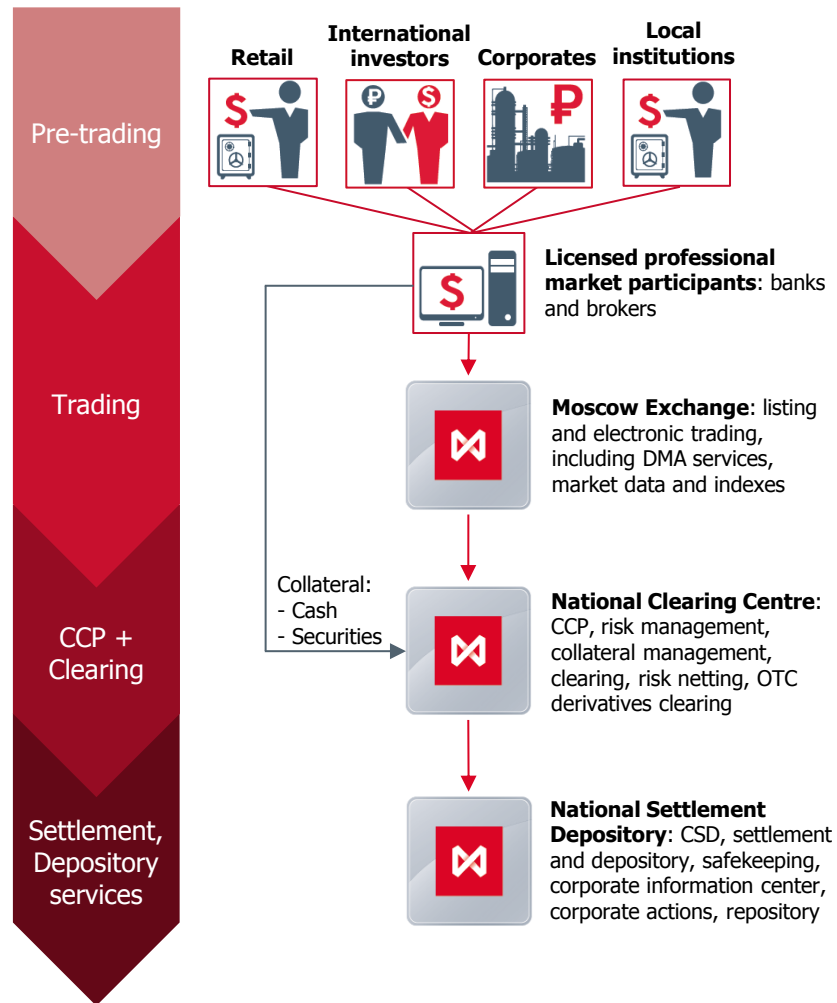




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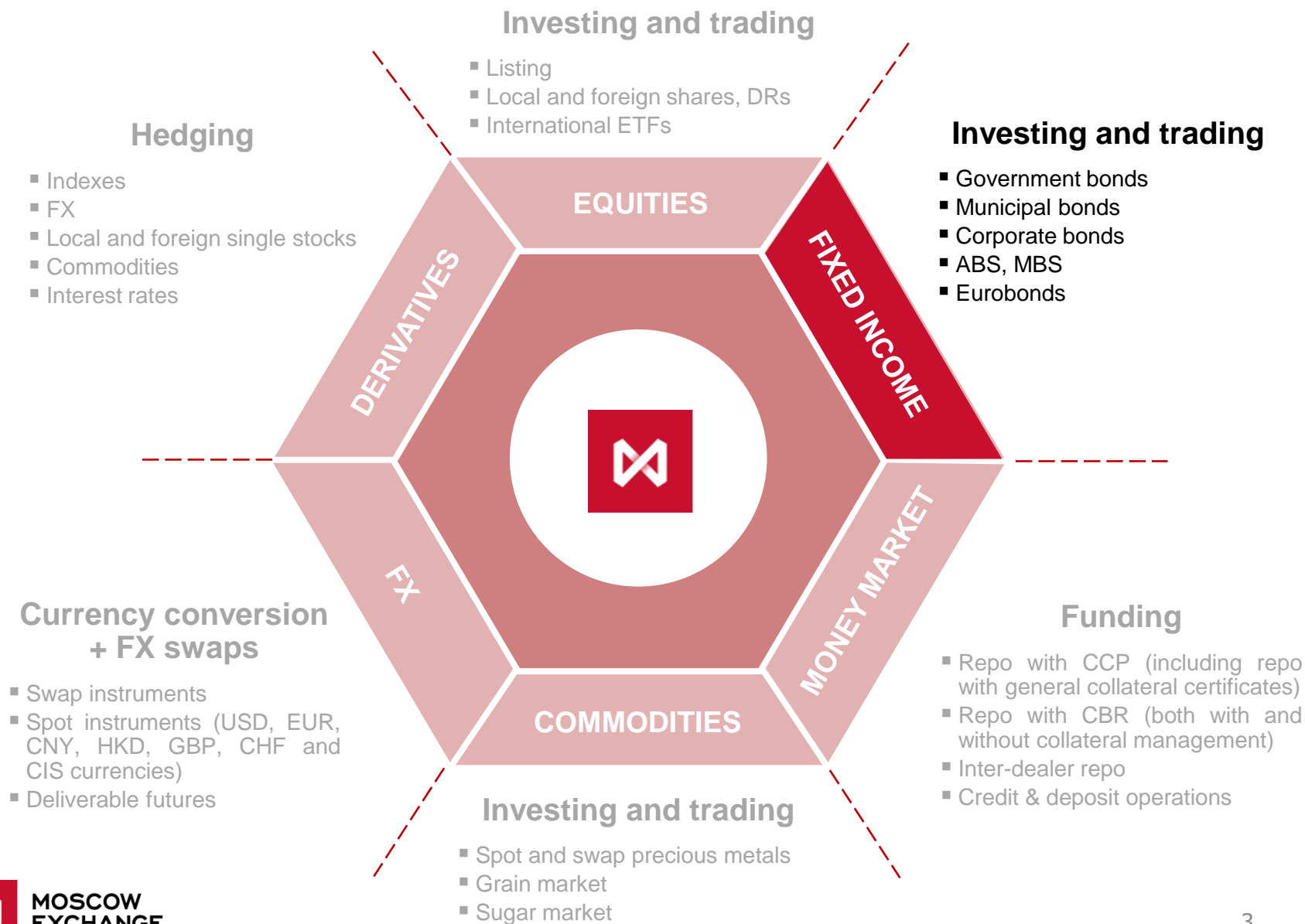
Fixed Income Market at MOEX

On-exchange market: capturing the entire value chain



- ✓ MOEX captures the **entire value chain** for end-customers, offering a one-stop shop for listing, risk management, market data, multi-asset trading, clearing, settlement and custody.
- ✓ Fully **vertically integrated infrastructure** with regulation and oversight by the Bank of Russia (CBR).
- ✓ Single-tier clearing system requires all participants to provide **eligible collateral** to trade any asset class, while pre-trade risk checks forestall any "fat fingers"/"flash crash" problems.
- ✓ The market has always been open for competition (except the CSD), but entry barriers are very high due to MOEX's post-trade infrastructure and **on-exchange market efficiency**. OTC is the key source of competition.
- ✓ Investors trade through brokers and banks, which are **licensed** locally and have access to MOEX markets. Foreign investors have **DMA, SMA and ICM services** at their disposal.

