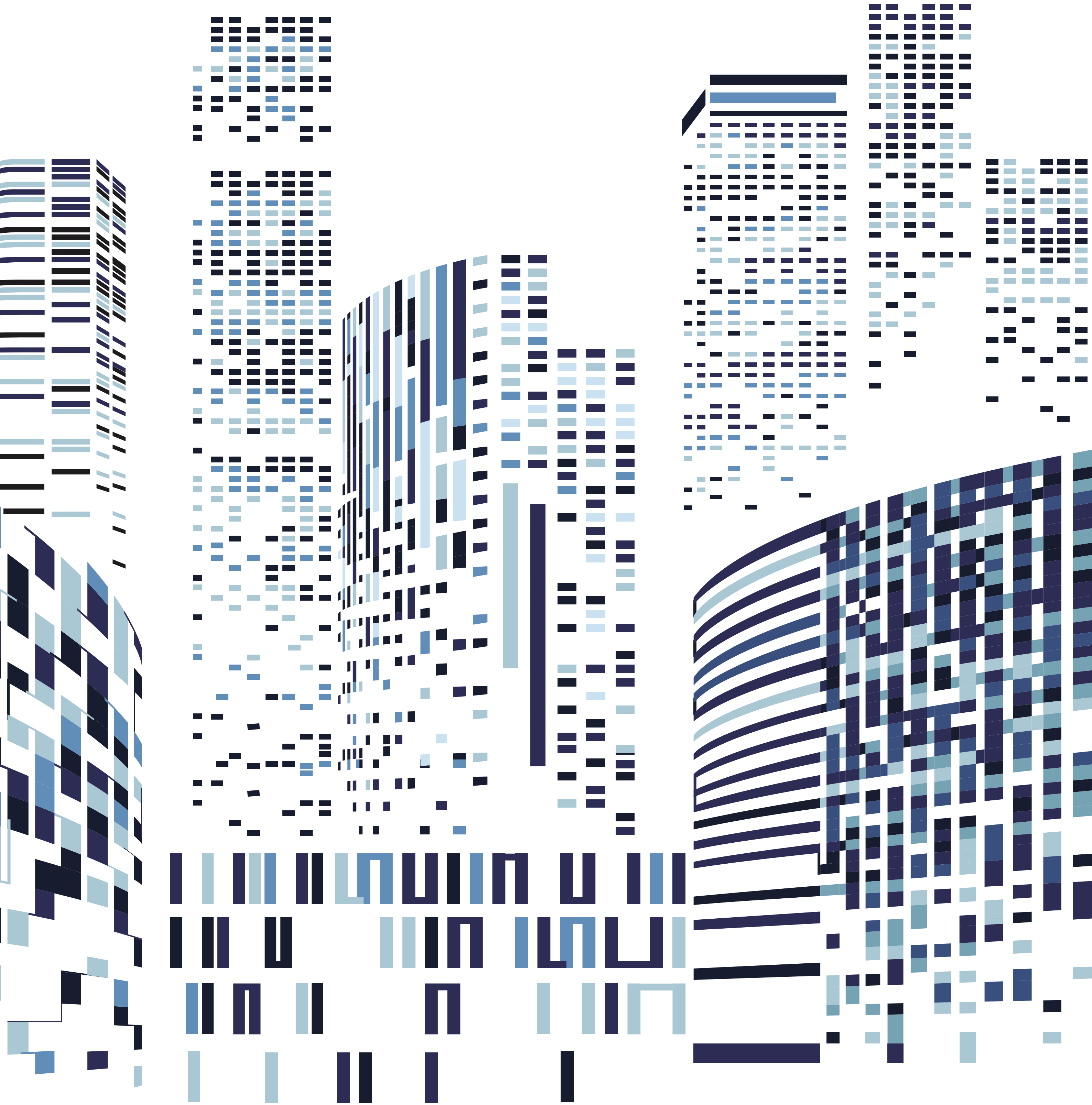
1/2017

AEB REAL ESTATE MONITOR

Magazine of the Association of European Businesses

CAPITAL · OFFICE · RETAIL · WAREHOUSE · HOSPITALITY · HOUSING



Contents

Introduction

Letter from the Chief Executive Officer 01

Letter from the Chairman of the AEB Real Estate Committee 02

Moscow market overview

Capital market 03

Retail market 05

Office market 08

Warehouse market 11

Hospitality market 16

Housing market 20

St. Petersburg market overview

Office market 28

Retail market 29

Street-retail market 30

Warehouse market 31

Hot Topics

Energy efficient building technology 32

Publication name/ Наименование издания: AEB Real Estate Monitor ("АССОЦИАЦИЯ ЕВРОПЕЙСКОГО БИЗНЕСА: Обозрение рынка недвижимости")

Published by/Учредитель: Non-profit making partnership "Association of European Businesses"/Некоммерческое партнерство "АССОЦИАЦИЯ ЕВРОПЕЙСКОГО БИЗНЕСА"

Chief Editor/ Главный редактор: D.N. Artemieva/Артемьева Д.Н.

Publication volume and number/Номер выпуска: 01, 2017

Release date/Дата выхода: 28 February 2017/ 28 февраля 2017 года

Cost/Цена: Distributed free of charge/Бесплатно

Publisher's address/ Адрес издателя, редакции: 16, bld. 3, Krasnoproletarskaya str., 127473, Moscow, Russia/ Россия, 127473, г. Москва, ул. Краснопролетарская, д. 16, стр. 3

The "AEB Real Estate Monitor" is registered with The Federal Service for Supervision of Legislation in Mass Communications and Protection of Cultural Heritage, Certificate registration ПИ № ФС77-24458/ СМИ "АССОЦИАЦИЯ ЕВРОПЕЙСКОГО БИЗНЕСА: Обозрение рынка недвижимости" зарегистрировано в Федеральной службе по надзору за соблюдением законодательства в сфере массовых коммуникаций и охране культурного наследия. Свидетельство о регистрации ПИ № ФС77-24458 от 23 мая 2006

Frank Schauff
Chief Executive Officer,
Association of European
Businesses

Dear reader,

Welcome to the first issue of the AEB Real Estate Monitor 2017!

After back-to-back years of recession, the Russian economy is gradually stabilising. According to analysts 2017 is shaping up to be much better for the country as higher real wages trigger consumption and lower interest rates attract investments. As inflation slows down the poverty rate is expected to decline. Tight monetary policy has successfully mitigated inflation, and now can support the recovery, in particular investment. The real estate sector has been the first to react to the improving conditions. Investors expect a further strengthening of the rouble and see the market bottoming out.

The Real Estate Committee of the Association of European Businesses keeps abreast with the situation in the Russian real estate market and provides you with in-depth information about all significant developments. Focusing on Moscow and St. Petersburg, this issue will cover the retail, industrial, and office markets in terms of rates and yields, and will acquaint you with the latest trends and developments.

It is my hope that you will find this publication a useful resource, and that it will open new horizons for your business. I look forward to seeing many of you at our upcoming Real Estate Committee events.

I would like to take this opportunity to thank our Real Estate Committee members who have actively contributed to this publication and the work of the committee as a whole.

Enjoy your reading!

Filippo Baldisserotto
Chairman of the AEB Real Estate Committee,
General Director,
Stupino 1 Industrial Park

Dear readers,

Stepping into 2017, the turbulent political events and contradictory economic circumstances of last year are behind us.

2017 will see positive changes for the world in general and for Russia in particular.

The Russian industrial sector registered a 3.2% growth in December 2016 as compared with December 2015, while overall industrial production grew by 1.1% in 2016 after shrinking by 3.4% in 2015.

We hope these changes will have a positive impact on the economic situation in general and also on the real estate sector.

And 2017 is promising to be a year of interesting changes for all of us.

The Real Estate Committee is preparing a series of new events and as always we invite all Real Estate Committee members to contribute by sharing their experience, knowledge and working practices with us.

Thank you to you all and we look forward to seeing you at the upcoming Real Estate Committee meetings and other events.

Moscow market overview

Capital market, Q4 2016

• The Russian economy continues to stabilise, supported by the growth in oil prices and strengthening of the rouble. Growth is expected to resume in H1 2017. These positive changes are leading to a reduction in market uncertainties. Investors see that the market is bottoming out and expect further strengthening of the rouble.

• In 2016, real estate investment in Russia increased by 74% YoY and reached USD 4.2 billion.

• Moscow's prime yields of 9.0–10.5% for offices and shopping centres and 11.0–12.5% for warehouses are benchmark figures.

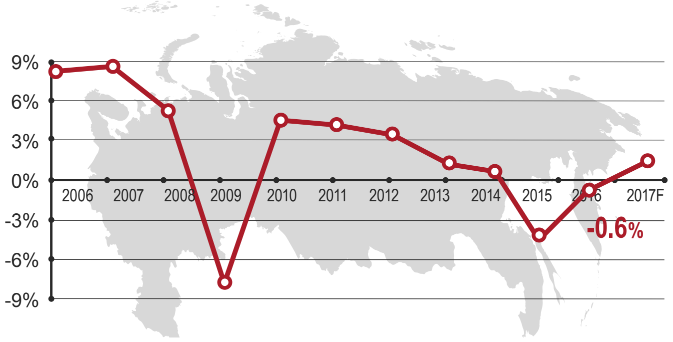
• Investors were more active in the office segment, which accounted for 60% of total investment in 2016.

• Investors continued to focus on assets in Moscow, where 80% of all deals were closed. Investments in the St. Petersburg real estate market reached USD 258 million in 2016 versus USD 105 million a year ago.

• Russian investors dominated in 2016; they accounted for 97% of all deals, which is the highest proportion on record.

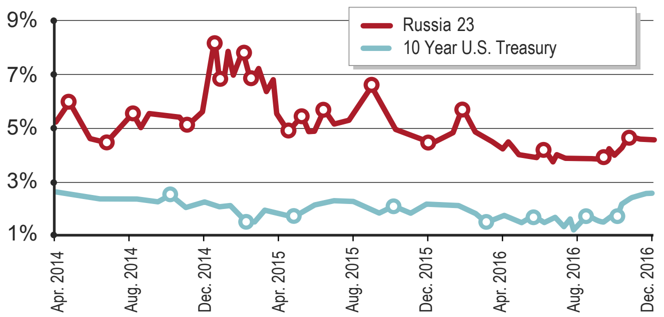
• We expect investment momentum to extend into the near future. We forecast investment to reach USD 4.5 billion in 2017. (**1–9** ▶)

1 ▶ RUSSIA REAL GDP GROWTH



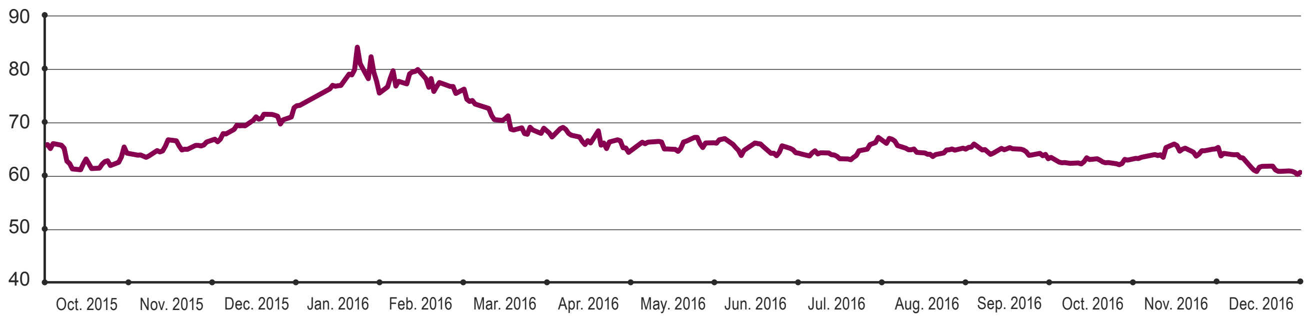
Source: Rosstat, Oxford Economics

2 ▶ SOVEREIGN DEBT YIELDS



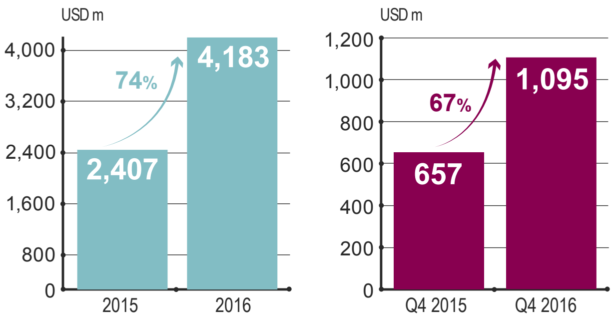
Source: Bloomberg

3 ▶ EXCHANGE RATE DYNAMICS, RUB/USD



Source: Central Bank of Russia

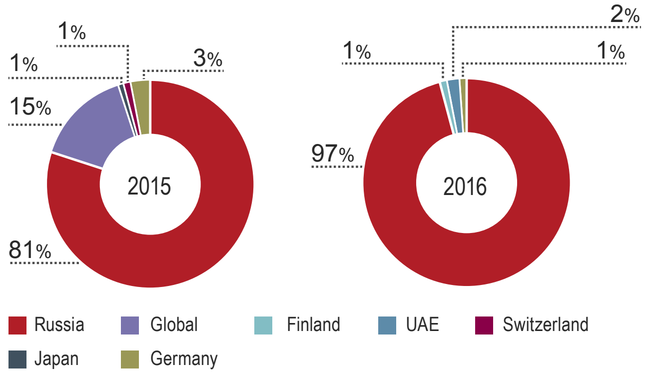
4 RUSSIA INVESTMENT VOLUME DYNAMICS*



*Investment deals excluding deals with land plots, joint ventures, sales of residential real estate to end-users.

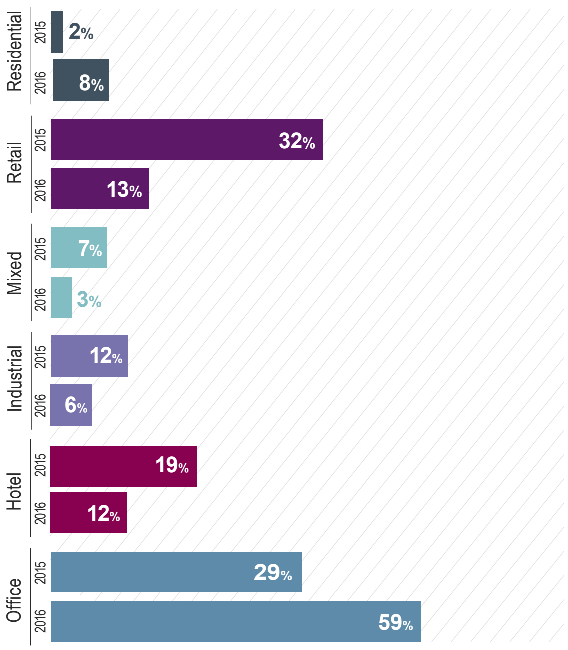
Source: JLL

5 INVESTORS BY SOURCE OF CAPITAL



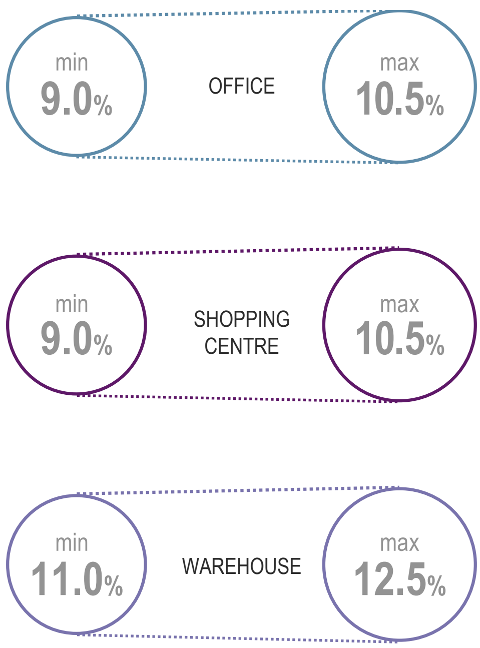
Source: JLL

6 INVESTMENT VOLUME BREAKDOWN BY SECTOR



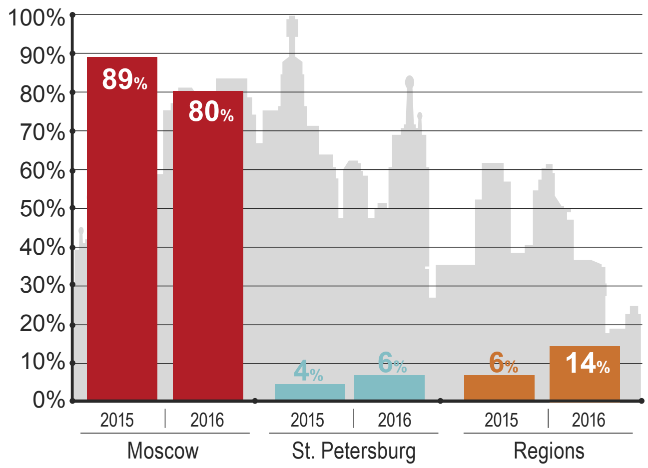
Source: JLL

7 PRIME YIELDS IN MOSCOW, Q4 2016



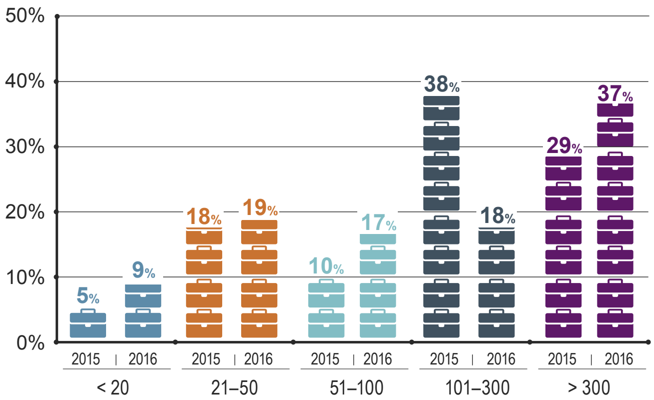
Source: JLL

8 INVESTMENT VOLUME BREAKDOWN BY REGION



Source: JLL

9 INVESTMENTS BY DEAL SIZE (VOLUME, USD M)



Source: JLL

Retail market, Q4 2016

• In Moscow 85,300 sq m* of new shopping centre space was delivered in Q4 2016, which is half that of Q4 2015. Completed malls include Butovo Mall (54,900 sq m), Kievsky (20,000 sq m), Vnukovo Outlet Village, Phase 3 (5,900 sq m) and Fashion House Outlet Centre, Phase 2 (4,500 sq m).

