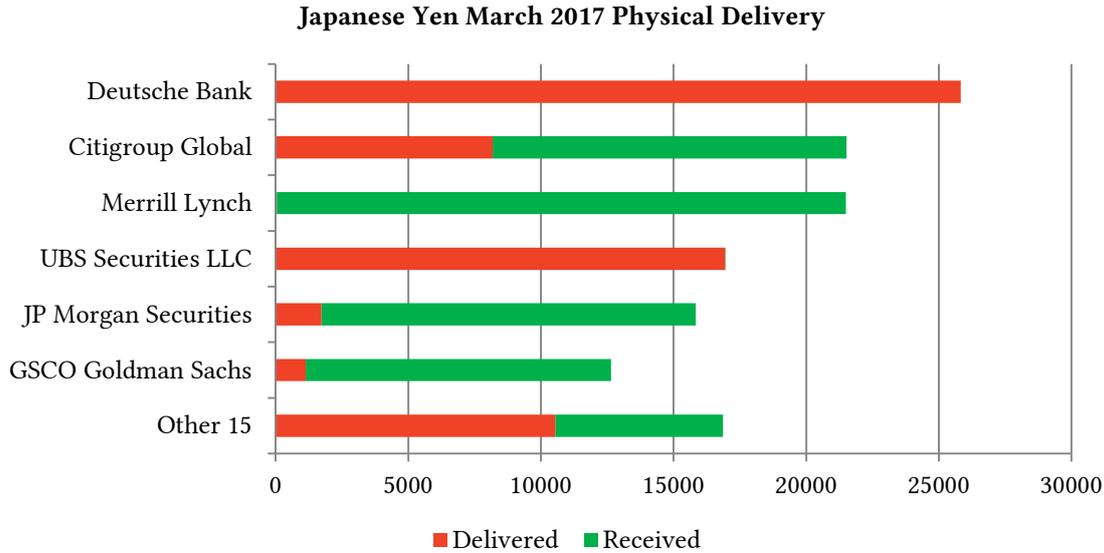
Figure 2.4 Japanese Yen March 2017 futures delivery report. Data source: DNS Report

British Pound March 2017 Physical Delivery
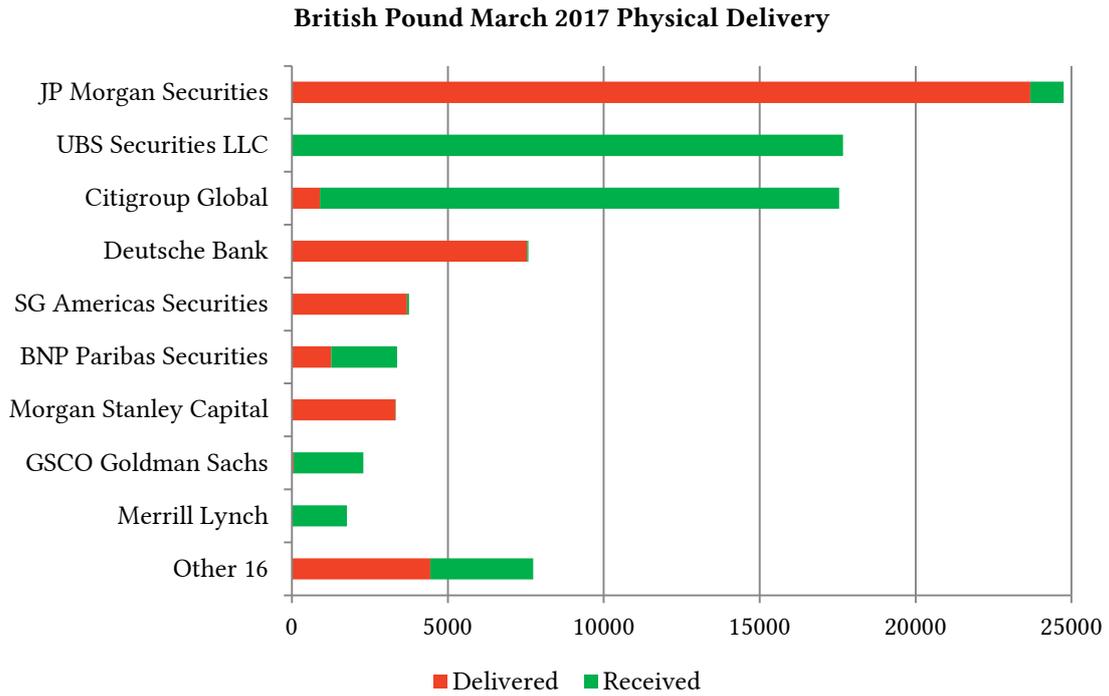
Figure 2.5 British Pound March 2017 futures delivery report. Data source: DNS Report

Australian Dollar March 2017 Physical Delivery
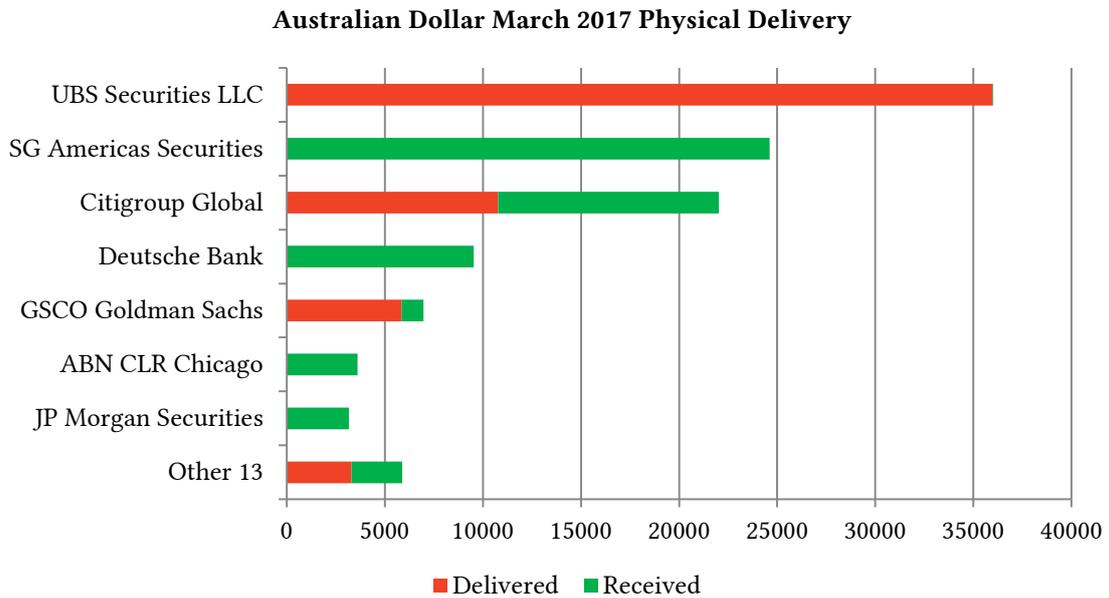
Figure 2.6 Australian Dollar March 2017 futures delivery report. Data source: DNS Report

Canadian Dollar March 2017 Physical Delivery
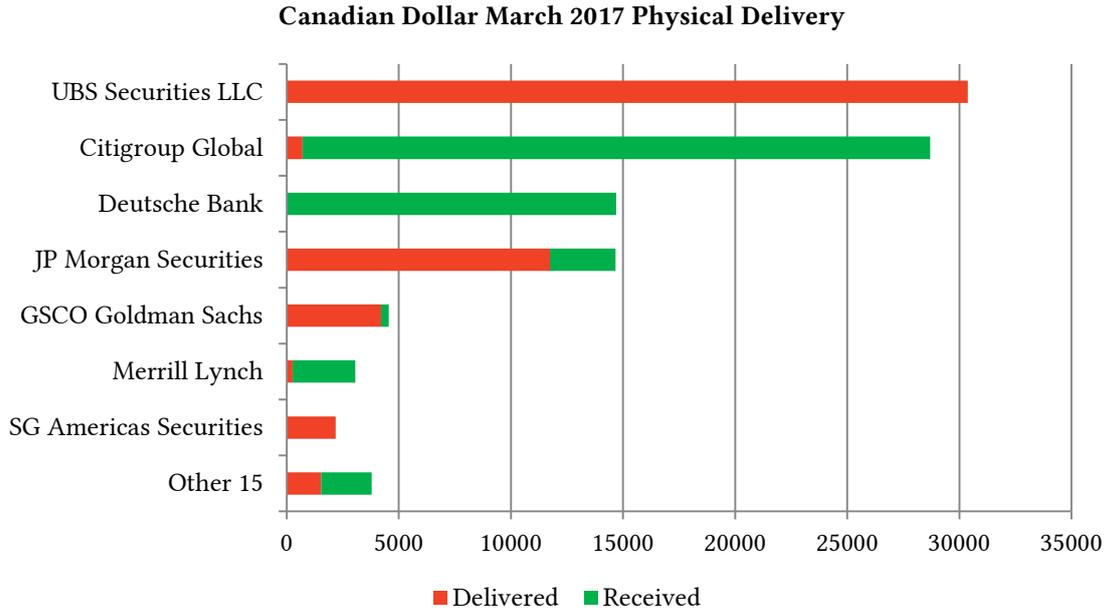
Figure 2.7 Canadian Dollar March 2017 futures delivery report. Data source: DNS Report

Swiss Franc March 2017 Physical Delivery
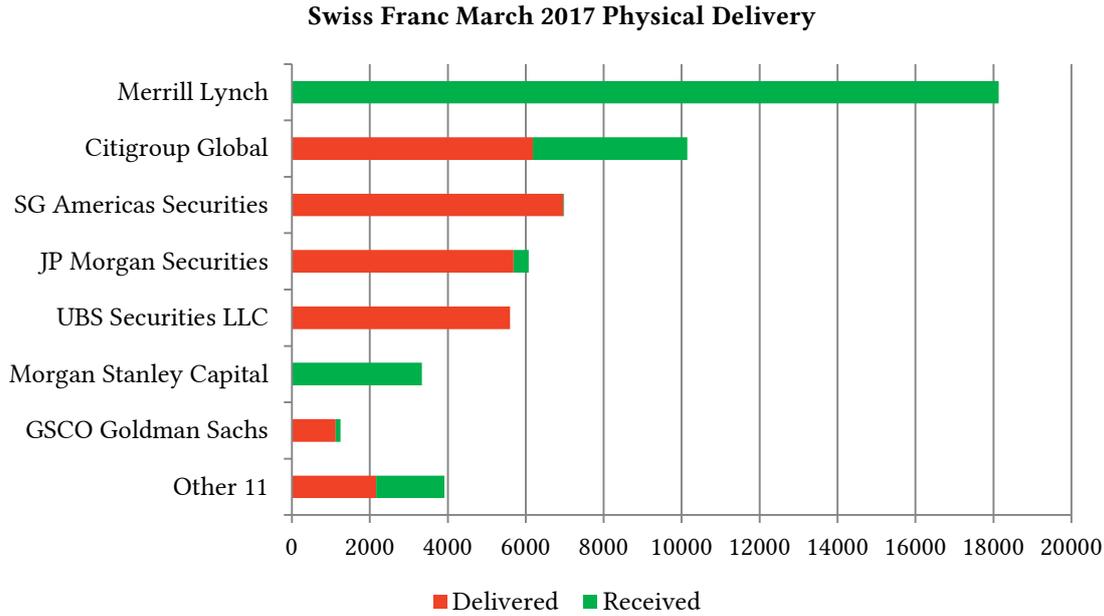
Figure 2.8 Swiss Franc March 2017 futures delivery report. Data source: DNS Report

Crude Oil March 2017 Physical Delivery
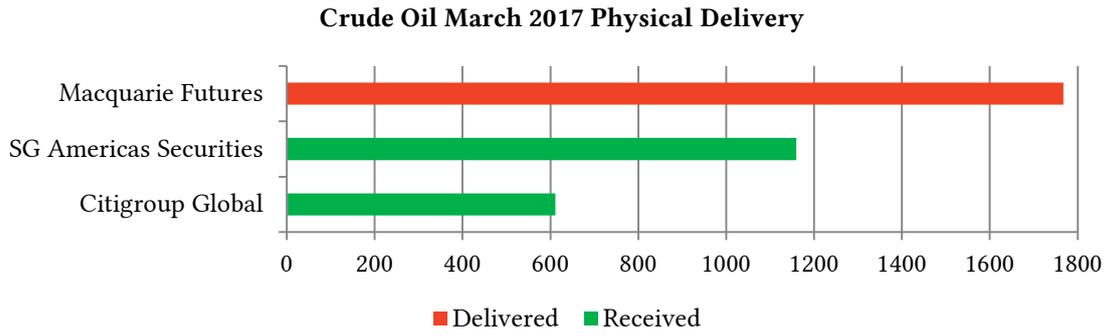
Figure 2.9 Crude Oil March 2017 futures delivery report. Data source: DNS Report

Crude Oil February 2017 Physical Delivery
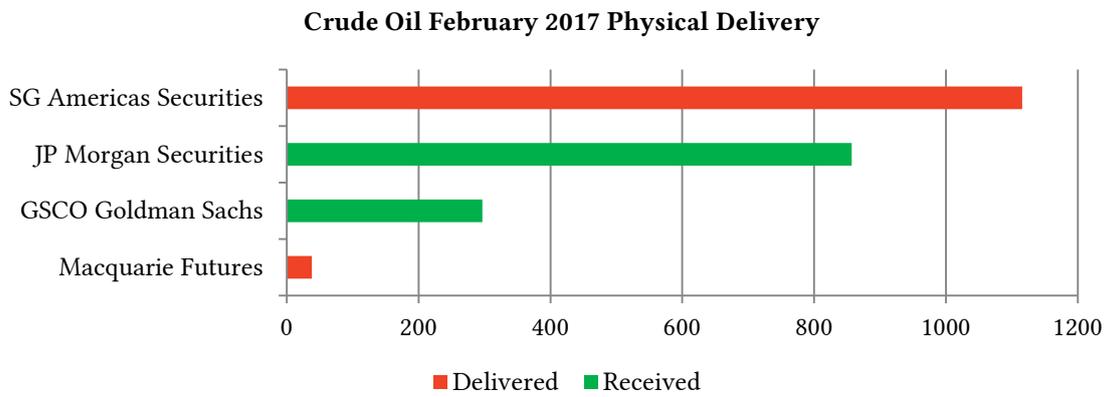
Figure 2.10 Crude Oil February 2017 futures delivery report. Data source: DNS Report

