

3 Retail Market Overview

3.1 Bangkok retail market submarket taxonomy

3.1.1 Bangkok submarkets

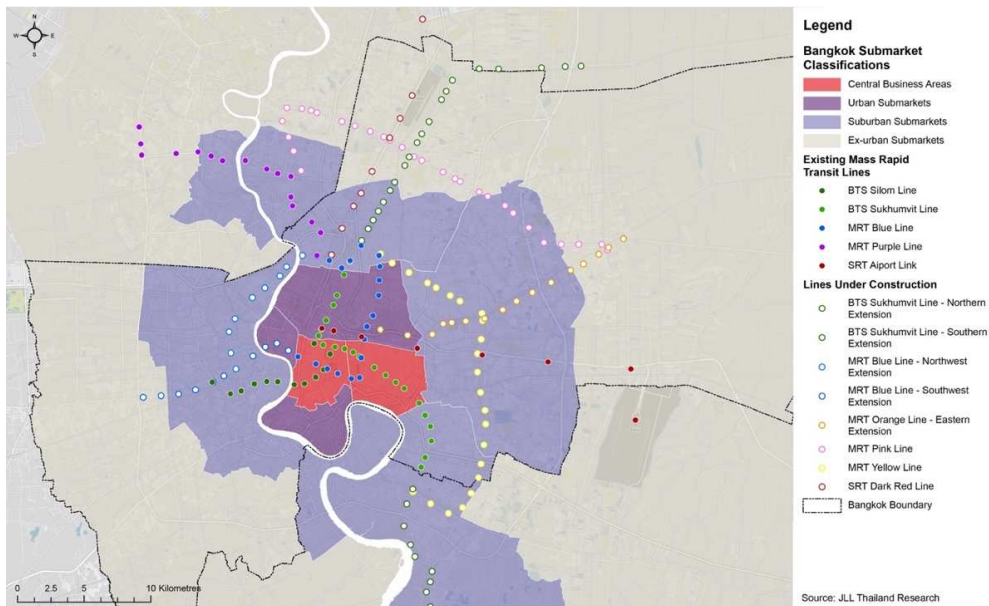
In terms of geography, we analyze the Bangkok retail market through the lens of twelve submarkets as described in Table 3-1 and illustrated in the Figure 3-1 below. Our submarkets align with official administrative boundaries with constituent districts (khet / amphoe) being grouped by dominant functions, incorporating the presence of residential space, office stock, dining, entertainment and recreational options and so forth.

Table 3-1: Bangkok submarket description

Submarket	Districts (Khet / Amphoe)
Central Bangkok	Bang Rak, Pathum Wan, Sathorn
Central East	Khlong Toey, Wattana
Central South	Bang Kho Laem, Yannawa
Rattanakosin	Phra Nakhon, Prom Pap Sattru Phai, Samphanthawong
Central North	Din Daeng, Dusit, Huay Kwang, Phaya Thai, Ratchathewei
Inner North	Bang Sue, Chatuchak, Lat Phrao, Muang Nonthaburi
Inner West	Bang Phlat, Bangkok Noi, Bangkok Yai, Chom Thong, Khlong San, Pasi Charoen, Rat Burana, Taling Chan, Thonburi
Inner East	Bang Kapi, Bung Kum, Khan Na Yao, Prawet, Saphan Sung, Suan Luang, Wang Thonglang
South	Bang Na, Phra Kanong, Muang Samut Prakan, Phra Pradaeng
Outer North	Bang Khen, Don Muang, Lak Si, Sai Mai, Pak Kret, Muang Pathum Thani, Khlong Luang, Thanyaburi, Nong Suea, Lat Lum Kaeo, Lam Luk Ka, Sam Khok
Outer West	Bang Bon, Bang Khae, Bang Khun Thien, Nong Khaem, Thawi Wattana, Thung Khru, Phra Samut Chedi, Bang Kruai, Bang Yai, Bang Bua Thong, Sai Noi
Outer East	Khlong Sam Wa, Lat Krabang, Min Buri, Nong Chok, Bang Bo, Bang Sao Thong, Bang Phli

Source: JLL Thailand Research

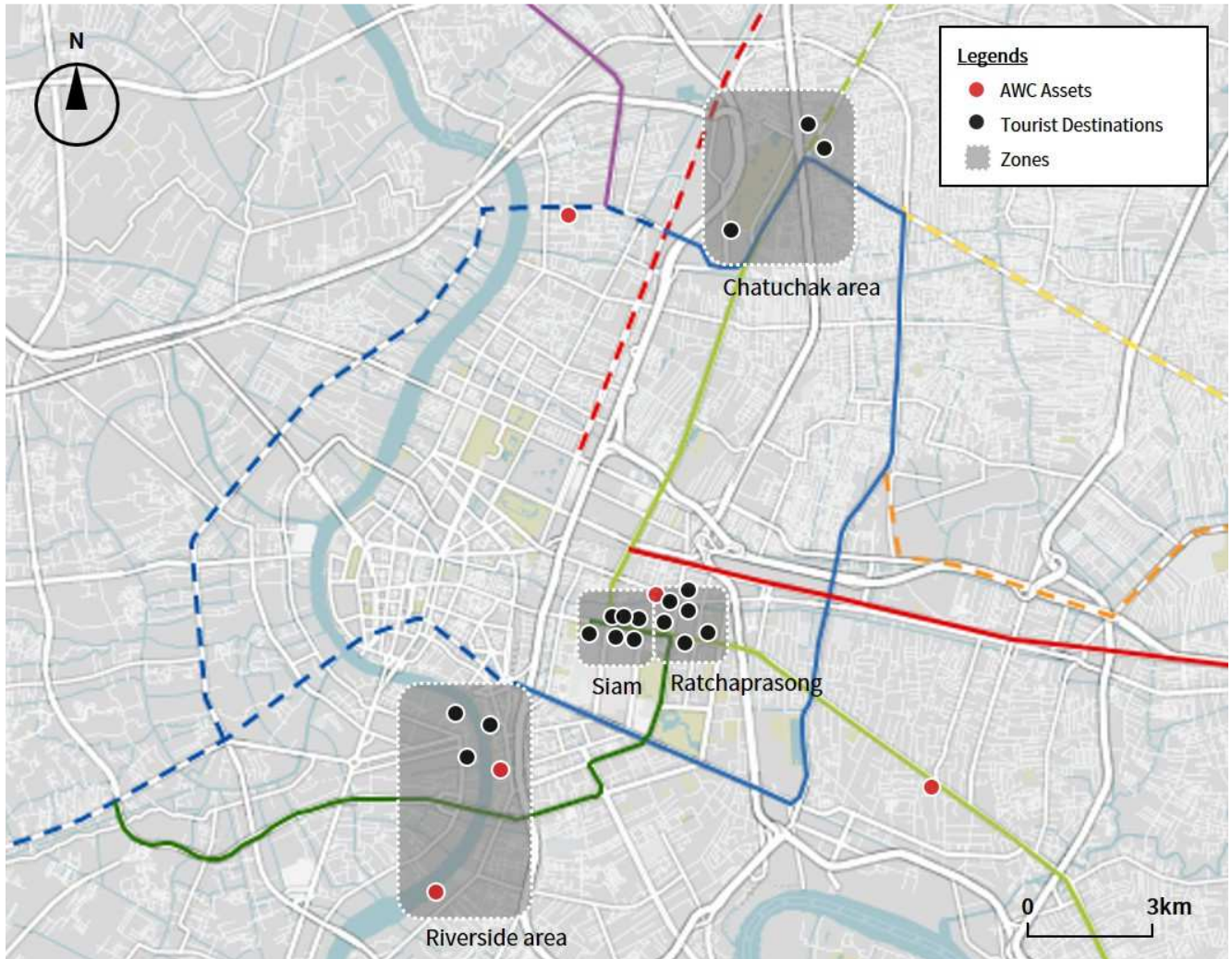
Figure 3-1: Bangkok submarket map



3.1.2 Top tourism shopping destinations

In Bangkok, there are four districts / areas including the Siam area, Ratchaprasong district, the Chao Phraya riverside area and Chatuchak district that are well recognized by both local and international visitors. Each district / area has different characteristics attracting to visitors. Both Siam and Ratchaprasong are located in the heart of the Central Bangkok submarket while the Chao Phraya riverside spans both Central Bangkok (east riverbank) and Inner West (west riverbank) submarkets. Chatuchak is located in the Inner North submarket. The locations of these areas are illustrated in Figure 3-2 below.

Figure 3-2: Key tourism-oriented shopping destinations in Bangkok



Source: JLL Thailand Research

Three assets of Asset World Corp Public Company Limited (AWC) including Pantip Plaza Pratunam, Asiatique the Riverfront and O.P. Place are located in the top tourist destination districts and have been recognized by both local and international visitors. Meanwhile, other AWC's assets such as Gateway Ekamai, Gateway at Bangsue, Pantip Plaza Ngamwongwan, Lasalle's Avenue and Tawanna Bangkokpi are recognized retail spaces by local visitors as these assets located in the local community area. Particularly, the Bangkokpi area which is home to Tawanna Bangkokpi which is the local shopping area for a period of time as the area consists of shopping centres from small-scale like nMark to large-scale like The Mall Bangkokpi by The Mall Group.

Siam

Siam is one of well-known and popular areas among local and international visitors. The area can be entered by two main roads including Phayathai road and Rama I road and also conveniently to access by public transports such as BTS skytrain and public bus. Moreover, it is a home for several retail centres such as MBK Center, Siam Paragon, Siam Center, Siam Discovery Center Siam Square One and The Center Point of Siam Square combined total over 379,000 sqm NLA of shopping and entertainment areas. It is also surrounded by amenities and facilities such as Chulalongkorn University, Pathum Wanaram temple, BTS Siam interchange station and the National Stadium. With a wide variety of goods and activities offering in the area, Siam is considered to be top shopping destination in Thailand for both domestic and international visitors.

Figure 3-3: Siam area map



Source: JLL Thailand Research

Table 3-2: Key retail centres in Siam

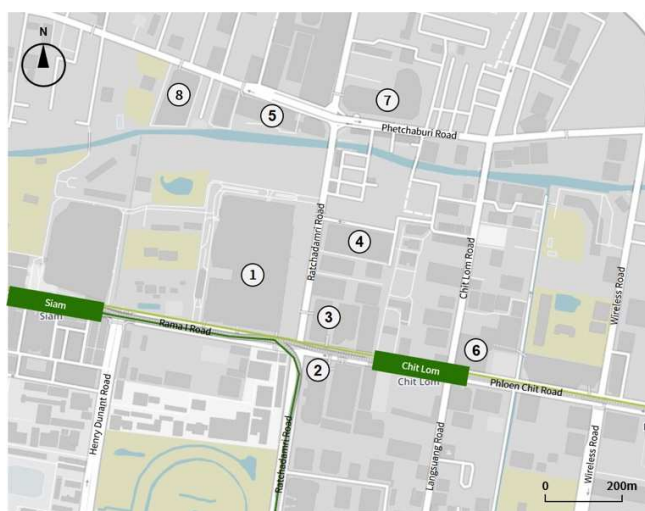
No.	Projects	Developer / Owner	Centre Type*	NLA (sqm), end-2018
1	MBK Center	MBK PCL	Regional Centre	92,565
2	Siam Paragon	Siam Paragon Development Co.,Ltd.	Regional Centre	191,000
3	Siam Center	Siam Piwat Co.,Ltd.	Specialty Centre	19,000
4	Siam Discovery Center	Siam Piwat Co.,Ltd.	Specialty Centre	40,000
5	Siam Square One	Property Management Office Chulalongkorn University	Community Mall	32,600
6	The Center Point of Siam Square	TCC Group	Specialty Centre	4,604

Ratchaprasong District

Ratchaprasong district is one of famous areas in Bangkok and can be accessed by two main roads including Rama I and Ratchadamri roads. The area is also close to two BTS stations including BTS Siam interchange and BTS Chit Lom stations with a walking distance. The characteristic of the area is similar to its neighbour area, Siam which is a home for several retail centres and offering the variety of goods from affordable to luxury segments. It also has all-day attractive activities such as visiting 8 Hindu gods' shrines and spiritual

attractions and seasonal attractive activities such as lighting and countdown festival. Moreover, the area is close to Pratunam area located by the famous wholesale shopping centre such as the Platinum Fashion Mall. Two areas are connected by Ratchaprasong Skyline Walk that can be accessed from BTS skywalk through Gaysorn Plaza and walk to the Platinum Fashion Mall. Therefore, the area can be considered to be top shopping destination in Bangkok with the foot traffic generated by both domestic and international visitors.