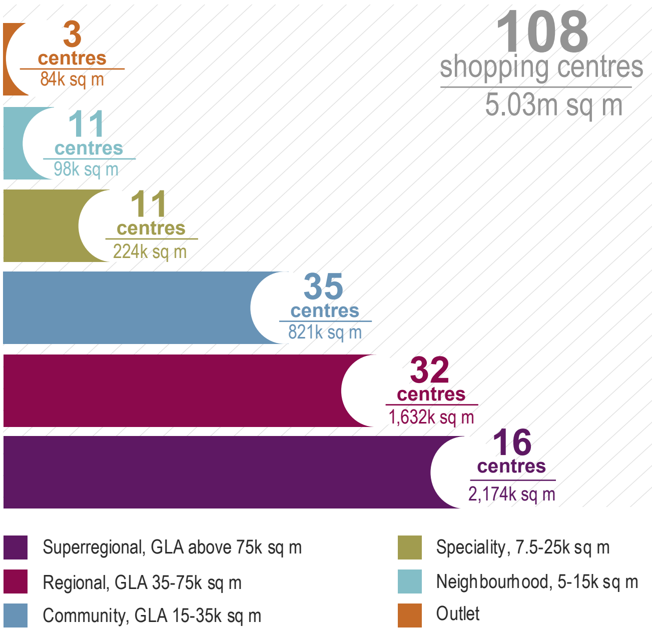
• Over the course of the year, completions dropped by 16% from 2015 to 455,500 sq m. This brought the total Moscow stock of shopping centres above 5 million sq m and shopping centre density to 407 sq m per 1,000 inhabitants. According to our forecast, around 277,200 sq m of new quality shopping centres will be completed in 2017, which is 39% less than in 2016.

• At the end of 2016, the overall vacancy rate was 7.5%, dropping by 1 ppt in Q4 2016 and by 0.8 ppt YoY. The vacancy rate declined significantly in the group of shopping centres that were delivered in the last three years. This was driven by improvements in their performance, including higher footfall and turnover. The combination of slower retail construction and rising tenant activity will lead to a further decline in the vacancy rate in 2017, which we forecast at 7% at the end of the year.

• 47 international brands entered the Russian market last year compared to 39 in 2015. Among the notable openings were the American underwear retailer Victoria's Secret, the Mexican entertainment park KidZania, the American cosmetics brand Urban Decay, the iconic French café Ladurée, the English clothes brand Superdry. Fashion retailers were the most active on the market, accounting for half of all debuts. Three international brands left the market last year: the American underwear retailer La Senza, the American café Magnolia Bakery, and the Italian kids clothes brand Prenatal Milano.

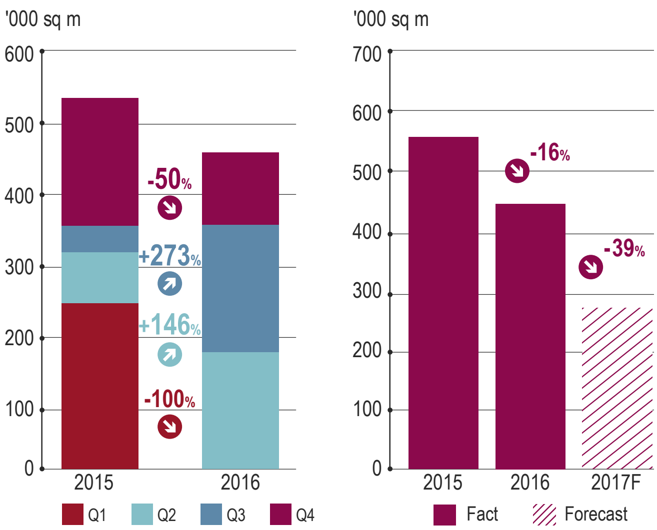
• Rents in shopping centres remained stable during the entire year: prime rental rates were RUB 195,000 per sq m/year, with average rental rents at RUB 74,000 per sq m/year. (10–18 ▶)

10 ▶ SHOPPING CENTRE SUPPLY



Source: JLL

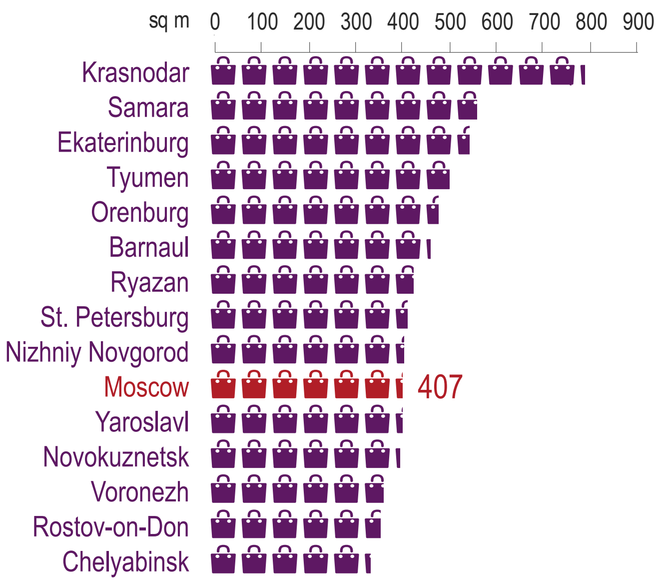
11 ▶ SHOPPING CENTRE COMPLETIONS



Source: JLL

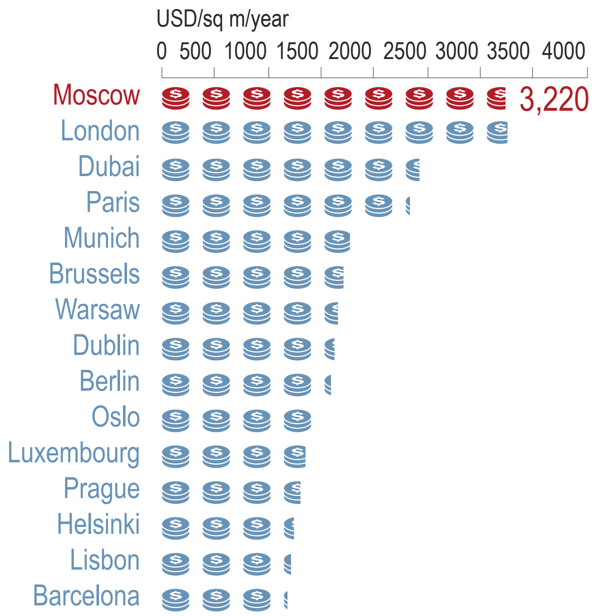
* Hereinafter we use gross leasing areas (GLA).

12 ▶ STOCK PER 1,000 INHABITANTS IN RUSSIAN CITIES



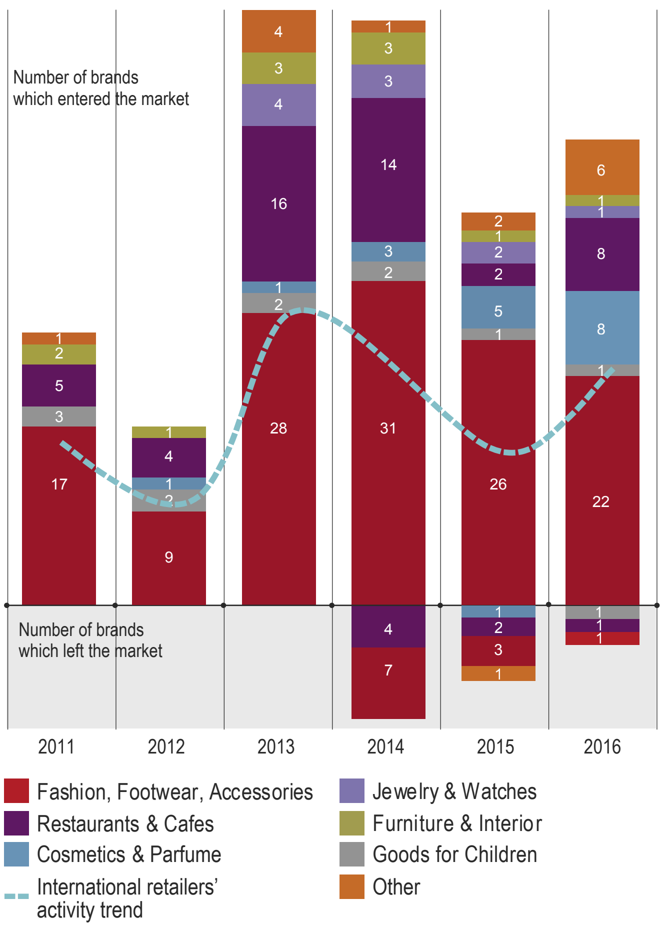
Source: JLL

13 ▶ PRIME RENT: EUROPEAN COMPARISON



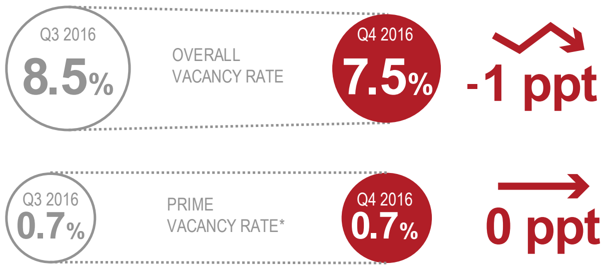
Source: JLL

14 ▶ NEW RETAILERS ON THE RUSSIAN MARKET: ENTRIES AND EXITS



Source: JLL

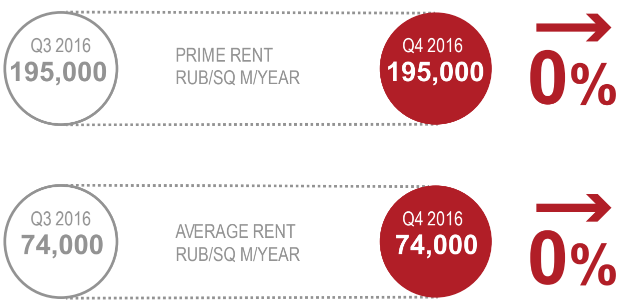
15 ▶ AVAILABILITY



* based on the basket of the most successful shopping centres with high footfall and conversion rates

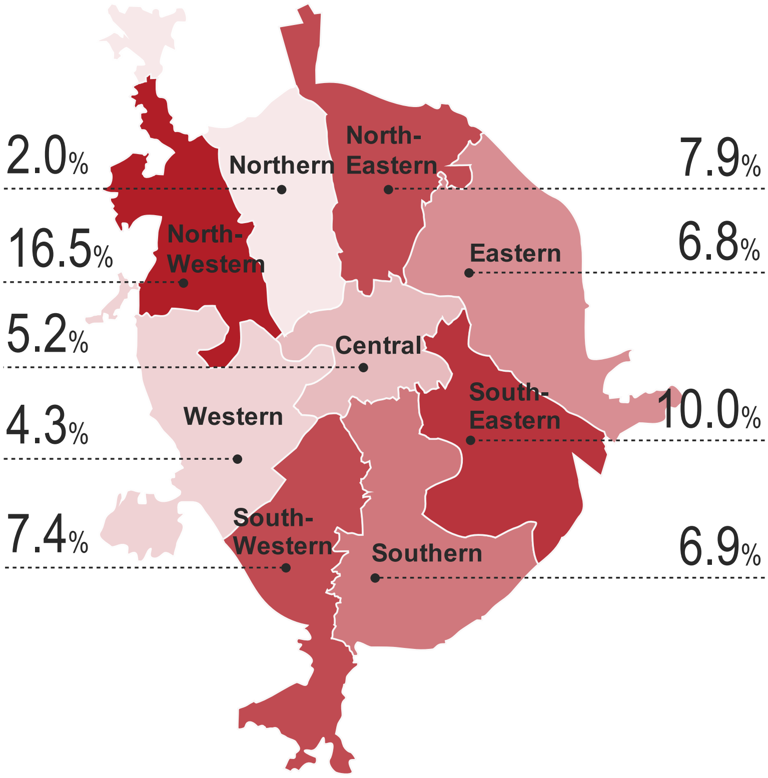
Source: JLL

16 ▶ PRICING



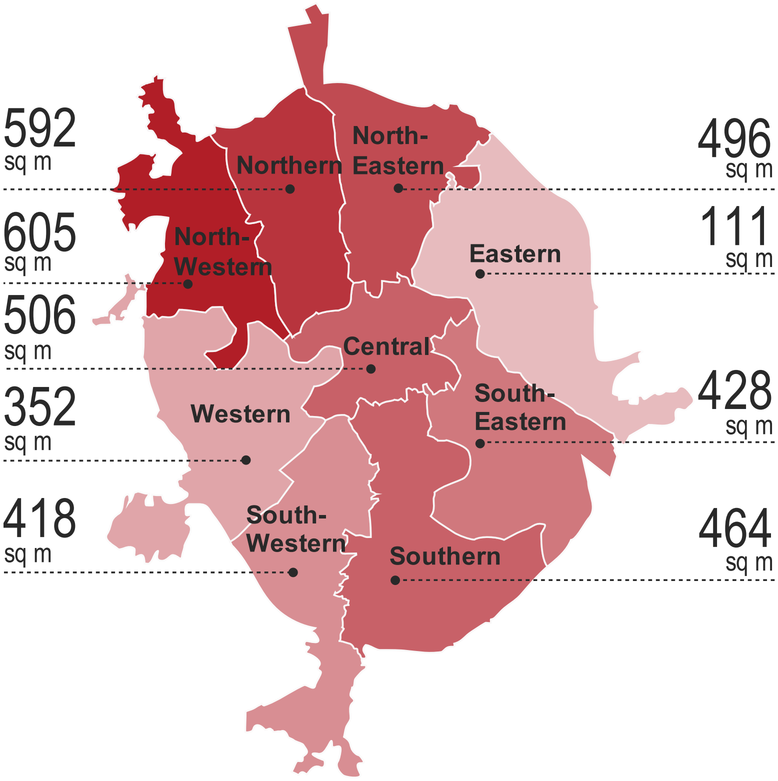
Source: JLL

17 ▶ VACANCY RATE BREAKDOWN BY MOSCOW DISTRICT



Source: JLL

18 ▶ SHOPPING CENTRE DENSITY BY MOSCOW DISTRICT (SQ M PER 1,000 INHABITANTS)