Gold February 2017 Physical Delivery
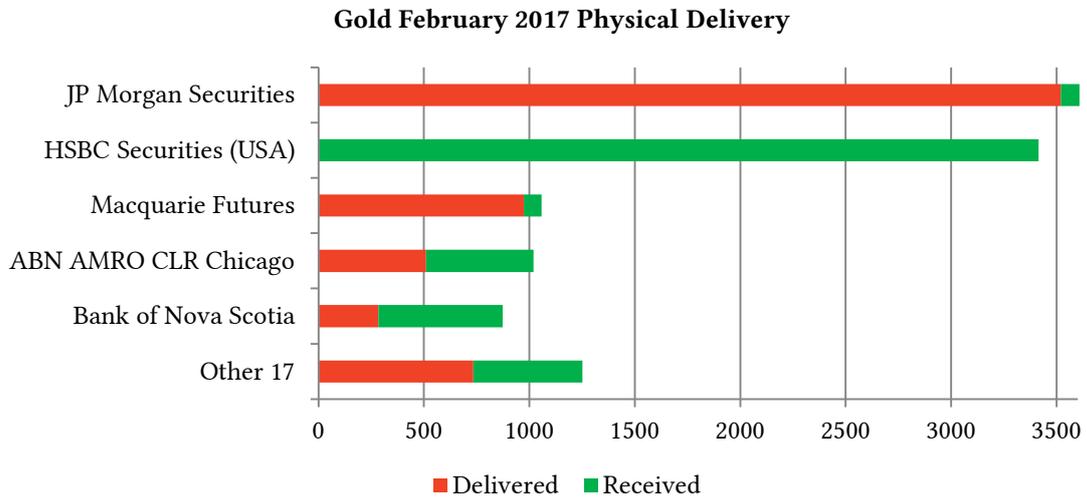
Figure 2.11 Gold February 2017 futures delivery report. Data source: DNS Report

Gold December 2016 Physical Delivery
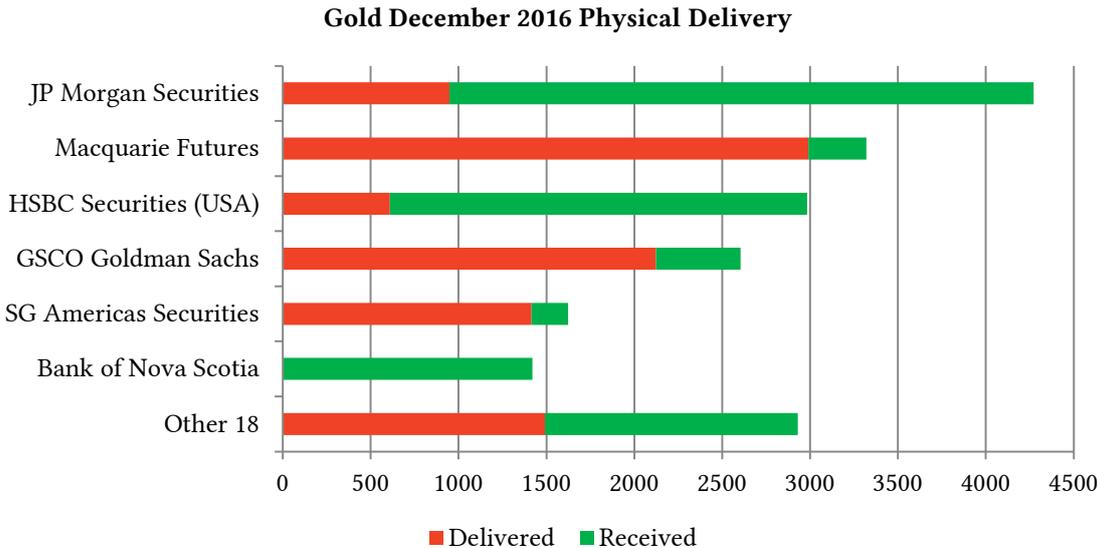
Figure 2.12 Gold December 2016 futures delivery report. Data source: DNS Report

Silver March 2017 Physical Delivery
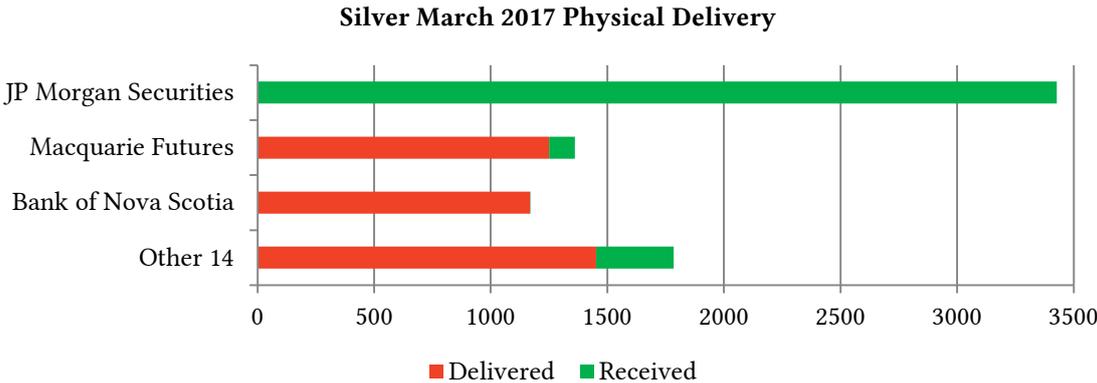
Figure 2.13 Gold December 2016 futures delivery report. Data source: DNS Report

Silver December 2016 Physical Delivery
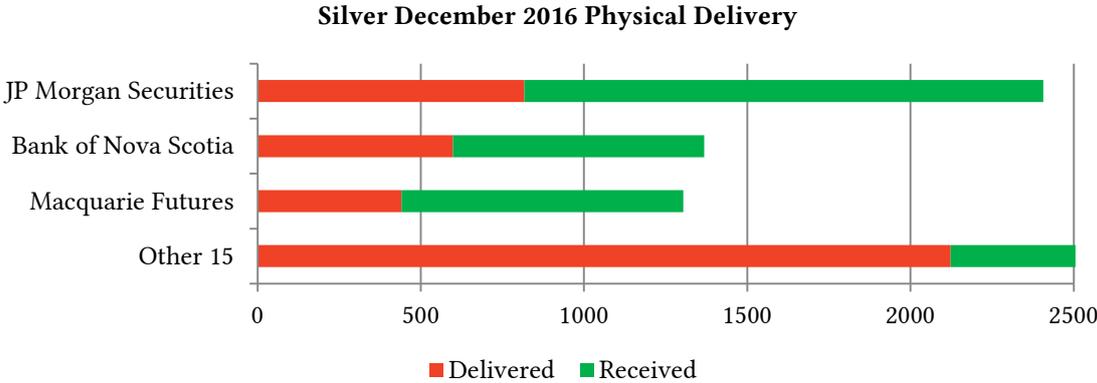
Figure 2.14 Silver December 2016 futures delivery report. Data source: DNS Report

Warehouse & Depository Stocks Reports provide us with a list of warehouses with available stocks in Eligible status (the commodity exists, has been tested in accordance with futures contracts specifications, and is deferred for future delivery) and the prevailing volumes in the warehouses of the market participants already known to us from the delivery reports.
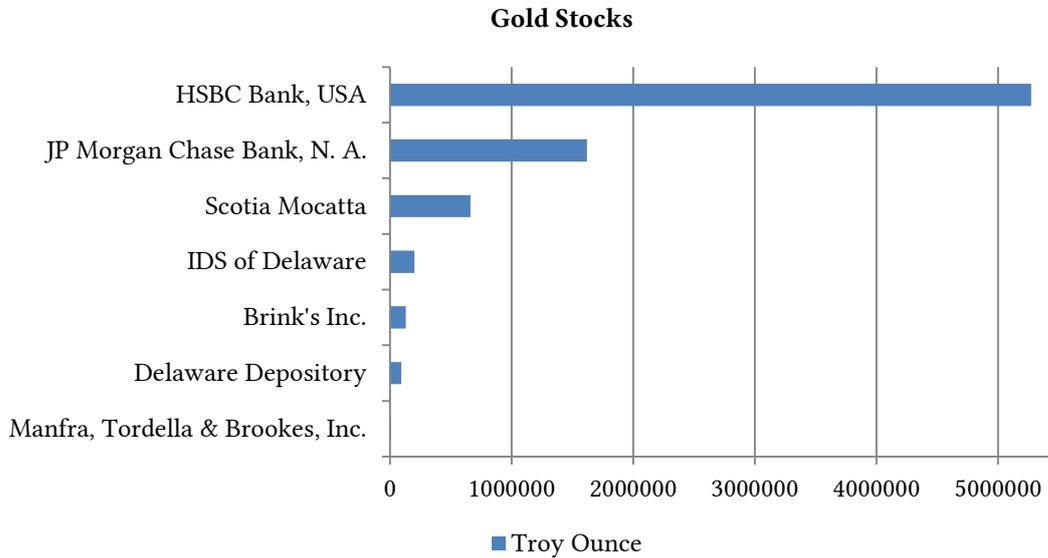
Gold Stocks

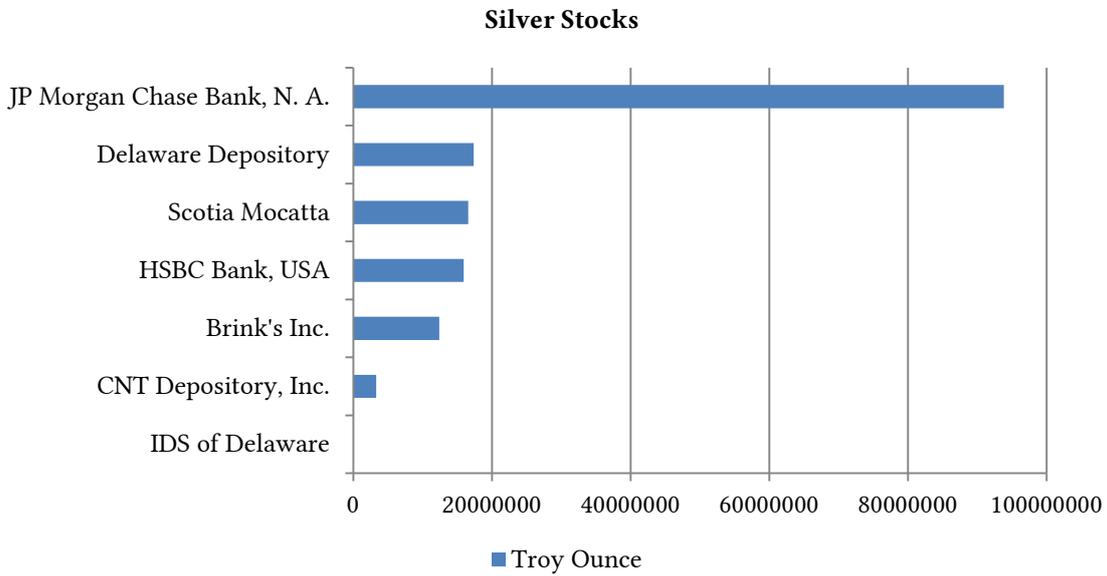Figure 3.1 Warehouse stock of Comex exchange for gold in Eligible status. Data: 12.04.2017. Data source: Gold Stocks

Silver Stocks

Figure 3.2 Warehouse stock of Comex exchange for gold in Eligible status. Data: 12.04.2017. Data source: Gold Stocks

1.5 Why Does Price Change Occur?

Instead of creating liquidity, by definition of CME Group, a market maker earns the spread (Chapter 1.3), but earning the bid-ask spread is only possible with the same volume of ask and bid transactions at a constant price; the limitation of the specified length of futures trading time adds the condition that half of the transactions at ask/bid price should be the opening of new positions and the other half should be the closing of the previously opened positions. Continuously providing liquidity, the market maker cannot achieve such a ratio. Therefore, market maker scales the principle of earning the spread from a constant price to a trading range, and guided by open positions, their potential take-profits and stop-losses, the market maker accumulates open positions at the same price range, and locks the prevailing open positions (by shifting the price in the direction opposite to the range and quoting the price within market maker' break-even zone) when there is an imbalance or loss of interest of market participants in current prices, thus insuring against losses in the event of simultaneous closing of open positions.

This principle of price change is the basis for futures with a market maker. LRA allows to determine the locked-in ranges and the future price changes that are profitable and permissible for the market maker.

Price manipulation that lead to market participants' closing positions at stop-losses and not reaching their take-profits represents a conflict of interest, but market makers are forced to quote prices against most open positions to profit, and the losses of most are only their survival tool.

The market maker always has a planned price trend, based on the current imbalance, but just like other participants, market makers constantly find themselves in a situation of uncertainty in the market; they do not know where will the price go in a minute, hour, day, week, month, or year, as it is decided here and now and depends on the volume of new open positions and the closing of existing ones.

You will never know when and where a trend in the market will appear, even using the most objective information about the current situation. Open interest, the levels of stop-losses and take-profits are nothing compared to such factor as market sentiment (the mood of market participants regarding future price changes expressed through open positions), since none of this creates a trend, but only a single movement/wave from accumulation up to the point of distribution and nothing more.

Whereas the trend is created only by the market sentiment, as it can only occur in two ways: either the weak side (prevailing open positions) will maintain the original unprofitable positions for as long as possible (even up to a total collapse or margin call), or the weak side will take small losses each time, but the same direction as before will re-enter new positions.

If the weak side execute stop-losses and reverse positions in the right direction (of the trend), or ceases to believe in the continuation of the movement and remains outside the market observing the development of the situation, the trend will not be continued.

In such a way, the market (price) goes up because most are in shorts (sell). And the price will keep going up or be above the "sell" locked-in range until the market participants close

"sell" and open "buy" positions. After that, the price will go down because the majority holds longs (buy). The price will decrease until the imbalance of open positions changes again.

When there is no continuous imbalance on the market, there is neither a trend; the market is in a state of one price range (flat), in which market participants define their intentions.

The market with a market maker presented in graphic form is an inversion of market participants' expectations, expressed in the form of the prevailing volume of open positions.

When market makers have all the possibilities and motives for price manipulation, the question arises, "where are the allegations against market makers related to price manipulation?"

Example:

(Sources: Case 1:11-md-02213-RPP, telegraph.co.uk)

Allegations of manipulations

The October 2010 lawsuit named JP Morgan and HSBC in connection with an alleged conspiracy and manipulation of the market for silver futures contracts traded on the Comex exchange.

The Court's decision

The charges against banks were dropped. There are no any facts showing that JPMorgan conspired with HSBC. The CFTC has twice initiated investigations into the alleged manipulation of the COMEX silver futures market and twice found that no such manipulation occurred (Market banking activity was known and permitted by the CFTC).

Interpretation

In theory, banks can manipulate the price of silver, but we cannot prove that such manipulations do occur.

Commentary by HSBC's global head of precious metals

"HSBC is an important source of market liquidity without which the spread, between the price at which the current contract is liquidated and a new contract is entered into, could widen dramatically, to the detriment of all participants."

1.6 Why Do Instruments Correlate?

Market correlation is a statistical measure that determines how assets move in relation to each other (positive correlation – same direction; negative correlation – opposite direction).

Correlation is not permanent and is due to the fact that market participants make decisions on entering a separate trading instrument based on the value of others (they buy index futures forecasting the growth of other indices; they sell currency futures forecasting the strengthening of the dollar against other currencies), or open positions simultaneously on several instruments in the same direction.

Chart is the main market analysis tool for decision-making both on new and open positions, so the correlation in the trend period for different instruments shows the intervention of market sentiment, that is the prevailing open positions for each instrument, which show the opinion of market participants on how the instruments should correlate.