Figure 3-4: Ratchaprasong district map



Source: JLL Thailand Research

Table 3-3: Key Ratchaprasong District retail centres

No.	Projects	Developer / Owner	Centre Type*	NLA (sqm), end-2018
1	CentralWorld	Central Pattana PCL (CPN)	Super Regional Centre	193,000
2	Erawan Bangkok	The Erawan Group PCL	Specialty Centre	7,000
3	Gaysorn Plaza	Gaysorn Group & Hongkong Land Limited	Specialty Centre	12,284
4	Big C Rajdamri	Big C Supercenter PCL	Discount Store	16,000
5	The Platinum Fashion Mall	The Platinum Group PCL	Specialty Centre	50,000
6	Central Chidlom	Central Retail Corporation Co., Ltd.	Specialty Centre	72,000
7	Palladium IT Pratunam	Great China Millennium (Thailand) Co., Ltd.	Specialty Centre	45,000
8	Pantip Plaza Pratunam	Asset World Corp PCL	Specialty Centre	30,356

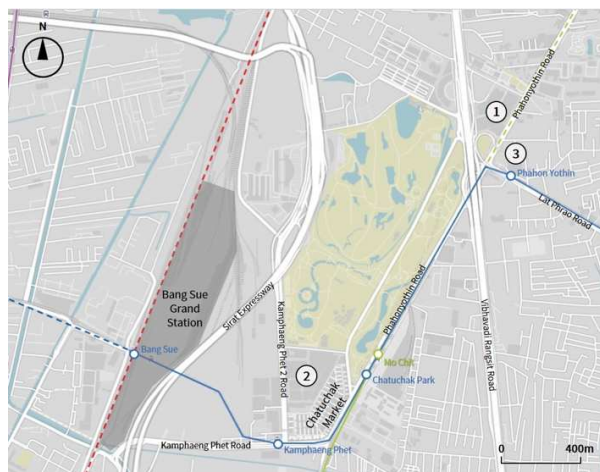
Source: JLL Thailand Research; *Note: please refer to section 3.3.1 for centre type definitions

Chatuchak

Chatuchak market is a weekend market that officially opens during weekend. The market locates adjacent in the corner of two main roads including Phaholyothin and Kamphaeng Phet road. The location is close to two MRT subway stations and a BTS skytrain station. The Chatuchak market is well-known for the wide variety of art and craft and local goods. The product offered in the market has a wide range of categories such as F&B, Fashion, Furniture and etc. Therefore, it is popular and famous among international tourists who are looking for traditional and local products. Local visitors also favors to visit the market as it also offers the wide range of products for choosing with affordable prices and unique styles. Thus, Chatuchak market is considered to be one of top shopping destinations that many tourists consider to visit in Bangkok.

As illustrated in the map below, the Bang Sue Grand Station is currently under construction. When complete in 2021, it will connect four different urban transit lines and after 2025 at least one high speed rail line, creating significant potential long-term upside for the area.

Figure 3-5: Chatuchak area map



Source: JLL Thailand Research

Table 3-4: Key retail centres in Chatuchak

No.	Projects	Developer / Owner	Centre Type*	NLA (sqm), end-2018
1	CentralPlaza Ladprao	Central Pattana PCL (CPN)	Regional Centre	55,500
2	JJ Mall	JJ Mall Co., Ltd.	Specialty Centre	65,000
3	Union Mall	Siam Chatuchak Co., Ltd.	Specialty Centre	71,000

Source: JLL Thailand Research; *Note: please refer to section 3.3.1 for centre type definitions

Chao Phraya Riverside

The Chao Phraya Riverside area is one of Bangkok's leading tourism destinations, attracting millions of foreign and domestic visitors each year. Along the river located by unique retail spaces such as Asiatique the Riverfront, O.P. Place Bangkok, ICONSIAM, River City and Lhong 1919. Most retail spaces along Chao Phraya river can be accessed via shuttle boat which is the famous transportation for international tourists. Moreover, the products and services mostly are local and traditional products that are attractive to local and international visitors.

Figure 3-6: Chao Phraya Riverside area map



Source: JLL Thailand Research

Asiatique the Riverfront is Bangkok's first open-air riverside shopping and tourist destination and largest night lifestyle shopping and entertainment destination in Bangkok, located on the east bank of the Chao Phraya River and can be accessed by shuttle boats and public and private vehicles through Charoen Krung road. The characteristic of the market is partly similar to Chatuchak market that is an outdoor market with the unique products and activities that are attractive to local and international visitors. With the unique location along Chao Phraya River and products and activities offering, Asiatique the Riverfront is considered to be one of tourist destination in Bangkok.

O.P. Place Bangkok offers antiques and other unique products such as art galleries and jewelry stores in a neo-classical setting with European style and exquisite Thai architecture.

Table 3-5: Key retail centres along the Chao Phraya Riverside

No.	Projects	Developer / Owner	Centre Type*	NLA (sqm)
1	Asiatique The Riverfront	Asset World Corp PCL	Specialty Centre	26,590
2	O.P. Place Bangkok	Asset World Corp PCL	Specialty Centre	2,455
3	ICONSIAM	Siam Pivat / CP Group and Magnolia Quality Development Co Ltd	Super Regional Centre	215,000
4	River City	Chaophraya Development Co., Ltd.	Specialty Centre	11,929
5	Lhong 1919	Wang Lee Co., Ltd.	Specialty Centre	6,800

Source: JLL Thailand Research; *Note: please refer to section 3.3.1 for centre type definitions

3.2 Retail-related macro-economic trends in Thailand

3.2.1 Key demographic trends

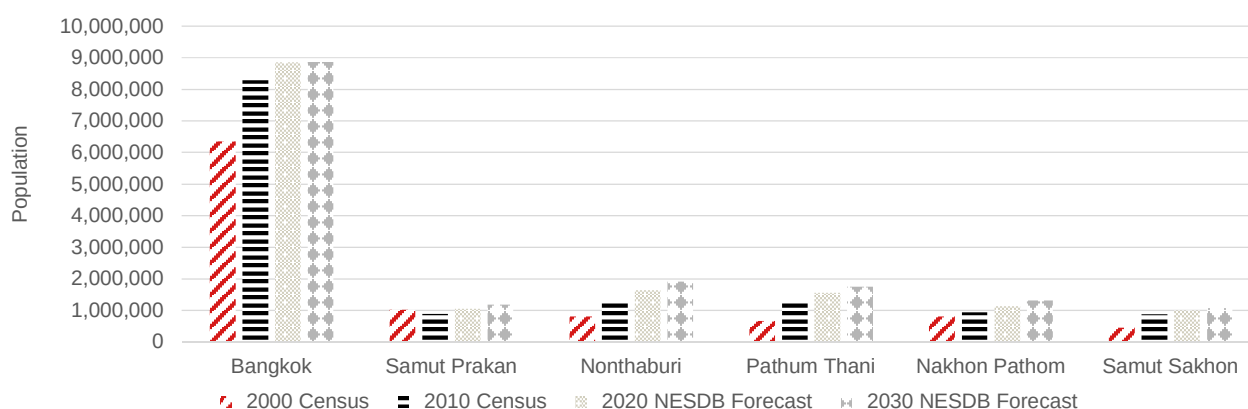
According to the UN World Urbanization Prospects 2018 revision, Thailand's total population as of 2018 was 69.2 million while the National Economic and Social Development Board of Thailand (NESDB), estimated the national population to be 67.9 million. Both estimates represent a 0.4% Compound Annual Growth Rate (CAGR) since 2010. According to the National Statistics Office of Thailand (NSO), there are approximately 21.4 million households in Thailand as of 2017, the latest year for which data are available. The average household size at the national level is 2.9 persons.

Based on an NESDB forecast dating to 2013, Thailand's national population is expected to peak at 68.5 million in 2026 before slowly declining. The latest data from the UN suggest the country's population will peak at 69.7 million in 2027.

There is a silver lining to be found in Thailand's greying populace – urbanization. Over the last 20 years, there has been a significant rural to urban migration as large cities have become important economic engines with ample employment opportunities. In 2000, only 31.4% (19.8 million people) of the country's population lived in urban areas. By 2010 that figure increased to 43.9% as urban areas more than 9.7 million people despite the national population increasing by only 4.3 million. According to UN data as of 2018, an estimated 34.6 million people live in urban areas nation-wide or some 50.0% of the total national population.

The Bangkok Metropolitan Region (BMR), defined as the provinces of Bangkok, Nonthaburi, Samut Prakarn, Pathum Thani, Nakhon Pathom and Samut Sakhon was the biggest winner in the decade between 2000 and 2010, adding more than 3.5 million new residents. As of 2018, the BMR population is estimated to be around 15 million with an average household size of 2.7 persons per household. With the BMR accounting for roughly half of national GDP, the region's anticipated population growth should continue to fuel economic growth. Figure 3-7 below illustrates forecast population growth by province for the constituent provinces of the BMR as per the NESDB's 2013 forecast.

Figure 3-7: Historical and forecast population for Bangkok and constituent provinces of the Bangkok Metropolitan Region (BMR)



Source: JLL Thailand Research, NSO, National Economic and Social Development Board (NESDB)

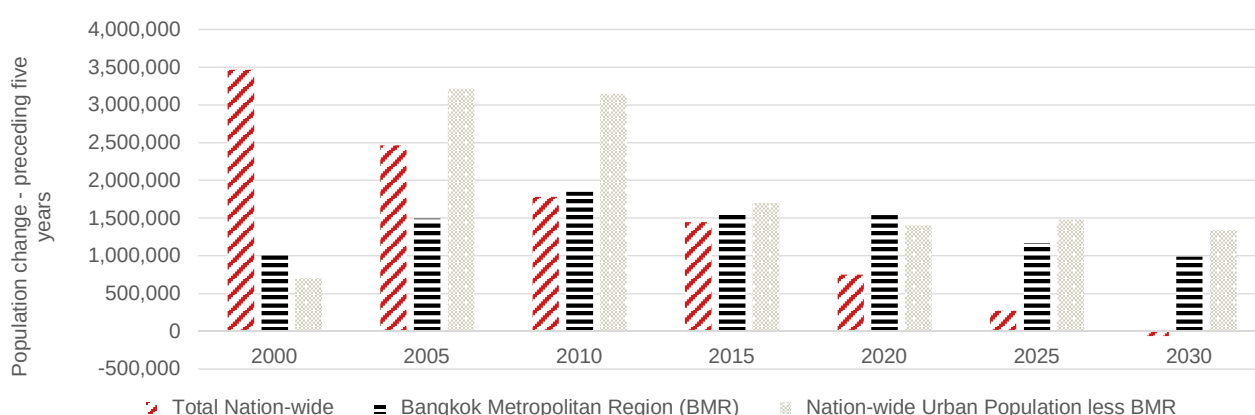
Table 3-6: Historical and forecast population for Bangkok and constituent provinces of the Bangkok Metropolitan Region (BMR)

	Bangkok	Samut Prakan	Nonthaburi	Pathum Thani	Nakhon Pathom	Samut Sakhon
2000 Census	6,355,144	1,028,401	816,614	677,649	815,122	466,281
2010 Census	8,292,937	894,716	1,333,117	1,325,685	942,977	883,554
2020 Forecast	8,865,640	1,061,616	1,641,017	1,563,485	1,137,577	999,454
2030 Forecast	8,877,478	1,191,416	1,921,517	1,754,785	1,321,377	1,084,454

Source: JLL Thailand Research, NSO, National Economic and Social Development Board (NESDB)

The UN forecasts that between 2018 and 2030, Thailand's total national population will increase by about 450,000 people while at the same time, the country's urban population will increase by more than five million people, resulting in 58.4% (40.7 million people) of the national populace living in cities. Figure 3-8 below illustrates historical and forecast population change at the national level, within the BMR, and all nation-wide urban areas other than the BMR between 2000 and 2030 broken into five year periods, incorporating the previous five-year period (e.g., change between 1995 and 2000 for the "2000" data point and 2025 to 2030 for the "2030" data point).