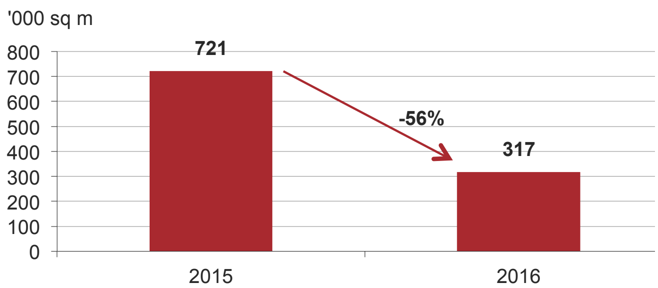


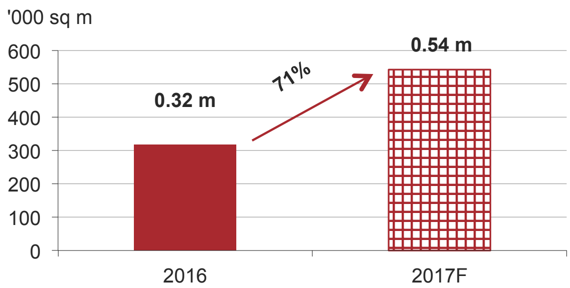
Source: JLL

Office market, Q4 2016

• In Q4 2016, 60,326 sq m of quality office premises were delivered to the market (compared to 82,000 sq m in Q3). Total completions in 2016 were only 317,000 sq m, 56% down YoY and the lowest in history.
• Now developers prefer to maintain a wait-and-see position and have revised the delivery schedule for 2017–2019. We expect about 543,000 sq m of new offices to be delivered in 2017 (our previous forecast was 722,000 sq m).
• Demand remained moderate in Q4, with 200,000 sq m of transacted space. Most transactions occurred in class B+ (56%), with 39% in class A and 5% in class B-. Overall in 2016 class A registered the largest take-up with 51% of total transactions, with 44% in class B+ and 6% in class B-. The main trends of the 2016 take-up were the benefits gained by tenants from reduced rents and the movement to quality facilities.
• The office buildings located between the TTR and MKAD were in high demand, with 40% of total transactions (with almost half in class A). This high percentage was brought about by the most favourable and flexible conditions for tenants. About 23% of transactions were in the area outside the Garden Ring, with 21% in Moscow City. The CBD recorded only 16% of total transactions.
• The overall vacancy rate in Moscow in 2016 declined to 15.5% compared to 15.7% in Q3 and 16% at the end of 2015. The class A vacancy rate declined noticeably to 18.1% from 20.3%, whereas the total vacancy rate for class B increased by 1 pp to 17.3%.
• At the end of 2016, asking rents were stable in all segments: USD 400–600/sq m/year for class A premises and RUB 12,000–20,000/sq m/year for class B+. (19–26 ▶)

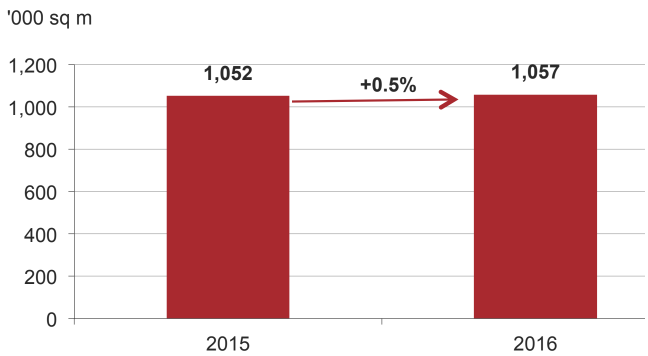
19 ▶ VOLUME OF NEW SUPPLY

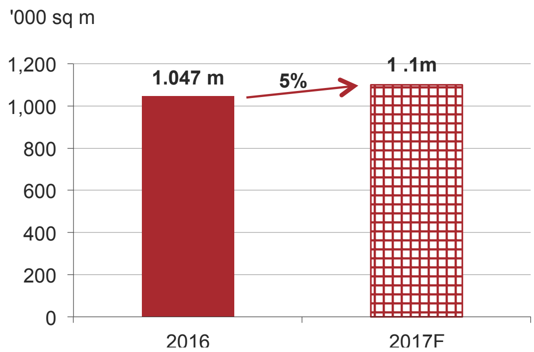




Source: JLL

20 ▶ VOLUME OF TRANSACTED SPACE





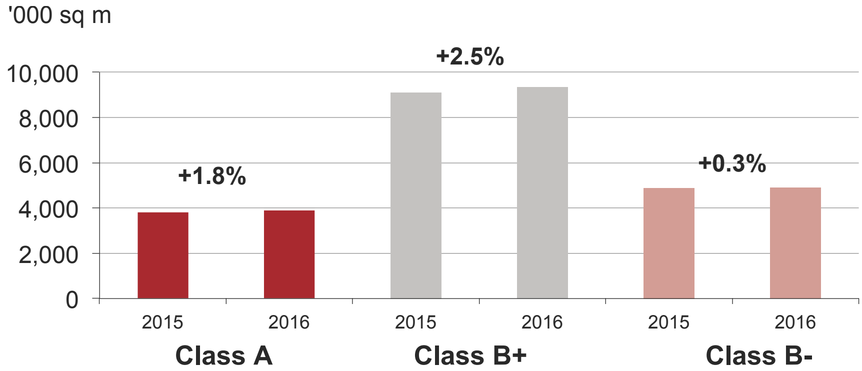
Source: JLL

21 ▶ VACANCY RATES BY CLASS

	2015	2016
Class A	26.8%	20.3%
Class B+	16.0%	16.9%
Class B-	11.1%	9.8%
Overall	17.0%	15.7%

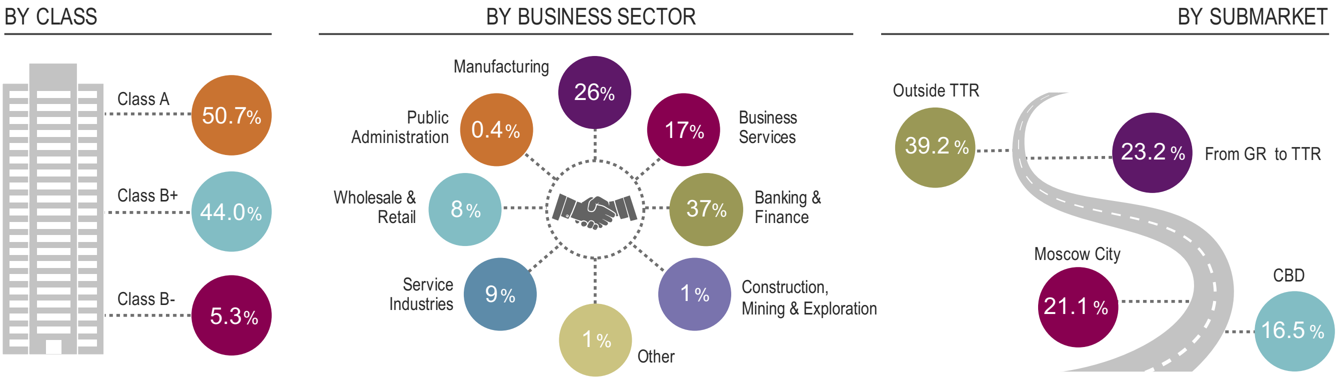
Source: JLL

22 ▶ MOSCOW OFFICE STOCK BY CLASS



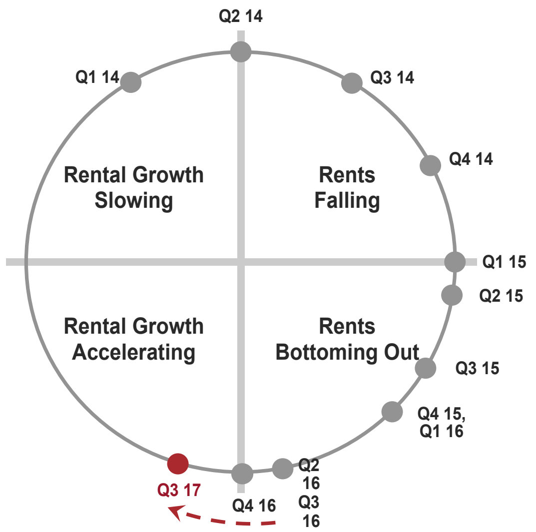
Source: JLL

23 ▶ TRANSACTED SPACE BY CLASS, LOCATION AND SECTOR, 2016



Source: JLL

24 OFFICE PROPERTY CYCLE IN MOSCOW



Source: JLL

25 ASKING RENTS*

USD/sq m/year	RUB/sq m/year		
Prime**	Class A	Class B+	Class B-
600–750	400–600	12,000–20,000	8,000–12,000

*Asking rents (including pre-lets) exclude VAT
**Prime rents refer to rents in high quality buildings in the Central Business District (CBD)

Source: JLL

26 MOSCOW OFFICE SUBMARKETS, Q3 2016

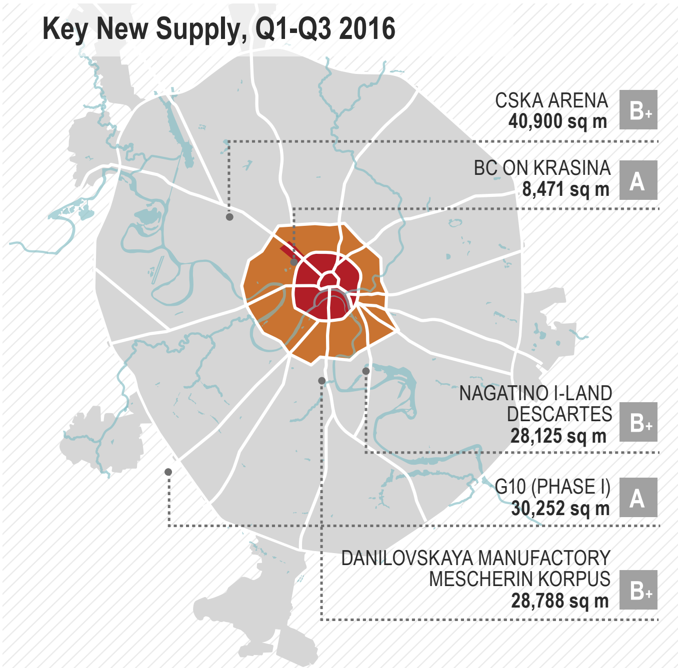
	CBD*	MOSCOW CITY	GR TO TTR **	OUTSIDE TTR ***
Stock, sq m	3,953,698	910,785	4,467,297	8,731,860
Availability, sq m	502,583	178,586	505,263	1,645,669
Vacancy Rate, %	12.7	19.6	11.3	18.8
Transacted Space, sq m	50,273	15,781	54,985	157,934

* The Central Business District submarket comprises the area within and in close proximity to the Garden Ring and Tverskaya-Yamskaya Street

** Excludes Moscow City

*** Includes projects outside MKAD

Source: JLL



Warehouse market

TRENDS

Weak demand for warehouse space is the main factor affecting the market in all the Russian regions.

The contracting consumer market has a strong effect not only on the retail segment, but also on the warehouse market. Retailers took advantage of the slow market, reaching record high levels of demand in 2015. In 2016, retail operators were focused on operational expense optimisation by decreasing their requirements for warehouse space. The demand from retailers is falling. Domestic manufacturing and logistics are increasing but small blocks are in high demand. This does not provide sufficient demand to make up for the weak demand from the retail sector.

Reacting to the market changes, developers are lowering speculative construction activity and starting construction only after signing preliminary lease and sale contracts.

In the majority of the regions where the market is not large, this approach has already resulted in an improvement in the market situation. Rental rates stabilised in 2016. In 2017, the situation will remain stable despite the unstable demand.

In the Moscow region, which covers 66% of the Russian warehouse market, high vacancy rates still affect the market. Developers continued to decrease rental rates in order to increase occupancy levels in 2016.

In 2017, the consumer market is expected to start to stabilise, and so demand will be more predictable and construction activity will slow down. We expect that vacancy levels will start decreasing and rental rates in the Moscow region will stabilise at the end of 2017.

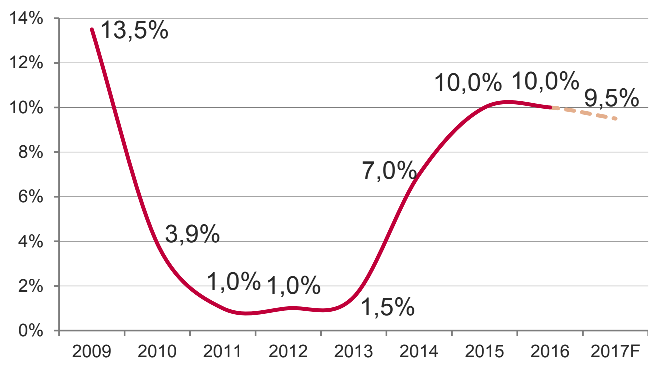
TRENDS. MOSCOW REGION

After 6 months of stability, rental rates decreased in Q4 2016. Average class A rental rates at the end of 2016 were RUB 3,500–3,800 sq m/ year excluding VAT, OPEX* and utilities, down 14% year-on-year.

The drop in rental rates resulted in an increase in take up. However, vacancy rates in class A remained at the same level all through the year. (27, 28 ▶)

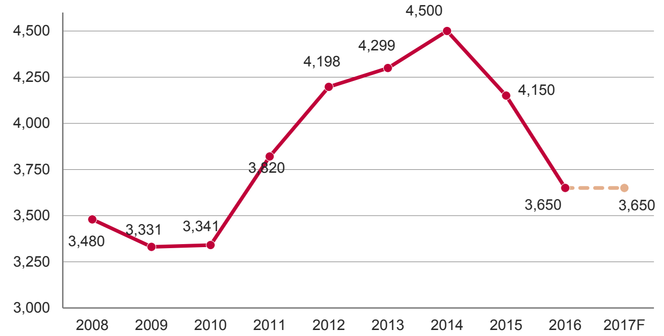
*OPEX - operational expense

27 ▶ VACANCY RATE, CLASS A



Source: Cushman & Wakefield Research

28 ▶ NET RENTAL RATE*, CLASS A, (RUB/SQ M/YEAR)



* Rental rate excluding OPEX, utilities, VAT

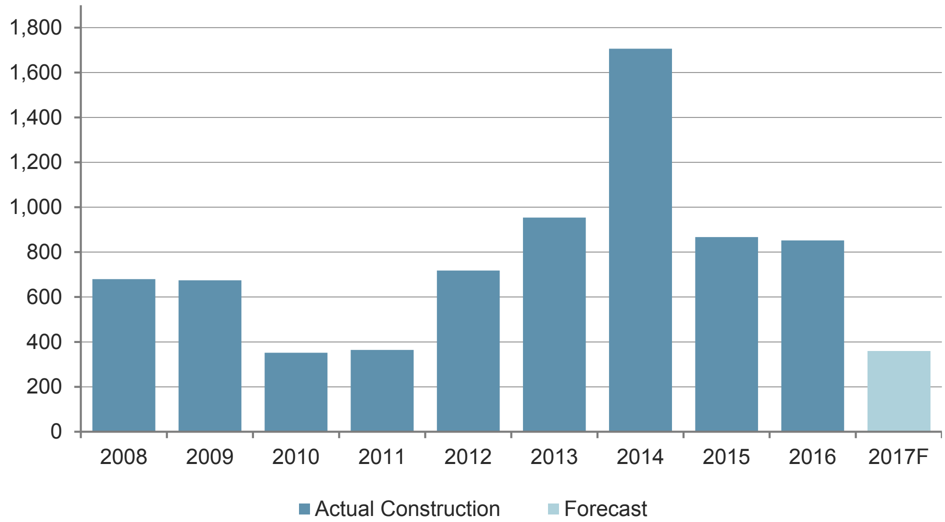
Source: Cushman & Wakefield Research

NEW CONSTRUCTION. MOSCOW REGION

235,000 sq m of quality warehouse space was delivered to the market in Q4 2016. In total, 852,000 sq m of warehouse space was constructed in 2016, which is similar to that of 2015.

The vacancy rates in class A in 2016 remained stable throughout the year at 10%. The vacancy rates in class B are lower because tenants prefer to lease smaller blocks due to changes in demand.