Fixed Income in Moscow Exchange product offering



Leading positions in a global context in 2017

2nd largest exchange in fixed income¹

Rank	Exchange	Country	Trading vol. (USD bln)	Incl. REPOs
1	LSE Group	UK	9,196	x
2	Moscow Exchange	Russia	4,818	✓
3	BME	Spain	4,804	✓
4	Korea Exchange	Korea	2,144	x
5	Johannesburg SE	South Africa	2,083	✓
6	Nasdaq OMX	USA	1,704	✓
7	Oslo Borse	Norway	1,041	✓
8	Shanghai SE	China	355	x
9	Bolsa de Valores de Colombia	Colombia	312	x
10	Tel-Aviv SE	Israel	241	x

5th largest exchange in derivatives²

Rank	Exchange	Country	Contracts traded (mln)
1	CME Group	USA	4,089
2	NSE India	India	2,482
3	BM&FBOVESPA	Brazil	1,638
4	Deutsche Boerse	Germany	1,597
5	Moscow Exchange	Russia	1,585
6	CBOE	USA	1,274
7	Nasdaq OMX	USA	1,101
8	Korea Exchange	Korea	1,015
9	ICE&NYSE	USA	742
10	BSE India	India	608

Among top 25 exchanges by equity trading volumes globally³

Rank	Exchange	Country	Mkt Cap (USD bln)	Securities listed	Trading vol. (USD bln)
1	ICE&NYSE	USA	22,081	2,286	14,535
2	Nasdaq OMX	USA	10,039	3,933	12,138
3	Shenzhen SE	China	3,622	2,089	9,112
4	Shanghai SE	China	5,090	1,396	7,563
5	Japan Exchange	Japan	6,223	3,604	5,813
6	LSE Group	UK	4,290	2,498	2,330
7	HKEx	Hong Kong	4,226	2,118	1,957
8	Euronext	EU	4,371	1,255	1,943
9	Korea Exchange	Korea	1,731	2,134	1,920
10	Deutsche Boerse	Germany	2,245	499	1,482
...
25	Moscow Exchange	Russia	619	234	144

13th largest publically listed exchange by Mkt Cap⁴

Rank	Exchange	Country	Mkt Cap (USD bln)
1	CME	USA	56.5
2	HKEx	Hong Kong	45.0
3	ICE&NYSE	USA	42.6
4	Deutsche Boerse	Germany	25.6
5	LSE Group	UK	19.3
6	BM&FBovespa	Brazil	16.3
7	Nasdaq OMX	USA	13.4
8	CBOE	USA	12.6
9	Japan Exchange	Japan	9.3
10	ASX	Australia	8.8
11	SGX	Singapore	6.1
12	Euronext	EU	4.9
13	Moscow Exchange	Russia	4.5

Sources: Moscow Exchange, WFE, Bloomberg

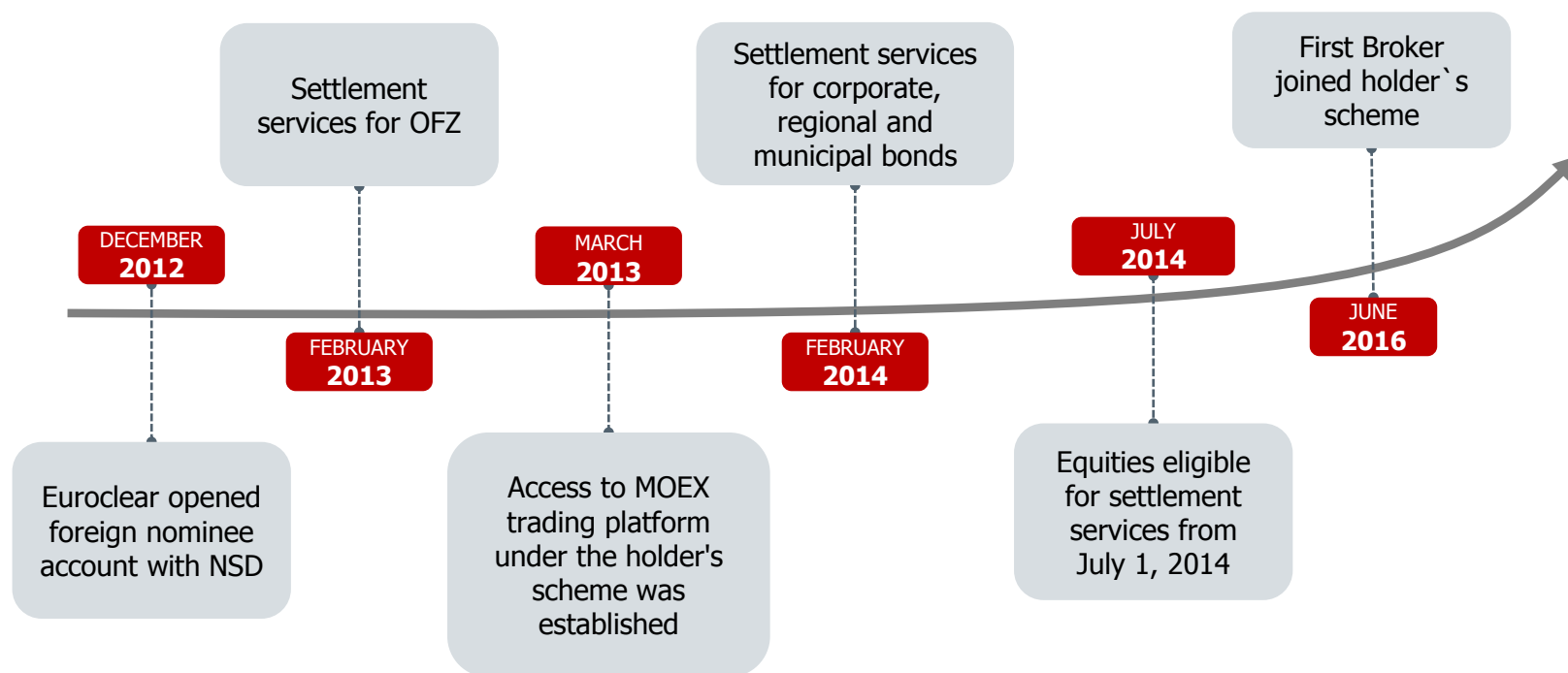
1 Due to different methodologies applied, data on fixed income trading may not be directly comparable among exchanges. Data for 2017

2 Data for 2017

3 Top equity trading exchanges are ranked by trading volume. Ranking without BATS (excluded due to absence of data for market capitalization and number of listed companies). Data for 2017