Figure 3-8: Historical and forecast population change, total nation-wide, BMR and total nation-wide urban less BMR, 2000 to 2030



Source: JLL Thailand Research, UN World Urbanization Prospects 2018 Revision

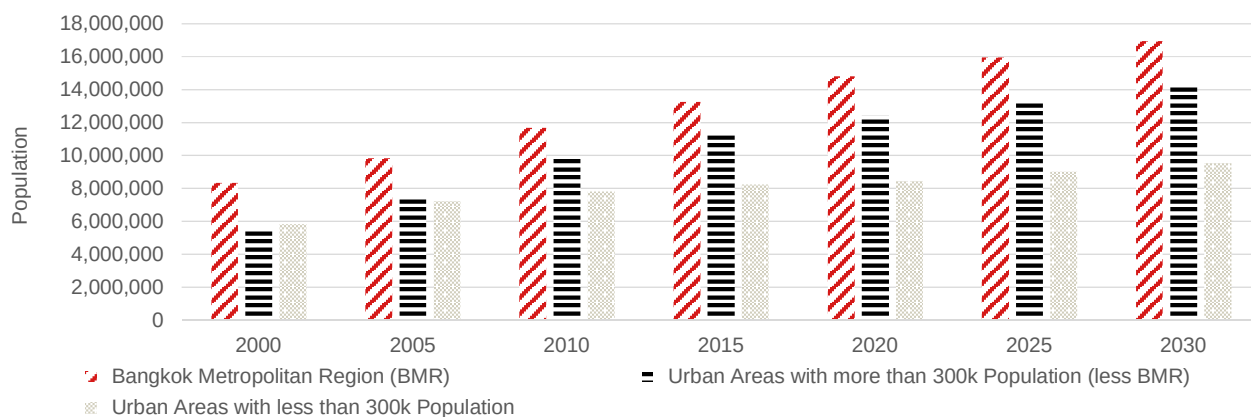
Table 3-7: Historical and forecast population change, total nation-wide, BMR and total nation-wide urban less BMR, 2000 to 2030

	2000	2005	2010	2015	2020	2025	2030
Total nation-wide	3,466,231	2,467,449	1,783,338	1,448,792	753,268	274,618	-59,274
BMR	1,044,249	1,498,945	1,850,597	1,568,055	1,544,513	1,165,284	988,110
Nation-wide less BMR	703,635	3,217,672	3,147,985	1,702,511	1,408,132	1,480,166	1,343,690

Source: JLL Thailand Research, UN World Urbanization Prospects 2018 Revision

Large cities, defined as those with a population of at least 300,000 in 2018 will reap the most benefits. By 2030, more than 78%, or some 3.9 million of the forecast 5.0 million person increase in urban population will locate in these large cities. At the same time, the BMR will capture more than 43% of new urban population – more than 2.3 million people. Figure 3-9 illustrates historical and forecast population in the BMR, in urban areas with more than 300,000 people (excluding the BMR) and in urban areas with less than 300,000 people through 2030.

Figure 3-9: Historical and forecast urban population by key constituent geography, 2000 to 2030



Source: JLL Thailand Research, UN World Urbanization Prospects 2018 Revision

Table 3-8: Historical and forecast population change, total nation-wide, BMR and total nation-wide urban less BMR, 2000 to 2030

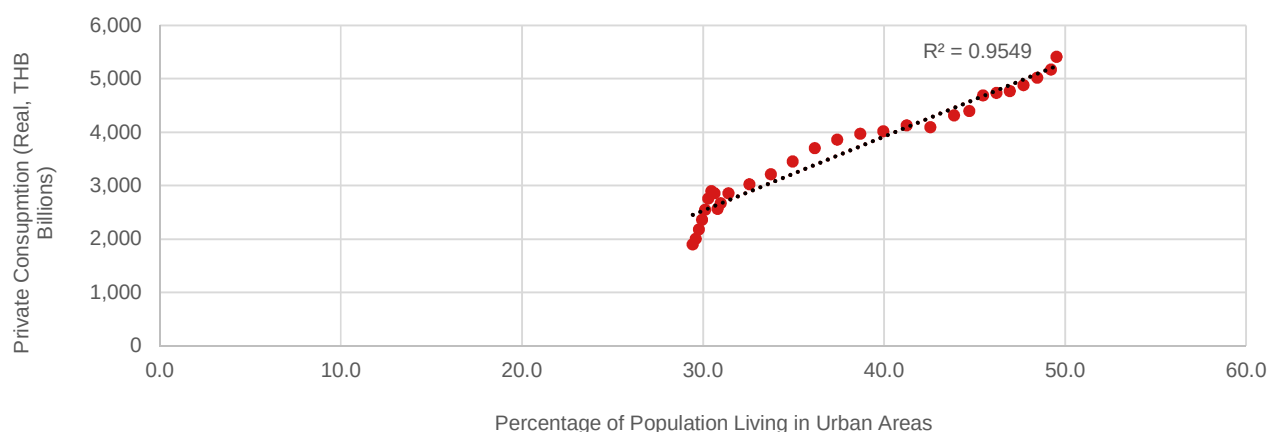
	2000	2005	2010	2015	2020	2025	2030
BMR	8,342,221	9,841,166	11,691,763	13,259,818	14,804,331	15,969,615	16,957,725
Urban 300k+ (less BMR)	5,576,633	7,398,101	9,970,162	11,237,865	12,432,294	13,353,545	14,170,049
Urban under 300k	5,841,061	7,237,265	7,813,189	8,247,997	8,461,700	9,020,615	9,547,801

Source: JLL Thailand Research, UN World Urbanization Prospects 2018 Revision

By 2030, the BMR is expected to host 17.0 million people, with population growth of 1.4% per year (CAGR) expected between 2020 and 2030. Urban areas with more than 300,000 people today will see population increase to 14.2 million by 2030 with anticipated growth of 1.3% per year (CAGR) between 2020 and 2030. Urban areas with populations of less than 300,000 are expected to see growth of 1.2% per year (CAGR) through 2030.

Anticipated urban population growth is likely to have a strong positive impact on private consumption and thus retail sales in the future. A linear regression analysis looking at Thailand's share of population living in urban areas and total private consumption (in real terms), suggests a very tight positive correlation between urban population share and private consumption as illustrated in Figure 3-10 below.

Figure 3-10: Relationship between urban population share and private consumption, 1990 to 2018



Source: JLL Thailand Research, UN World Urbanization Prospects: 2018 Revision, Oxford Economics

Forecasted data from Oxford Economics suggests that private consumption will increase by 2.8% per year (CAGR) through 2030. Alongside projections for Thailand's urban population to grow by five million people through 2030 and given the strong correlation between private consumption and urbanization, it would be reasonable to expect robust retail sales growth, as well as an increase in demand for retail space in the Thai commercial and retail real estate markets over the next decade.

3.2.2 Household income and expenditure

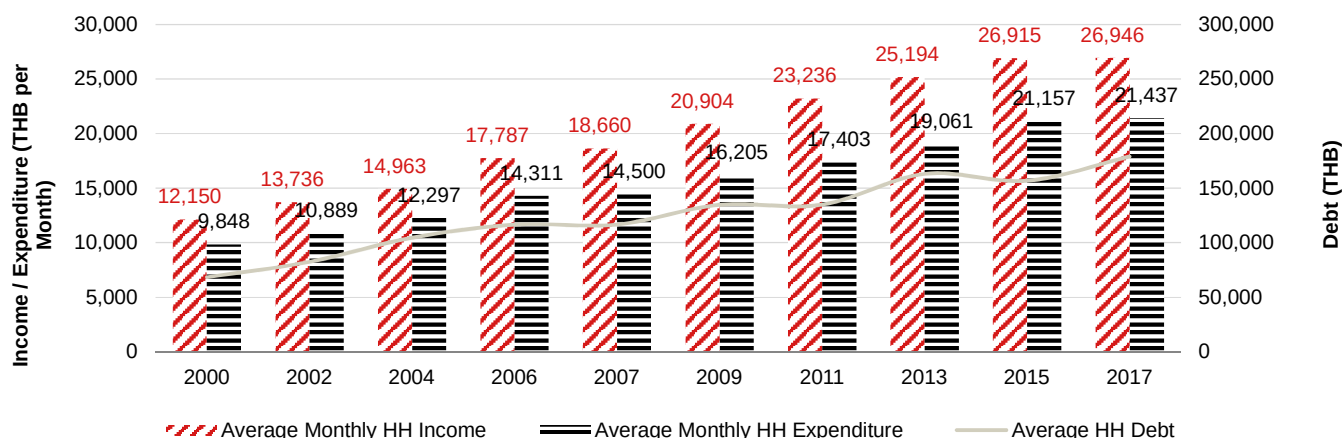
The retail industry in Thailand continued to grow as the main purchasing power and key contributors are coming from the middle-to-upper income and the regular income class. While the middle-to-lower income are still burdened with high household debt causing more caution in spending behavior, the total household debt has increased by 15% from 2014 to 2017, according to the Bank of Thailand (BOT), this is partially due to the increase in the amount of automotive loans and other consumer loans, mortgages, credit cards and personal loans that households are using.

As the retail market continued expanding under the current market conditions with the challenges of changing in consumers' behavior, several retailers/operators need to adjust the format to suit with the trend of demand.

As the current consumers' behavior shifted to focus into convenience and experiences along with the speed, causing growth for online shopping. Thus, the transformation to new-style retail format with contemporary space designed is being adopted by the operators in order to create new strategies to enhance new customer experiences under this current careful spending situation.

As illustrated in Figure 3-11 below, average monthly household incomes across Thailand have increased by an average of 3.7% per year (CAGR) between 2007 and 2017, the latest data available. During the same period, average monthly household expenditures rose by an average of 4.0% per year (CAGR). As a result, household debt levels have increased over time.

Figure 3-11a: Average monthly household income and expenditure in Thailand, 2000 to 2017

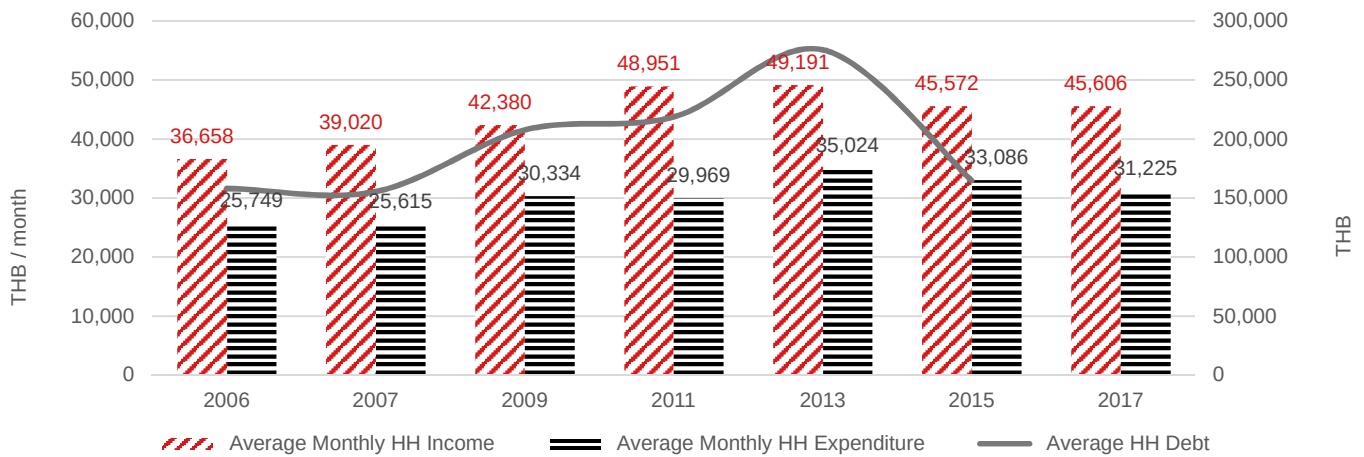


Source: JLL Thailand Research, National Statistics Office of Thailand (NSO)

According to National Statistical Office of Thailand (NSO), the household income and expenditure data in each province were categorized into the decile groups of households from 10 – 100. The data were used in order to benchmark the purchasing power from the middle-to-upper income and the regular income class as they are the main contributors and key purchasing power.

As of 2017, the total household income for Thailand stood at approximately THB 568.9 million per month, 21.9% or THB 124.4 million of which were contributed by the households in Bangkok. The average monthly household income for Thailand stood at approximately THB 26,946 per month while Bangkok had an approximately of THB 45,606 per month. Bangkok generally has a higher household income than the overall nation by 41.7%.