29 ▶ NEW CONSTRUCTION, CLASSES A AND B, '000 SQ M



Source: Cushman & Wakefield Research

We expect new construction to drop significantly in 2017. According to preliminary estimates, 360,000 sq m of warehouse space will be delivered to the market, which can result in a drop in vacancy rates by the end of 2017. (29 ▶)

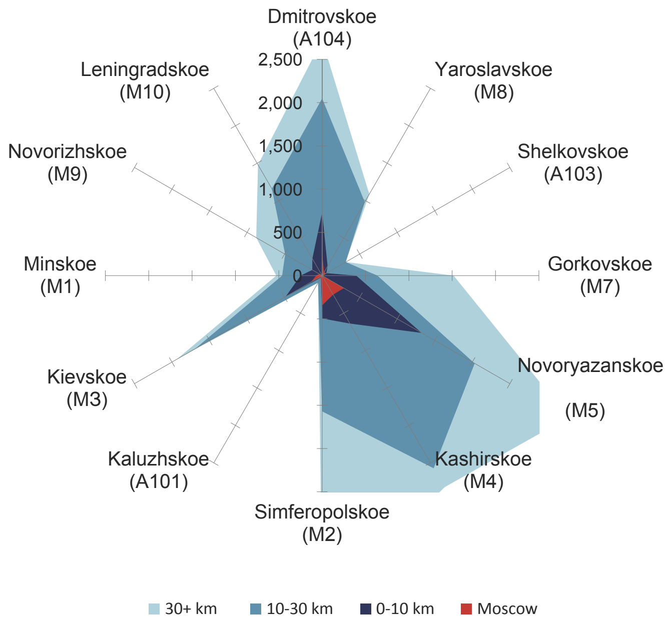
The new warehouse space delivered to the market in 2016 did not change the warehouse space distribution in the Moscow region.

The largest proportion of warehouse space is concentrated on Simferopolskoye highway at 18%, on Novoryazanskoye highway at 16%, and on Kashirskoye highway at 14%.

The smallest proportion of warehouse space is located on Kaluzhskoye highway at less than 1%, and Schelkovskoye highway at 2%.

The majority of warehouse space (46%) is situated within 10–30 km of the MKAD. (30 ▶)

30 ▶ GEOGRAPHICAL DISTRIBUTION OF QUALITY WAREHOUSE SPACE BY HIGHWAY, CLASS A AND B, '000 SQ M



Source: Cushman & Wakefield Research

DEMAND. MOSCOW REGION

In Q4 2016, due to the drop in rental rates take up comprised 528,000 sq m, which is 2.5 times higher than the average for 2011–2015.

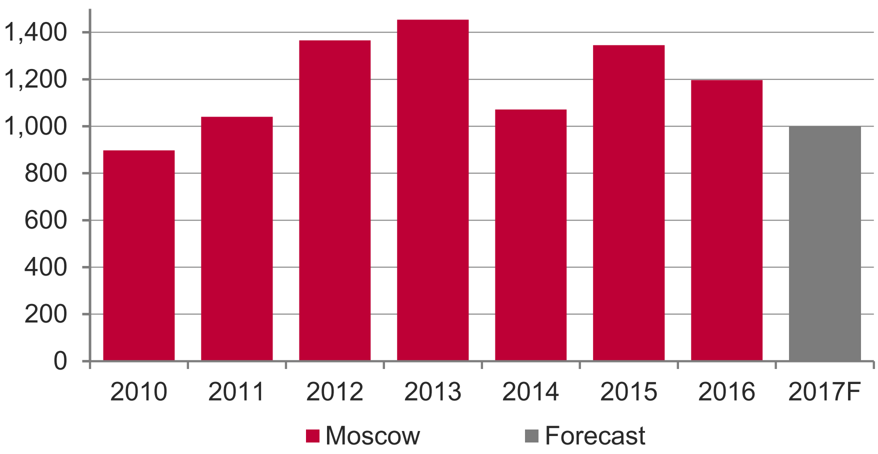
However, the total annual take up was 1.2 million sq m, which is 11% lower than in 2015 and 7% lower than the average for 2011–2015. The long-term drop in demand caused by the slowdown in the economy is still affecting the market.

The proportion of sales in the total volume decreased from 20% in 2015 to 14% in 2016. The average sale in 2016 was 12,000 sq m, up 11% year-on-year. (31 ▶)

The demand for warehouse space from retailers is decreasing. The proportion of retailers in take up dropped from 56.2% in 2015 to 48% in 2016. The number of deals also decreased. The average transaction size in this segment did not change from 2015 and comprised 26,000 sq m.

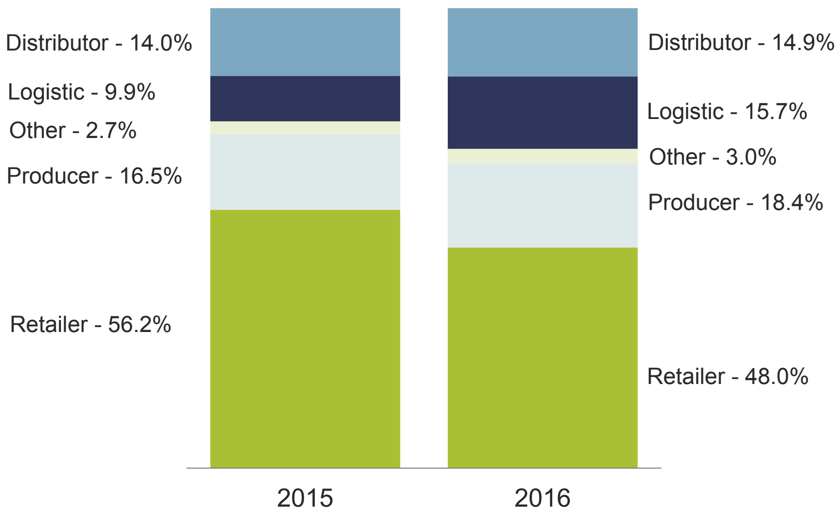
There was a rise in demand from manufacturing and logistic companies. In these segments the number of deals increased by 23% and 11% from 2015 respectively. In the logistics sector the transaction size increased and in 2016 it comprised 11,000 sq m, up 28% year-on-year. (32 ▶)

31 ▶ TAKE UP, CLASS A AND B, '000 SQ M



Source: Cushman & Wakefield Research

32 ▶ TAKE UP STRUCTURE



Source: Cushman & Wakefield Research

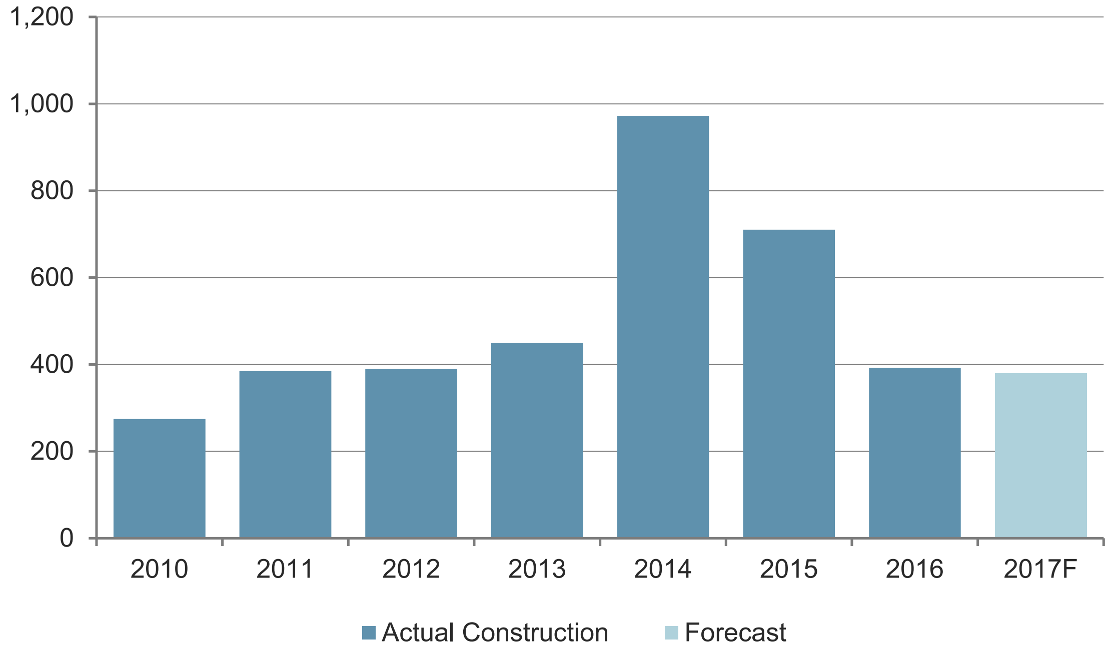
NEW CONSTRUCTION. REGIONS

392,000 sq m of quality warehouse space was delivered to the market in the regions in 2016, down 45% year-on-year. At the same time, 40% of premises are already pre-leased or sold to the final user.

As usual, the largest proportion of warehouse space was constructed in St. Petersburg. In 2016, 132,000 sq m of warehouse space was added to the market in the region, while 126,000 sq m were constructed in 2015.

We expect construction activity to remain at the same level in 2017. Around 380,000 sq m of warehouse space will be delivered to the market. (33 ▶)

33 ▶ NEW CONSTRUCTION, CLASS A AND B, ‘000 SQM



Source: Cushman & Wakefield Research

DEMAND. REGIONS

The total volume of lease and sale transactions was 142,000 sq m in Q4 2016, which is 19% lower than the average for 2011–2015.

In total, the take up in the regions in 2016 comprised 432,000 sq m, down 29% year-on-year. A drop in take up was registered for the second year in a row.

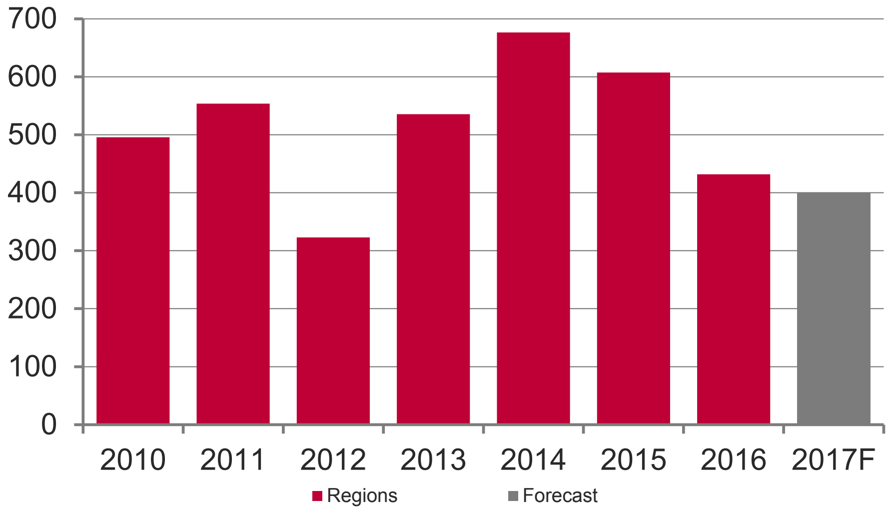
Average deal size declined by 13% and comprised 9,000 sqm, number of deals decreased by 21% compared to 2015. (34 ▶)

Demand from all sectors went down in the regions. The biggest fall was seen in the manufacturing and distribution sectors.

In 2016, the volume of lease and sale transactions was 3.5 times lower than in 2015.

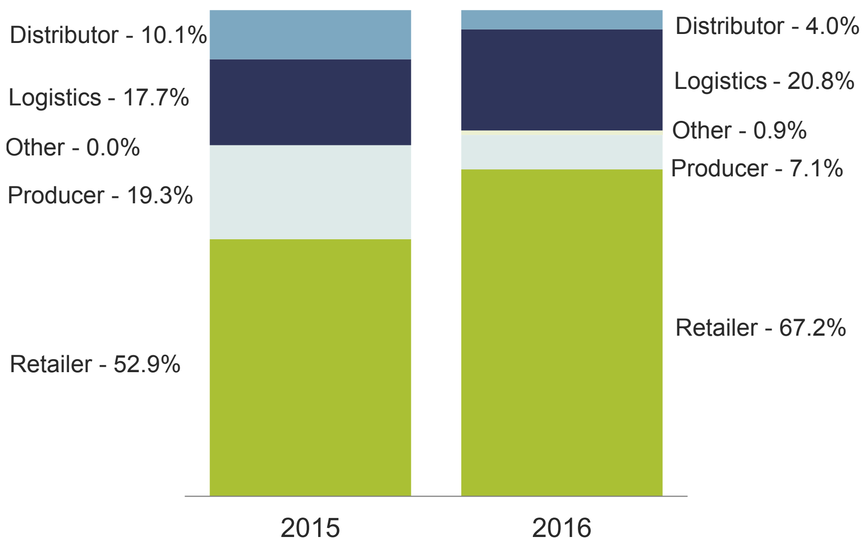
The lowest decline in demand was from retailers and logistics companies. Take up decreased by 7% and 15% respectively. (35 ▶)

34 ▶ NEW CONSTRUCTION, CLASS A AND B, '000 SQM



Source: Cushman & Wakefield Research

35 ▶ TAKE UP STRUCTURE



Source: Cushman & Wakefield Research

Hospitality – Moscow hotels in Q4 2016

The upscale segment demonstrated a positive trend in rouble ADR (average daily rate) and RevPAR (revenue per available room) compared to Q4 2015 and showed a 9% and 12% increase (RUB 12,274 and RUB 8,480) respectively. US dollar ADR figures also showed an increase but only by 1%, and comprised USD 185 along with the US dollar RevPAR which increased by 4% (USD 129). The overall occupancy increased by 2% (69%).

Business hotels showed the following results in January–December 2016: US dollar RevPAR increased by 2% (USD 66), which was composed of a 4% occupancy increase (74%) and a 4% drop in ADR nominated in US dollars (USD 90). The rouble RevPAR increased by 10% (RUB 4,357) in line with a 4% ADR rise (RUB 5,933).

There was a drop in the midscale segment. ADR and RevPAR nominated in US dollars fell by 11% and 5% respectively, amounting to USD 64 and USD 50. The rouble ADR decreased by 4% (RUB 4,246) while RevPAR increased by 2% (RUB 3,325). Only overall occupancy showed a positive trend and increased by 4% (78%).

Average occupancy across all market segments of Moscow hotels grew by 3% (74%) as compared to the same period of 2015. During 2016 the US dollar ADR decreased by 3%, with the RevPAR growing by 1% (USD 113 and USD 82 respectively). At the same time, rouble ADR increased by 5%, amounting to RUB 7,484, along with RevPAR which demonstrated a 9% increase (RUB 5,387).

Comparing the results of 2016 to last year when we observed extreme fluctuations of the US dollar against the rouble, we can conclude that these fluctuations are continuing to downshift.The US dollar/rouble exchange rate increased by 9% in January–December 2016 compared with the corresponding period in 2015.

The absolute gap in RevPAR between market segments demonstrated the following results:

• The gap between the upscale and midscale segments comprised USD 79/RUB 5,155 compared to USD 71/ RUB 4,333 in the same period of 2015.

• The difference in RevPAR between upscale and business hotels changed to USD 63/RUB 4,123 compared to the 2015 results (USD 59/RUB 3,616). (36 ▶)

36 ▶ HOTELS OPENED IN 2016 IN MOSCOW AND THE MOSCOW REGION (AS OF DECEMBER 2016)

Name	Number of rooms	Address	Class
Moscow			
Holiday Inn Seligerskaya	201	10 Korovinskoe Highway	4 stars
Novotel Moscow Kievskaya	202	2 Kievskaya street	3 stars
Adagio Moscow Kievskaya	149		3 stars
Ibis Moscow Kievskaya	350		3 stars
Moscow region			
Ibis Stupino	129	42 Stupino, Pobedy Avenue	3 stars
Emerald Wood	6 guest houses	Near the villages of Sharino and Denisovo, Klinsky district	4-5 stars
Total: 3 hotels	**1,031 rooms, 6 guest houses**		

Source: EY database, open sources, operator data

Hotels opened in 2016:

• Accor Hotels announced the opening in April 2016 of a new Ibis Stupino hotel in Stupino, Moscow region. The hotel on 42 Pobedy Avenue offers 129 rooms, a restaurant, a bar, two conference halls and two meeting rooms.

• InterContinental Hotels Group announced the opening of Holiday Inn Moscow – Seligerskaya hotel after reconstruction. The hotel located on 10 Korovinskoe Highway, was called Iris Congress Hotel before rebranding. The hotel offers 201 rooms, a restaurant, a lounge bar, a café, 12 conference halls, a concert hall, a fitness center with a swimming pool and a sauna. The owner of the hotel is Amtel Properties.

• A new Emerald Wood eco-hotel opened near the villages of Sharino and Denisovo in the Klinsky district, Moscow region at the end of August 2016. The countryside hotel offers six guest houses, a restaurant, a recreational centre with a swimming pool and SPA, a children's park and beach.