Example:

Market participants form the prevailing opinion about the strengthening/growth of the US dollar and confirm their view with the prevailing volumes of open positions based on the growth of the US dollar relative to other currencies.

Instrument	Market participants' prevailing positions	Market maker' prevailing positions
Euro FX	Sell	Buy
Japanese Yen	Sell	Buy
British Pound	Sell	Buy
Australian Dollar	Sell	Buy
Canadian Dollar	Sell	Buy
Swiss Franc	Sell	Buy

Table 8. Constant correlation of directions of market participants and market maker's prevailing open positions

This market sentiment creates an uptrend correlation (in the direction of market maker's open positions) between currency futures prices, which will continue until the prevailing market sentiment is lost (sell = buy) or is changed for the opposite one.

Open interest with long-term goals (> one liquid futures contract trading period) influences the formation of long-term trends; OI with short-term goals (< one liquid futures contract trading period) forms prices every day.

Chapter 2. Locked-in Range Analysis (LRA)
(The analysis is used in the futures markets where liquidity is provided by market-making participants)

2.1 Locked-in Range, Resistance and Support Ranges

Locked-in Range (abbr. LR) is the trading range in which the volume of open positions accumulates, making the price change to the side where the prevailing volume of open positions will be locked at a loss, because the price will no longer allow to close in profits or break-even.
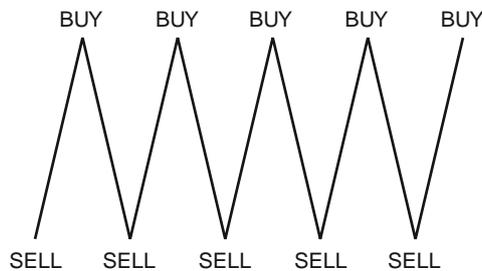

Figure 4.1 Averaged graphical representation of the locked-in range positions

Resistance LR is the locked-in range in which the volume of open buy positions prevails, and it is profitable for the market maker to quote prices below the range.
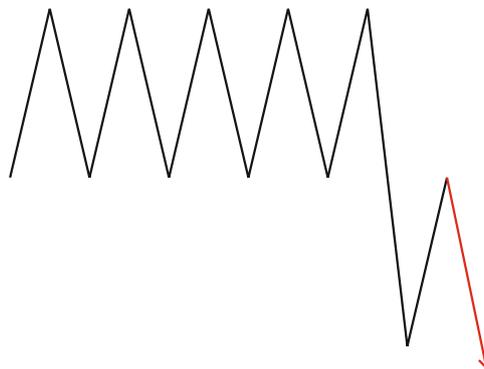
Figure 4.2 Averaged graphical representation of the resistance range

Support LR is the locked-in range in which the volume of open sell positions prevails, and it is profitable for the market maker to quote prices above the range.
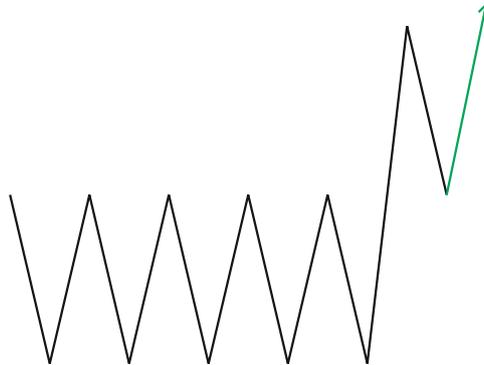
Figure 4.3 Averaged graphical representation of the support range

An increase in open interest during the movement of a price within the same trading range leads to an increase in the potential for the subsequent movement of prices after the range breakout: at a strong imbalance – a breakout and movement in the direction opposite to the prevailing open positions; at a slight imbalance / no imbalance – a breakout in one direction and then in another direction, for triggering stop-loss on both sides of the range (range extension).

There is no sense in trying to forecast the prevailing open positions in the locked-in range; it is necessary to analyze the price and volume changes after the range breakout and in proximity to the TPSL levels (Chapter 2.2), which will allow to join the further profitable price changes for the market maker.
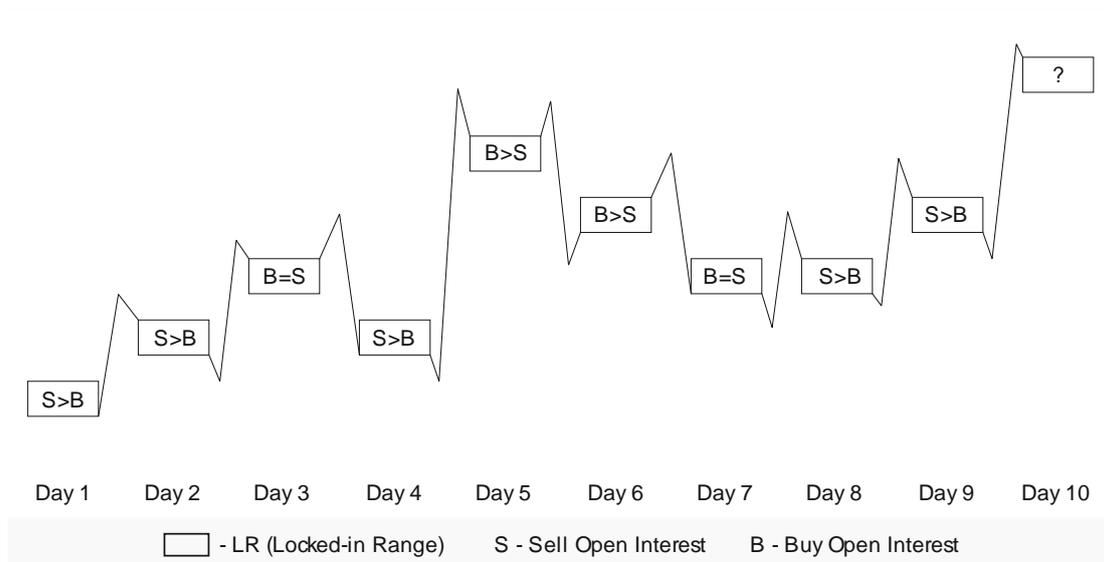

Figure 5. The logic of price changes in the futures markets, where liquidity is provided by market makers

2.2 Take-Profit, Stop-Loss and Break-Even Levels

The market maker maintains accumulated open positions of market participants until those who opened the positions close them (Chapter 1.4). Having data on pending orders (Chapter 1.3), the market maker sees price levels (Figure 1) at which market participants will begin to close their positions by take-profits or stop-losses. As for earning the spread (Chapter 1.3), the market maker is interested in increasing the number of open positions, the levels of take-profit or stop-loss are an obvious reason for the market participants to close open positions and a provocation to open new positions; therefore, the market maker quotes the price (Chapter 1.5) to accelerate the achievement of these levels by the principle against the prevailing volumes (Chapter 1.5).

The market maker is not solely guided by pending orders, as due to market participants' unwillingness to show take-profits and stop-losses, a part of the market participants prefers to close by market orders at the achievement of predetermined prices; therefore, the information on the number and the direction of his open positions is primary for the market maker.

However, if the market maker does not know at what prices, when and how many new open positions will appear (Chapter 1.5), he does know at what prices the available open positions will begin to close by stop-losses, because the different market participants use approximately the same levels when using a chart as a forecasting tool (using similar rules of technical analysis).

Example:

If the market participants predict a price increase, they wait for the price to renew a nearest previous swing high; if they forecast a price decrease, they wait for the price to renew a nearest previous swing low. When the prediction for a price increase turns out to be wrong (the nearest previous swing low are renewed), the market participants exit the unprofitable positions, and vice versa.

<u>Take Profit Stop Loss</u> level (abbr. TPSL level) is the price level at which sellers and buyers will exit the market, closing their open positions by take-profits and stop-losses.

If the TPSL level is a signal to exit loss-making positions, then for a part of profitable positions, that will not be closed at it, the level is a signal to make the positions to a break-even (to move a stop loss order to breakeven) as their forecast of the range breakout turned up to be correct and they are waiting for the price to continue moving in the same direction.

TPSL 1 is determined principally on the basis of:

1) The nearest previous Swing High/Low before the current range (Reason: Technical analysis)
2) High/Low prices of the current range (Reason: Technical analysis)
3) Addition X points to High/Low prices of the current range, where X is equal to the height of the current range in points (Reason: Psychology)
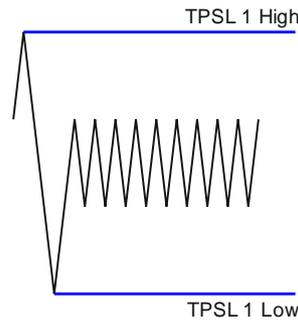
Figure 6.1 Graphical representation of TPSL 1 levels

TPSL 2 is determined principally on the basis of:

1) Behind the nearest previous Swing High/Swing Low before the current range (Reason: Technical analysis)
2) Price levels with highest open interest in option strikes (Reason: Hedging futures positions)
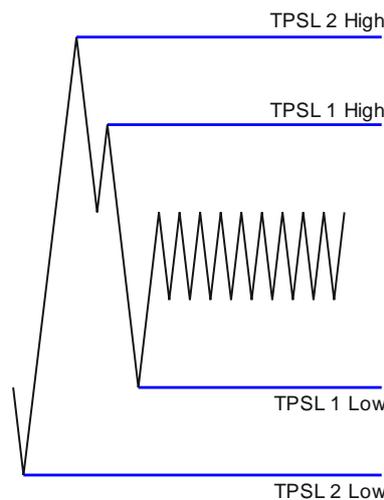   CALL options – for Sell positions
   PUT options – for Buy positions

Figure 6.2 Graphical representation of TPSL 1 & TPSL 2 levels

TPSL3, TPSL4, TPSL5 and next are the price levels at which the volume of open positions of the locked-in range ceases to be the cause of further price changes, since the volume of open positions entered the market after the range breakout becomes higher than the volume of the remaining open positions in the range.

Note. When the TPSL levels are close, the next far TPSL levels will have an effect on the price formation.

The market maker sees the pending orders (Figure 1) and is guided by Net positions (sell+buy) at all price levels and TPSL levels for accumulation and saving the imbalance of open positions, against the prevailing volumes of which the further price change will take place (Chapter 1.5).

Example:

We have a LR with prevailing open buy positions. If the volume of pending limit sell orders (mainly take-profits) is equal to or greater than the volume of pending buy stop orders (mainly stop-losses) at TPSL 1 High level, it is not profitable for the market maker to reach this level in order to execute stop-losses, because there will be more buyers than sellers at this level, or there will be new open sell positions which will reduce the imbalance of the "buy" locked-in range. And vice versa.

That is why market participants face situations when the price unfolds "point-to-point" immediately after the execution of their pre-set stop-loss, or the price unfolds before reaching their pre-set take-profit 1 tick.

Open positions, their take-profits and stop-losses are the only true source of information for making decisions on speculative entry into the futures market with the market maker, therefore, those who do not base their trading decisions on it are Lucky-traders.

2.3 Value of Trading Session and Time-Frame

Trading on the CME Globex platform is generally available Sunday through Friday (Chicago Time), except special holiday trading hours. Exact trading hours vary by product.

Product	CME Globex (Sunday - Friday)		
Name	Chicago Time (CT)	Time Zone	Summer Time
Euro FX Japanese Yen British Pound Australian Dollar Canadian Dollar Swiss Franc E-mini S&P 500 E-mini NASDAQ 100 E-mini Dow Crude Oil Gold Silver	17:00-16:00	GMT -6	GMT -5

Table 9. Globex trading hours (Sunday - Friday) with a 60-minute break each day. Source: cmegroup.com

Trading Session

Trading session means the most active (due to the time difference, or time zone) trading time in a particular region of the world. This is the period when macroeconomic indicators are released and dignitaries of the countries make official statements.

Table 10. CME Globex most active trading sessions hours. Time Zone: GMT

Note. Trading sessions, most active trading time, largest regional exchanges in terms of trading volume:

- Asian-Pacific Session (22:00-09:00 GMT): *New Zealand Exchange (NZX), Australian Securities Exchange (ASX), Japan Exchange Group (JPX), Singapore Exchange (SGX), Hong Kong Exchange (HKEX), Shanghai Stock Exchange (SSE), National Stock Exchange of India (NSE).*

- European Session (07:00-15:00 GMT): *London Stock Exchange (LSE), Swiss Exchange (SIX), Frankfurt Stock Exchange (FWB), Euronext, Moscow Exchange (MOEX), Johannesburg Stock Exchange (JSE).*

- American Session (13:00-21:00 GMT): *New York Stock Exchange (NYSE), NASDAQ, Chicago Mercantile Exchange Group (CME Group), Intercontinental Commodity Exchange (ICE), Chicago Board Options Exchange (CBOE), Toronto Stock Exchange (TSX), Chicago Stock Exchange (CHX), Mexican Stock Exchange (BMV), BM&FBOVESPA.*
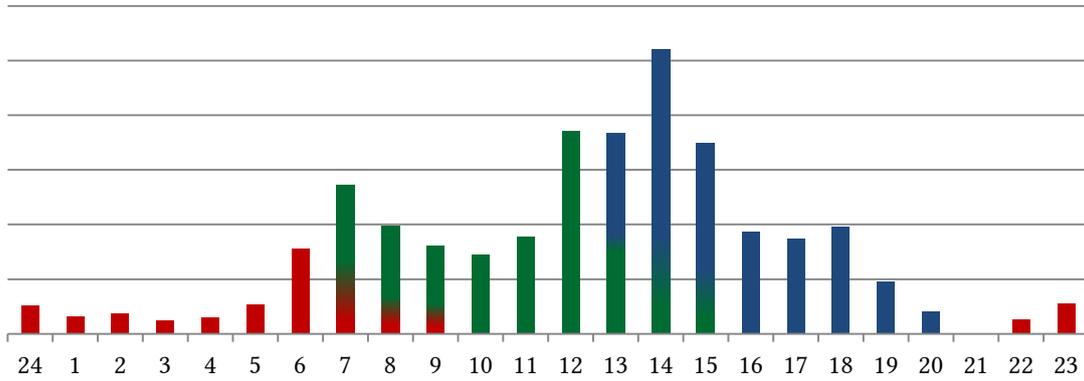
Euro FX - Hour Distribution of Daily Volume

Figure 7.1 Euro FX March 2017 Futures – hour distribution of daily volume. Period: February 2017 Time Zone: GMT
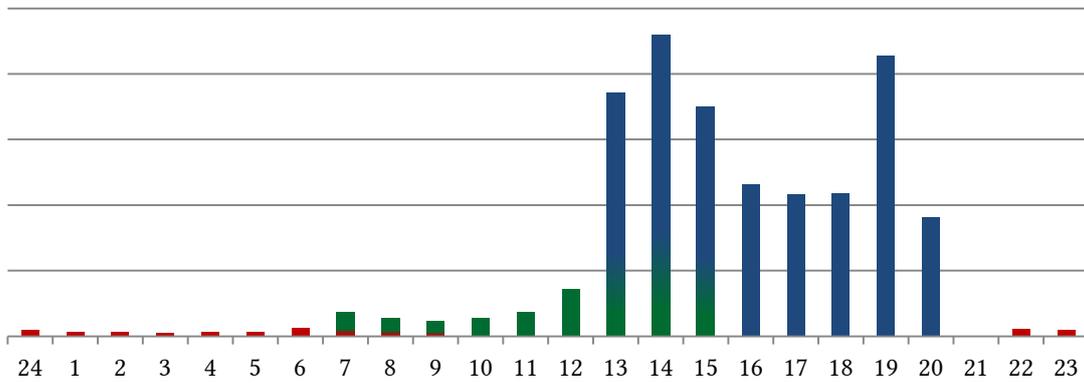
E-mini S&P 500 - Hour Distribution of Daily Volume