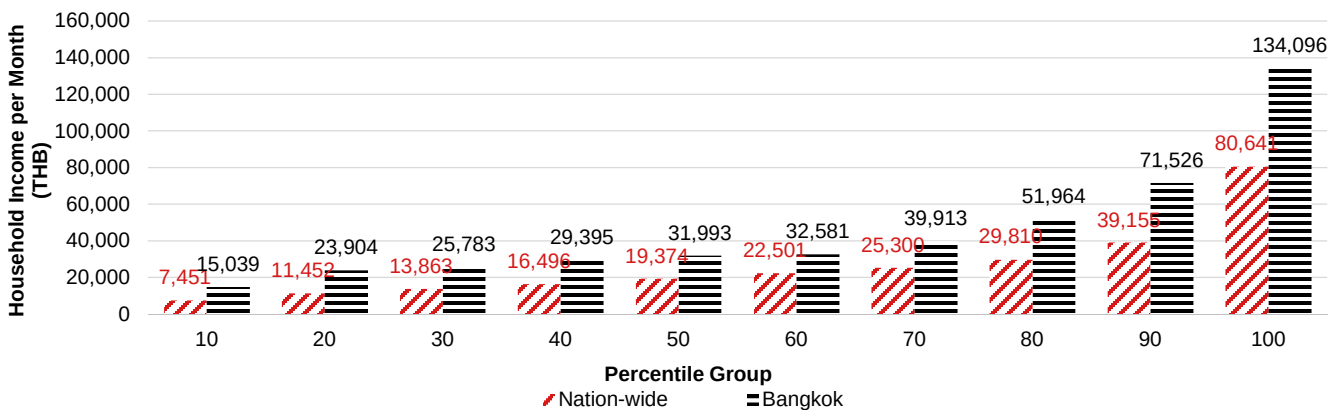
Figure 3-11b: Average monthly household income and expenditure in Bangkok, 2006 to 2017



Source: JLL Thailand Research, National Statistics Office of Thailand (NSO)

By comparing the top 10% of households between whole Kingdom and Bangkok, the household income in Bangkok was recorded at THB 134,096 per month, 66.3% higher than the Nation-wide household income which stood at THB 80,641 per month. Considering the household income by income group, the top 10 percentile group of the household group, both in Bangkok and Nation-wide, had approximately a double income of the next lower percentile group.

Figure 3-12: Average monthly household income by decile in Bangkok and Thailand, 2017



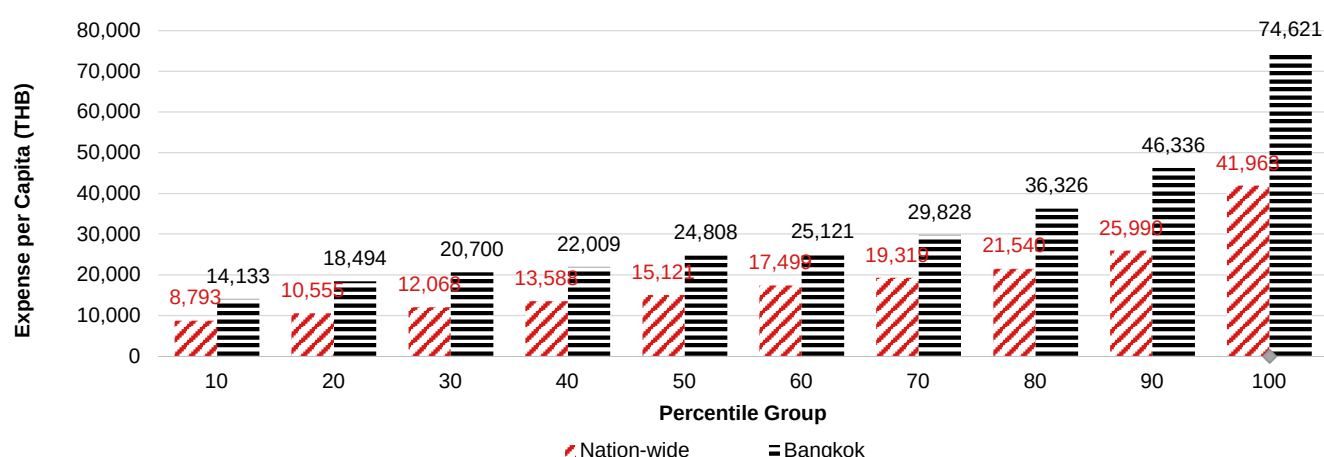
Source: JLL Thailand Research, National Statistics Office of Thailand (NSO)

Meanwhile, the total household consumption expenditure for Thailand stood at approximately THB 398.7 million per month and THB 85.5 million per month for Bangkok, accounting for 21.4% of the nation-wide. The average consumption expenditure for Thailand was recorded at approximately THB 21,437 per month while Bangkok had approximately THB 31,225 per month, representing higher purchasing power than the whole kingdom by 40.3%.

By observing the top 10% of the household group, Bangkok household contributed a higher consumption expenditure at THB 74,621 per month. Considering the household expenditure by expense group, the top 10 percentile household group, of both in Bangkok and Nation-wide, had a higher household expense of 61.0% and 61.5%, respectively, compared to the next lower percentile group.

From the analysis of the data, the proportion of expenditure to income in Thailand, including Bangkok is in the range of approximately 60% – 70% of monthly earnings.

Figure 3-13: Average monthly household expenditure by decile in Bangkok and Thailand, 2017



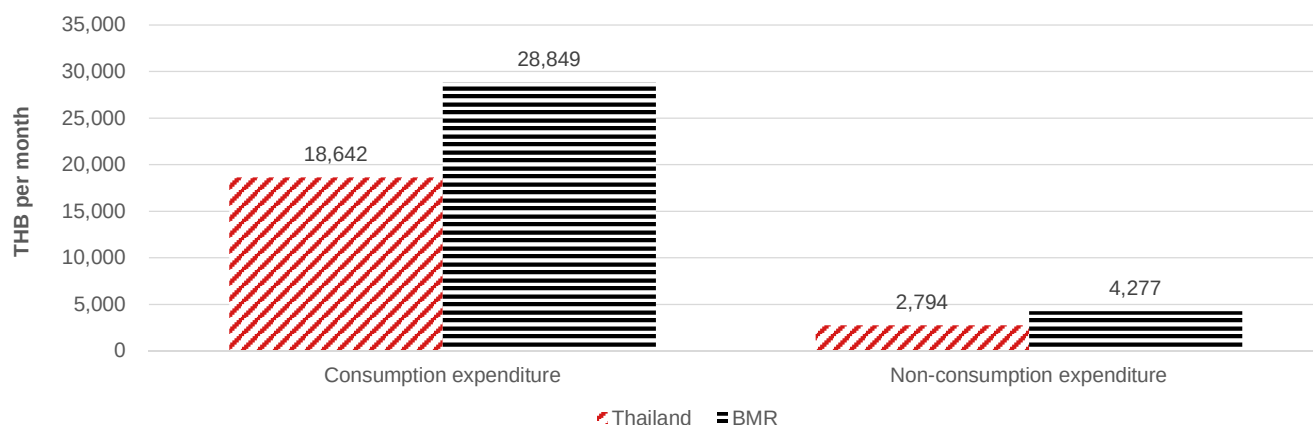
Source: JLL Thailand Research, National Statistics Office of Thailand (NSO)

3.2.3 Household Expenditure Breakdown

In order to determine the consumption trend, JLL has reviewed the household expenditure breakdown data from the NSO in order to observe the proportion of the spending potential in each category. Note that the data for household expenditure breakdown is only available for the whole kingdom and Bangkok Metropolitan Region (BMR) and regional level.

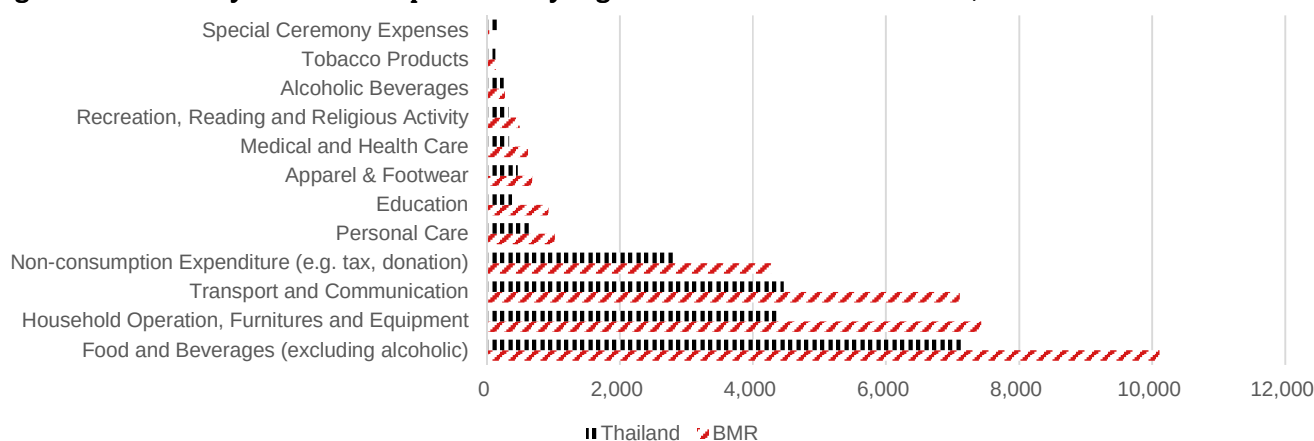
Household expenditure data was broken down into two main categories, consumption expenditure and non-consumption expenditure. Consumption expenditure mainly refers to all the spending by the household on goods intended for consumption or expenditure on services. On the other hand, non-consumption expenditure refers to all tax expenses such as income tax and other direct taxes, pensions and social security contributions, remittances and similar transfers by the household.

Figure 3-14: Average monthly expenditure by type in the BMR and Thailand, 2017



Source: JLL Thailand Research, National Statistics Office of Thailand (NSO)

Figure 3-15: Monthly household expenditure by segment in the BMR and Thailand, 2017



Source: JLL Thailand Research, National Statistics Office of Thailand (NSO)

As of 2017, the average household expenditure in the BMR (Bangkok and the five urban regions that surround the metropolis of Bangkok including Nonthaburi, Samut Prakarn, Pathumthani, Samut Sakorn and Nakhon Pathom) was recorded at THB 33,126 per month, which was higher than the national average of THB 21,437 per month.

Among the 12-category breakdown including consumption and non-consumption expenditure, the consumption expenditure contributed approximately 87.0% of the total expenditure for both nation-wide and BMR, food and beverage contributed the most at 33.3% of the total expenditure for the whole kingdom and 30.5% for BMR. This was followed by household operation, furniture and equipment at 20.3% and 22.4% of the total expenditure, respectively.

3.2.4 Tourism and retail

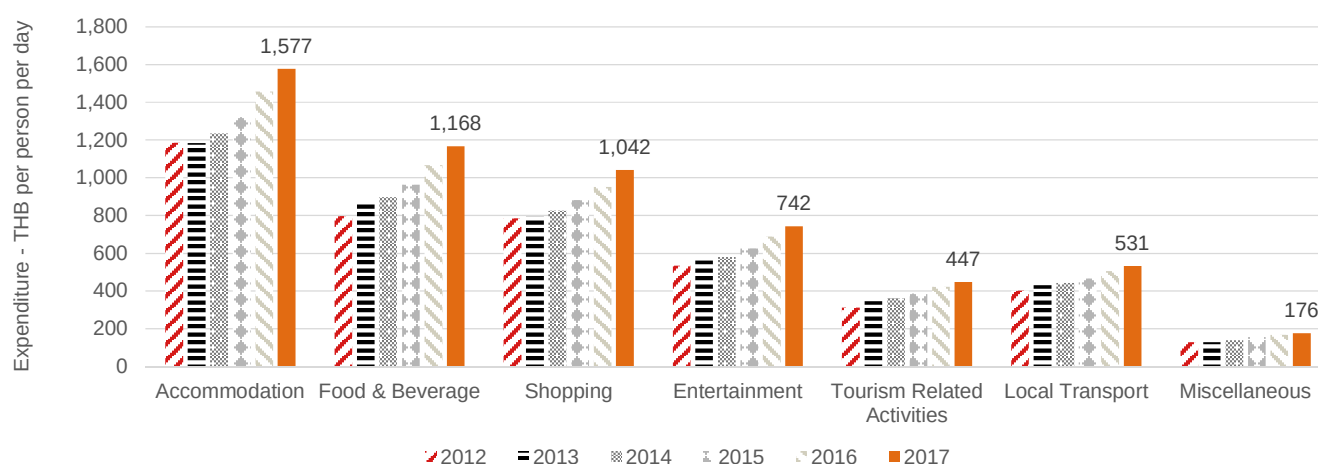
Foreign Tourism Expenditure

According to Thailand's Department of Tourism, the average foreign tourist spent THB 5,684 per day in 2017, up from THB 4,150 per day in 2012 and representing a compound annual growth rate (CAGR) of 6.5%. Accommodations accounted for the largest share of the average foreign tourists' budget at 27.7% in 2017 followed by Food & Beverage (20.6%), Shopping (18.3%) and Entertainment (13.1%) as illustrated in Figure 3-16 and Table 3-6 below.