• Accor Hotels announced the opening of hotel complex in Moscow near Kievsky railway station on 2 Kievskaya street in the middle of November 2016. The complex includes three Adagio, Ibis and Novotel hotels with 149, 350 and 202 rooms respectively. The complex also offers two restaurants, a bar, a conference hall with 10 halls, a fitnesscenter with a swimming pool and parking.

We expect the following hotels to open in 2017: (**37–42** ▶)

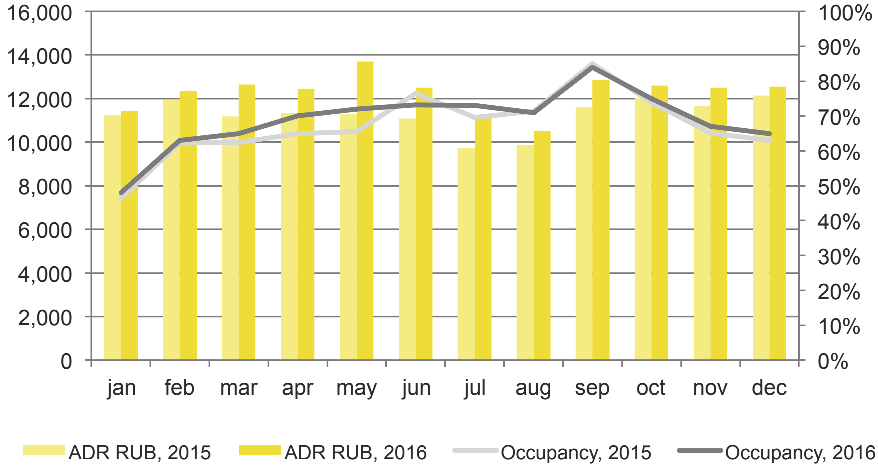
37 ▶ FUTURE HOTELS ANNOUNCED FOR OPENING IN MOSCOW IN 2017

Name	Number of rooms	Address	Class
		Moscow	
Hyatt Regency Moscow Petrovsky Park*	298	36 Leningradsky Avenue	4 stars
Ibis Moscow Oktyabrskoe Pole*	242	2 Marshala Rybalko street	3 stars
Ibis Budget Oktyabrskoe Pole*	108		2 stars
DoubleTree by Hilton Vnukovo Airport*	432	Vnukovo Airport	4stars
Ramada H&S Moscow Greenwood Park	376	69 km MKAD, Krasnogorsk district	4 stars
Four Points by Sheraton Moscow Vnukovo Airport	250	8 Vnukovskaya Bolshaya street	3 stars
Hilton Garden Inn Moscow Krasnoselskaya	292	11 A Verkhnyaya Krasnoselskaya street	4 stars
Holiday Inn Express Moscow – Dubininskaya	243	Dubininskaya street	2 stars
Mercure Neglinnaya	100	n/a	4 stars
Radisson Olympiysky Hotel Moscow	340	1 Olimpiysky Passage	5 stars
		Moscow region	
Hilton Mozhaysk Borodino Hotel & SPA	160	Village of Zarechye, Mozhaysky district	5 stars
Ibis Domodedovo	158	Village of Shishkino	3 stars
Total: 12 hotels	**2,999 rooms**		

*These hotels were set to be opened in 2016 but remained at the development stage as of 2017

Source: EY database, open sources, operator data

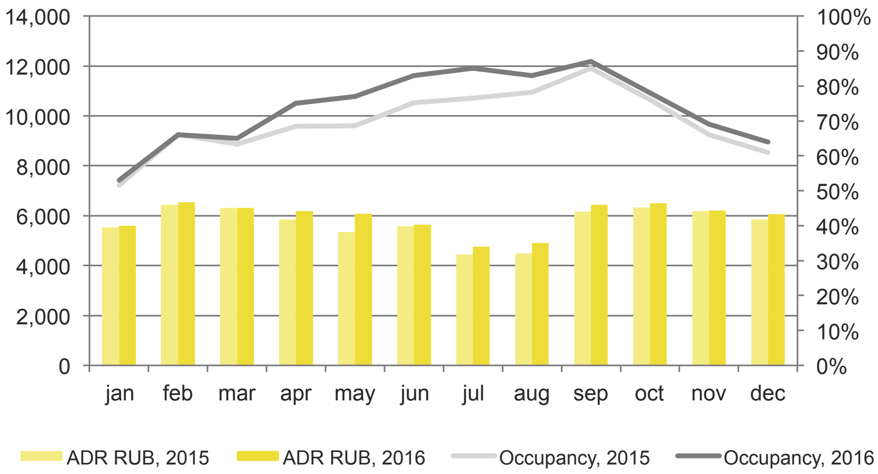
38 ▶ 5-STAR HOTELS: ADR* (RUB) AND OCCUPANCY, 2016 VS. 2015



* average daily rate

Source: EY analysis

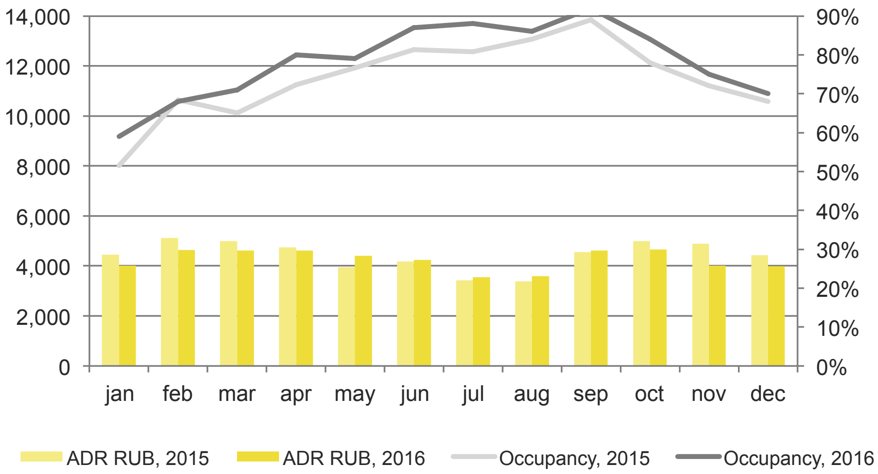
39 ▶ 4-STAR HOTELS: ADR* (RUB) AND OCCUPANCY, 2016 VS. 2015



* average daily rate

Source: EY analysis

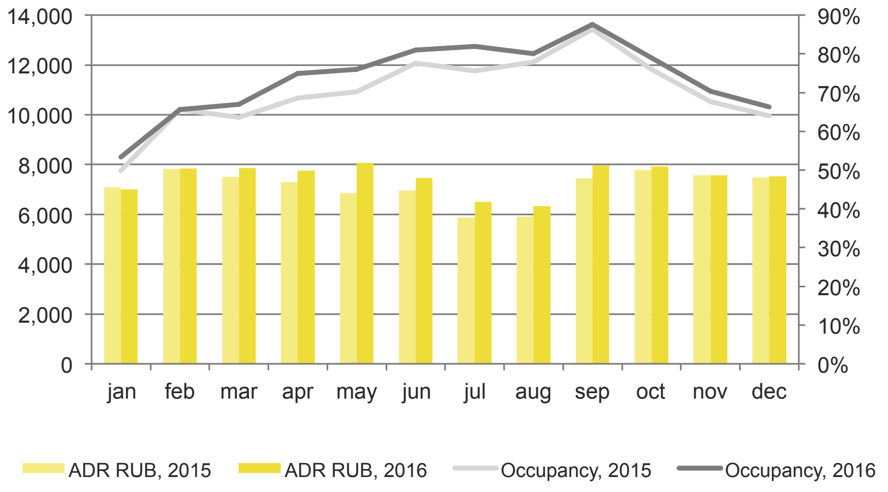
40 ▶ 3-STAR HOTELS: ADR* (RUB) AND OCCUPANCY, 2016 VS. 2015



* average daily rate

Source: EY analysis

41 ▶ AVERAGE MARKET ADR* (RUB) AND OCCUPANCY, 2016 VS. 2015



* average daily rate

Source: EY analysis

42 ▶ OPERATIONAL INDICES

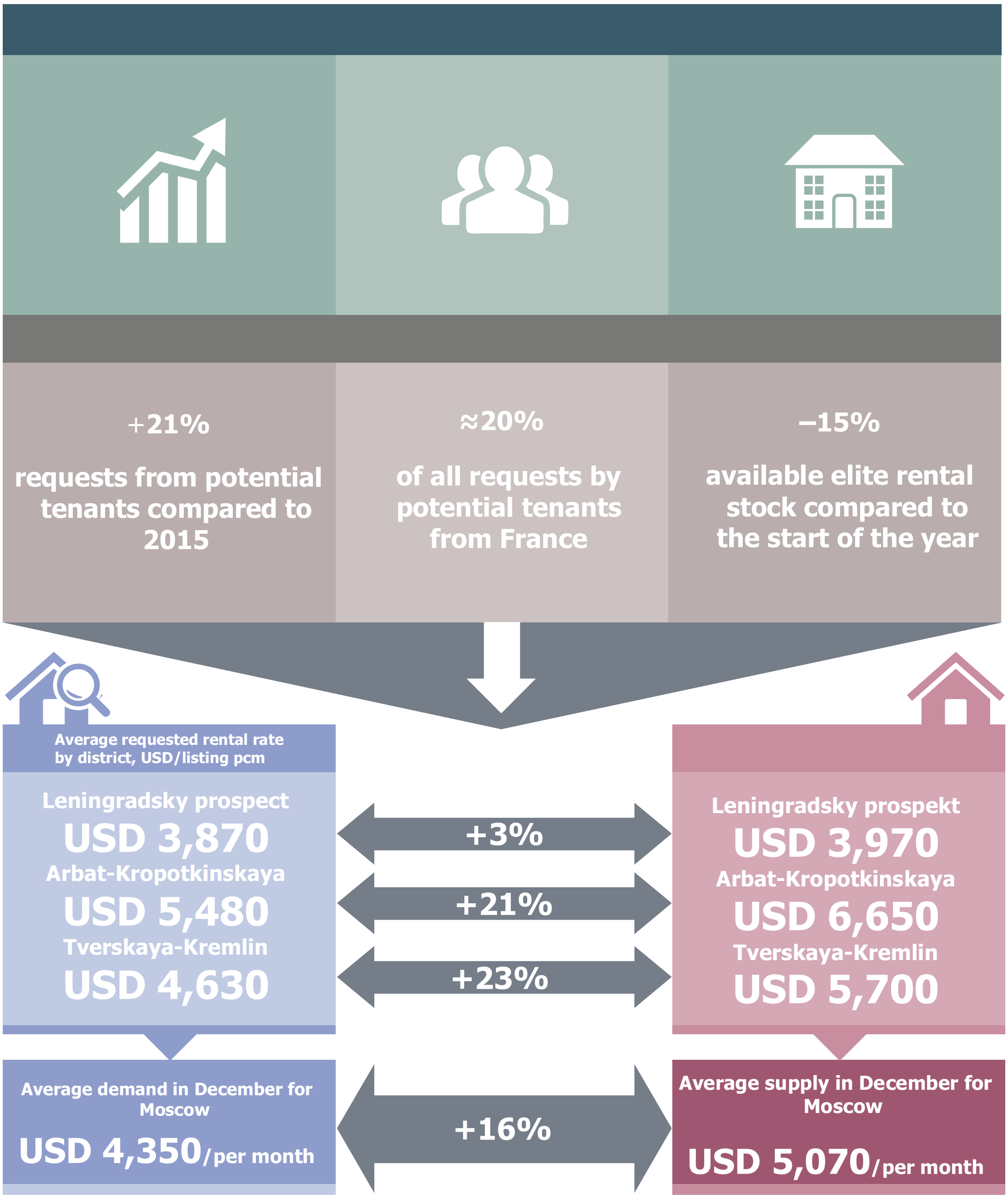
	January–December 2016 (US dollars/roubles)	January–December 2015 (US dollars/roubles)	January–December 2016 vs. January–December 2015, %, US dollars/roubles
	5 stars		
Occupancy	69%	67%	2%
Average daily rate (ADR)	USD 185/RUB 12,274	USD 184/RUB 11,258	1%/9%
Revenue per available room (RevPAR)	USD 129/RUB 8,480	USD 124/RUB 7,578	4%/12%
	4 stars		
Occupancy	74%	70%	4%
ADR	USD 90/RUB 5,933	USD 93/RUB 5,713	-4%/4%
RevPAR	USD 66/RUB 4,357	USD 65/RUB 3,962	2%/10%
	3 stars		
Occupancy	78%	74%	4%
ADR	USD 64/RUB 4,246	USD 72/RUB 4,423	-11%/-4%
RevPAR	USD 50/RUB 3,325	USD 53/RUB 3,245	-5%/2%
	Average		
Occupancy	74%	70%	3%
ADR	USD 113/RUB 7,484	USD 116/RUB 7,131	-3%/5%
RevPAR	USD 82/RUB 5,387	USD 81/RUB 4,928	1%/9%

Source: Smith Travel Research, EY analysis and forecast

Moscow Housing Market

Last year confirmed the stability of the prime residential rental market in Moscow, despite the uncertain economic conditions. The number of vacant properties dropped significantly, and requests from new tenants increased by nearly 25%. Demand was high, even for the most expensive listings valued at USD 11,000 pcm (per calendar month). The most striking trend was the strong activity of Russian nationals in this segment compared to the previous time periods. (43 ▶)

43 ▶ KEY FIGURES, 2016



Source: Intermark Relocation

TENANT PROFILE

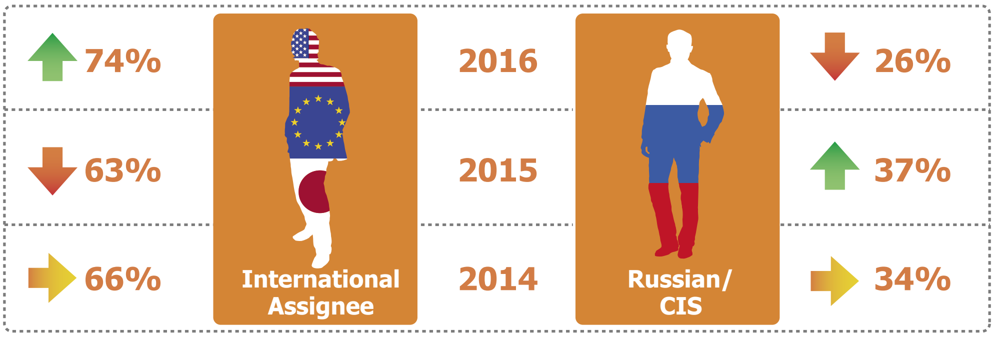
Over the whole year, the share of requests from potential foreign tenants increased, and comprised about 74% of the total requests. Prime rental apartments in the capital were particularly popular with French citizens, whose requests accounted for 20% of total interest, followed by Russian nationals (about 16%). (44 ▶)

The average age of potential tenants ranged from 35 to 49 years old, comprising over half (51%) of all clients interested in the high-budget segment. The largest demand came from families with children (72%) looking for 2 and 3 bedroom apartments. (45 ▶)

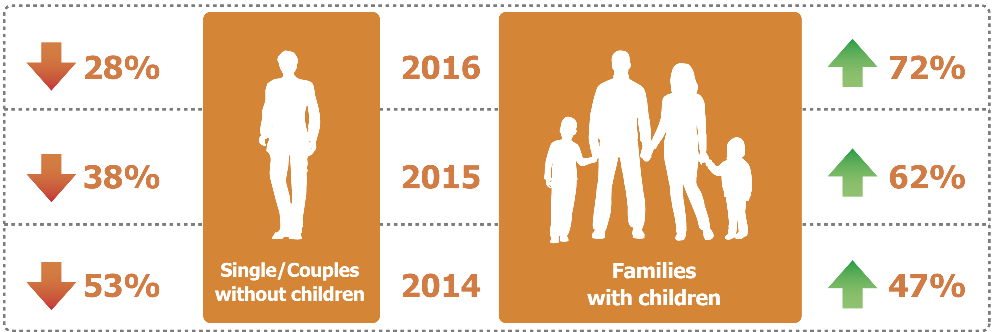
FURNISHED VS. UNFURNISHED

Furnished apartments are the most popular among tenants, accounting for nearly 90% of requests. A distinct feature of today's tenants is the prerequisite demand for premises that are protected by security guards. (46 ▶)