4 Market capitalization of public exchanges based on Bloomberg data as of 28 February 2018

Russian sovereign, corporate bonds and equity are settled through ICSDs



Diversified investor base

Equities
Market

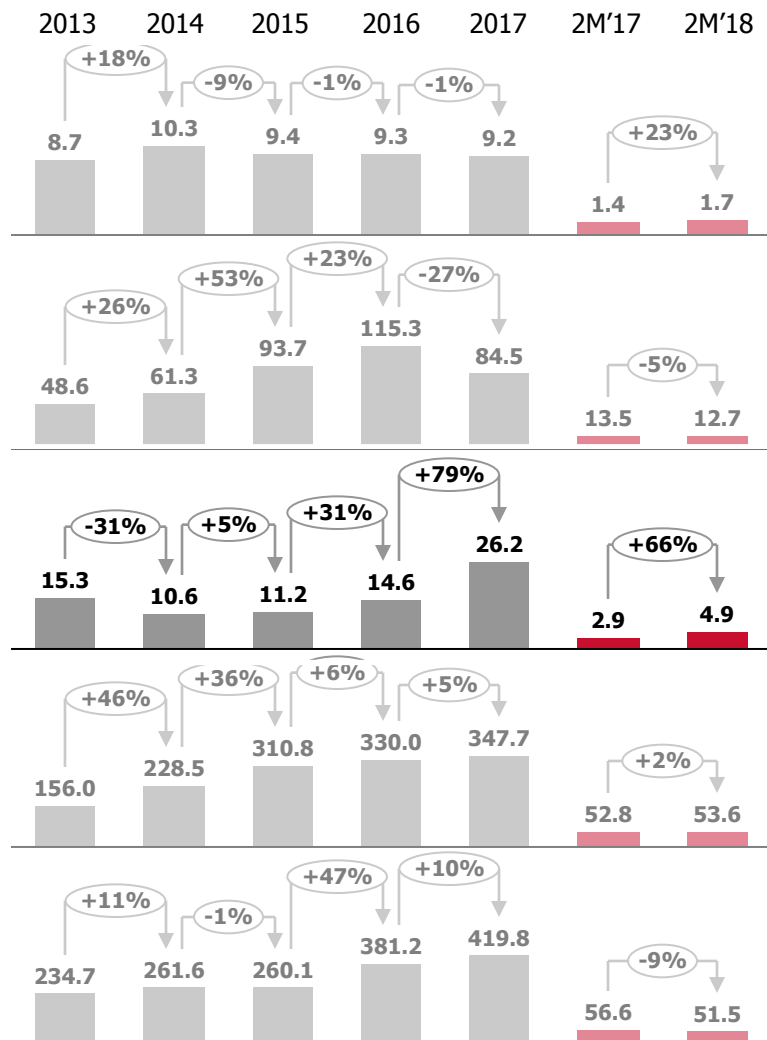
Derivatives
Market

**Fixed
Income
Market**

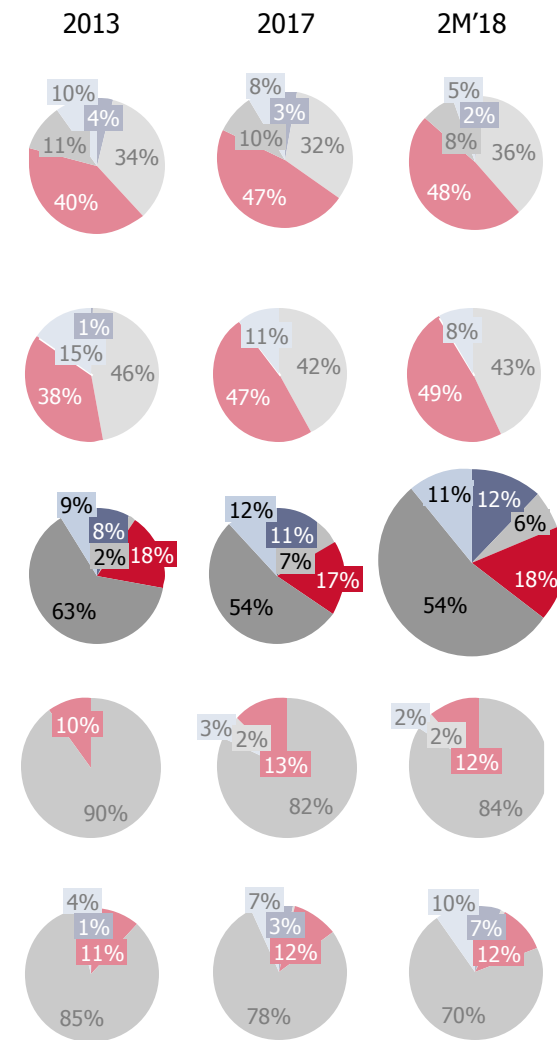
FX Market

Money
Market¹

Trading volumes, RUB trn



Volume breakdown by investor types



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Source: Moscow Exchange data

¹ Trading volumes include repo with collateral management through NSD.
Investor structure is based on on-exchange repo trading volumes only

Local funds
Local banks and brokers
Local retail investors
Local corporates
Foreign investors

Accessing Russian bonds is easy

- ❑ No regulatory approval is required for foreign investors to start investing
- ❑ No restrictions on investments in Russian bonds
- ❑ Opening an account with a global custodian / Russian broker is easy
- ❑ RUB is fully convertible since 2006
- ❑ RUB can be acquired on MOEX for USD and EUR

Foreign banks and brokers trade on MOEX via Russian subsidiaries

- **~16 000** accounts of foreign investors
- **25** subsidiaries of foreign banks are MOEX trading participants
- **15** subsidiaries of foreign banks have DMA access to MOEX
- Key foreign participants of Equity and Bond markets at MOEX:

- | | |
|---------------------------|-------------------------|
| ▪ <i>Barclays Capital</i> | ▪ <i>JP Morgan</i> |
| ▪ <i>BNP Paribas</i> | ▪ <i>Merrill Lynch</i> |
| ▪ <i>Citigroup</i> | ▪ <i>Morgan Stanley</i> |
| ▪ <i>Credit Suisse</i> | ▪ <i>HSBC</i> |
| ▪ <i>Deutsche Bank</i> | ▪ <i>Raiffeisenbank</i> |
| ▪ <i>Goldman Sachs</i> | ▪ <i>UBS</i> |
| ▪ <i>ICBC</i> | |

FI market product range

Products on MOEX Bond market

Russian RUB bond market

Almost 100% bonds are listed and traded on MOEX

Bonds in **RUB, USD and EUR**

✓ **Sovereign bonds: ~50 issues**

- Floating-rate issues
- Fixed-rate bonds
- CPI-linked notes

✓ Corporate bonds ~1200 issues

✓ Regional bonds ~120 issues

✓ Mortgage-backed securities

Russian Eurobonds are also traded on MOEX bond market

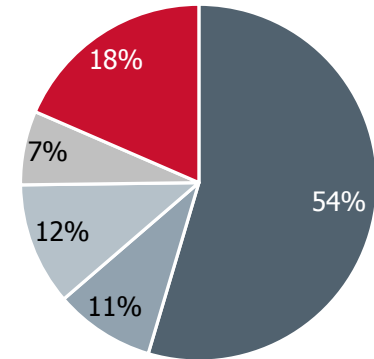
✓ **Sovereign Eurobonds: ~15 issues**

✓ Corporate Eurobonds ~50 issues

✓ Repo with Corporate Eurobonds ~350 issues

Value breakdown by investor types

2017



- Russian banks and brokers
- Pension funds and asset managers
- Russian corporates
- Russian retail investors
- Foreign investors

> 120 **bond programs**, registered on MOEX that may be issued in foreign currency