Figure 7.2 E-mini S&P 500 March 2017 Futures – hour distribution of daily volume. Period: February 2017 Time Zone: GMT
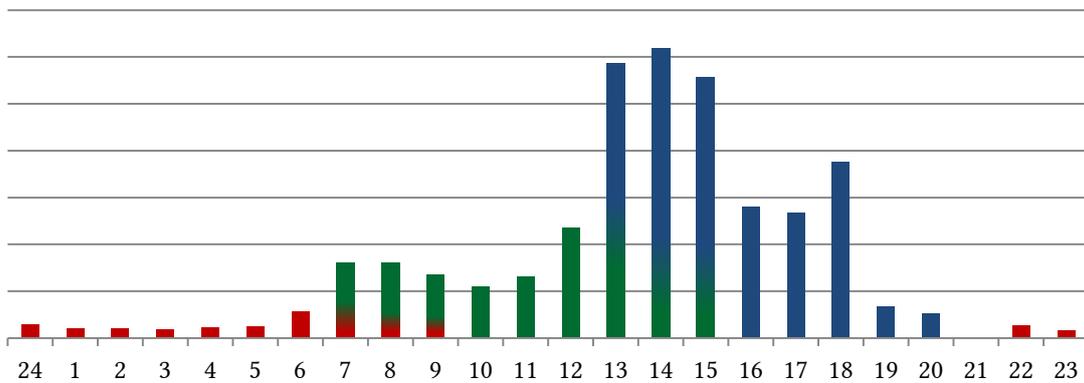
Crude Oil - Hour Distribution of Daily Volume

Figure 7.3 Crude Oil February 2017 Futures – hour distribution of daily volume. Period: January 19 – February 14 2017 Time Zone: GMT

| Trading Session | Influence on The Price Formation | |
	Currency Futures (6E, 6B, 6A, 6C, 6J, 6S) Commodity Futures (GC, SI, CL)	Indices (ES, NQ, YM)
American	High	High
European	Medium	Low
Asian-Pacific	Low	Low

Table 11. Influence of trading session on the price formation of CME Group futures.

The price varies between the locked open buy and sell positions (Chapter 1.5), where the volume and direction of open positions are crucial. As a rule, the main source of new open positions during the trading day are trading sessions descending from high to low traded volume (Table 11). Significant price movements (going beyond the TPSL levels) at sessions with low influence on the formation of prices occur based on or taking into account and not contradicting the prevailing open positions during sessions with higher influence.

Price Location	Within TPSL levels	Beyond TPSL levels
Condition for opening a position	The emergence of a more favorable price on the deviation from the accumulated positions imbalance (Chapter 2.4)	Determination of market sentiment and entry to the movement continuation
Stop-loss zone	Beyond the TPSL level, acting as a level fixing the losses, profits, and break-evens (Chapter 2.2) for already opened positions Reason: Continued accumulation of positions imbalance within the range of TPSL levels	Beyond the locked-in range, acting as a source of market sentiment Reason: It is not profitable for a market maker to return the price, so that loss-making positions cannot close at break-even levels
Take-profit	Approximation of price to the opposite level of TPSL or its breakout	Increased volume's appearance or the accumulation of new volume occurs, that can change the imbalance which is the basis for opening a position

Table 12. Advantages of sessions with low influence on price formation

Focusing on price behavior during a session with low influence (Table 12) and correctly estimating the imbalance of the locked-in range, you can join the the most profitable price movement scenario for the market maker.

Note. To increase the probability of trades profitability, based on LRA, it is recommended not to enter the market in sessions with increased influence on price formation, since the large volume of the new opening positions can change the imbalance of the market maker previous sessions and days to the opposite.

Time-Frame

Time-frame is the time interval used to group price changes for chart creating (Bars, Candles, and Line). The LRA time-frame selected for the construction of charts should include the current TPSL levels and the previous trading days at the same time, with a likely significant volume of locked/break-even open positions that influence the formation of prices by the market maker (Example: 1 Hour).

2.4 Determination and Using of LR Imbalance

Speculative futures trading is a zero-sum game when one player gains only at the expense of another player. The full control of the market maker over the participants of this game (knowledge of open positions and pending orders of each market participant) and over the holding of the game (price formation) gives an indisputable advantage to victory. By determining the prevailing open positions, we can join the next actions of the market maker by opening positions based on the causes of price changes.

Degree of Imbalance	3/3	2/3	1/3
Number of open positions[1]	High	Medium	Low
Volume's appearance beyond TPSL levels[2]	Low	Medium	High
Support/resistance zone at first return[3]	Strong	Medium	Weak

Table 13. Properties of the locked-in range depending on the degree of imbalance

Note 1. The number of open positions (direct dependence of influence on price change) depends on the traded volume and the time in one LR.

Note 2. Without knowing the exact number of open positions in the LR and the number of positions closed after the breakout of TPSL level, it is possible to focus exclusively on the average scenario of volume's appearance.

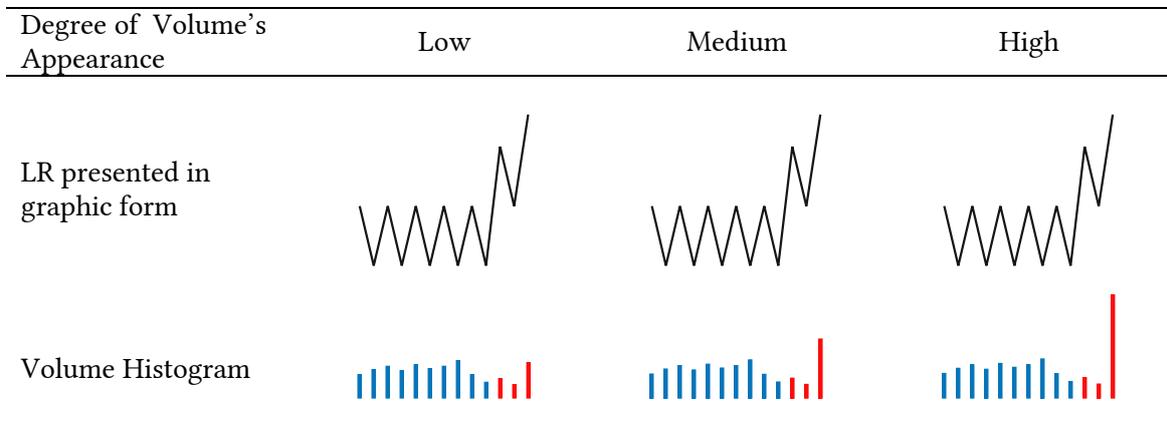| Degree of Volume's Appearance	Low	Medium	High
LR presented in graphic form			
Volume Histogram			

Figure 8. Average scenario for determining the volume's appearance

Note 3. The probability of price reversal from the LR at the first return based on the availability of locked-in open positions, against the prevailing volume of which it is profitable for the market maker to quote or maintain the price (Chapter 1.5).

Signs of weak imbalance:

1) Return to the break-even zone[1]
   TPSL level breakout and price return to LR.
   Reason: Not enough imbalance to continue movement. (Accumulation continues)
2) Quick movement beyond the range[2]
   TPSL level breakout and fast movement from LR.
   Reason: Encouraging the market participants to prematurely close their loss-making positions (Psychology)

Signs of strong imbalance:

1) Close approximation of price (with an already formed LR) to one TPSL level, but the breakout of opposite TPSL level
   The approximation is only implemented if the Net positions are added to the prevailing volume side.
   Reason: Additional accumulation of positions; execution of profitable positions break-even
2) Slow trend in the direction of TPSL level breakout
   Reason: With a slow price movement beyond LR without rollbacks (market correction), stop-losses will retract (Psychology); opening of counter-trend positions (in the direction of the locked-in range prevailing positions)
3) Previous LR b
   Reason: The remaining volume of open positions in the previous LR cannot influence the current imbalance
4) Increase in OI values relative to the previous trading day (data is available with a 24-hour delay)
   Reason: Increase in the number of open positions and the probability of market maker changing prices against the prevailing volumes (Chapter 1.5)

[1]Return to Break-Even Zone

Based on the logic of price movement (Figure 5), as a rule, "buy" positons are mainly concentrated in the upper half of the LR and "sell" in the lower half. Therefore, the average allowable return to the range is 30-70% of the range height in points where the break-even orders will be executed (entered against the prevailing volume) in the profitable price direction for the market maker, the volume of which can restore or increase the imbalance, remaining after the breakout of TPSL level and the closing of loss-making positions.

Only the market maker knows the exact level of Net positions (sell stop>buy limit / buy stop>sell limit) at the price return to the range, but given the fact that part of the market participants prefers to close by market orders (Chapter 2.2), the market maker is forced to "test" the prices, at which many open positions of the "trend followers" are placed (in the profitable price direction for the market maker), for their closing in a break-even by market orders or change the opinion about the market and reverse their positions.

²Quick movement beyond the LR

Sharp price movement is the price movement accelerated compared to average changes in the futures instrument price.

Sharp movement beyond the TPSL level is a sign of a weak imbalance, but a large volume of open positions.

In addition to quick locking of LR imbalance by the market maker, sharp movement is a provocation for the opening of new positions.

If market participants do not enter the sharp movement side, the return of price in LR to the market maker's break-even zone will be (if the imbalance changes upon return, the breakout of the opposite TPSL level will be).

If market participants enter the sharp movement side, the breakout of the opposite TPSL level will be.

If market participants enter the side opposite to the sharp movement, the continuation of movement will be.

Rollback to LR

After price movement (breakout of TPSL level) beyond the LR, all positions are already locked, therefore, price return to the nearest border of the range is permissible to accumulate more open positions.

Example:

If the price goes down by 100% of the locked-in range heigh in points from TPSL 1 level breakout, it will mean "buy" positions prevailed in the LR, and if they still remain there, then the price will go down with the probability of rollback to the low LR border (in case of strong imbalance) or to the break-even zone (in case of weak imbalance).

LR Cancellation

Price return after the breakout of TPSL 1 level (by 100% of the height of the considered range in points) to the opposite TPSL 1 level or its breakout.

Reason: The market sentiment's weak capacity to keep loss-making positions (Chapter 1.5)

Example:

If all shortists are out of the locked-in range, but open longists remain they will become the majority and the price will go against them. And vice versa.

Accumulating Positions in LR

Note.

Market participants prefer to enter the graphically formed price ranges, since they are able to set protective stop-losses beyond the TPSL levels.

An accumulation of open positions for high-volume sessions occurs with the renewal of the TPSL High-Low levels of locked-in range (The renewal of the TPSL High-Low levels of LR is much more effective in provoking the opening of new positions than the price intra-range quotation. Therefore, the market maker may renew the LR high/low prices in the interest of spread and under the accumulation of open positions any number of times until an obvious imbalance is formed).

The accumulation of open positions for low-volume sessions occurs within the TPSL levels guided by the open intra-range Net positons.

Ignoring First Volumes

In assessing the traded volume, first candles/bars of the locked-in range should not be taken into account, as there are mostly accumulated stop-losses in them.

Advantage of the Last LR

Out of two visible LRs, the latter is stronger as there are more open positions in it.

TPSL Level False Breakout

If the TPSL level is broken by less than 20% of the LR height in points with a small/medium volume's appearance and a quick price return to the opposite TPSL level, it is permissible to consider the breakout as "false" based on the execution of profitable Net positions (degree of imbalance 2/3)

Example:

Mostly open "buy" positions are accumulated in the locked-in range, but TPSL 1 High has a strong imbalance in the placed Net positions when "buy stop" > "sell limit". The market-making system will change the price to these positions and after they are executed, the automated system will quickly return the price quoting to the LR in which most open "buy" positions will be at a loss again. Further, it will be expected for the price to go below TPSL 1 Low.

Tracking the rollover of OI

To correctly assess an accumulated and "outgoing" volume, it is necessary to track the rollover of open interest to the next contract of the traded instrument.

Note.

Using LRA on instruments with a high constant simultaneous open interest of more than 1 contract is less effective.

Using of LRA

Opening Position

The price of futures is never too high to start buying or too low to start selling, as everything is decided by the market sentiment, expressed in the number of open positions at this price zone (Chapter 1.5). Neither the market maker nor the crowd knows where they will change their opinion on the market. For speculative trading in similar conditions, an advantage in the market is the search or waiting for signs of an accumulation of open positions (Example: LR) and about the price behavior (speed of price change, volume) of TPSL levels, trying to determine the profitable direction of price changes for the market maker.

Alternative Scenario for Opening Position

The current price is always in the break-even zone for all market maker's open positions, but it is not always in the most profitable value for the market maker. Entering the market at the moment of price deviation from the most profitable price (between the TPSL levels) and exiting at the moment in which it is profitable for the market maker to maintain the price or in which the prevailing volume of LR positions is at a loss, is an alternative method of speculative trading based on the causes of price changes.

Determination of Take-Profit and Stop-Loss Levels

your Take-Profit — stop-loss of locked-in participants in the LR (TPSL 1 & TPSL 2).

your Stop-Loss — the LR acts both as a reason and protection of your positions, therefore, your stop-loss is a violation of the scenario and is set beyond the LR.

Note.

When the imbalance of the LR disappears, your advantage to enter the market also disappears, and holding the position for longer, it relies on luck.

2.5 Impact of Fundamental Factors on Price

Fundamental factors influence the price by the fact that new positions are opened on their basis, based on which "news" movements occur (Chapter 1.5).

Classification of fundamental factors in terms of their expectations:

1. Planned and expected factors are news on economic (macroeconomic indicators) or less often of political nature.

During the release of news with known release dates and times, the market maker has a "justified" opportunity for sharp price changes for distribution of the current and/or previously accumulated imbalance, as these movements will not attract the attention of the CFTC.

2. Random and unexpected factors are political phenomena and events (wars, terrorist attacks) and events of natural origin (cataclysms, natural disasters).

With a long factor life cycle (from several weeks to several years), the market maker can change the ratio of limit orders to maintain liquidity (Chapter 1.3) so as not to incur financial losses.

Example: Hostilities have begun in the country 'X', and market participants are actively selling national currency futures. It is also not profitable for the market maker to own (after expiration) this currency at the current price, therefore, he will continue to accumulate Buy orders in full, but to accumulate less Sell orders volume than (or equal to) his available accumulated Buy orders.

Why Does the Current Market Price Tend to Meet the Fundamental Factors?

1) Investigation by CFTC.