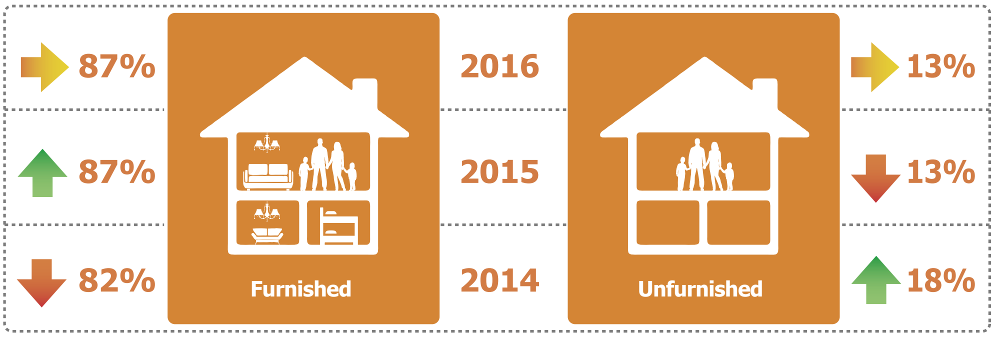
44 ▶



45 ▶



46 ▶



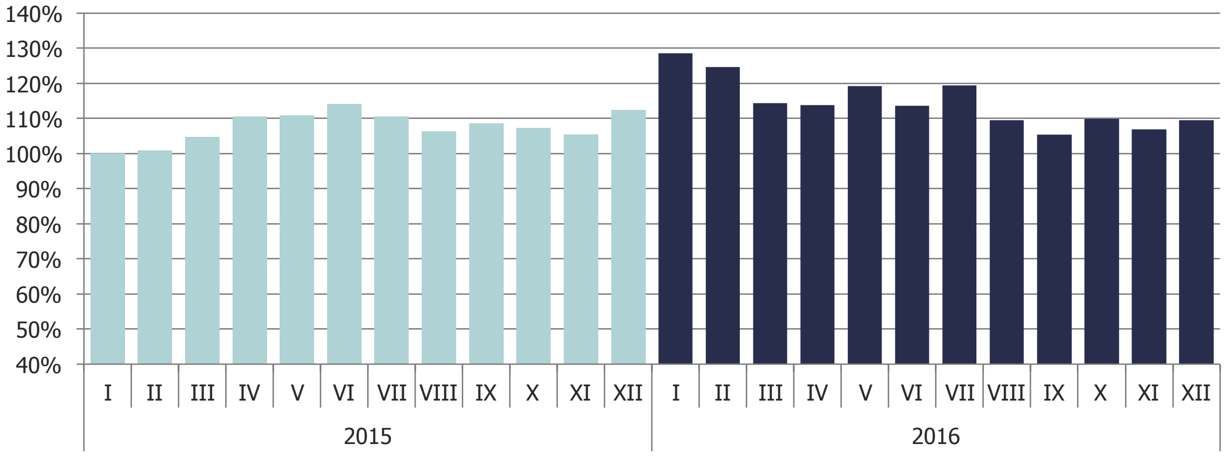
Source: Intermark Relocation

SUPPLY

The supply volume of the high-budget rental market was stable in 2016. The number of available listings fluctuated from -3% to +5% every month. Nevertheless, by the close of the year, there were 15% less vacant properties, testifying to the growing liquidity of rental real estate. Furthermore, potential tenants are being offered better options, with high-quality decoration and furnishings. (47 ▶)

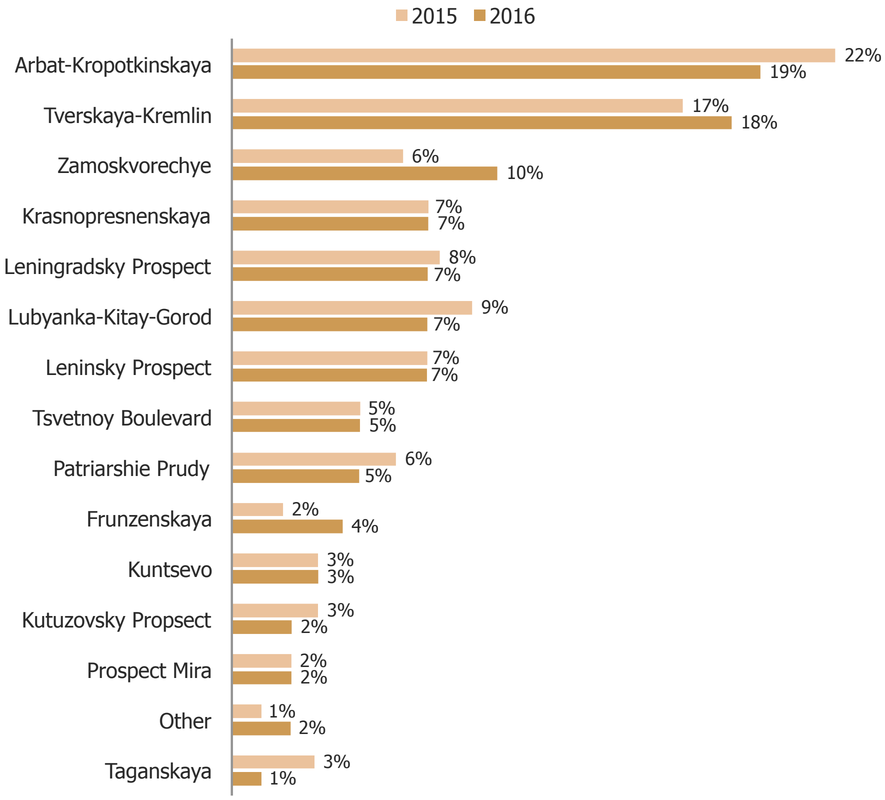
High-budget property rental listings are concentrated in five main districts: Arbat–Kropotkinskaya, Tverskaya–Kremlin, Zamoskvorechye, Krasnopresnenskaya and Leningradsky Prospekt. Together, these areas account for about 61% of the total supply in this segment. (48 ▶)

47 ▶ MOSCOW PRIME RENTAL MARKET SUPPLY (JANUARY 2015 – 100%)
THE SUPPLY OF LUXURY RENTALS FELL 15% BETWEEN JANUARY AND DECEMBER



Source: Intermark Relocation

48 ▶ ANALYSIS OF THE MOST POPULAR AREAS TO LIVE IN MOSCOW IN TERMS OF SUPPLY



Source: Intermark Relocation

TOP 5 DISTRICTS IN TERMS OF SUPPLY IN 2016

1. **Arbat–Kropotkinskaya**
2. **Tverskaya–Kremlin**
3. **Zamoskvorechye**
4. **Krasnopresnenskaya**
5. **Leningradsky Prospekt**

The high-budget rental supply structure is as follows: 2 and 3 bedroom apartments are most common (32% and 24% respectively), followed by 1 bedroom (20%), 4+ bedrooms (16%) and studio apartments (8%). (**49** ▶)

DEMAND

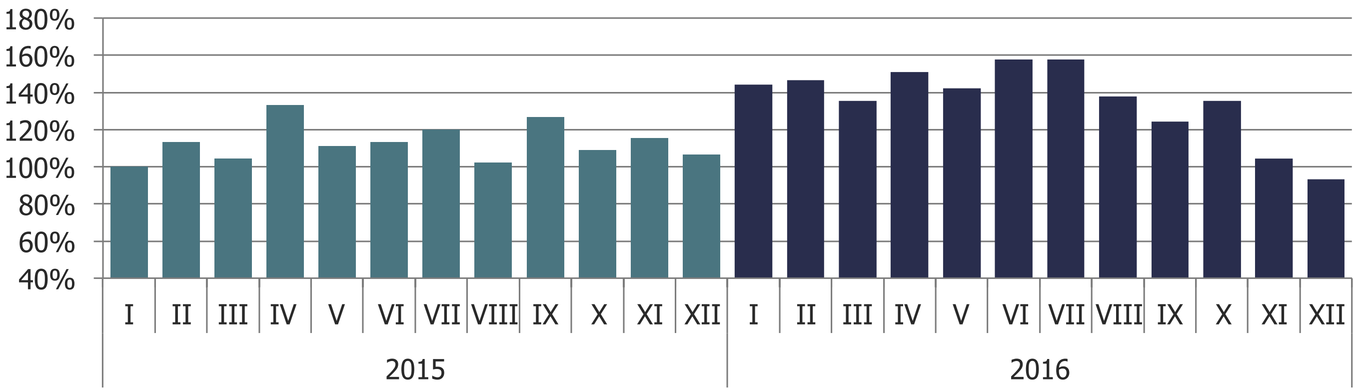
Between January and December 2016, demand from potential tenants was 21% higher than during the same period in 2015. (**50** ▶)

49 ▶ SUPPLY ANALYSIS OF EXPAT HOUSING IN MOSCOW IN TERMS OF NUMBER OF ROOMS

Number of Rooms	2014%	2015%	2016%
Studio	1%	4%	8%
	14%	14%	20%
	38%	36%	32%
	28%	27%	24%
	19%	20%	16%

Source: Intermark Relocation

50 ▶ DEMAND IN THE MOSCOW PRIME RENTAL MARKET (JANUARY 2015 – 100%)
DEMAND GREW BY NEARLY ONE-QUARTER IN 2016 YEAR-ON-YEAR



Source: Intermark Relocation

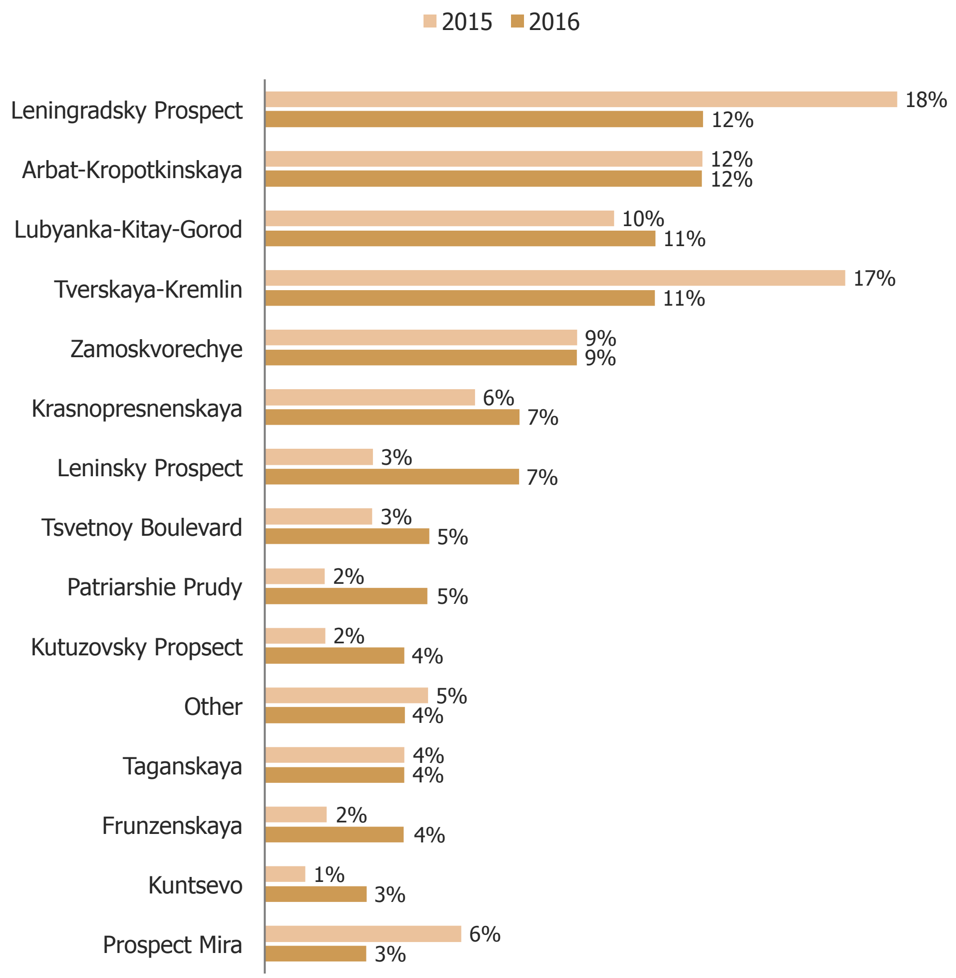
Leningradsky Prospekt was the most popular district for primerentals in the Russian capital. Property in this area attracted 12% of all client requests, followed by Arbat–Kropotkinskaya (11.5%). Tverskaya–Kremlin and Lubyanka–Kitay-Gorod tied for third place.

In 2015, Leningradsky Prospekt was also the most popular district, but it held a larger margin over other areas, attracting nearly one-fifth of all client interest (18%). Tverskaya street and Arbat–Kropotkinskaya ranked second and third (17% and 12% respectively). (**51** ▶)

TOP 5 DISTRICTS IN TERMS OF DEMAND IN 2016

1. **Leningradsky Prospekt**
2. **Arbat–Kropotkinskaya**
3. **Lubyanka–Kitay-Gorod**
4. **Tverskaya–Kremlin**
5. **Zamoskvorechye**

51 ▶ ANALYSIS OF THE MOST POPULAR AREAS TO LIVE IN MOSCOW IN TERMS OF DEMAND LENINGRADSKY PROSPEKT ATTRACTED THE MOST TENANT REQUESTS



Source: Intermark Relocation

1 and 2 bedroom prime rentals were in greatest demand last year, attracting nearly two-thirds of all requests. 3 bedroom properties (18%) and studios (10%) were less popular, as were more spacious options; 4+ bedroom flats (7%). (52 ▶)

The prime rentals segment in Moscow was most popular with French and Russian citizens (approx. 20% and 16% of all requests respectively).

52 ▶ DEMAND ANALYSIS OF MOSCOW HOUSING MARKET IN TERMS OF NUMBER OF ROOMS

Number of Rooms	2014%	2015%	2016%
Studio	8%	14%	10%
	24%	33%	30%
	30%	30%	34%
	24%	16%	18%
+	14%	7%	7%

Source: Intermark Relocation

RENTAL RATES AND BUDGETS

In 2016, the average rental rate requested per property was USD 5,000 pcm*, which is 7% higher than in 2015. Rental rates remained stable during the last quarter of 2016.

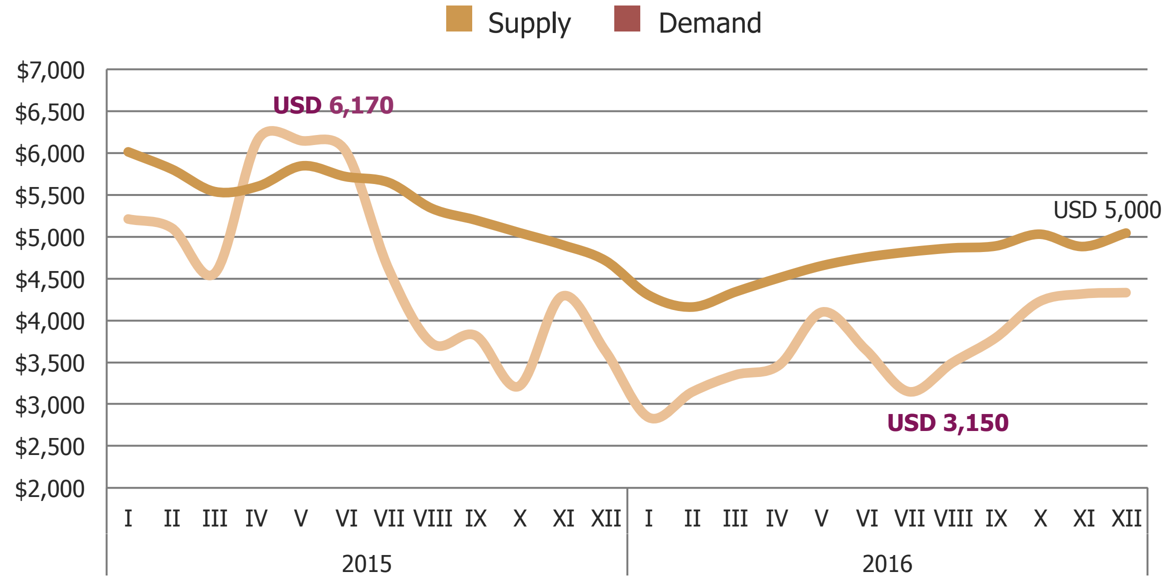
Tenant budgets declined by 22% compared to the previous year to USD 3,700 pcm on average per property. In December 2016, rental budgets reached their highest monthly average at USD 4,300 pcm, compared to just USD 3,000 pcm at their lowest in January.