> 90 **issuers** of bond programs

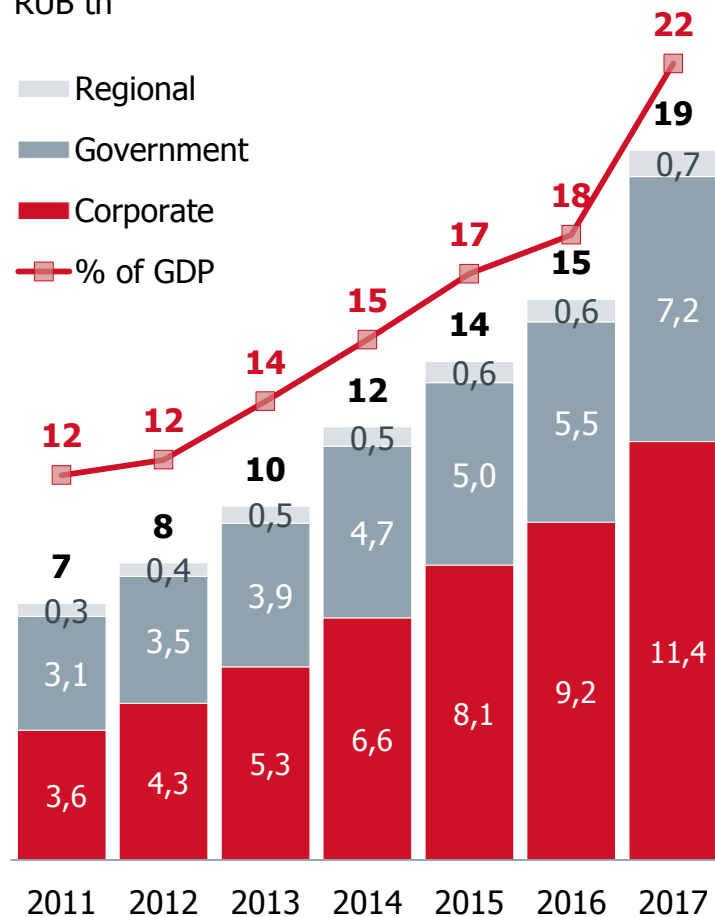


Russian bond market evaluation

Steady growing market

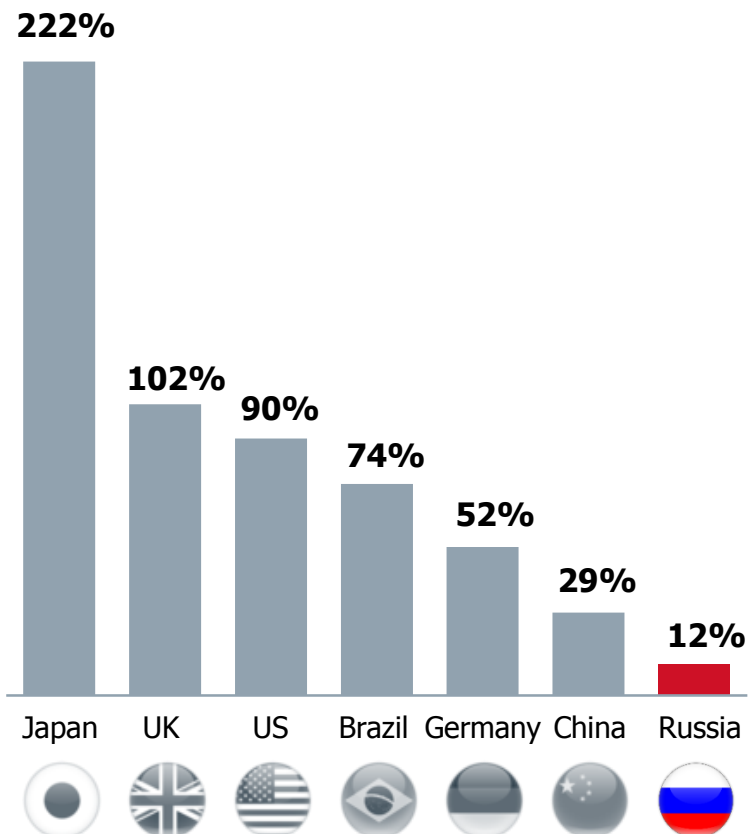
RUB tn

- Regional
- Government
- Corporate
- % of GDP



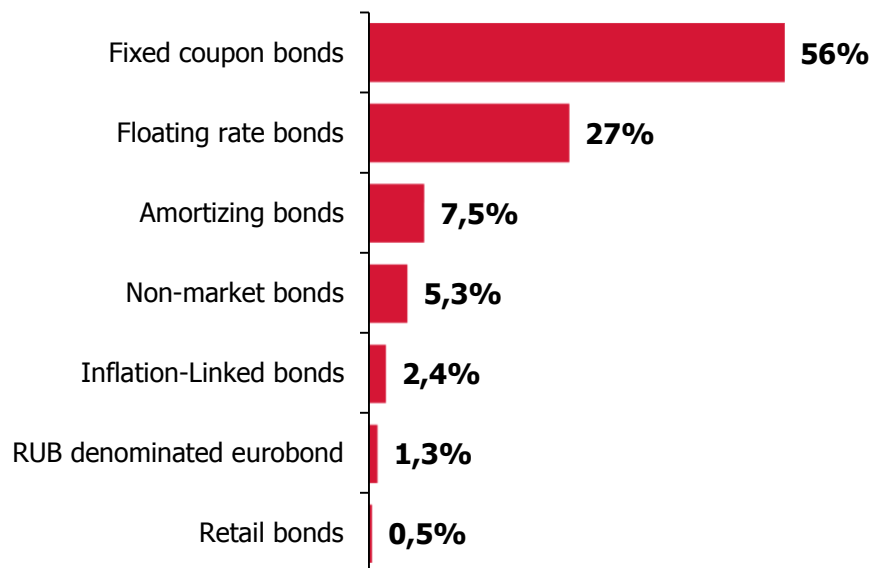
Easy-to-control government debt

Government bonds to GDP



OFZs market

Structure of domestic government bonds



MOEX solution for OFZ market:

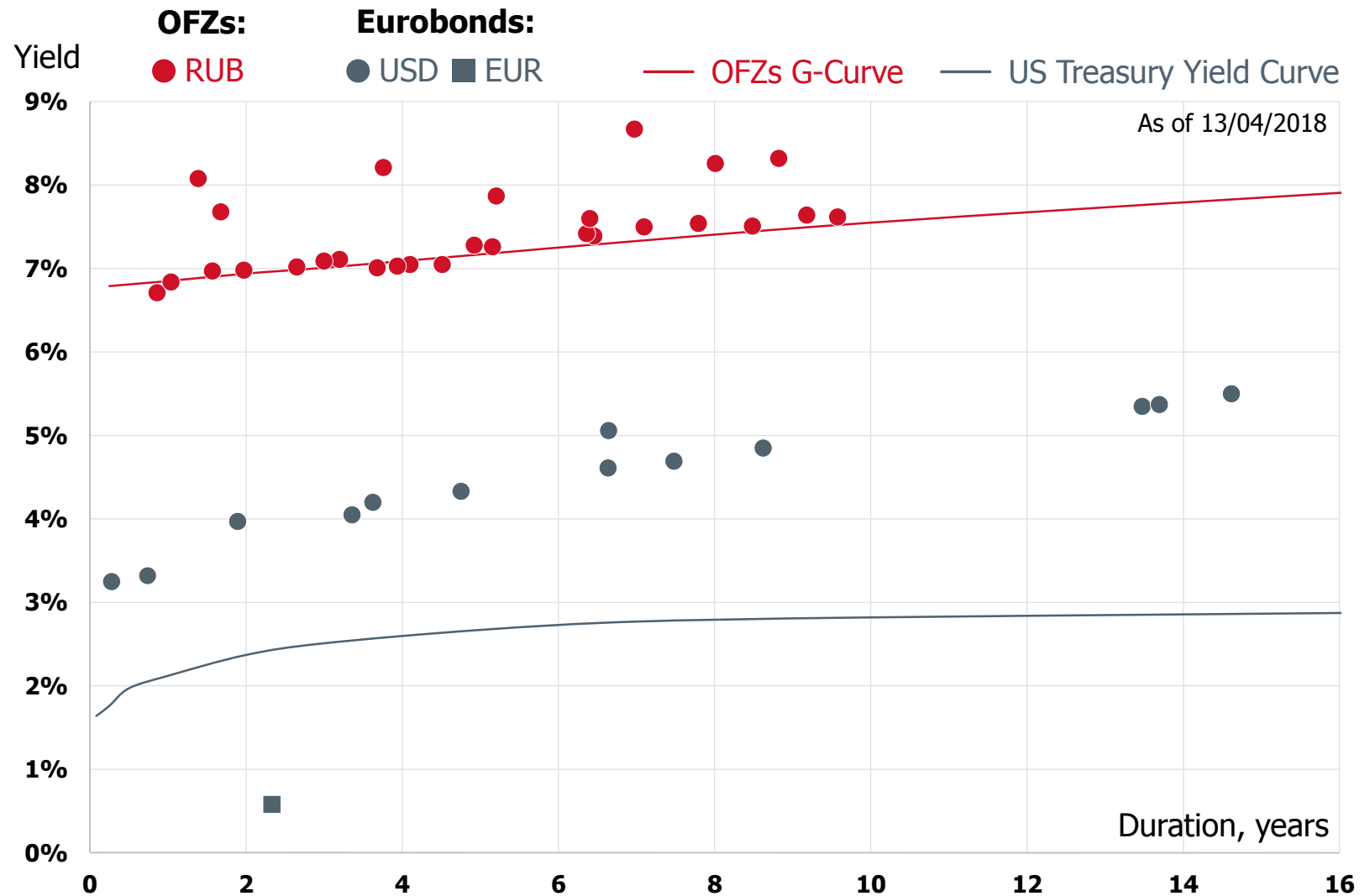
- ✓ T+1 settlement cycle
- ✓ Partial pre-funding (collateral requirements from 4% to 10%)
- ✓ Central limit order book (CLOB) and negotiated bilateral trades
- ✓ Market-making in CLOB
- ✓ OFZs used as collateral in repo trades
- ✓ Primarily placements on a weekly basis (for all market participants)
- ✓ OFZs used as underlying of derivatives contracts
- ✓ DMA/SMA for international investors