With a strong divergence between the price and the real market factors affecting the asset, CFTC will launch an investigation into the suspicion of asset manipulation.

Since it is impossible to express a fair market price in a certain value and the media sources are good at "justifying" the reasons for any price changes, the market-making system often does not come to the regulator's attention. Nevertheless, this factor acts a deterrent for market makers against excessive price manipulation in their own interests.

2) Warehouse stocks of market makers.

The market maker goes to physical delivery (Chapter 1.4), and it is in his interest for the current market price to correspond to the fundamental factors as the market maker owns this asset in the form of warehouse stocks, and stocks need to be sold by future deliveries under derivative instruments or in the over-the-counter (spot) market.
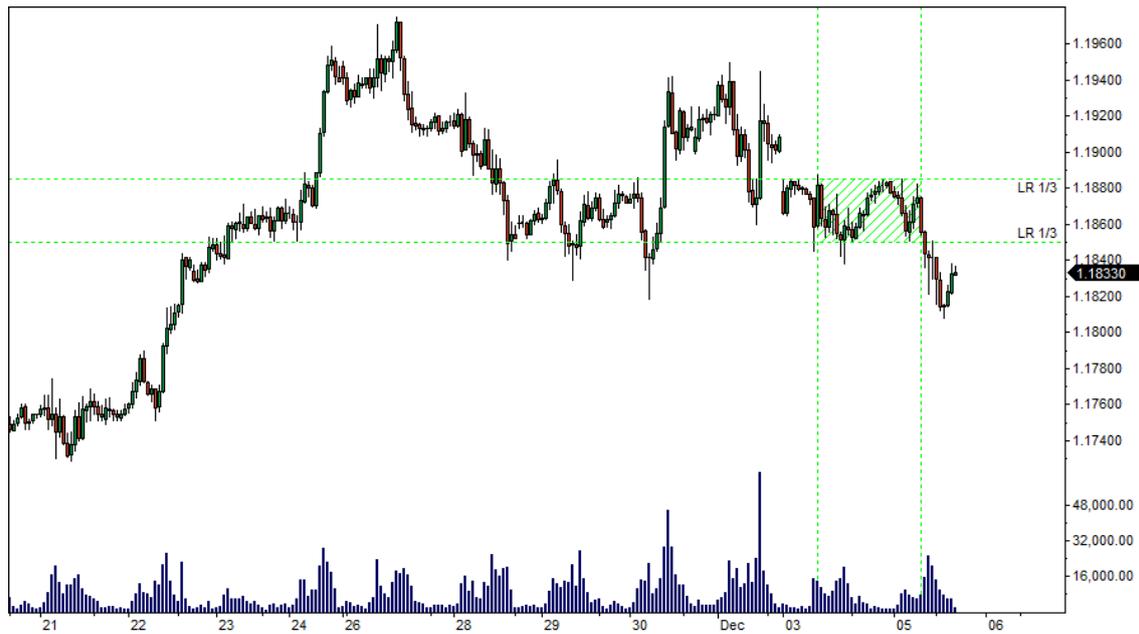
2.6 Real-World LRA

Figure 9.1a.

Euro FX (EUR/USD) Futures
December 2017, 1 Hour
Period: 21 November – 5 December

Locked-in Range: 1.18850-1.18500; Sentiment (Doi): Buy (1/3)

**Preference:** Short positions below resistance LR 1.18850-1.18500

Comment: The breakout of Low extremum of LR (TPSL 1 Low) and previous swing Low (TPSL 2 Low) with a "Medium" degree of volume's appearance is an indicator pointing to the volume imbalance of prevailing "Buy" open positions until the price goes out of LR. There is a probability of having the remaining "Buy" open positions in the range.

Figure 9.1b.

Euro FX (EUR/USD) Futures
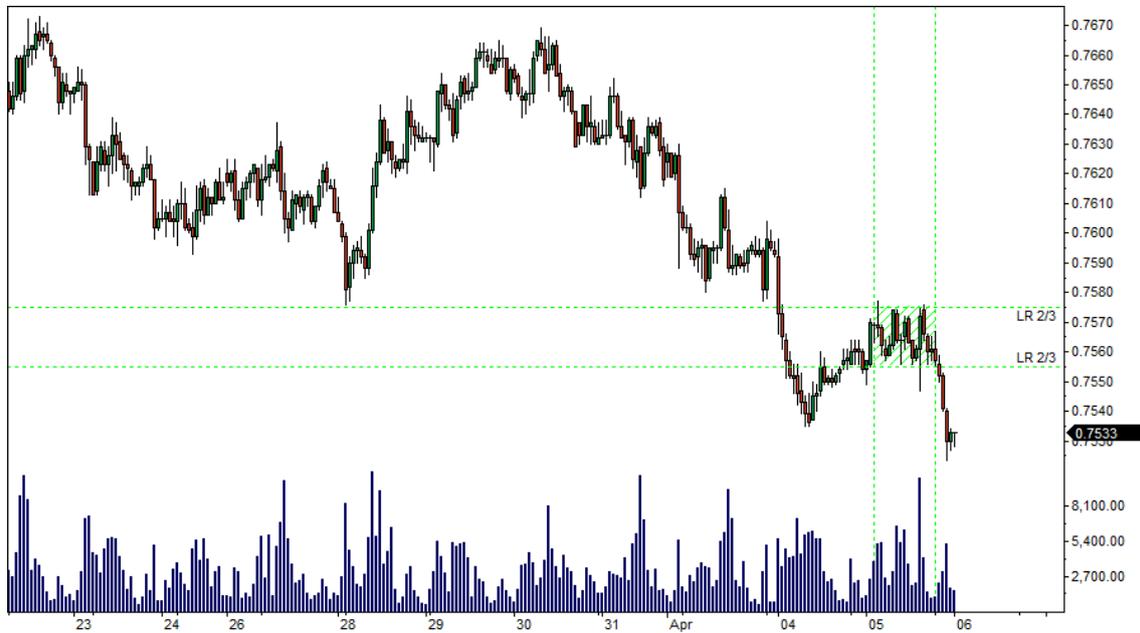December 2017, 1 Hour
Period: 24 November – 8 December
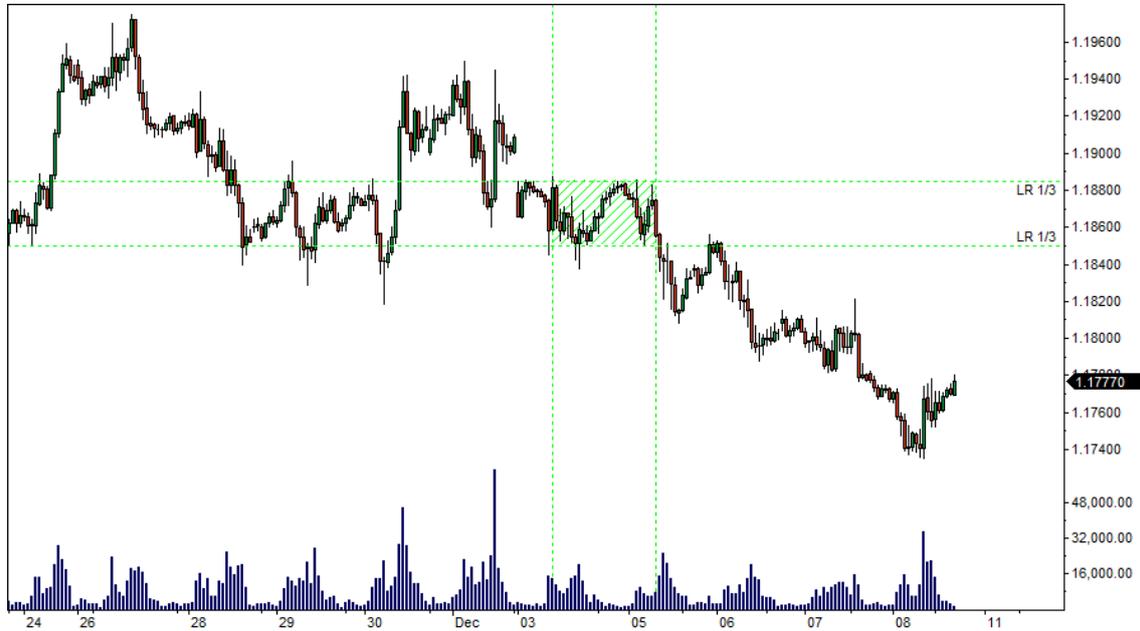
Comment: In the moment of price approximation to LR, the volume of the remaining "Buy" open positions had a sufficient influence on the price formation when it is profitable for the market-making system to quote prices below the range.

Figure 9.2a.

Japanese Yen (JPY/USD) Futures
June 2017, 1 Hour
Period: 12 May – 26 May
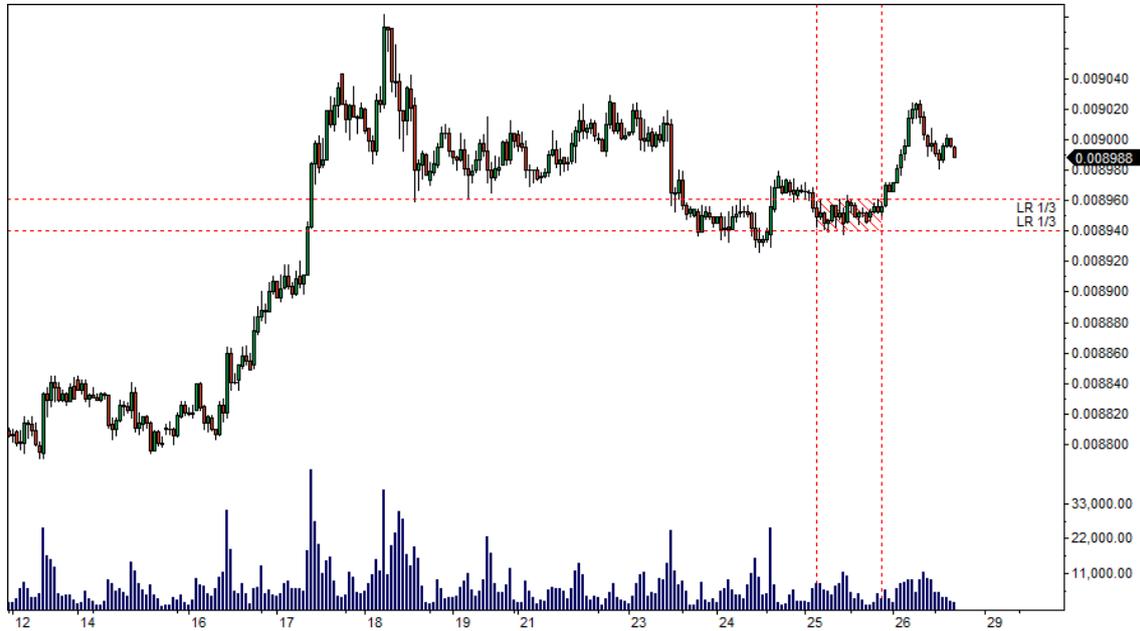
Locked-in Range: 0.008960-0.008940; Sentiment (Doi): Sell (1/3)

Preference: Long positions above support LR 0.008960-0.008940

Comment: The breakout of High extremum of LR (TPSL 1 High) and the end of next trading day without price return to LR is an indicator pointing to the volume imbalance of prevailing "Sell" open positions until the price goes out of LR. There is a probability of having the remaining "Sell" open positions in the range.

Figure 9.2b.

Japanese Yen (JPY/USD) Futures
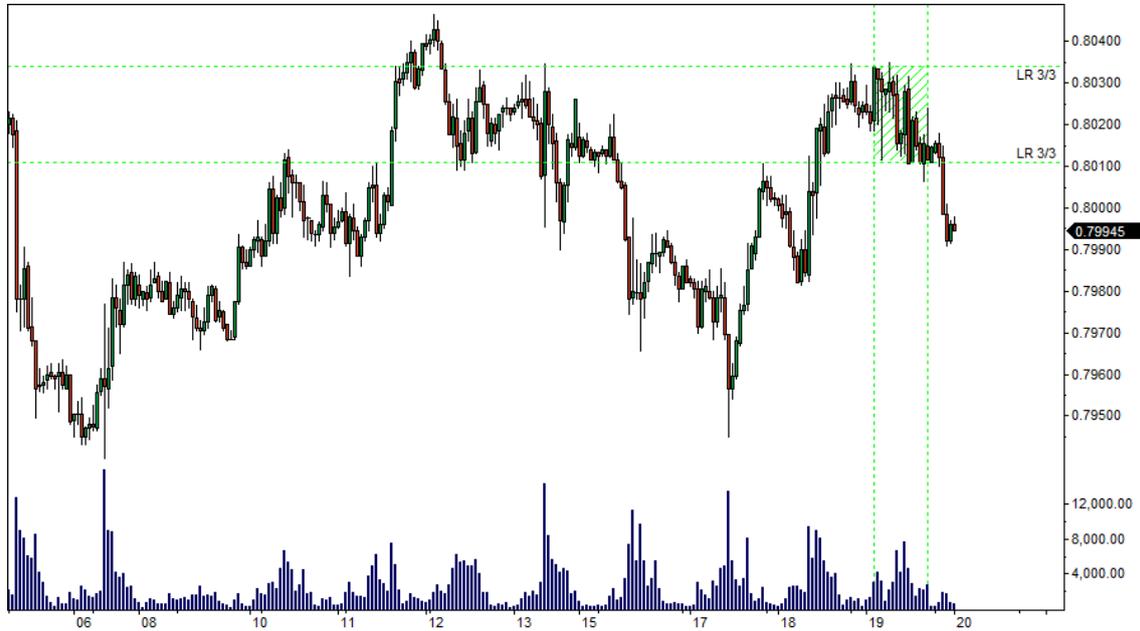June 2017, 1 Hour
Period: 23 May – 6 June

Comment: In the moment of price approximation to LR, the volume of the remaining "Sell" open positions had a sufficient influence on the price formation when it is profitable for the market-making system to quote prices below the range.

Figure 9.3a.