In keeping with tradition, Arbat–Kropotkinskaya was the most expensive district, with landlords requesting USD 6,500 pcm on average per property, followed by Krasnopresnenskaya (USD 5,740 pcm), and Tverskaya street (USD 5,690 pcm).

The most affordable district in the high-end rental property segment was Taganskaya, where average rental rates were just USD 1,940 pcm per property. (53–55)

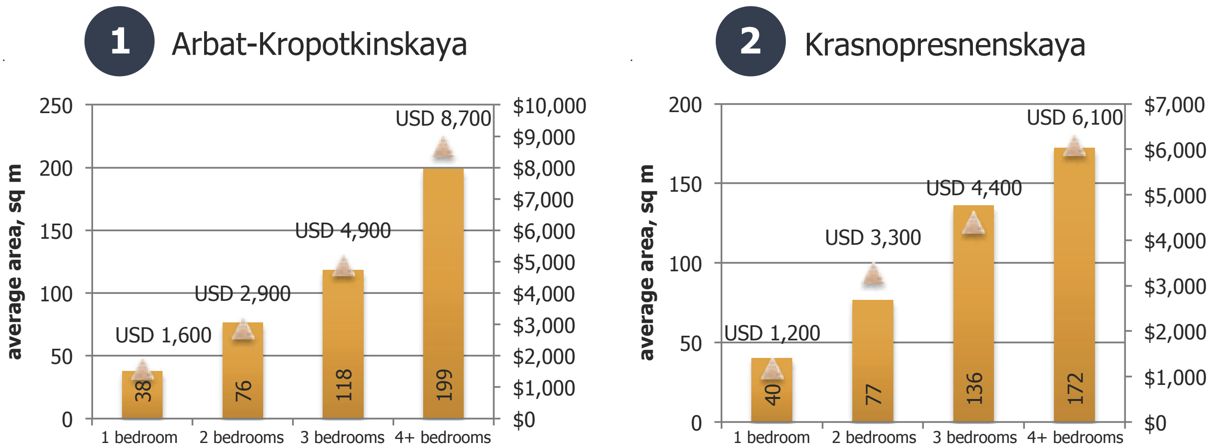
* per calendar month

53 AVERAGE SUPPLY AND DEMAND BUDGETS

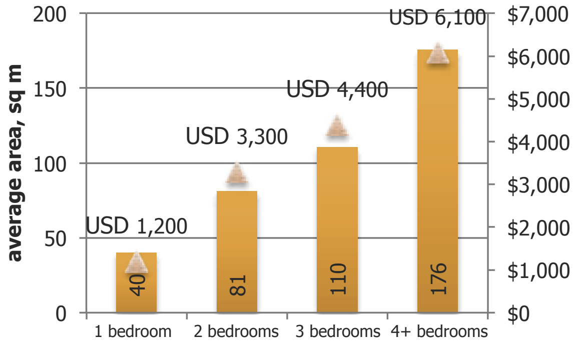


Source: Intermark Relocation

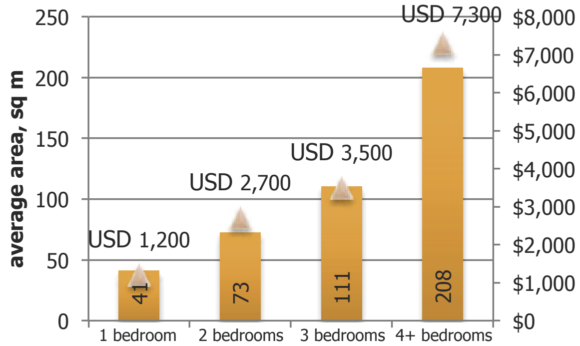
54 TOP 5 MOST EXPENSIVE DISTRICTS FOR PRIME RENTALS IN 2016 RATES VARY BY NUMBER OF ROOMS



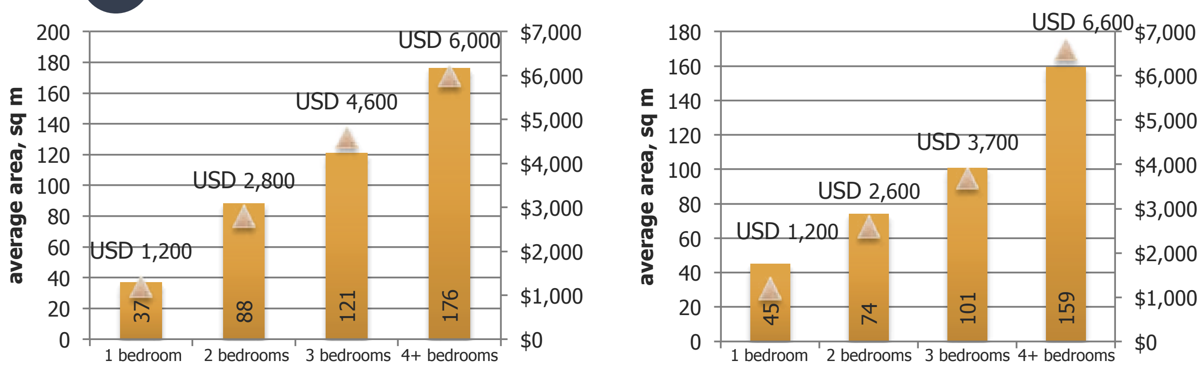
3 Tverskaya-Kremlin



4 Lubyanka-Kitay-Gorod



5 Tsvetnoy Boulevard and Patriarshie Prudy



55 ▶ ANALYSIS OF AVERAGE ASKING PRICES/NUMBER OF BEDROOMS/CLASS

Tverskaya, Lubyanka–Kitay-Gorod, Arbat–Kropotkinskaya, Patriarshie Prudy, Zamoskvorechie			Close to international schools (Leningrasky Prospekt, Kuntsevo)	
	Business, USD	**Elite, USD**	**Business, USD**	**Elite, USD**
1 bedroom	USD 1,300–USD 2,000	USD 1,500–USD 2,500	n\a	n\a
2 bedroom	USD 1,600–USD 2500	USD 3,000–USD 8,000	USD 1,000–USD 2,000	USD 1,000–USD 4,000
3 bedroom	USD 2,500–USD 3500	USD 4,000–USD 7,000	USD 1,500–USD 2,500	USD 3,000–USD 6,000
4 bedroom	USD 3,000–USD 4,500	USD 7,000–USD 8,000	USD 2,500–USD 3,500	USD 3,500–USD 8,000
5+	USD 5,000–USD 10,000	USD 12,500– USD 15,500	n\a	USD 5,000–USD 12,000

BUSINESS CLASS

Apartments in pre-revolutionary, Stalin-period or ministerial buildings. Clean secure entrance with concierge or quality intercom arrangement. Quality renovation with the use of standard renovation materials (not designer renovation), in many cases furnished in IKEA style/quality.

ELITE CLASS

Apartments in pre-revolutionary renovated buildings or new buildings. Presentable entrance with high quality renovation and concierge or security, in most cases the building has underground or enclosed parking. Apartments with high quality designer renovation, furniture and appliances.

PREMIUM CLASS (UNIQUE PROPERTIES)

Apartments in new premium class buildings – mostly "club buildings" – premium quality designer entrance renovation, underground parking, high multi-level security. The apartments are renovated to a high quality, with top brand furniture and appliances, and typically unique features such as 300 sq m, terraces.

INTERNATIONAL COMPOUNDS

In 2016, almost every international compound revised its rental rents, with the exception of Serebryany Bor, which offers rouble rates.

Pokrovsky Hills reduced their rates by 2.8–33% from December 2015, depending on the property type. The rate is inclusive of water, electricity, and TV, but not telephone and internet.

Rosinka maintained its rates in US dollars, but also provides a rouble option. This particular compound is flexible on pricing for potential tenants.

Please note that Serebryany Bor has significantly changed its policy, and its rates no longer include water or electricity. Tenants are now liable for these services. The approximate cost of these amenities in a 300 sq m house may reach RUB 30,000 per month during the winter.

The property management board of Serebryany Bor has added new listings to the compound – these are large houses ranging from 280 to 430 sq m.

FORECAST AND RECOMMENDATIONS

• New global projects will enter the market and should significantly improve prime rental apartment quality in the business class segment.

• The number of elite rental properties remains at the level of 2016.

• +5–10% growth expected in rouble rates for 2017.

• 90% of rental contracts fixed in rubles; this trend is expected to continue.

St. Petersburg market overview

Office market

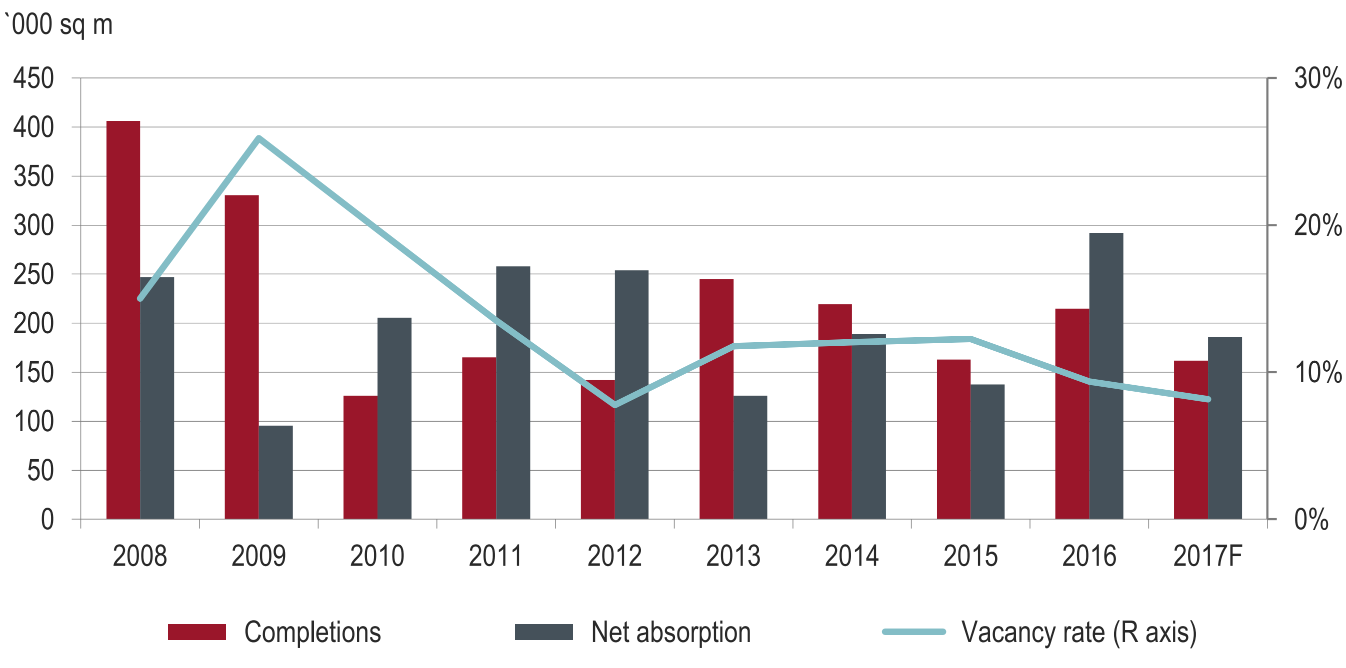
In Q4 2016, eight business centres with a total leasable area of 94,800 sq m were delivered to the market. The total level of completions in 2016 increased by 32% YoY (214,800 sq m vs. 162,800 sq m respectively). In 2017, we expect a reduction in completions.

In 2016, net absorption set a new record at 292,200 sq m. It doubled YoY and was 13% higher than the previous peak of 257,900 sq m in 2011. In Q4 2016, net absorption reached 99,870 sq m, the highest level for the fourth quarter.

At the end of 2016, the largest office transaction in the Saint-Petersburg office market was completed; Gazprom leased 29,200 sq m in Fort Tower BC. Strong demand from mining & exploration and IT companies led to a decline in vacancy rates both in Q4 2016 (by 0.7 pps) and in 2016 (by 2.8 pps, from 12.2% to 9.4%).

In Q4 2016, rental rates in Class A increased by 0.9% and in Class B by 0.2%. The average asking rent was RUB 1,600 per sq m/month in Class A and RUB 1,137 per sq m/month in Class B (including VAT and operating expenses). Next year we expect office market rents to rise further. (56 ▶)

56 ▶ MARKET BALANCE



Source: JLL

Retail market

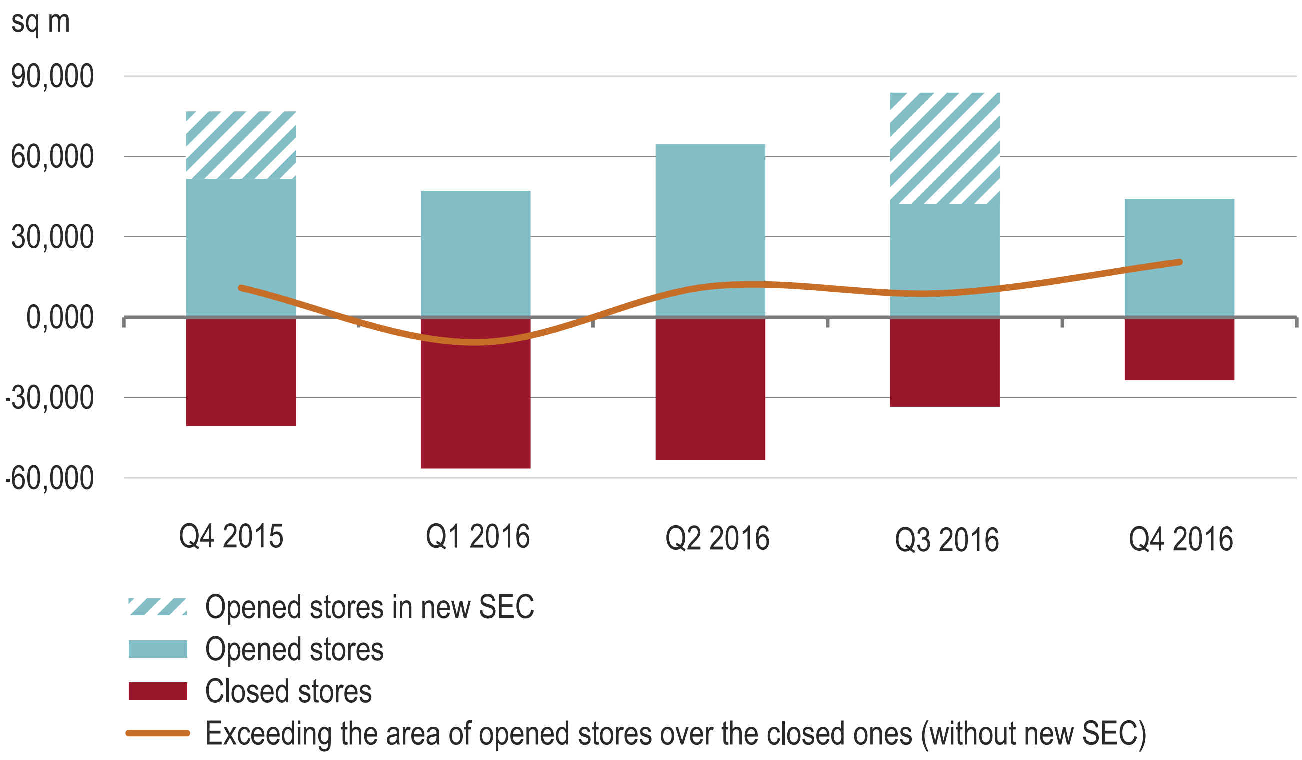
Two shopping centres with a total leasable area of 88,900 sq m were opened in 2016; the Okhta Mall SEC (78,000 sq m GLA) and Port Nahodka SEC (10,860 sq m GLA). Currently, 58 quality shopping centres with a total leasable area of 2.25 million sq m operate in St. Petersburg. For the first time, there are no shopping centres announced for delivery in 2017. The absence of new completions will lead to the gradual absorption of existing areas and further decline in vacancies.

The average vacancy rate on the retail market increased in 2016 by just 0.1 pps YoY to 6.0%, and dropped by 0.9 pps QoQ.

The total volume of opened retail stores exceeds the area of closed ones both in Q4 2016 and in 2016 (by 87% and 44% respectively).