Collectively, the average foreign tourist spent THB 2,852 per day in 2017 across Food & Beverage, Shopping and Entertainment, some 52% of the average daily expenditure budget. This is notable because activities in these three categories have a significant impact on modern retail centre performance in Central Bangkok and along the riverside. AWC's Asiatique the Riverfront destination is uniquely positioned to capture expenditure in these three segments as well as accommodations budgets in the near future.

Due to lags in publication of data by the Department of Tourism, the latest data reported are only through 1H18, hence there is currently no direct full-year comparison between 2017 and 2018. However, on year-on-year basis, the average foreign tourist spent THB 6,112 per day in 1H18, up by 7.4% from THB 5,693 per day in 1H17. In 1H18 the average foreign tourist spent THB 3,173 per day across Food & Beverage, Shopping and Entertainment, totalling 51.9% of the average daily expenditure budget.

Figure 3-16: Foreign tourism expenditure by category, THB per person per day, 2012 to 2017



Source: JLL Thailand Research, Department of Tourism

Table 3-9: Key foreign tourism expenditure metrics by category, 2012 to 2017

	Accommodation	Food & Beverage	Shopping	Entertainment	Tourism Related Activities	Local Transport	Miscellaneous	Total
2012	1,150	800	750	550	300	400	100	4,050
2013	1,200	850	800	600	350	450	150	4,350
2014	1,250	900	850	650	400	500	200	4,750
2015	1,300	950	900	700	450	550	250	5,150
2016	1,400	1,000	950	750	500	600	300	5,500
2017	1,577	1,168	1,042	742	447	531	176	5,684

2012	Expenditure (THB / person / day)	1,187	798	786	535	312	403	129	4,150
	Share of Expenditure	28.6%	19.2%	18.9%	12.9%	7.5%	9.7%	3.1%	100.0%
2017	Expenditure (THB / person / day)	1,577	1,168	1,042	742	447	531	176	5,684
	Share of Expenditure	27.7%	20.6%	18.3%	13.1%	7.9%	9.3%	3.1%	100.0%
CAGR	Expenditure	5.8%	7.9%	5.8%	6.7%	7.4%	5.7%	6.5%	6.5%

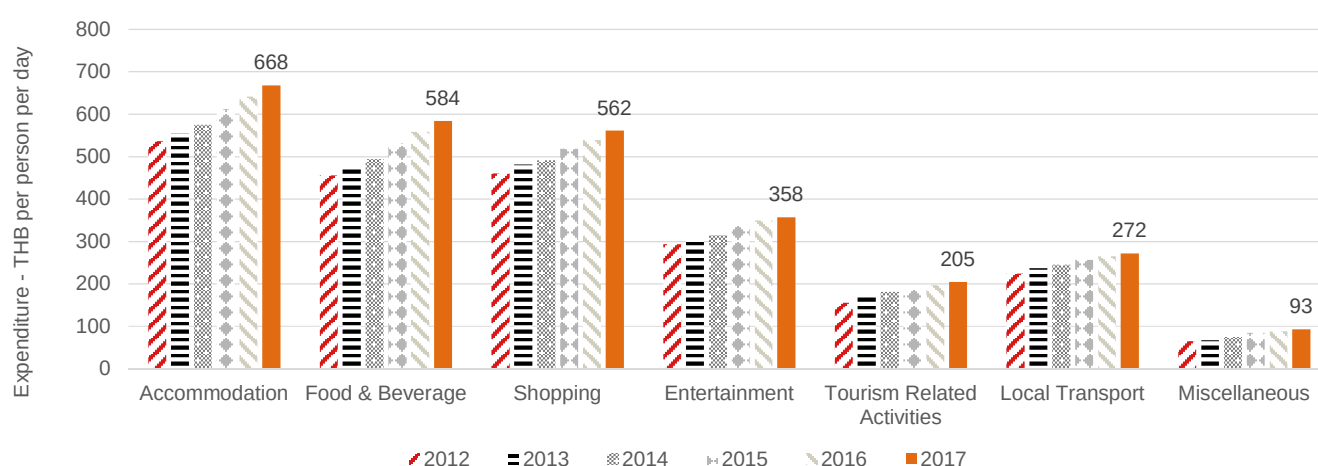
Source: JLL Thailand Research, Department of Tourism

The Food & Beverage segment has been the strongest performer over the last five years with a CAGR of 7.9% versus overall per person per day CAGR of 6.5%.

Domestic Tourism Expenditure

In 2017, average per person per day expenditure by domestic tourists totalled THB 2,741, less than half of the comparable foreign figure. As of 1H18, average domestic tourist expenditure totalled THB 2,759 per day, up by 4.3% from THB 2,646 per day in 1H17. Between 2012 and 2017, average per person daily expenditure increased by 4.5% per year (CAGR), more slowly than the 6.5% CAGR figure recorded for foreign tourists during the same period. Much like foreign tourists, growth in spending in the Food & Beverage segment (5.1% CAGR) has outpaced overall growth while the Shopping segment has lagged behind.

Figure 3-17: Domestic tourism expenditure by category, THB per person per day, 2012 to 2017



Source: JLL Thailand Research, Department of Tourism

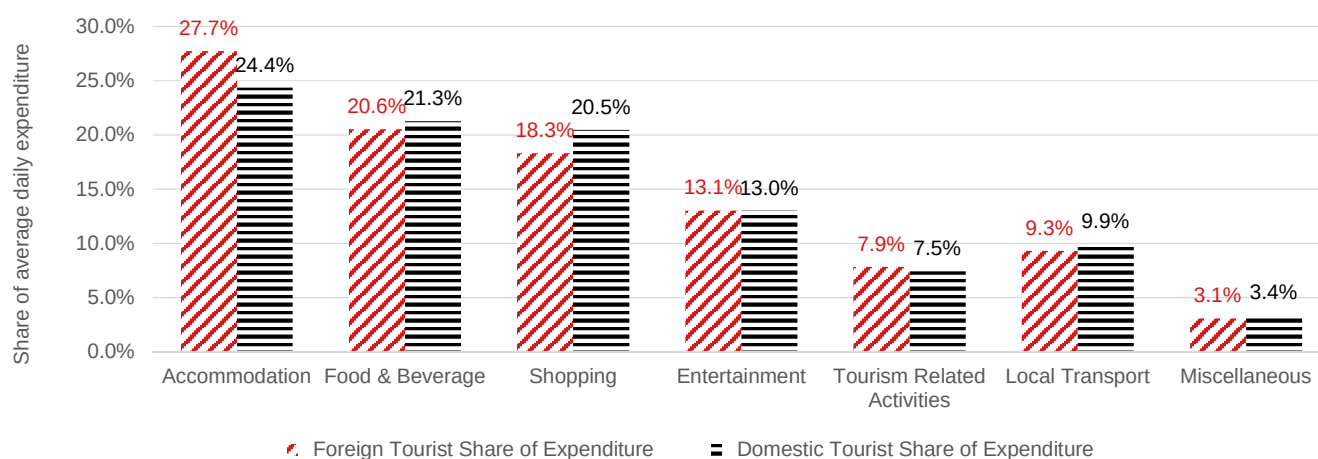
Table 3-10: Key domestic tourism expenditure metrics by category, 2012 to 2017

		Accommodation	Food & Beverage	Shopping	Entertainment	Tourism Related Activities	Local Transport	Miscellaneous	Total
2012	Expenditure (THB / person / day)	537	456	461	294	156	225	65	2,195
	Share of Expenditure	24.5%	20.8%	21.0%	13.4%	7.1%	10.2%	3.0%	100.0%
2017	Expenditure (THB / person / day)	668	584	562	358	205	272	93	2,741
	Share of Expenditure	24.4%	21.3%	20.5%	13.0%	7.5%	9.9%	3.4%	100.0%
CAGR	Expenditure	4.5%	5.1%	4.0%	4.0%	5.6%	3.9%	7.3%	4.5%

Source: JLL Thailand Research, Department of Tourism

Consumption patterns between foreign and domestic tourists are similar in that both allocate the largest share of daily budget towards accommodation, however domestic tourists spend a much larger share, relatively speaking, on Food & Beverage and Shopping as illustrated in Figure 3-18 below.

Figure 3-18: Share of daily expenditure by segment, foreign versus domestic, 2017



Source: JLL Thailand Research, Department of Tourism

3.3 Thailand retail and wholesale overview

3.3.1 Defining retail and wholesale trade

Modern Retail

Throughout the remainder of the report, the terms “retail” and “modern retail” will be used interchangeably. Modern retail is mainly a Business-to-Customer (B2C) type of business where the products are sold directly to the customer. In most cases, products in modern retail outlets and centres will be sold at a higher price per unit than in wholesale outlets or centres and the nature of the business will involve direct interaction with customers. We group (modern) retail centres into six main categories described in Table 3-8 below.

Table 3-8: Modern retail centre type definitions

Type	Description	Example Centres
Regional Shopping Centre	Specialty space of more than 30,000 sqm or 100 or so specialty stores, anchored by one large department store and attract 75,000 to 100,000 customers per day	Siam Paragon, The Emporium, CentralPlaza Grand Rama 9
Super Regional Centre	Similarly defined as regional shopping centre, but comprising more than one department store.	Mega Bangna, CentralWorld
Discount Store (hypermarket)	A type of department store typically selling lower priced products than traditional retail outlets and offering a wide range of products in a single facility.	Big C Supercentre, Tesco Lotus
Cash and Carry	Standalone retail centres specializing in the bulk sale of finished goods targeting small restaurant owners and mom and pop / independent convenience store operators	Makro
Community Mall	Range of specialty space between 10,000-25,000 sqm, housing 10 to 30 stores, which are mostly convenience and shopping stores, targeting local residents.	K-Village, The Crystal, The Walk
Neighborhood Centre	Similar feature as community mall but smaller scale.	Lasalle Avenue, J Avenue Thonglor, Rainhill Sukhumvit, The Portico
Specialty Centre	Stores that specialise in a specific range of merchandise and related items.	Pantip Plaza, O.P. Place, Gateway at Bangsue, Asiatique, Gateway Ekamai
Wholesale / B2B	Centres focused on providing high volume, low-cost produces including food, textiles and other commodities to other businesses.	AEC Trade Center, Bobae Tower, Tarad Thai

Source: JLL Thailand Research

Modern Retail Customer Profiles

There are various formats of retail centres across Thailand in which each format in each location usually catered to a group of clientele which reflect in the type of tenants in each centre. It is important to note that each format of retail centre in each location usually cater to different group of customers depending on the characteristic of specific location and surrounded demographic. We have summarized a general clientele of each format as follows base on our experience working with retailers in the market.

Regional and Super Regional shopping centres

Regional shopping centre is usually large in scale with leasable areas of 30,000 sqm and above consist of anchor tenants such as department store. Regional shopping centre usually cater a large catchment area with family group and first jobber group as main targeted customers. As regional centres in different locations may capture different targeted group some of the regional centres in tourist cities such as Chiang Mai, Pattaya, or Phuket also welcome a significant number of tourists.

Discount stores and Hypermarkets

Main targeted customers for Discount stores and Hypermarkets is housewives coming to do groceries shopping while Hypermarket in some locations also capture family group coming to buy groceries as well as enjoying the F&B outlets attached to the store.

Cash and carry

Cash and carry usually offer products in large quantity at discounted price. Primary targeted customers for cash and carry are small restaurant owners as well as mom and pop shops in the catchment area. Cash and carry also attract family and housewives living in the catchment area as secondary targeted group.

Community malls and Neighbourhood centres

Community malls and neighbourhood centres are typically small in scale and targeted the family living in nearby neighborhoods. While main purpose of community mall is to serve the nearby neighborhood, some community mall that have lifestyle tenants can capture first jobbers and family group in a wider catchment area as well. Most successful community malls and neighbourhood centres are located on major arterial roads.