British Pound (GBP/USD) Futures
September 2017, 1 Hour
Period: 30 June – 16 July
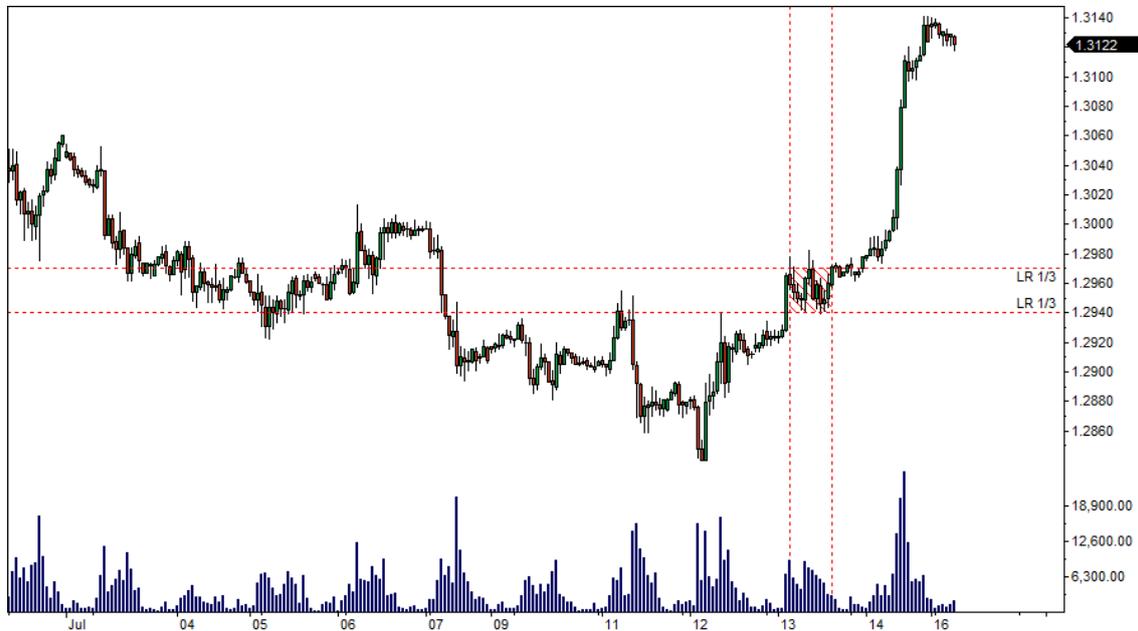
Locked-in Range: 1.2970-1.2940; Sentiment (Doi): Sell (1/3)

Preference: Long positions above support LR 1.2970-1.2940

Comment: The breakout of High extremum of LR (TPSL 1 High) and previous swing High (TPSL 2 High), the end of next trading day without price return to LR are indicators pointing to the volume imbalance of prevailing "Sell" open positions until the price goes out of LR. There is a probability of having the remaining "Sell" open positions in the range.

Figure 9.3b.

British Pound (GBP/USD) Futures
September 2017, 1 Hour
Period: 12 July – 27 July
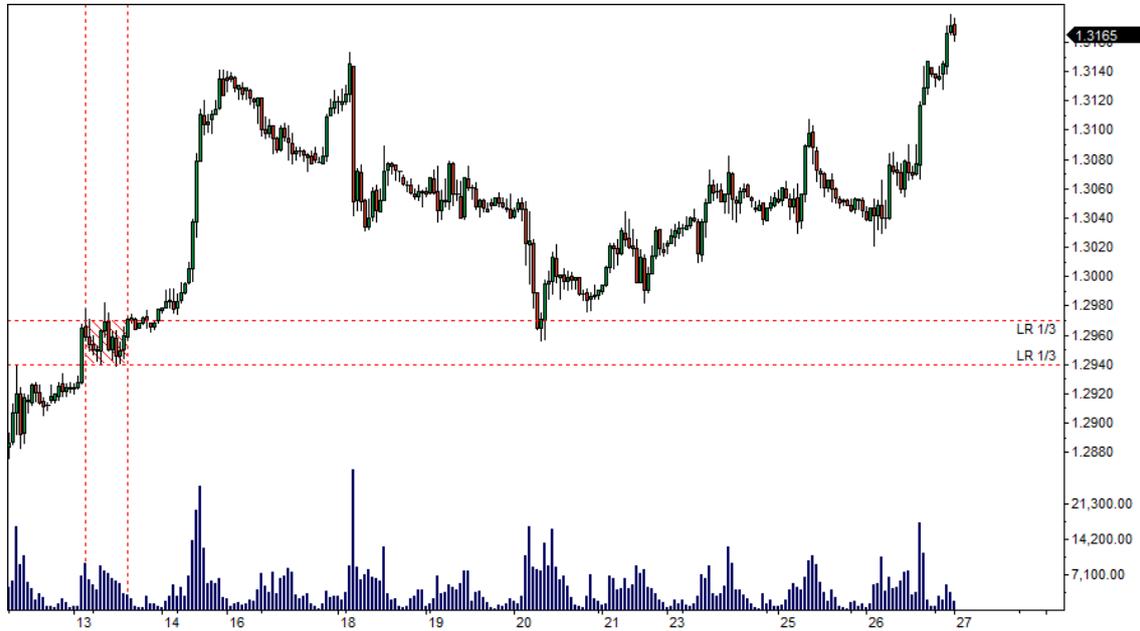
Comment: In the moment of price approximation to LR, the volume of the remaining "Sell" open positions had a sufficient influence on the price formation when it is profitable for the market-making system to quote prices below the range.

Figure 9.4a.

Australian Dollar (AUD/USD) Futures
June 2017, 1 Hour
Period: 22 March – 5 April

Locked-in Range: 0.7575-0.7555; Sentiment (Doi): Buy (2/3)

Preference: Short positions below resistance LR 0.7575-0.7555

Comment: The breakout of Low extremum of LR (TPSL 1 Low) and previous swing Low (TPSL 2 Low) with a "Medium" degree of volume's appearance is an indicator pointing to the volume imbalance of prevailing "Buy" open positions until the price goes out of LR. There is a probability of having the remaining "Buy" open positions in the range.

Figure 9.4b.

Australian Dollar (AUD/USD) Futures
June 2017, 1 Hour
Period: 26 March – 9 April

Comment: In the moment of price approximation to LR, the volume of the remaining "Buy" open positions had a sufficient influence on the price formation when it is profitable for the market-making system to quote prices below the range.

Figure 9.5a.

Canadian Dollar (CAD/USD) Futures
December 2017, 1 Hour
Period: 5 October – 19 October

Locked-in Range: 0.80340-0.80110; Sentiment (Doi): Buy (3/3)

**Preference:** Short positions below resistance LR 0.80340-0.80110

Comment: The breakout of Low extremum of LR (TPSL 1 Low) with a "Low" degree of volume's appearance is an indicator pointing to the volume imbalance of prevailing "Buy" open positions until the price goes out of LR. There is a probability of having the remaining "Buy" open positions in the range.

Figure 9.5b.

Canadian Dollar (CAD/USD) Futures
December 2017, 1 Hour
Period: 10 October – 24 October
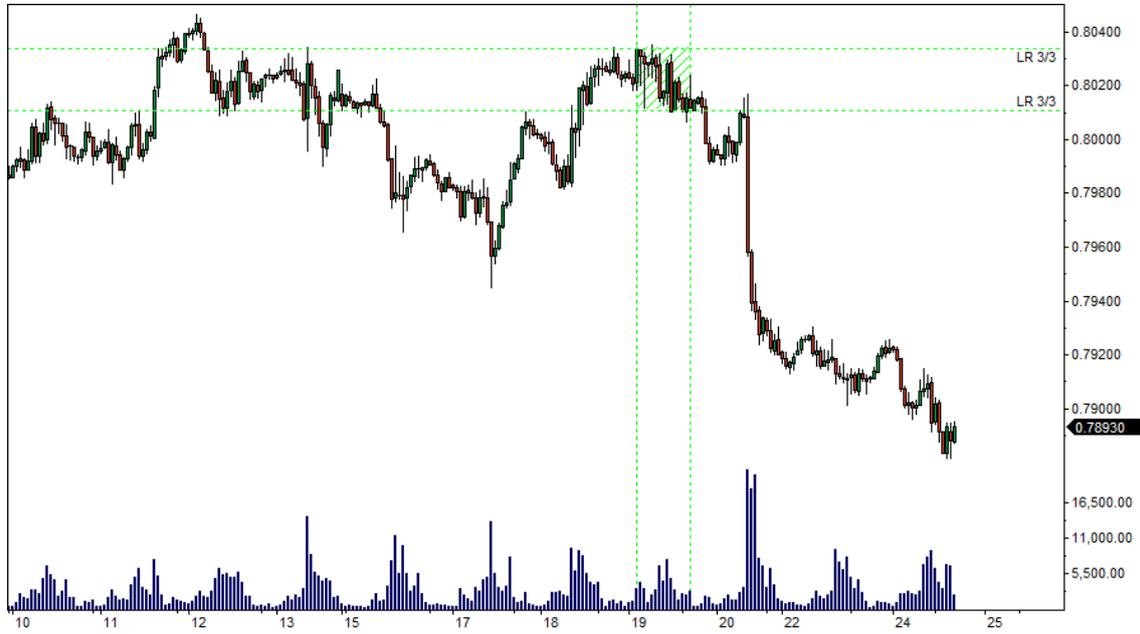
Comment: In the moment of price approximation to LR, the volume of the remaining "Buy" open positions had a sufficient influence on the price formation when it is profitable for the market-making system to quote prices below the range.

Figure 9.6a.

Swiss Franc (CHF/USD) Futures
June 2017, 1 Hour
Period: 22 March – 5 April

Locked-in Range: 1.0031-1.0011; Sentiment (Doi): Buy (1/3)

Preference: Short positions below resistance LR 1.0031-1.0011

Comment: The breakout of Low extremum of LR (TPSL 1 Low) with a "High" degree of volume's appearance is an indicator pointing to the volume imbalance of prevailing "Buy" open positions until the price goes out of LR. There is a probability of having the remaining "Buy" open positions in the range.

Figure 9.6b.

Swiss Franc (CHF/USD) Futures
June 2017, 1 Hour
Period: 27 March – 9 April
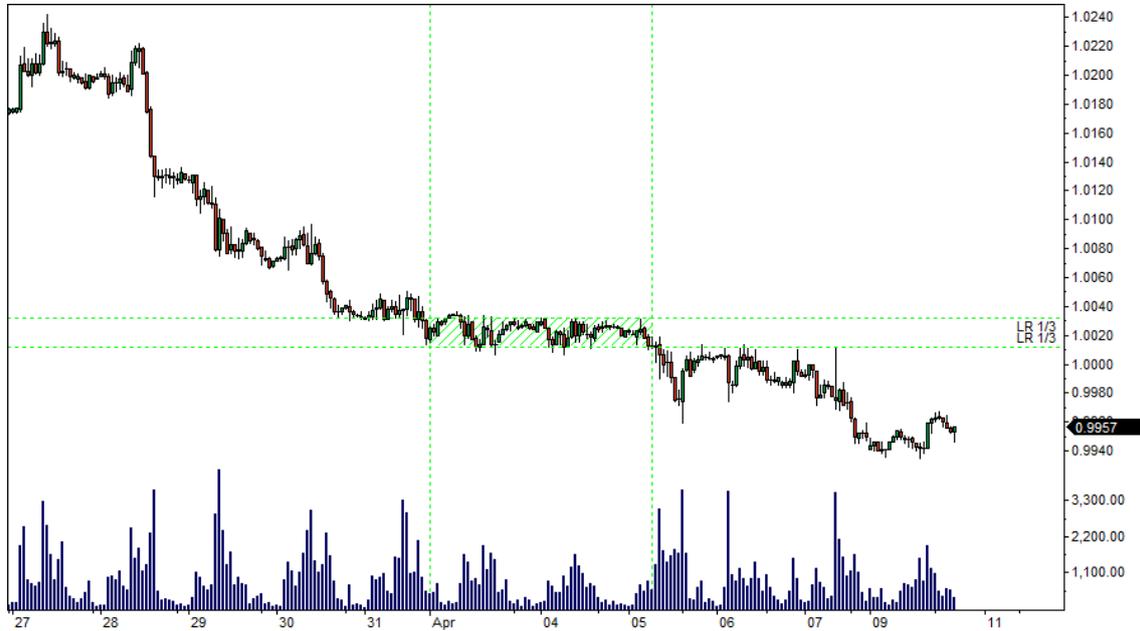
Comment: In the moment of price approximation to LR, the volume of the remaining "Buy" open positions had a sufficient influence on the price formation when it is profitable for the market-making system to quote prices below the range.

Figure 9.7a.

E-mini S&P 500 Futures
December 2017, 1 Hour
Period: 15 October – 27 October
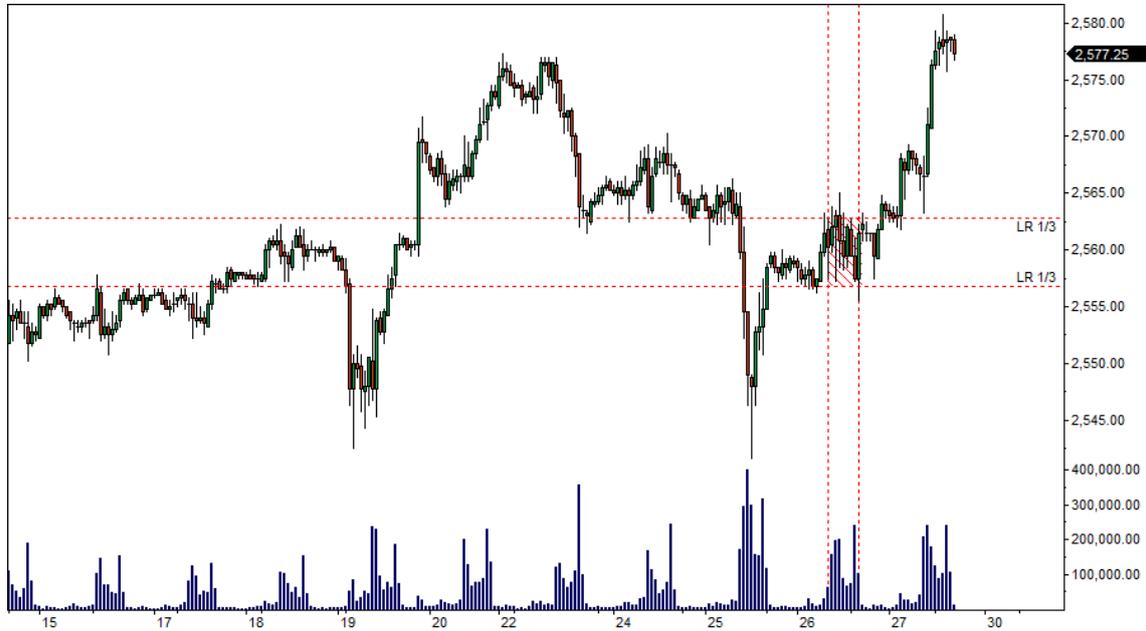
Locked-in Range: 2562.75-2556.75; Sentiment (Doi): Sell (1/3)

Preference: Long positions above support LR 2562.75-2556.75

Comment: The breakout of High extremum of LR (TPSL 1 High) and previous swing High (TPSL 2 High), the end of next trading day without price return to LR are indicators pointing to the volume imbalance of prevailing "Sell" open positions until the price goes out of LR. There is a probability of having the remaining "Sell" open positions in the range.

Figure 9.7b.