Prime base rents in quality shopping centres did not change and amounted to RUB 65,000–70,000/sq m/year (excluding VAT and operating expenses). (57 ▶)

57 ▶ TOTAL AREA OF OPENED AND CLOSED STORES IN SEC



Source: JLL

Street retail market

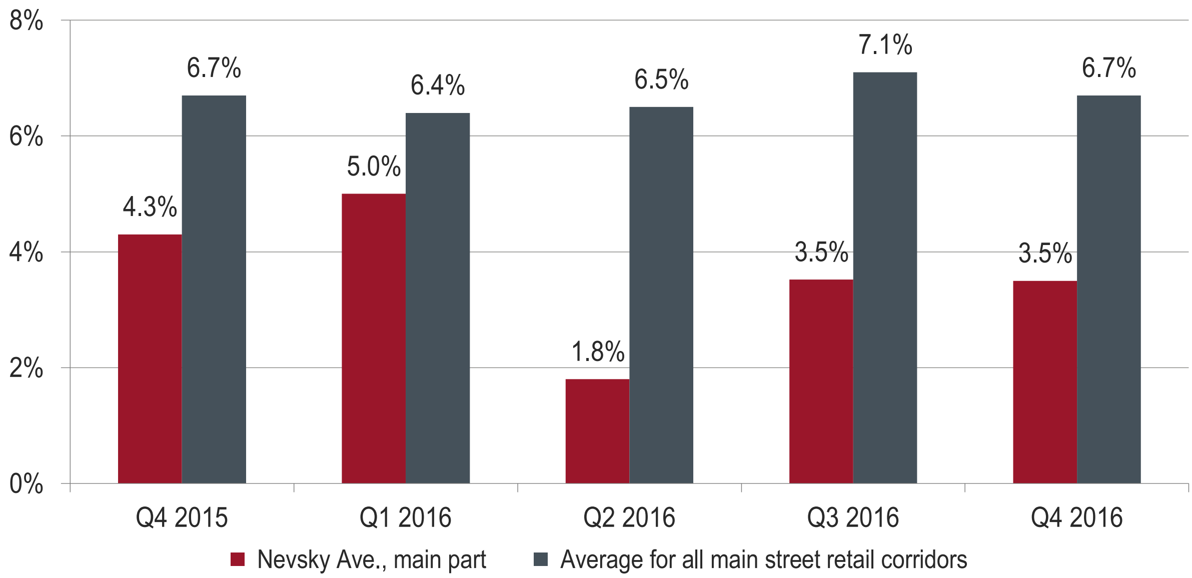
In Q4 2016, the total number of opened stores in the main street retail corridors exceeded the number of closed stores by 20%. This resulted in a decline in vacancy rates by 0.4 pps to 6.7%. The largest decline (4.4 pps) was observed on Vladimirsky Avenue – by 4.4 pps to 5.9%, and Staro-Nevsky Avenue – by 4.0 pps to 7.4%.

A significant proportion of the opened facilities were supermarkets – 17%, exceeded only by cafés & restaurants (27%).

The proportion of cafés and restaurants among the closed facilities reached 36%, which is the highest quarterly level in 2016.

The rotation level in Q4 did not change and remained at 5.5%. The annual rotation declined by 4.7 pps to 21.5% in 2016, which points to stabilisation in the street retail market. Lower rotation was observed on all main street retail corridors except Vasilyevsky Island. (**58 ▶**)

58 ▶ VACANCY RATES IN THE MAJOR STREET-RETAIL CORRIDORS



Source: JLL

Warehouse market

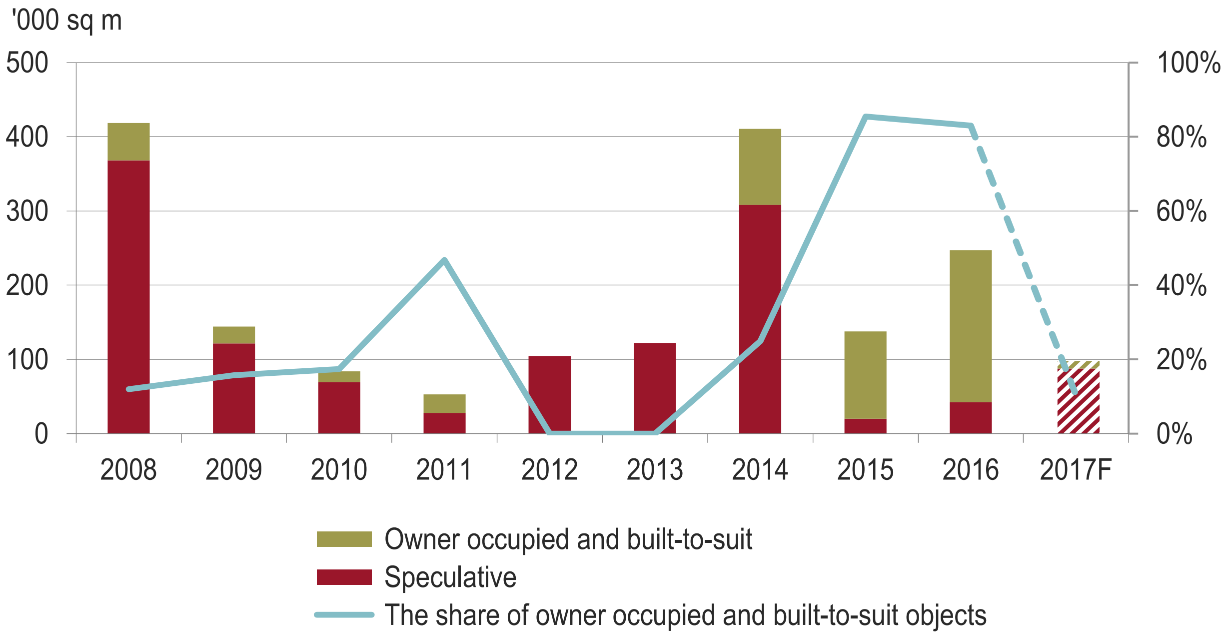
In 2016, 246,900 sq m of quality warehouse space was delivered in the St. Petersburg market (a growth of 79% YoY), 86,500 sq m of which was in Q4 2016 (14% more than in Q4 2015). Around 87% was built-to-suit and own occupied projects.

The yearly net absorption reached the highest levels in Saint-Petersburg market since 2007 at 289,900 sq m, an increase of 140% YoY. Meanwhile, the total take up declined by 15% YoY to 235,000 sq m. On the demand side, logistics companies were the most active tenants for the first time since 2009. They accounted for 41% of the total leased area in 2016.

In Q4 2016, the vacancy rate declined by 0.9 pps to 5.5%. Overall in 2016, the vacancy rate fell by 1.9 pps.

The asking rental rates in quality warehouse complexes did not change and amounted to RUB 450–500 per sq m/month (including OpEx and VAT). (59 ▶)

59 ▶ SUPPLY ON THE WAREHOUSE MARKET



Source: JLL

Hot Topic:

Energy efficient building technology

Yuri Tarasenko
Promoter of energy efficiency in buildings, OOO Siemens

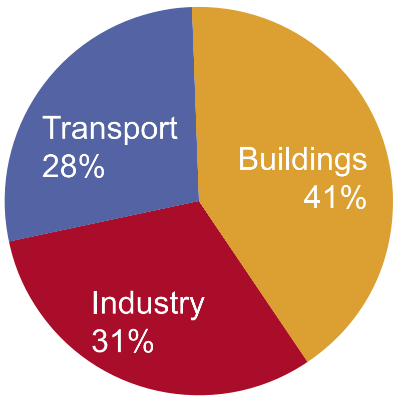
If we look at a picture of a town, we can see that it contains various types of buildings. These are mainly residential or office buildings, some of which contain shops or apartments ("mixed construction"), schools, theaters, sports arenas, hospitals, and factories. All of these buildings have one thing in common: they are designed to protect their users from the outside environment and ensure comfortable conditions.

People spend a lot of time inside buildings. The quality of this "indoor world" is therefore vitally important to their health and wellbeing. The significance of this indoor environment was only recognised as the number of cases of sick-building syndrome began to increase. There are many causes of reduced well-being. Some can be measured objectively, but many of the problems are also related to individuals and their social environment. Objectively quantifiable causes include room temperature or humidity levels that are too high or too low, poor indoor air quality, drafts and unsuitable lighting. The human desire for comfort does not stop at own front doors or office doors: it extends to shopping malls, exhibition halls, sports arenas, fitness centers, museums, and theaters; all places where perceived comfort conditions are important. Our own individual perception of comfort in buildings and rooms has a highly significant effect on our sense of well-being. To maintain comfortable conditions, a large amount of heat and electricity is used in engineering systems:

- heating;
- cooling;
- domestic hot water;
- ventilation;
- air conditioning;
- lighting;
- etc.

Buildings consume 41 percent of energy, which is more than the transport or industry sectors.

Primary energy use in Europe



Impact of Building Automation
Efficiency improvement and modernisation can save up to 30 percent

Worldwide, buildings also account for 21 percent of greenhouse gas emissions. Building owners face growing pressure to reduce energy consumption and minimise the impact of this consumption on the environment. This makes future-oriented energy concepts involving energy efficient buildings very attractive for building operators. The biggest consumers of energy in a building are technical installations and lighting fixtures, which account for 40 to 60 percent of total energy costs. This need not be the case. A refurbished building can reduce energy consumption by over 40 percent through the optimisation of the performance of its heating, ventilation and air-conditioning (HVAC) equipment. Furthermore, the investment needed to implement these measures can be repaid via the savings in energy and operating costs.

Energy saving in buildings can be achieved through the implementation of various measures:

BUILDING AUTOMATION AND CONTROL

Up-to-date measuring and control technology combined with a building automation and control system is a basis for good "building performance", which can be defined as the harmonious interplay of building architecture, system technology and indoor comfort. Despite the fact that most processes are "automated", the scope for intervention by individuals is a key objective of modern building design strategies. New buildings should only be built to future-oriented low-energy standards and equipped with energy-saving building automation and control systems. With regard to energy efficiency, we have to deal with a less-than-optimum building environment and do the best we can with the help of building automation and control.

ENERGY SAVING POTENTIAL WITH BUILDING AUTOMATION AND CONTROL

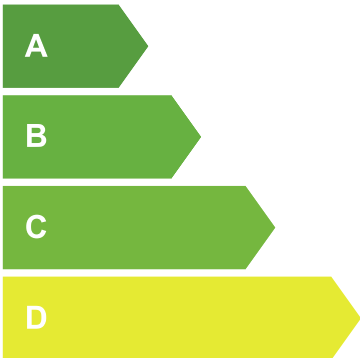
Building automation and control systems are the building's brain. They integrate the information for all the building's technology. They control the heating and cooling systems, ventilation and air conditioning plants, lighting and blinds, fire protection and security systems. The building's brain is therefore the key to the effective control of energy use and all on-going operating costs. Intelligent and integrated building and room automation can produce considerable energy savings without reducing comfort. The higher the level of building automation, the greater the ability to derive energy savings from engineering systems. European standard EN 15232 ("Energy performance of buildings – Impact of building automation") and Russian GOST 54862-2011 developed on the basis of the European standard describe building automation effectiveness that falls into four energy-efficiency classes, from A to D.

Category	Measures, e.g.	Saving potential (%)	Pay back (years)

Building automation	▪ Installation and optimised tuning of energy functions
	▪ Optimisation during operation by
	  ▪ efficient use of BACS and weak point analysis
	  ▪ dynamic energy management
		5-30	0-5

Techn. installations	▪ HVAC, refrigeration, lighting	10-60	2-10
Building envelope	▪ Insulation (windows, walls, roofs, etc.) ▪ Thermal bridges, construction physics	>50	10-60

BACS Energy Performance Classes



Class A:
- High energy performance BACS and TBM

Class B:
- Advanced BACS and TBM

Class C:
- Standard BACS (is normally used as reference)

Class D:
- Non energy efficient BACS

In office buildings equipped with class A systems, for example, energy savings can reach 30 percent over class C systems. The standards make it possible for building owners to evaluate the success of their optimisation measures and realise potential savings.

Building automation and control systems (BACS) and technical building management (TBM) have an impact on the energy performance of buildings. They provide effective automation and control of heating, ventilation, cooling, hot water and lighting appliances, etc., which leads to an increase in operational and energy efficiency. Complex and integrated energy saving functions and routines can be configured based on the actual use of a building depending on the real user needs to avoid unnecessary energy use and CO2 emissions. Building management systems provide information for the operation, maintenance and management of buildings, and especially for energy management – trending and alarming capabilities and detection of unnecessary energy use.

ROOM CONTROL – THE KEY TO ENERGY SAVING

The highest energy performance (class A) can be achieved with high-quality room control. It enables the provision of an accurate and energy efficient room climate and eliminates unnecessary readjustments of the room temperature set-point. A set-point reduction of only 1°C

Function list and assignment to energy performance classes – EN 15232

		Definition of classes							
		Residential				Non residential			
		D	C	B	A	D	C	B	A
Automatic control									
Heating control									
Emission control The control system is installed at the emitter or room level, for case 1 one system can control several rooms									
0	**No automatic control**								
1	**Central automatic control**								
2	**Individual room automatic control by thermostatic valves or electronic controller**								
3	**Individual room control with communication between controllers and to BACS**								
4	**Integrated individual room control including demand control (by occupancy, air quality, etc.)**								

generates energy savings of up to 6%. It ensures total energy savings of up to 14%. If a room is to be kept at a constant temperature, internal heat sources (people, devices, lighting, solar radiation, etc.) must be taken into account. During the entire heating season internal heat sources can be used as heating energy. Total Room Automation systems also control replacement of air on actual demand and lighting upon human presence. The demand response principle improves energy efficiency via feedback from energy consumers in rooms to central energy generators in buildings.

Advantages for room occupants:
• Individual and comfortable room climate and optimal air quality
• Optimal and adequate lighting of the work-place
• Ability to easily and individually change room climate and lighting conditions

Advantages for building owner:
• Reliable, cost saving and energy efficient operation without limitation of the optimal room climate comfort
• Protection of the investment throughout the entire life cycle

Interaction between HVAC, light & blind disciplines are a key factor when increasing energy efficiency, room comfort and flexibility.

INTELLIGENT BUILDINGS

The highest energy efficiency and comfort can be achieved in intelligent buildings. Such buildings integrate intellectual subsystems to optimise the entire chain of all energy generation and energy consumption components of a building, from local alternative energy sources to individual consumers at workplaces. As the world's biggest single energy consumers, buildings offer enormous saving potential. They can be made more efficient through integration into a smart grid and modern building automation systems. As intelligent and local participants on the grid, buildings perform an important balancing function within the smart grid. Building operators and users benefit from this because it is cost-effective, reliable, environmentally friendly and future-oriented. Intelligent and sustainable solutions shape the buildings that are able to protect their users from the outside environment and ensure comfortable conditions.

Association of European Businesses

AEB REAL ESTATE COMMITTEE

The AEB Real Estate Committee was founded in 2003 and brings together real estate professionals from a variety of areas including developers, investors, financiers, consultants, project and facilities managers, and other service providers.

The Real Estate Committee has three primary objectives around which its activities are structured: to facilitate the exchange of information regarding real estate and development issues in Russia; to influence existing procedures in order to increase the attractiveness of foreign and domestic investment; and to establish a "bridge" between the AEB, the Moscow Government, State Duma and other relevant governmental bodies.

AEB REAL ESTATE COMMITTEE MEMBERS:

1Forma; ABB; AERECO S.A. (FRANCE) – Representative Office in Russian Federation; Allianz IC OJSC; ALPE consulting OOO; ALRUD Law Firm; Arup; ASTRON Buildings LLC; Bank Credit Suisse (Moscow); BEITEN BURKHARDT Moscow; BNP Paribas; Borenius Russia; BUREAU VERITAS RUS JSC; CMS, Russia; Crocus International; Debevoise and Plimpton LLP; Deloitte CIS; Dentons; DLA Piper; DuPont Science and Technologies; Egorov Puginsky Afanasiev & Partners (EPAM); EY; GDP Quadrat; Gerald Sakuler; Gide Loyrette Nouel; GOLTSBLAT BLP; Hannes Snellman; IKEA Centres Russia; Immochan; Intermark Relocation; Italcantieri; KPMG AO; LINDNER; Mazars; METRO AG (Germany) Representative office; Noerr OOO; Orange Business Services; P&R Engineering; PBN Hill+Knowlton Strategies; Pepeliaev Group LLC; Porsche Russland; PwC; Radius Group; Repsol Exploracion S.A.; Rödl & Partner; Ruukki Construction; Saint-Gobain CIS; SCHNEIDER GROUP; Spectrum holding Ltd.; Sponda Russia; Stupino 1 Industrial Park; TMF Group; VEGAS LEX Advocate Bureau; YIT Construction.

For more information please contact:

Saida Makhmudova, Committee Coordinator, at saida.makhmudova@aebrus.ru

BOSCH

Invented for life