Specialty Centres

Specialty Centres generally specialises in a specific range of merchandise and related items. This type of centre is normally targeted by specific customers in relation to products and services offered in the store. Therefore, the centre does not capture only the customer in nearby neighborhoods, but is attracted by customers from other areas. The character and size of specialty centre therefore varies from small to large scale project.

Wholesale

Unlike modern retail, the wholesale industry generally operates in a Business-to-Business (B2B) environment where a person or company sells products in high volumes to various outlets or retailers for onward sale. Wholesalers may also be the manufacturer or the producer of the product itself. The products are usually sold at a discounted price per unit as they are sold in high volume to reduce the handling time and cost involved.

Wholesaling in Thailand dates back more than one hundred years, with the first trade areas still operating today opening in the late 1800s. Examples of the long existing wholesale areas are Sampeng, Pahurat, Bobae, Khlong Thom and Pratunam. The wholesale space in these areas is originally assembled from a cluster of shophouses or small buildings. However, some areas also consist of key modern wholesale buildings/markets such as Bobae Tower, Baiyoke Building and Tarad Thai.

The example of the modern wholesale store would be Makro Cash and Carry, similar to discount stores but selling food and non-food products in high volumes, mainly targeting those small and medium sized retailers. Furthermore, in the near future, AEC Trade Center from AWC will bring large-scale modern wholesale facilities with a broad variety of product categories and supporting facilities design to serve businesses both in Thailand and other markets in Southeast Asia. AEC Trade Center is currently under-development and holding a test run and is in process of finding tenants and expected to fully launch in 2020.

Table 3-9: Leading wholesale locations in Thailand

Name of wholesale area/ market	Completion/ launched year	Location	Type of products	Characteristic of retail space	Key area and its developers
Sampeng	1891	Bangkok	Accessories, Giftshops, Toys, Trinkets, Cosmetics, Skincare	Shophouses/ Outdoor spaces	Sampeng market
Bobae	N/A	Bangkok	Clothing, Costumes, Accessories	Retail building, Shophouses/ Outdoor spaces	Bobae tower 1&2 by Prommaharaj Land Development Co., Ltd.
Pahurat Market	N/A	Bangkok	Thai Silk, Fabric, Textile, Clothing	Shophouses/ Outdoor spaces	Pahurat market
Sua Pa Plaza	N/A	Bangkok	IT accessories, Mobile cases, gadgets	Retail building, Shophouses/ Outdoor spaces	Sua Pa Plaza by Sua Pa Plaza Co., Ltd.
Klongthom	N/A	Bangkok	IT accessories, gadgets, Electronics	Retail building/ Outdoor spaces	Klongthom Center by Khlongthom Plaza (Tiaomoseng) Co., Ltd.
Pratunam	N/A	Bangkok	Clothing, Costumes, Accessories	Retail building, Shophouses/ Outdoor spaces	Platinum Fashion Mall by S.P.C.Properties and Development Co., Ltd.
Tarad Thai	1997	Pathum thani	Fruits, Vegetables, Seafoods, Rice	Open door market / Outdoor spaces	Tarad Thai by Thai Agro Exchange Co., Ltd.
Simummuang Market	1983	Pathum thani	Fruits, Vegetables, Seafoods, Rice	Open door market / Outdoor spaces	Simummuang Market by Donmuang Pattana Co. Ltd.
Talay Thai Market	2002	Samutsakhon	Seafood	Open door market	Talay Thai Market by Mahachai Fisheries Development Co. Ltd.
AEC Trade Center	2020*	Ayutthaya	Wide range of products and services for manufacturers, retailers, exporters and logistic	Retail buildings	Asset World Corp PCL.

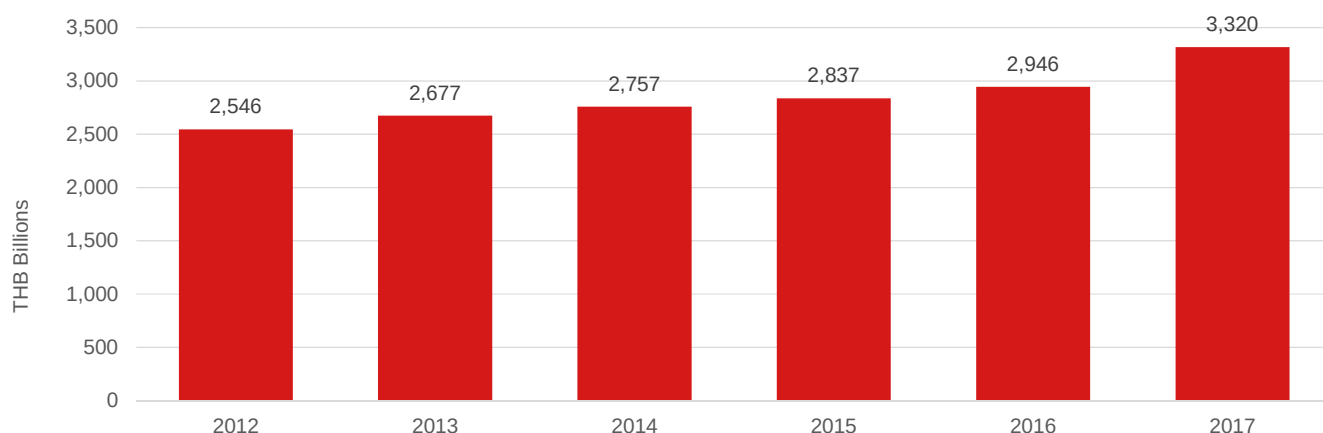
Source: JLL Thailand Research, Industry Sources; *Note: AEC Trade Center is currently (as of 1Q19) holding a test run

3.3.2 Thailand retail market dynamics

Despite the significance of the retail and wholesale trade sector, which accounts for more than 15% of Thailand's GDP, reliable data pertaining to both the value and the volume of retail and whole sales is not published by the Thai government nor any reliable and transparent secondary sources such as the World Bank or United Nations.

Information obtained from the United States Department of Agriculture (USDA) which has compiled retail sales value in Thailand from a variety of source (see Figure 3-19 below) indicates healthy growth in recent years.

Figure 3-19: Value of retail sales in Thailand, 2012 to 2017

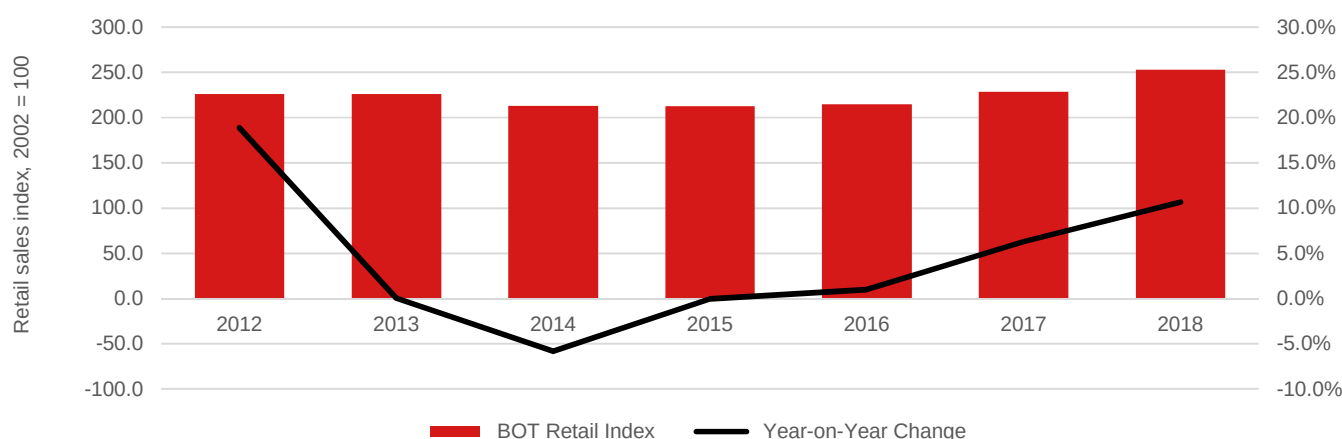


Source: JLL Thailand Research, United States Department of Agriculture

According to the USDA, the total value of retail sales in Thailand has increased from THB 2.5 trillion in 2012 to THB 3.3 trillion in 2017, representing a CAGR of 5.4% during the period, nearly double the national GDP growth (2.8% CAGR).

At the same time, the Bank of Thailand's (BoT) Retail Sales Index paints a different picture. As illustrated in Figure 3-20 below, BoT data suggest that while retail sales have grown by 5.0% per annum (CAGR) between 2008 and 2018, growth was much slower (1.9% CAGR) between 2012 and 2018. That said, year-on-year growth as of 1Q19, the latest data available, suggests an increase of 9.1% with the index reaching an all-time high.

Figure 3-20: Thailand retail sales index, 2012 to 2018



Source: JLL Thailand Research, Bank of Thailand

We believe the disparity in the annualized growth figures between the USDA and BoT is largely methodological. Two of the key constituents of the BoT retail sales index are the sales of motor vehicles and the sales of fuel for motor vehicles, the former of which saw declines between 2014 and 2016 due to government policies which promoted first-time buyer vehicle ownership in 2012 and 2013 that in-turn sapped future demand. At the same time, despite the increased size of the vehicle fleet, fuel consumption

was largely stagnant during the period. We do not believe the USDA factors these constituents into their calculations.

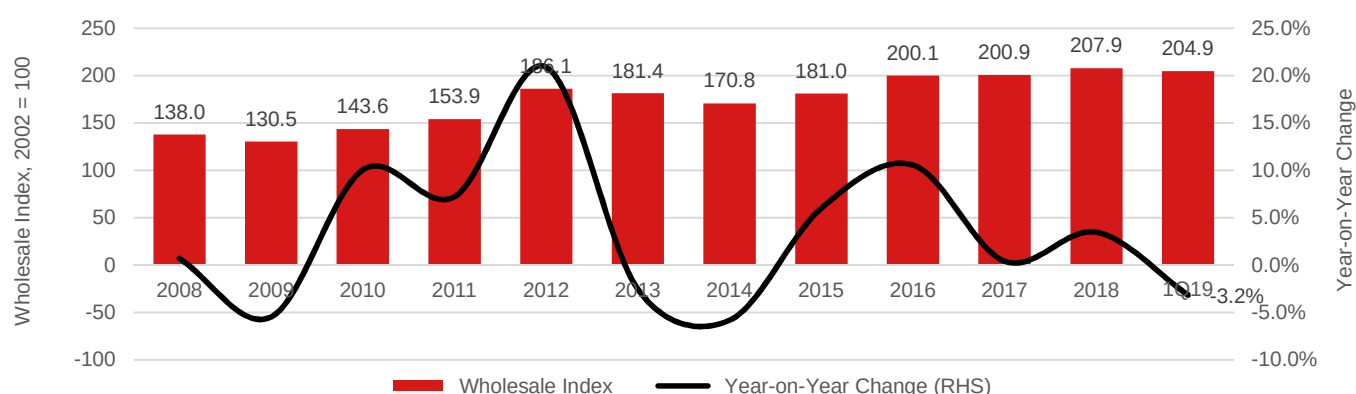
3.3.3 Thailand wholesale market dynamics

Wholesale Market Trends

The Bank of Thailand's Wholesale Index measures the level of goods and trends in the sales of goods while also reflecting consumer spending habits on various goods. The wholesale index is compiled from the value of turnover collected from VAT returns with 2002 as the base year = 100. The BoT index suggests that wholesale trade has increased by an average of 4.2% per year (CAGR) between 2008 and 2018, outpacing GDP growth by a healthy margin, but slowing 1.9% CAGR between 2012 and 2018. The wholesale sector appears to ebb and flow in-line with both local and global macro-economic conditions, hitting a trough in 2009 during the global recession before temporarily peaking in 2012 before domestic political unrest soured market dynamics in 2013-15.