E-mini S&P 500 Futures
December 2017, 1 Hour
Period: 24 October – 5 November
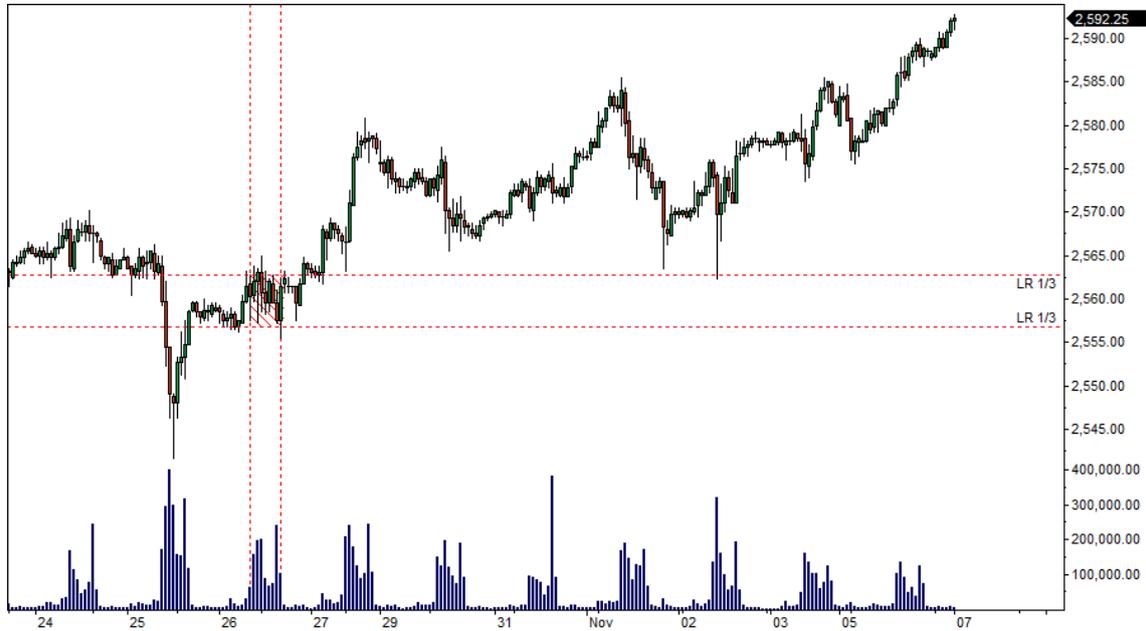
Comment: In the moment of price approximation to LR, the volume of the remaining "Sell" open positions had a sufficient influence on the price formation when it is profitable for the market-making system to quote prices below the range.

Figure 9.8a.

E-mini NASDAQ 100 Futures
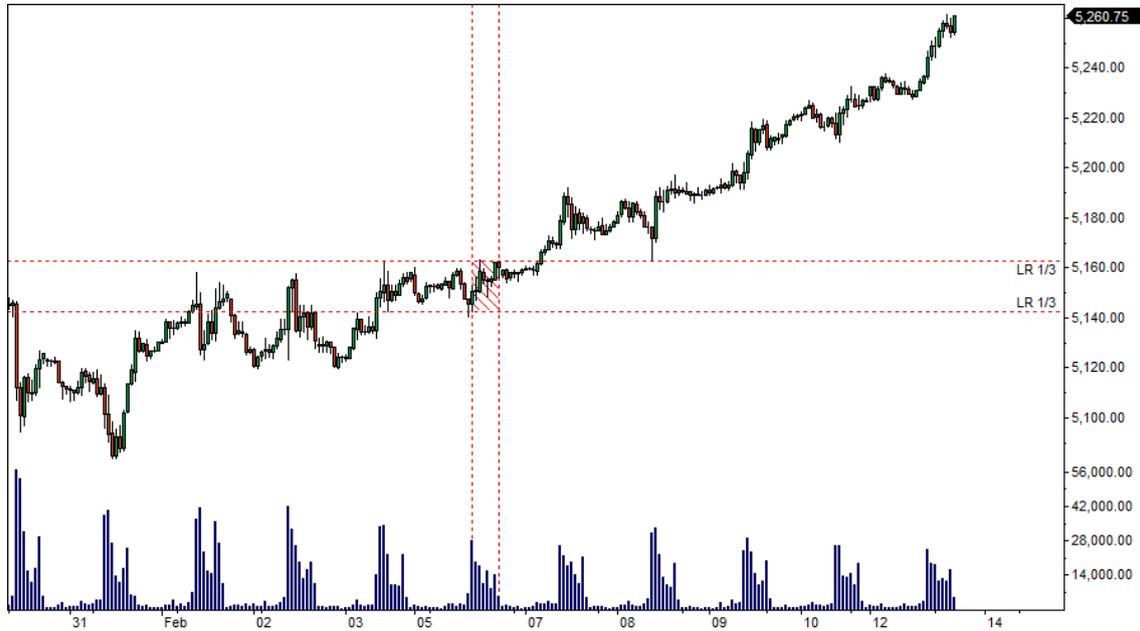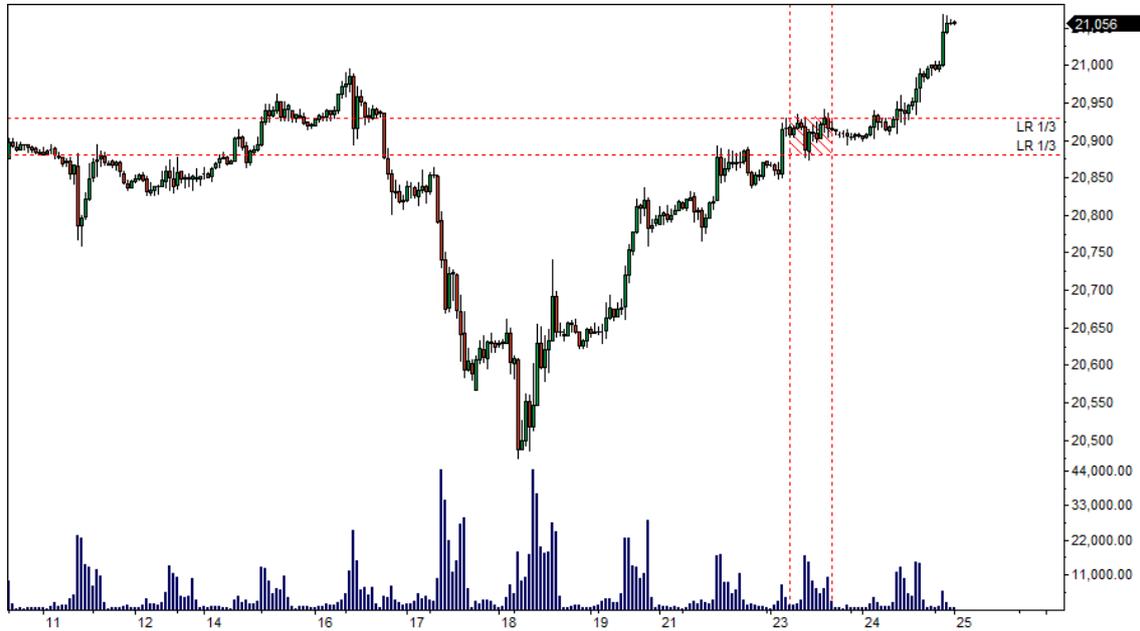March 2017, 1 Hour
Period: 25 January – 7 February
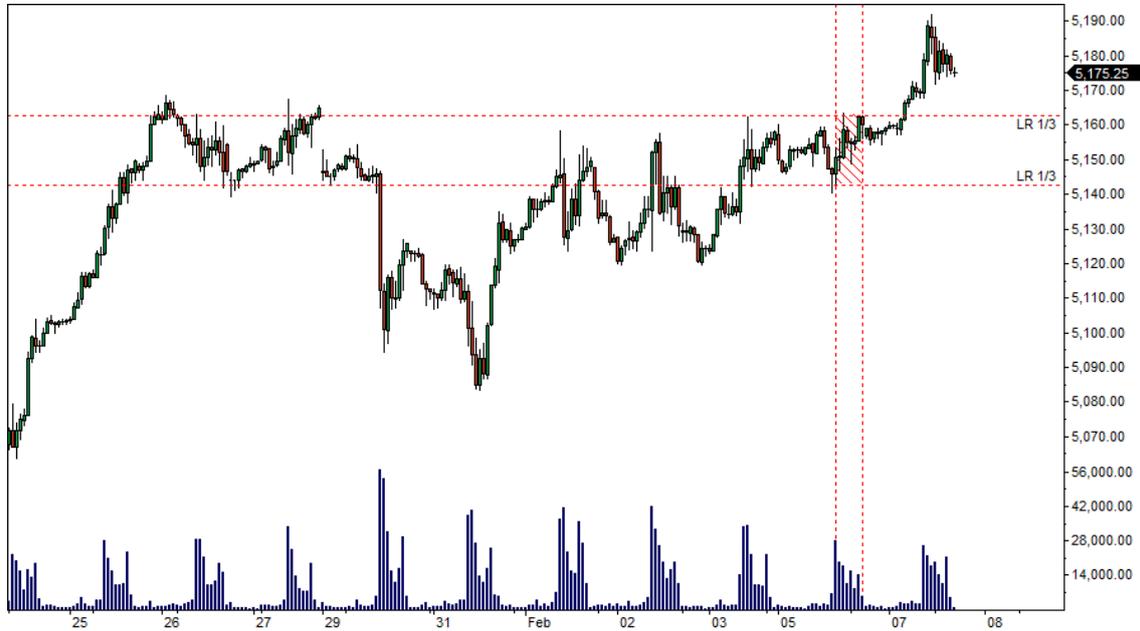
Locked-in Range: 5162.75-5142.75; Sentiment (Doi): Sell (1/3)

Preference: Long positions above support LR 5162.75-5142.75
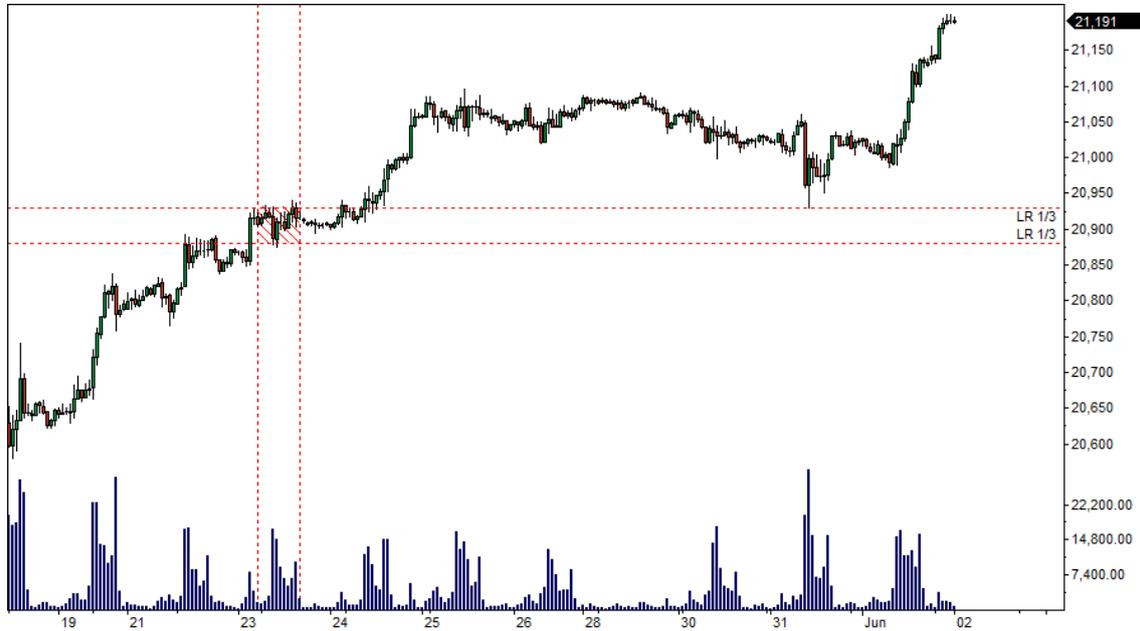
Comment: The breakout of High extremum of LR (TPSL 1 High) and previous swing High (TPSL 2 High), the end of next trading day without price return to LR are indicators pointing to the volume imbalance of prevailing "Sell" open positions until the price goes out of LR. There is a probability of having the remaining "Sell" open positions in the range.

Figure 9.8b.

E-mini NASDAQ 100 Futures
March 2017, 1 Hour
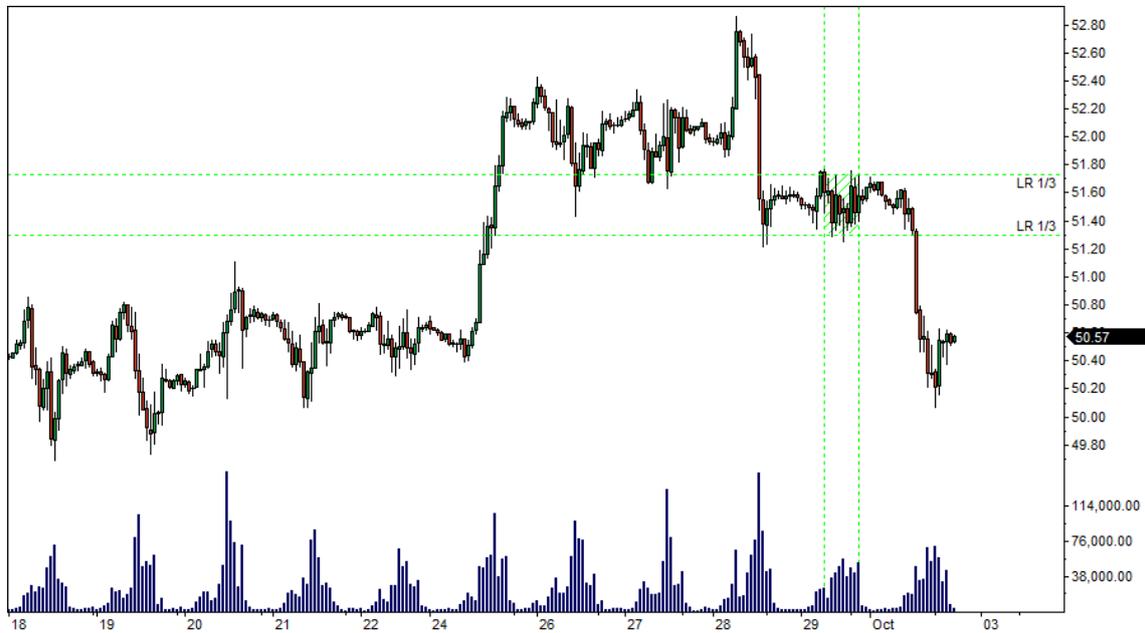Period: 31 January – 12 February

Comment: In the moment of price approximation to LR, the volume of the remaining "Sell" open positions had a sufficient influence on the price formation when it is profitable for the market-making system to quote prices below the range.

Figure 9.9a.

E-mini Dow ($5) Futures
June 2017, 1 Hour
Period: 11 May – 24 May

Locked-in Range: 20.930-20.880; Sentiment (Doi): Sell (1/3)

Preference: Long positions above support LR 20.930-20.880

Comment: The breakout of High extremum of LR (TPSL 1 High) and previous swing High (TPSL 2 High), the end of next trading day without price return to LR are indicators pointing to the volume imbalance of prevailing "Sell" open positions until the price goes out of LR. There is a probability of having the remaining "Sell" open positions in the range.

Figure 9.9b.