Information disclosure:

- “Public Debt Management Policy of the Russian Federation” for the following year and 3 year budget planning period is published on Ministry of Finance’s official website
- Information on volume and breakdown of public debt, government issuance plans, parameters of government bonds, auction results (Ministry of Finance’s official website)
- Disclosure of non-residents’ investments in OFZs (Bank of Russia official website)

Ministry of Finance quarterly group meetings with key participants of the government bond market

Russian Government bonds: Market Map

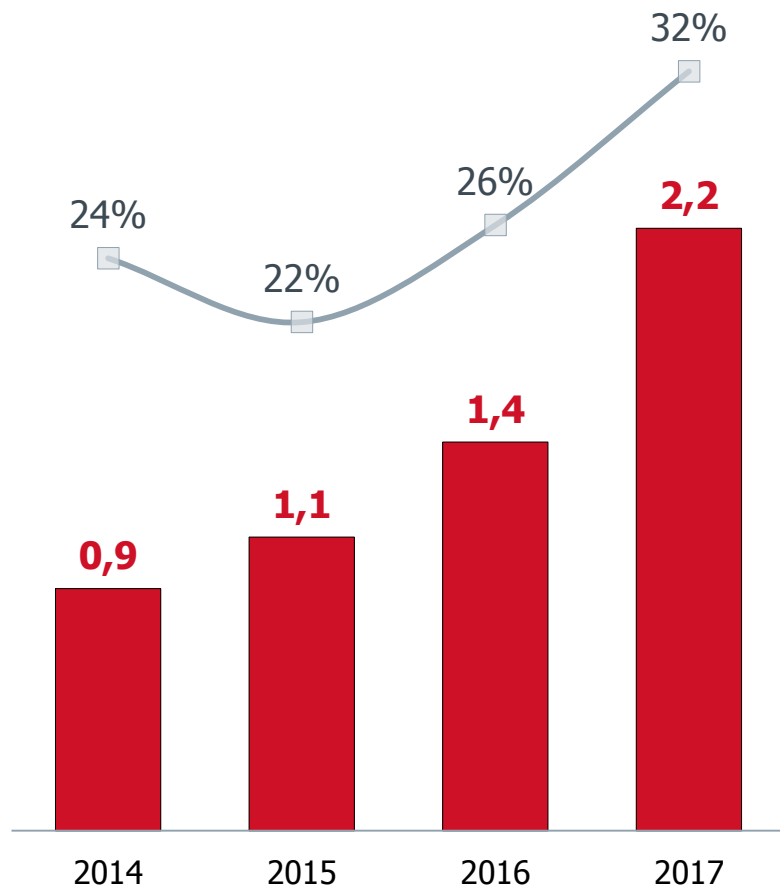


Foreign investors on the OFZ market

Foreign nominee account balances in NSD

RUB tn

Account balances % of total OFZ



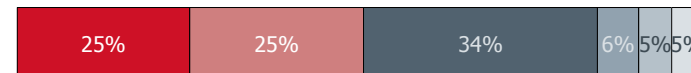
Trading volume breakdown

- Trust management funds
- Retail investors
- Foreign bank subsidiaries
- Russian corporates
- Russian banks and brokers
- Foreign investors

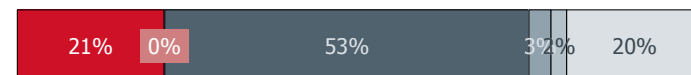
Floating rate bonds



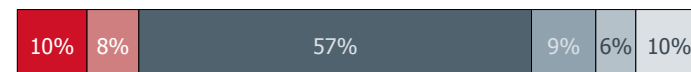
Fixed coupon bonds



Inflation-Linked bonds



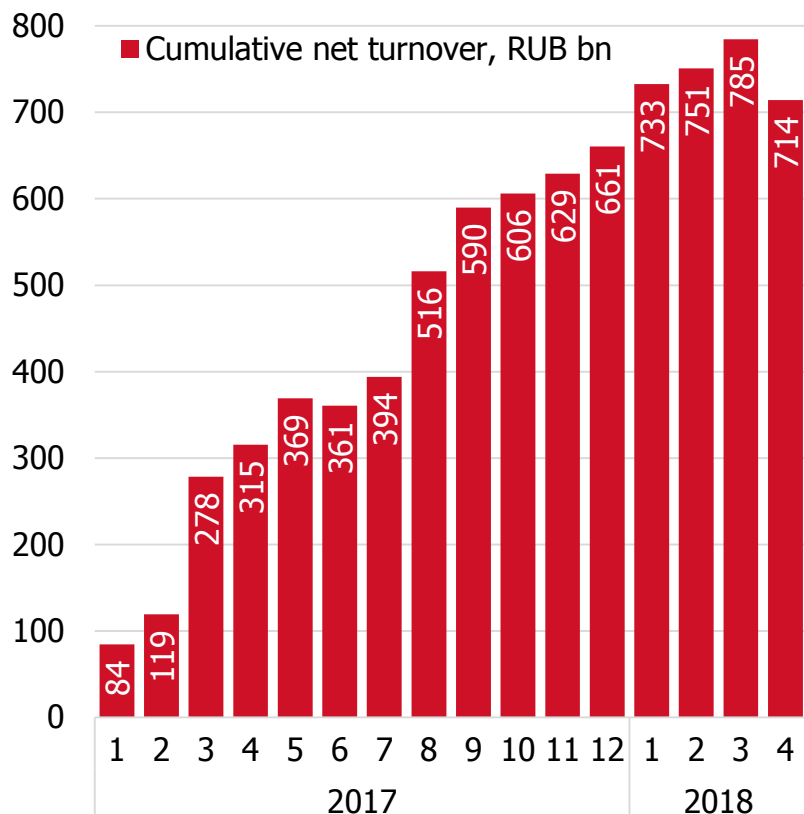
Amortizing (Sinkable) bonds



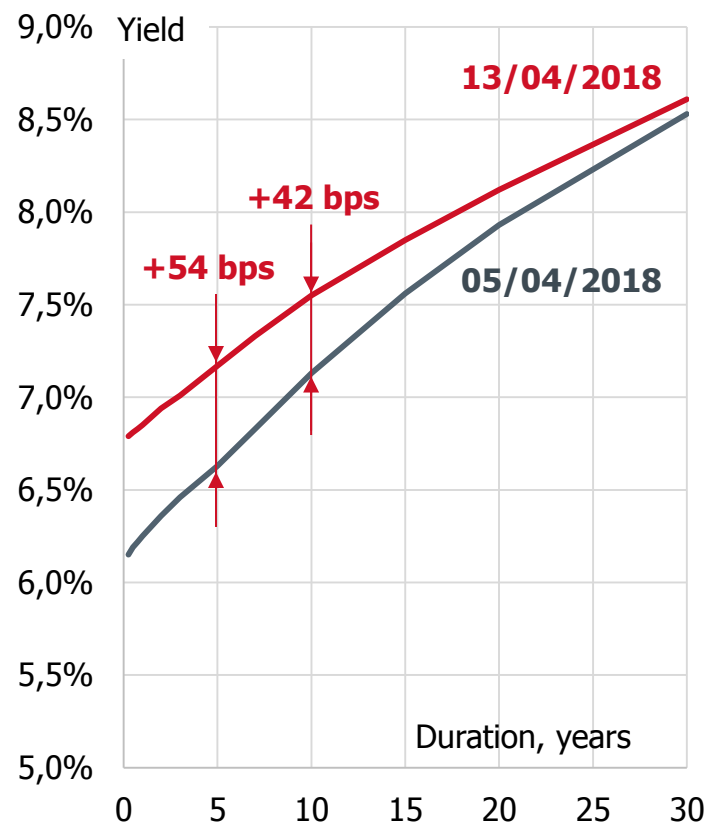
Latest market changes

Foreign investors OFZ net turnover (buy - sell)