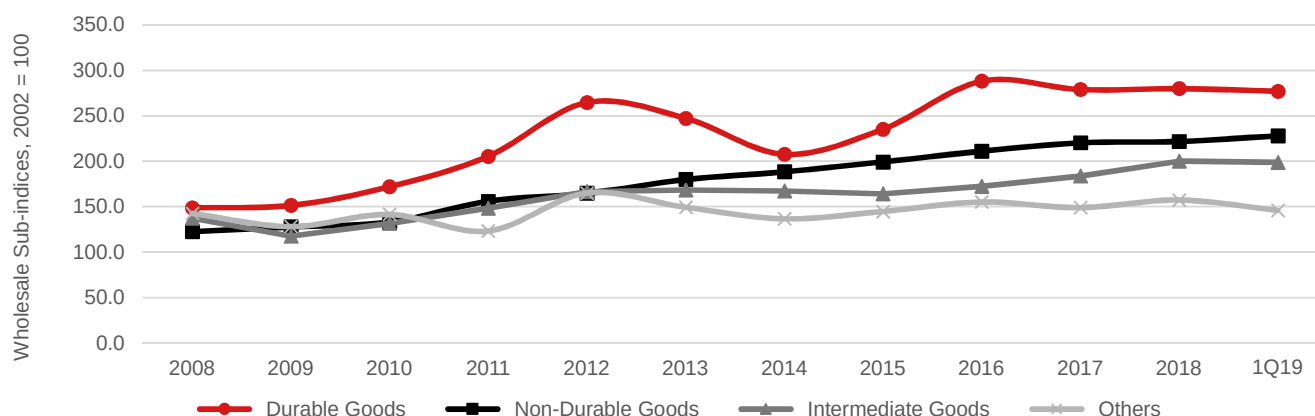
Since 2015, the index has been steadily moving upwards, reaching an all-time high in 2018. The growth has been driven by the sales of durable good category mainly dominated by general household goods. Durable goods in wholesale market is mainly related to household appliances and clothing. The wholesale index of durable goods represented the largest proportion among other type of goods since 2008. As of 1Q19, the BoT's wholesale index declined by 3.2% year-on-year.

Figure 3-21: Thailand wholesale sales index, 2008 to 1Q19



Source: JLL Thailand Research, Bank of Thailand

Figure 3-22: Key wholesale sales index constituent sub-indices, 2008 to 1Q19



Source: JLL Thailand Research, Bank of Thailand

Wholesale Logistics and Marketing Challenges

In this digitizing market, wholesalers are generally already facing larger competition with B2B digital sales and may potentially have to invest in e-commerce technology in order to remain competitive and maintain the level of customer base diversification. Utilizing within e-commerce platforms allows the wholesales business to access to wider market, especially to international market in order to reduce the effect of geographical boundaries. Moreover, e-commerce platforms provide opportunities for Thai businesses to reach out to potential overseas partners. The large wholesalers have substantially marketing and investment budgets with which they are able to increase market share and create barriers for entry for competing with smaller wholesalers.

Small wholesalers have numerous barriers within the wholesales market, in terms of both marketing and logistics. E-commerce has opened up the potential size of the market for small wholesalers, however it has also exposed them to an increasingly competitive market, where large wholesalers are able to dominate the market due to their greater quantities of scale.

Marketing, including online marketing can be a large cost for any company. Small wholesalers are most likely start-ups who would have limited budgets to utilize. There is a lack of online marketplaces in which wholesales can advertise, small companies do not have the budget to create and manage their own sales portals. It can take a large amount of resources for wholesalers to develop the understanding of how the market perceives their products in order to encourage engagement, this can be costly and difficult for smaller companies to manage.

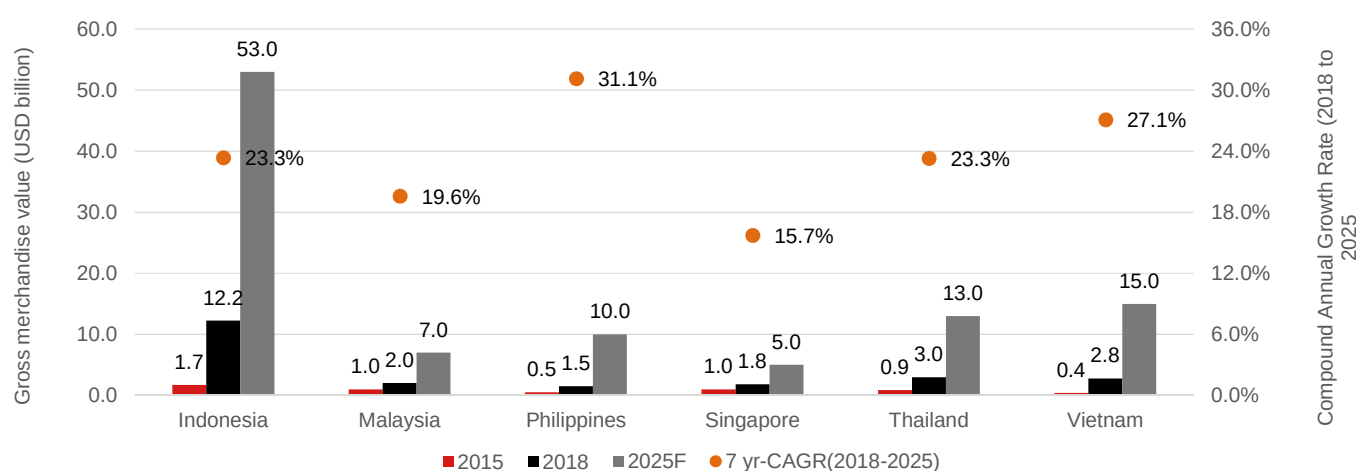
Small wholesalers have numerous challenges in managing logistics; there are currently limited methods for delivering products, especially for wholesalers who are located outside of major city areas. This shortage results in higher cost and lower productivity for small wholesalers, who may be required to fulfil individual orders separately. In order to reduce the cost of logistics a wholesaler is required to increase the size of the shipments, however, this can create further operational difficulties.

3.3.4 Thailand e-commerce landscape

Similar to the modern retail and wholesale industries, reliable data from Thai government and/or secondary sources pertaining to the growth of e-commerce are limited.

Since 2016, Google and Temasek have produced a series of annual reports analyzing the growth of e-commerce and the wider internet “e-economy” in Southeast Asia. While the specific methodologies are unknown, the reports provide a consistent look at the growth of e-commerce over the last few years. Figure 3-23 below illustrates information drawn from the latest (2018) report.

Figure 3-23: E-commerce market sizing in Southeast Asia, 2015, 2018 and 2025 forecast



Data Source: e-Conomy SEA 2018 report, Google and Temasek, compiled by JLL Thailand Research

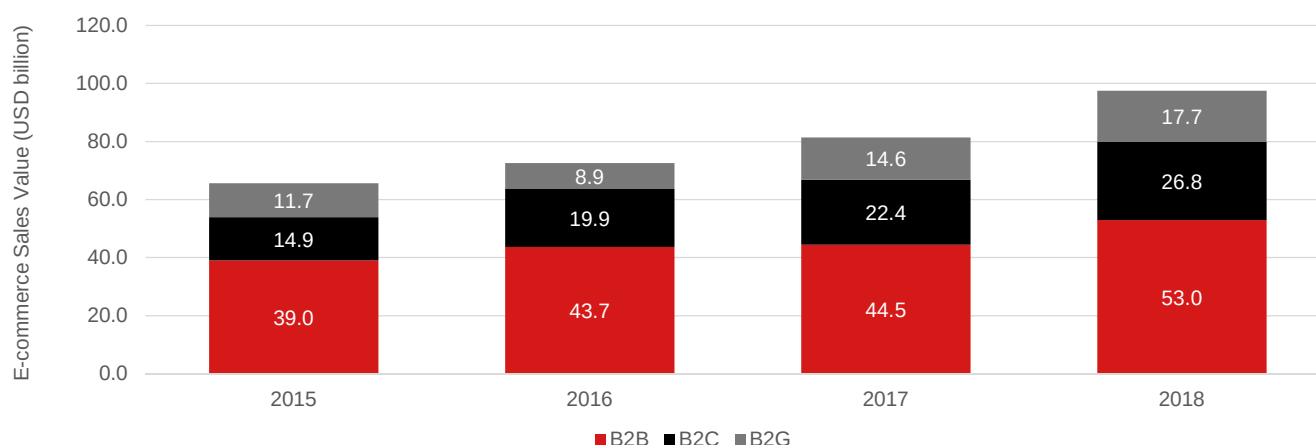
Since 2015, the figures suggest that the value of e-commerce sales in Thailand have grown from USD 0.9 billion in 2015 to USD 3.0 billion in 2018, a three-year CAGR of 49.4%. Looking forward, the value of Thailand's e-commerce sales is expected to reach USD 13.0 billion by 2025, representing a CAGR of 23.3% over the next seven years. Google and Temasek estimated that the value of e-commerce sales accounted for 0.8% of total retail sales in Thailand in 2015 and between 2-3% of total retail sales in 2018. If the above forecast holds true, it is reasonable to expect that e-commerce sales could account for between 7-8% of total retail sales by 2025. Online shopping and related digital services are rapidly changing consumer behaviour and expectations. To remain competitive, leading retail centre operators across Bangkok and Thailand are undertaking large-scale renovations of existing centres, re-balancing tenant mixes and working to create destinations that go beyond the traditional shopping experience.

The most notable shift across recent and ongoing asset enhancement campaigns is the increasing presence of F&B outlets, both chains and unique outlets, as well as other lifestyle-related categories such as health & beauty, fitness, and cinemas, which collectively account for nearly 40% of demand in leading centres. The rise of lifestyle tenants is coming at the expense of categories that face stiff online competition, including fashion, electronics and banking. In many centres that cater to foreign visitors, efforts are also being ramped up to provide better multi-lingual services. Certain efforts include the hiring

customer service representatives who are native / fluent speakers of key languages like Chinese and providing better wayfinding (signage) and promotional / marketing materials in key languages.

Independently, Thailand's Electronic Transaction Development Agency (ETDA) has produced annual reports since 2015 looking at the value of e-commerce sales in the Business-to-Business (B2B), Business-to-Consumer (B2C), and Business-to-Government (B2G) segments. While these data do not align with other sources like Google and Temasek and the USDA, they are nonetheless useful for charting the growth of e-commerce in recent years. Figure 3-24 below illustrates the value of e-commerce sales by type between 2015 and 2018.

Figure 3-24: E-commerce sales value by type of business, 2015 to 2018



Source: JLL Thailand Research, Electronic Transaction Development Agency (ETDA)

Note: B2B is business to business, B2C is business to consumer and B2G is business to government

According to the ETDA, the total value of e-commerce in 2015 was USD 65.6 billion, rising to USD 97.5 billion in 2018. Between 2015 and 2018, the B2C segment experienced the most rapid growth, with a three-year CAGR of 21.6% as compared to B2G at 14.8% and B2B at 10.7%. As of 2018, the B2B segment accounts for the largest share of e-commerce sales at 54.4% of the total e-commerce market in Thailand, followed by B2C at 27.5% and B2G at 18.2%.

We note that AWC is working to capture rising demand from e-commerce users in the B2B, focusing on wholesaler tenants known as AEC Trade Center Online. Per local press releases, we understand that AEC Trade Center Online is an online platform that enables AEC Trade Center tenants, as well as traditional offline retailers, to establish an online presence. It aims to connect buyers and sellers, and facilitates tenants' sourcing operations, order placement, inventory management, payment, delivery and invoice management with a user-friendly interface that is accessible through websites and mobile applications.

3.4 Thailand's physical retail landscape

3.4.1 Overview of key retail terminology and formats

Glossary

Net Absorption – The term is used to describe the total change in demand (occupied space) within a given time period, including in site expansion, relocations, new market entrants and market withdrawals. The indicator is measured in square metres and can be either positive or negative.

Net Leasable (or lettable) Area - Abbreviated as NLA, this term refers to the amount of space, measured in square metres, in a retail centre that is available for tenant occupancy.

Non-Prime Grade (NP) - The term represents retail centres that do not meet our Prime Grade standards in terms of location, reputation, quality, tenant mix or a combination (See details in Prime Grade Criteria table below).

Prime Grade (P) - This term represents the High-quality retail spaces meeting various rigorous criteria such as excellence in location, reputation, quality, and tenant mix (See details in Prime Grade Criteria table below).

Table 3-13: Retail centre grading criteria

Criteria	Consideration
Zoning	Each prime project is considered based on the zoning where it is located in. It is not necessarily located only in the city centre; it should reflect the market condition in each specific zone, for example located in high density area and/or surrounded by demand generators including office, residential and etc.
Location	Prime project should be located in the prime location in each specific zone and is easy to access, for example located on arterial roads.
Developer	Each prime project should be developed by a well-known or experienced developer (e.g. Central Group, The Mall Group, AWC and Siam Future Development).
Quality of the Centre	Each prime centre should be carefully researched and has strong positioning. The project should be well designed and planned, allowing accessibility to all tenants and maximising tenants' exposure to their customers.
Selection of Brands	The tenants represented in the prime centre should be international brands and/or well-known local brands. The majority of tenants occupying the ground floor should be mid-to-high end and/or luxury brands. The positioning of the brands should target upper middle to high income shoppers. In some cases, in certain zones, a shopping centre that has the majority of mid-range brands can also be considered prime.