E-mini Dow ($5) Futures
June 2017, 1 Hour
Period: 19 May – 1 June

Comment: In the moment of price approximation to LR, the volume of the remaining "Sell" open positions had a sufficient influence on the price formation when it is profitable for the market-making system to quote prices below the range.

Figure 9.10a.

Crude Oil Futures
November 2017, 1 Hour
Period: 18 September – 2 October

Locked-in Range: 51.73-51.30; Sentiment (Doi): Buy (1/3)

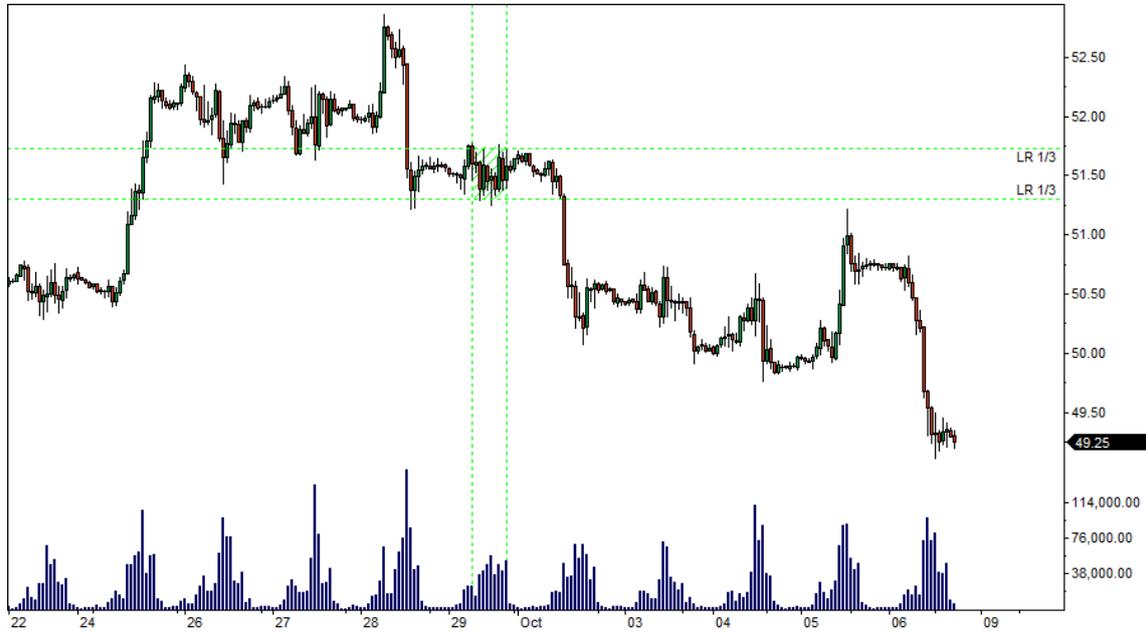**Preference:** Short positions below resistance LR 51.73-51.30

Comment: The breakout of Low extremum of LR (TPSL 1 Low) and previous swing Low (TPSL 2 Low), the end of next trading day without price return to LR are indicators pointing to the volume imbalance of prevailing "Buy" open positions until the price goes out of LR. There is a probability of having the remaining "Buy" open positions in the range.

Figure 9.10b.

Crude Oil Futures
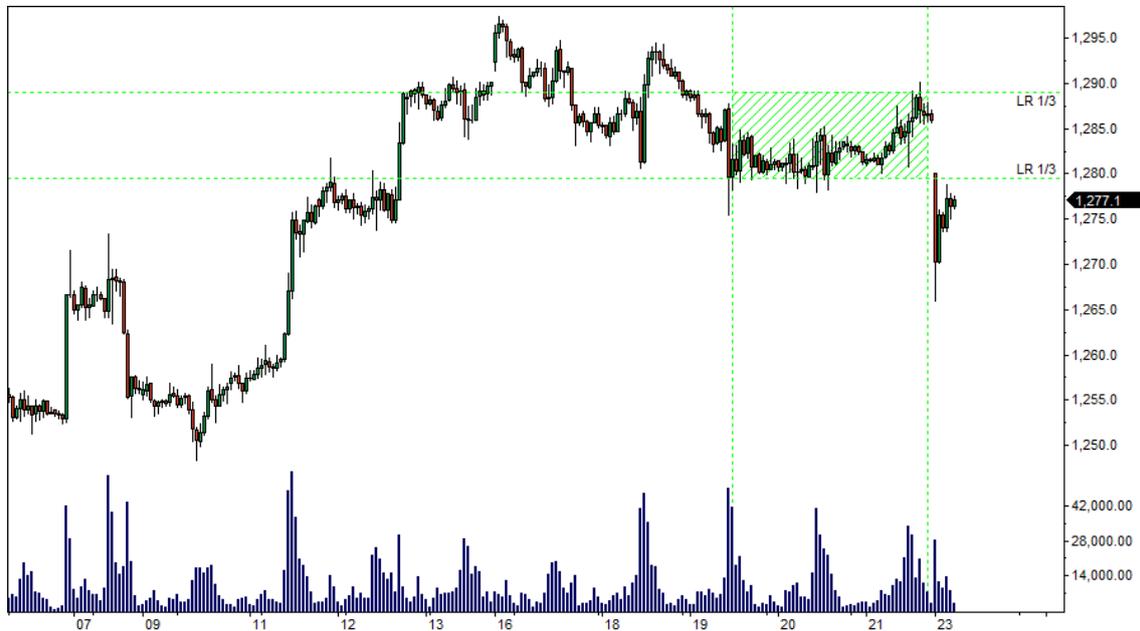November 2017, 1 Hour
Period: 22 September – 6 October

Comment: In the moment of price approximation to LR, the volume of the remaining "Buy" open positions had a sufficient influence on the price formation when it is profitable for the market-making system to quote prices below the range.

Figure 9.11a.

Gold Futures
June 2017, 1 Hour
Period: 6 April – 23 April

Locked-in Range: 1289.0-1279.5; Sentiment (Doi): Buy (1/3)

**Preference:** Short positions below resistance LR 1289.0-1279.5

Comment: The breakout of Low extremum of LR (TPSL 1 Low) and previous swing Low (TPSL 2 Low) with a "Medium" degree of volume's appearance is an indicator pointing to the volume imbalance of prevailing "Buy" open positions until the price goes out of LR. There is a probability of having the remaining "Buy" open positions in the range.

Figure 9.11b.

Gold Futures
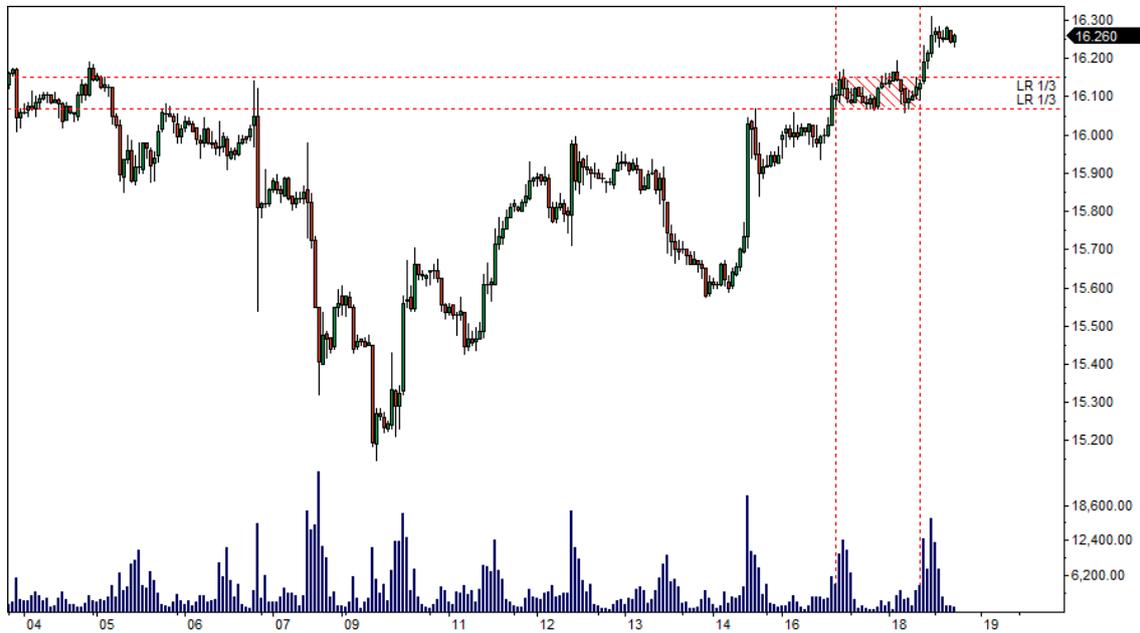June 2017, 1 Hour
Period: 18 April – 2 May
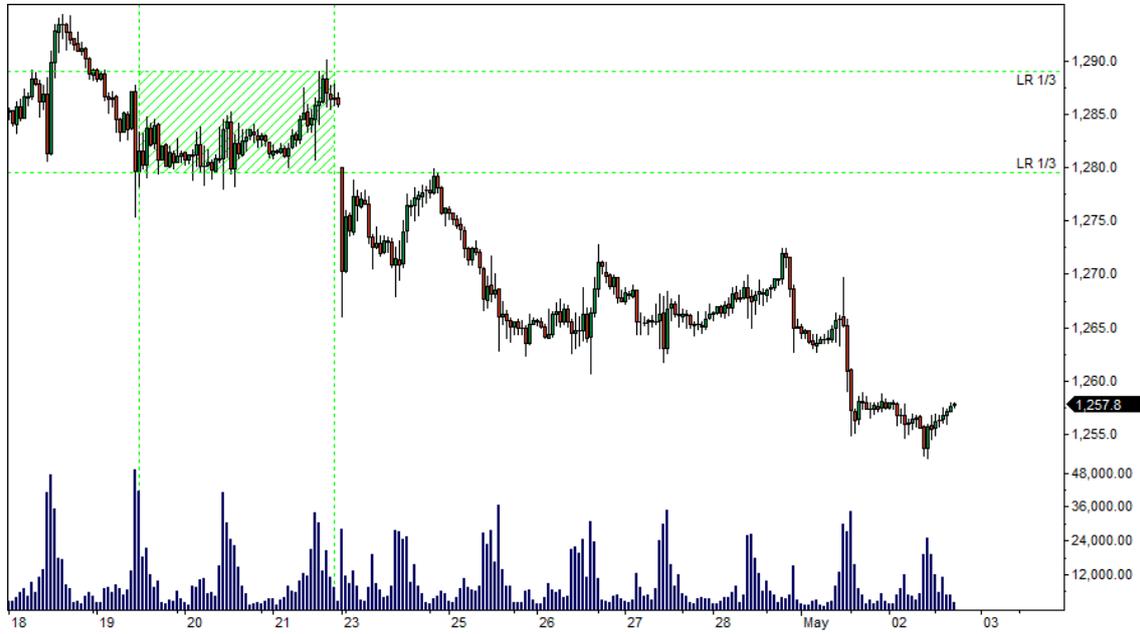
Comment: In the moment of price approximation to LR, the volume of the remaining "Buy" open positions had a sufficient influence on the price formation when it is profitable for the market-making system to quote prices below the range.

Figure 9.12a.

Silver Futures
September 2017, 1 Hour
Period: 4 July – 18 July

Locked-in Range: 16.150-16.070; Sentiment (Doi): Sell (1/3)

Preference: Long positions above support LR 16.150-16.070

Comment: The breakout of High extremum of LR (TPSL 1 High) and previous swing High (TPSL 2 High), the end of next trading day without price return to LR are indicators pointing to the volume imbalance of prevailing "Sell" open positions until the price goes out of LR. There is a probability of having the remaining "Sell" open positions in the range.

Figure 9.12b.

Silver Futures
September 2017, 1 Hour
Period: 12 July – 26 July
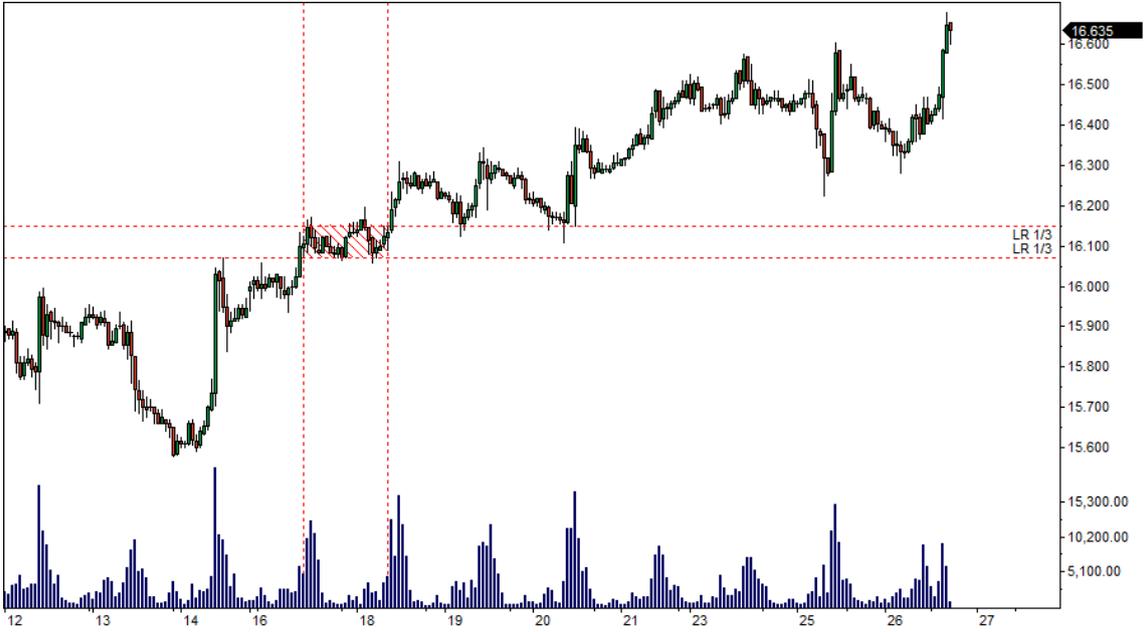
Comment: In the moment of price approximation to LR, the volume of the remaining "Sell" open positions had a sufficient influence on the price formation when it is profitable for the market-making system to quote prices below the range.

Afterword

Understanding the principle of market organization and the process of the current price changes in the market does not guarantee the possibility of making a profit, since the market is made by market participants here and now, when an advantageous open position may turn out to be "Locked-in" at any time.

Each person can have his own approach to trading; there can be an unlimited number of for entry and exit price, but LRA should be the basis for weighted speculative decision-making that allow to multiply the available funds, because trades that are not based on any cause-effect relationships are intuition-based and making such trades it is impossible to achieve stable profitable results in the long term.

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Everyone can analyze the market using LRA method, these rules are the same for all. Daily LRA report is a convenient tool for understanding the current market sentiment and working independently with own investments. Use my reports to master the LRA method and compare your analysis with mine. Everything seems "clear" in the market until you open a position and only an unbiased LRA will protect you from the erroneous subjective assessment of the market, arising from existing positions or beliefs which prevent you from objectively assessing the situation.