Foreign investors sold OFZs on RUB 70 bn more than bought in first two weeks of April 2018



OFZs G-Curve



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Source: Moscow Exchange

Key Global Indices

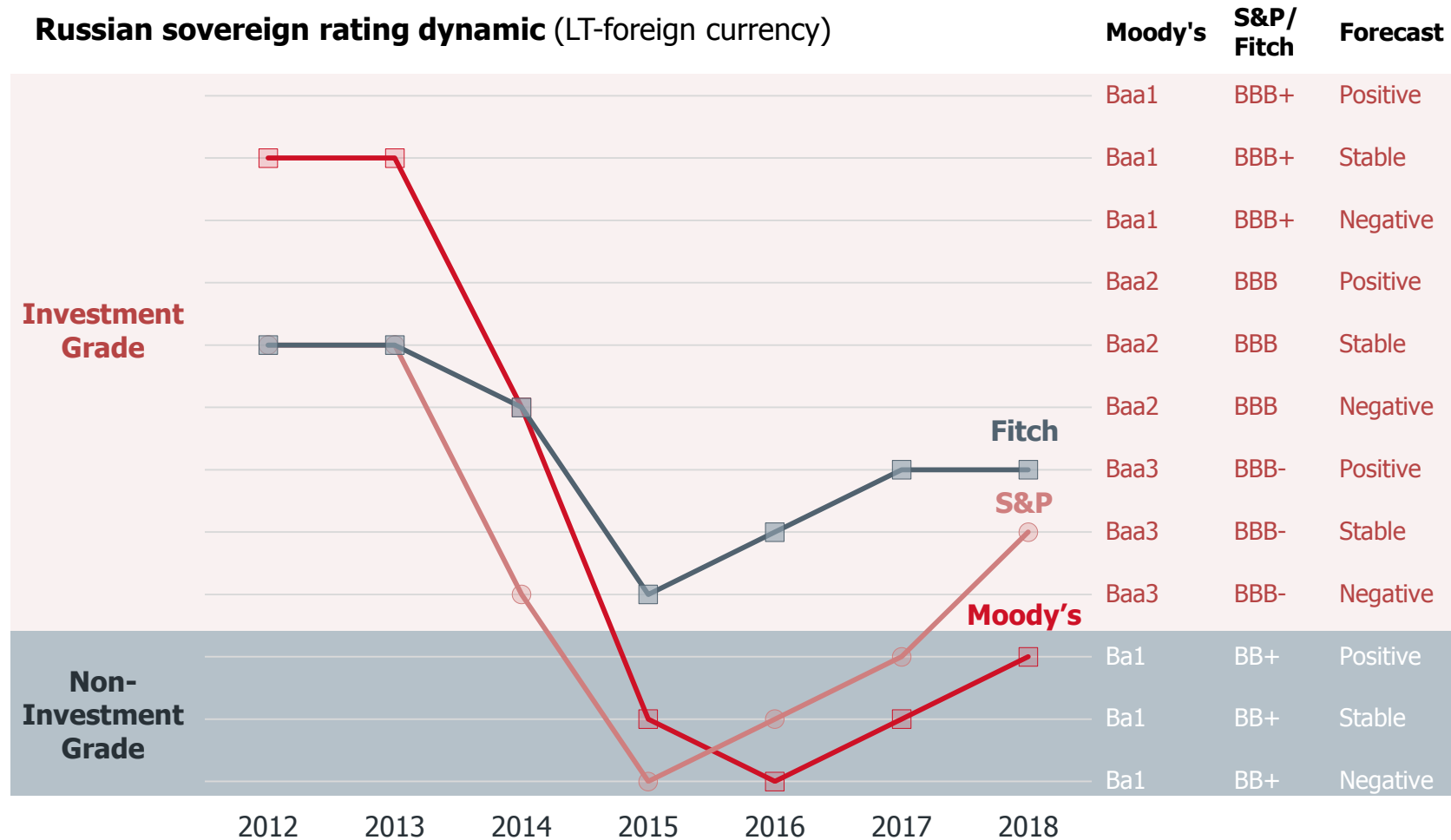
- OFZ and Russian Eurobond markets included in the major global bond indices
- Inflation-Linked OFZ issue was included in Barclays Emerging Market Government Inflation-Linked Index from February 2016

Current Russian Federation presence in the key global bonds indices		Index share
JP Morgan	GBI-EM (OFZs)	7,60%
	EMBI Global Div (Eurobonds)	1,33%
	EMBI Global (Eurobonds)	6,25%
	EMBI+ (Eurobonds)	7,99%
Barclays	EM Local Currency Government Index (OFZs)	3,11%
	Global Aggregate Index (Eurobonds and OFZs)	0,13%
	Emerging Market Government Inflation-Linked Index (OFZs)	0,61%
Citigroup	Emerging Markets Government Bond Index (OFZs)	5,99%
	CEEMEA Government Bond Index (OFZs)	13,54%
Credit Suisse	GBI EM GD (OFZs)	7,50%
	EMBI GD (Eurobonds)	3,73%



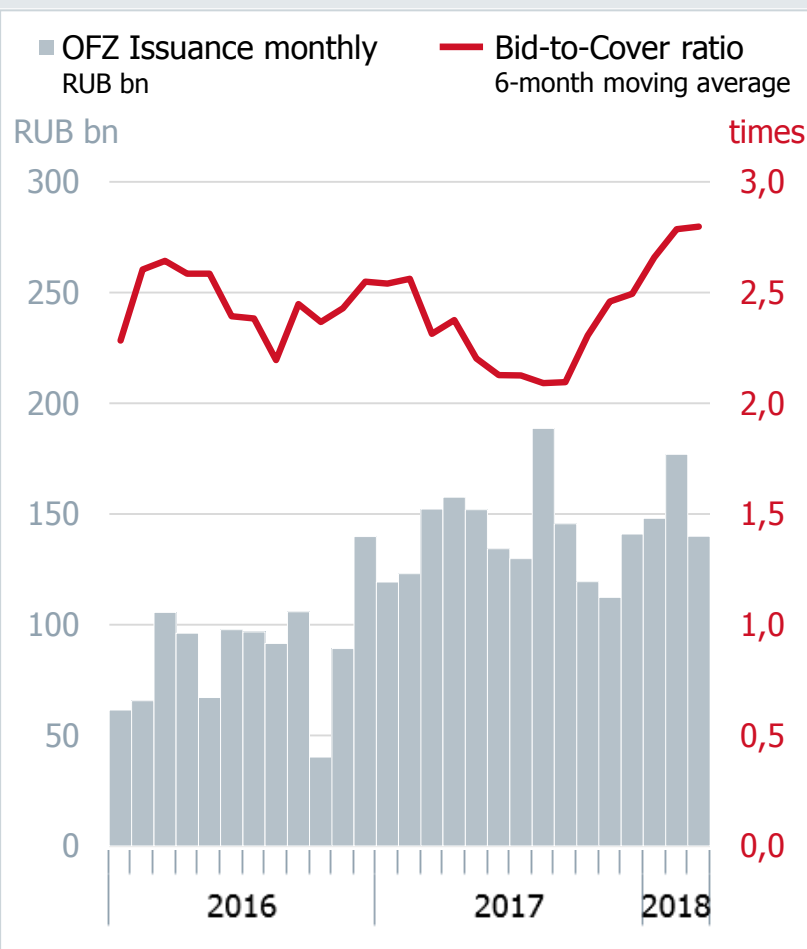
Back to Investment Grade level

Russian sovereign rating dynamic (LT-foreign currency)



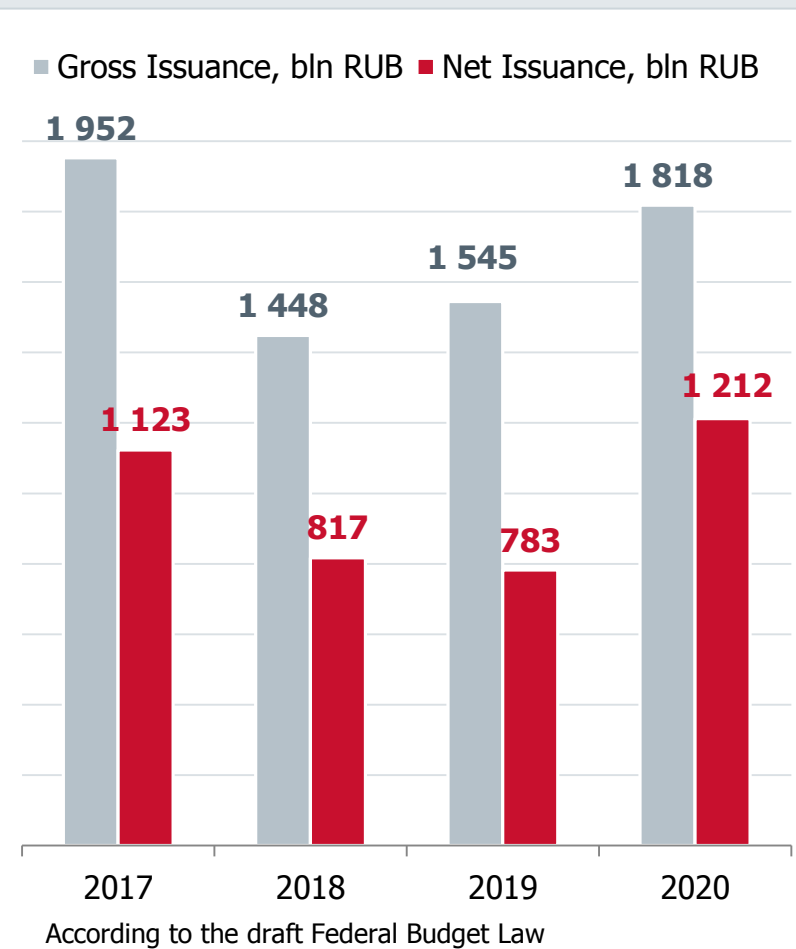
Domestic Government Bond Issuance

Most of placements occur with high demand which 2-3 times exceeds offer.



Gross domestic government bond issuance reached a record level in 2017.

Net Issuance will exceed 2017 level only in 2020.

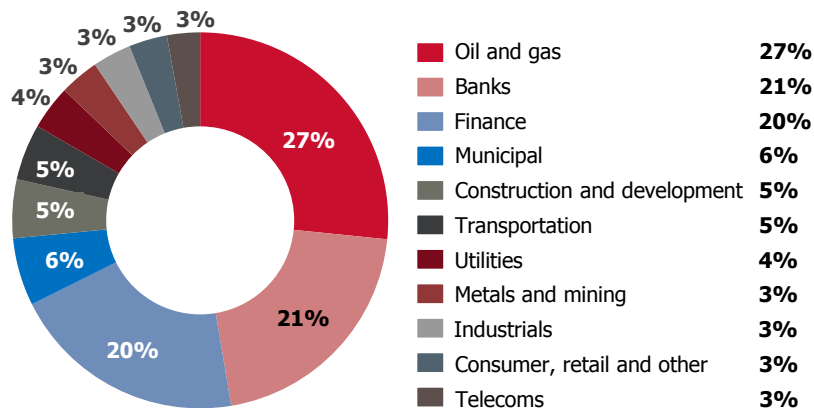


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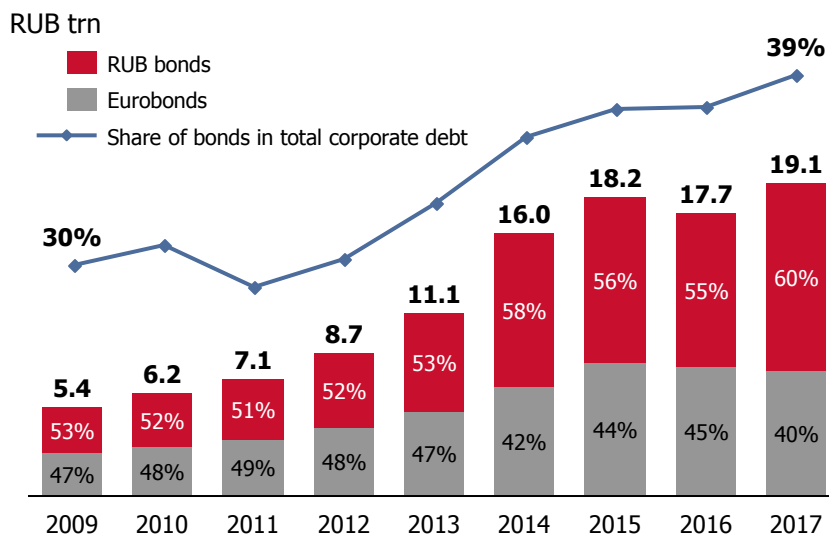
Source: Ministry of Finance

Corporate Bond market

Breakdown of bond issuers¹ by industry



Local bonds vs Eurobonds of Russian corporates²



Sources: Bank of Russia, Cbonds, Rosstat, Moscow Exchange

¹ RUB-denominated bonds traded on MOEX's Bond Market in January 2018

² Including banks and financial institutions. Data for 2017 as of 1 December 2017

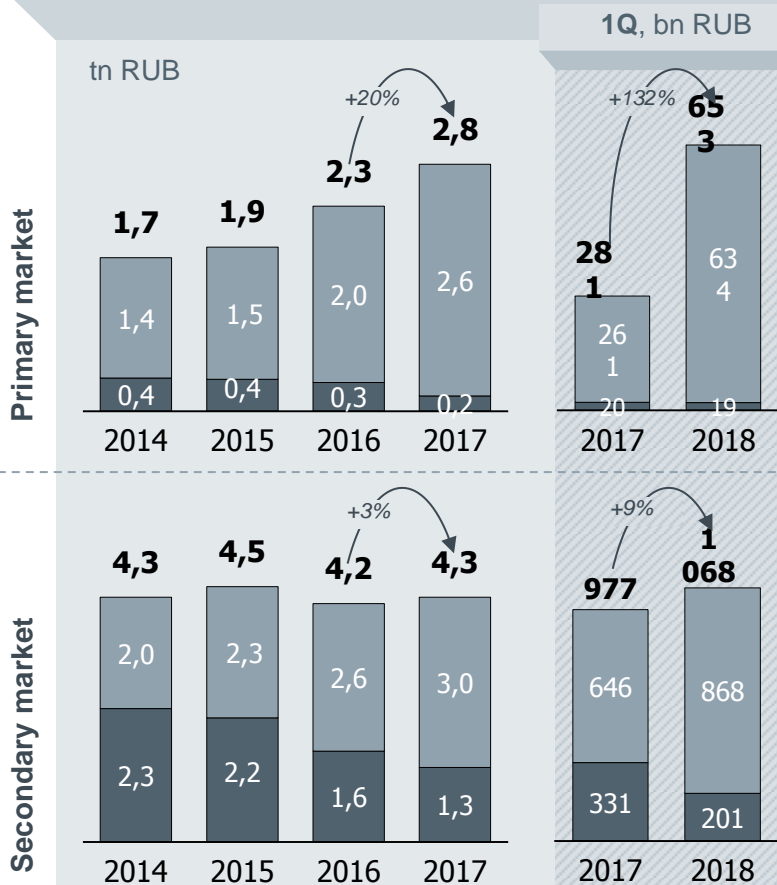


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Primary and secondary bond markets' volumes

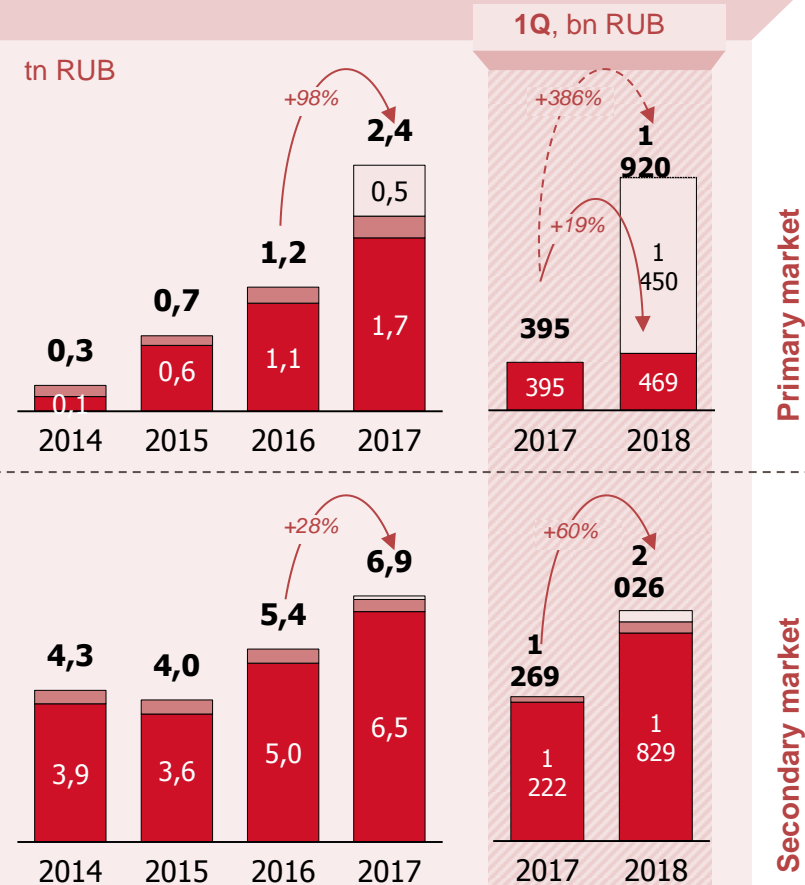
Corporates

- Exchange registered
- CBR registered



OFZ

- CBR bonds
- OFZ
- Subfederal



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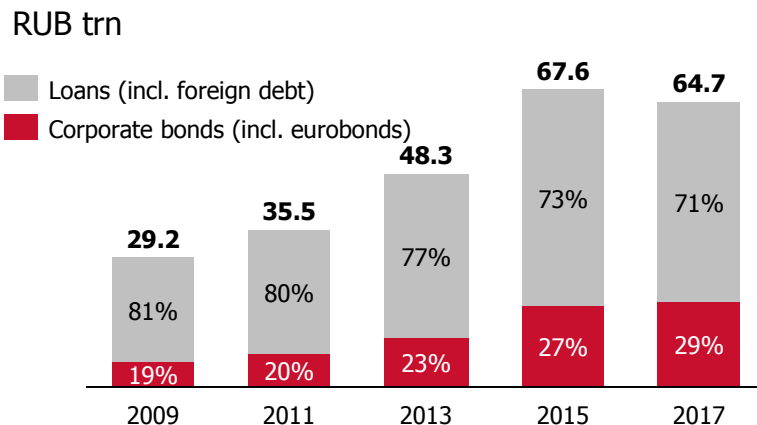
Source: Moscow Exchange

FI market 2017-2020: key pillars

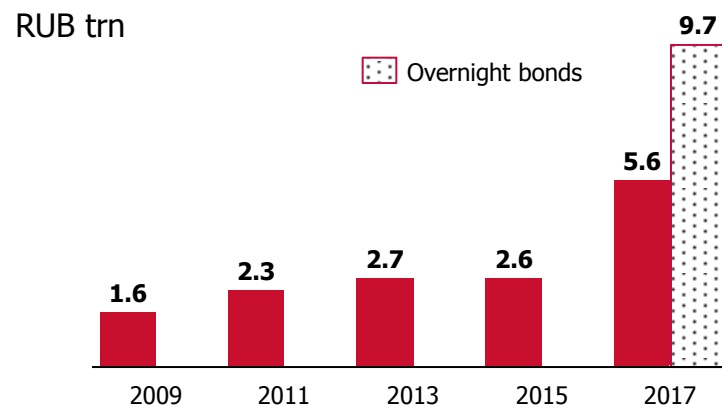
"Bondization": bonds to substitute bank loans as a funding tool

- Development of short-term and ultra short-term bonds, securitization
- Easier access to the bond market for corporates
- Growth of the retail investor base
- Benefits from completed reforms (shift to T+1 for OFZs, cross-margining)
- Development of the OTC platform:
 - Create a better price discovery mechanism in OTC fixed income market
 - Move fixed income trading practices onto MOEX electronic trading venue
 - Increase available reference data for fixed income instruments

Corporate loans vs corporate bonds in Russia



Bond primary market trading volume



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Source: Moscow Exchange, Cbonds

Unified Collateral Pool

1 Collateral

- **Unification of the list of assets¹**, accepted as **Collective** clearing collateral on the Securities, FX и Derivatives markets (including acceptance of sovereign bonds и eurobonds on all markets).
- **Unification of the approach** to the acceptance of assets into **Individual** clearing collateral.

2 Settlements on net basis under obligations and claims arising from trades, concluded on the Securities, FX and Derivatives markets, using assets, recorded under the Trade Account of the Unified Pool.

3 Implementation of **cross-margining** on the Securities, FX and Derivatives markets.

MOEX technology: connectivity

Moscow Exchange offers multiple types of connectivity solutions to ensure each client's requirements are met.

Global points of Presence

Network connectivity from top financial centers across the globe including London, Chicago, New York, Frankfurt through MOEX global POPs.

Extranets and Network Service Providers

Telco neutral access to the markets with optimized latency. NSP list includes global leading Extranet providers such as ICE (SFTI, Atrium) BT Radianz, Colt, Centurylink, euNetworks, Avelacom and others

Exchange Colocation services

Comprehensive service with variable footprint sizing options providing ultra-low latency connectivity.

Internet access

Access via secure encrypted connection.



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- volatility (a) of the Russian economy and the securities market and (b) sectors with a high level of competition that the Company and its subsidiaries operate;
- changes in (a) domestic and international legislation and tax regulation and (b) state policies related to financial markets and securities markets;
- competition increase from new players on the Russian market;
- the ability to keep pace with rapid changes in science and technology environment, including the ability to use advanced features that are popular with the Company's and its subsidiaries' customers;
- the ability to maintain continuity of the process of introduction of new competitive products and services, while keeping the competitiveness;
- the ability to attract new customers on the domestic market and in foreign jurisdictions;
- the ability to increase the offer of products in foreign jurisdictions.

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