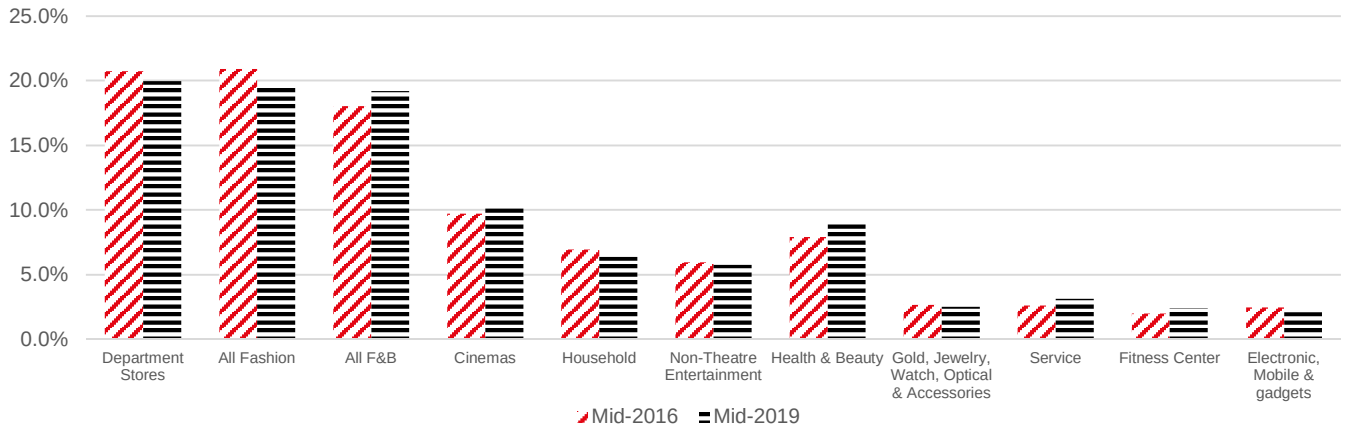
Source: JLL Thailand Research

3.5 Greater Bangkok retail market performance

3.5.1 Greater Bangkok demand dynamics

As of the mid of 2019, leasable area of most lead shopping centres in Bangkok was taken mainly by Department, fashion and F&B tenants. Three categories were accounted for 20.0%, 19.5% and 19.2% of the total share, respectively. However, tenant mix in leading shopping centres was rebalanced in recent years. Changes in the percentage of share by category could be seen between the mid of 2016 and 2019. The share of five categories particular in all F&B and Health & Beauty increased in the percentage, while six out of eleven categories especially all fashion and department stores presented a decrease in the share. Several reasons could be expected behind these changes. For example, the growth of omni-channel is creating an alternative channel for sale parallel to offline channel. Moreover, consumer behavior has been changed in relation to an increase in urbanization in several cities. Retail centres are required to provide more than shopping experience to visitors. Therefore, some categories including F&B, Health & Beauty, Cinemas, Service and fitness center significantly increased in its footprint in recent years.

Figure 3-25: Tenant mix evolution in leading Bangkok shopping centres, 2016 and 2019



Source: JLL Thailand Research

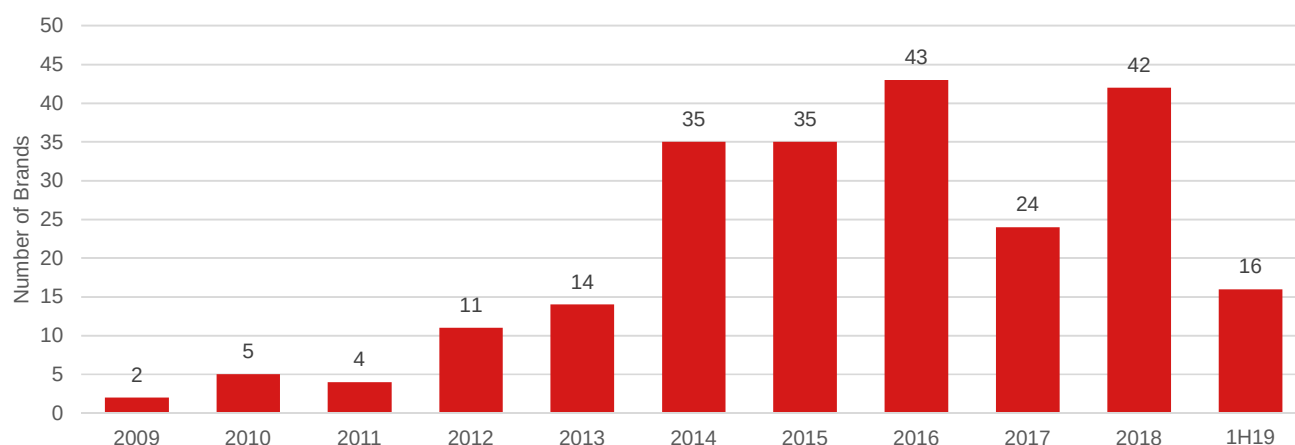
Note: Figures are updated annually at the end of the second quarter

A change of tenant mix could be seen in several shopping centers in relation to the movement of trend and technology. E-commerce was one of the factors affecting to the tenant mix change. The online services was creating a convenient access for consumers to get the product and also be the alternative channel for retailer to sale their products. Therefore, some tenants such as Fashion and Electronic, Mobile & Gadget tenants maybe required smaller offline space than the past, by contrast, offline retail space of Fitness Center, Cinemas and Health and Beauty increased continuously due to the improvement of sale by online services. As a result, the e-commerce has affected the change in tenant mix of shopping centres particular in large-scale projects.

Foreign Retail Brand Expansion

Bangkok retail market is considered to be one of the biggest retail market in Thailand. Moreover, the market is also acknowledged by both local and international visitors. A high demand for Bangkok retail space can be expected from both local and foreign, but the rental value is considered to be lower than other key retail markets in Asia. As a result, new foreign brand continuously entered the market in recent years in order to expand its footprint to this potential location. Several new foreign brands became key tenants in shopping centres in recent years.

Figure 3-26: New-to-market foreign brand entries, 2009 to 1H19



Source: JLL Thailand Research, Industry Sources

Counting the number of new foreign brand entry from 2009 to 1H19 can indicate the movement of new foreign brands along the decade. Although the amount of new foreign brand entered to Bangkok retail market in between 2009 and 2013 was limited averagely 7 brands per year, an increase in the number of new foreign brand entry was obvious after the completion of new Prime Grade projects from 2014 to 2018, such as Central Embassy (2014), Siam Square One (2014), EmQuartier (2015), CentralPlaza Westgate (2015), Central Festival Eastville (2015), Siam Discovery Center renovation (2016), Gaysorn Tower (2017), Mega Bangna expansion (2017) and ICONSIAM (2018). The limited available leasable area in Prime Grade retail centres in between 2009 and 2013 might affect the number of new foreign brand entry during the period.

Existing Brand Expansion – Focus on F&B

In recent years, the existing retail brand in Thailand presented a notable movement. One of big changes was the ownership of Thailand KFC's franchise between 2016 and 2017 as Yum Brands Inc., changed its policy on franchise business. As a result, three companies currently are acknowledged as franchisee of KFC in Thailand, including Central Restaurants Group Co., Ltd. (CRG), Restaurant Development Co., Ltd. and The QSR of Asia Co., Ltd (QSA). Three companies own existing KFC stores accounted for 38%, 22% and 40% of total store in Thailand as of 2017. However, the changing policy of Yum Brands did not affect only KFC franchise. Other fast-food brands under Yum Restaurants International (Thailand) Co., Ltd. such as Pizza Hut and Taco Bell also were sold the franchise to PH Capital co., Ltd, a subsidiary company of Thoresen Thai Agencies PCL. The franchise of Pizza Hut in Thailand was sold since 2017 and Taco Bell's franchise was dealt in 2018.

In addition, CRG is one of biggest players in food-chain market and also has other F&B brands apart from KFC that have been expanded widely. The other brands under CRG such as Mister Donut, Aunties Anne's, Pepper Lunch, Chabuton Ramen, Cold Stone, Yoshinoya, Ootoya, Katsuya and Tenya were well recognized brands that exist in several shopping centres in Thailand and other countries. Although these brands were generally opened in CPN's shopping centres and its expansion of the brand was in parallel to the opening of new CPN's malls, the brands also were well accepted in other shopping centres due to its recognition and

variety of brands in CRG's portfolio. The total twelve brands included KFC in the CRG's portfolio had a total 914 outlets as of the mid of 2018 and the company expected to expand the brand's branches up to 1,000 outlets in the end of 2018. Note that CRG also has a comprehensive group called Central Food Retail group (CFG) under its arm and focus to expand other type of retail category such as supermarket, Health and Beauty store and convenient store.

Furthermore, Charoen Pokphand Food (CPF), a subsidiary company of CP group are one of recognized companies in the food industry that have established own global franchise brands and have expanded the brand in Thailand and abroad. The retail brands such as Chester grill, Five-star chicken, Star Coffee and CP Food World were the franchise retail brand developed by CPF. Well recognized fast-food franchise brands by CPF were Chester Grill and Five-star chicken. Both brands were started the franchise business in 1994 and 2000 respectively. Chester Grill with targeting young generation had more than 200 branches in 2017 and Five-star chicken with an idea of micro business had more than 6,000 franchisees during the same period. The expansion of CPF's brand grew steadily due to its concept that local partner can participate the franchise.

However, expansion of fast-food brands was not a bed of roses. Domino Pizza was an example that the business operation and strategy could affect the success of brand. This pizza brand was entered to Thailand market since 1994. The Domino pizza franchise was firstly bought to Thailand by Monterey group, but unsuccessful of operation and economic downturn during the period had a big effect on the brand expansion and its franchisee resulting to the end of the brand in Thailand in 1999. After that Domino Pizza was disappear from the Thailand market for a while before Fico group bought the brand back to Thailand in 2012. Fico group was a franchisee of three brands including Domino Pizza, the Coffee Bean & Tea Leaf and KyoChon, but all franchises' business were transferred to Food Capital PCL (as known as Evolution Capital PCL) in order to focus on food and beverage portfolio. Nevertheless, the company have faced the deficit in its operation resulting to the limitation of brand expansion. Therefore, all three brand under Food Capital PCL was transferred back to Fico group in 2018 with an aim to focus on energy industry rather than food industry. Moreover, three food brands under Fico group will get more investment in order to boost the growth of brand.

Apart from fast-food brands, Starbucks, a long existing coffee shop chain from US, also made a move in 2018. Starbucks have formed a partnership with ESSO (Thailand) to expand Starbucks branches in petro station. Starbucks would support non-oil business for ESSO (Thailand) in order to compete with other petro brands. The first branch of Starbucks in ESSO was opened in Kanchanaburi province. The expansion of the petro station's branch will focus on provinces' station.

In 2014, Minor International (MINT) had formed a strategic partnership with BreadTalk from Singapore to establish a 50:50 joint venture company, named BTM Thailand in order to expand BreadTalk brand in Thailand. As of 2018, there were at least 25 BreadTalk outlets in Thailand. However, the 50% of BTM share was bought out by BreadTalk in February 2019. The expansion after the deal could not been foreseen. However, it expected that Minor International will use the earning from the sold BreadTalk share to invest in further expansion of Minor Food group's brands in Thailand.

Minor International consists of three main groups including Minor hotels group, Minor food group and Minor lifestyle group. The company also be one of key retailers that have bought several brands to Thailand retail market and have an influence in international brand expansion in Thailand. International brands under Minor group were under two main categories; F&B and Fashion. Minor food group have managed F&B brands including the Pizza Company, Jiang Bian Cheng Wai, the Coffee Club, ThaiXpress, Benihana, Swensens, Sizzler, Daily Queen and Burger King. For Minor Lifestyle group have look after fashion brands

such as Espirit, Bossini, Brooks Brothers, Charles & Keith, Anello, Radley, Save My Bag and Etam. The latest brand by Minor Lifestyle group was OVS, a fast-fashion brand. The brand was entered to the Thailand retail market in 2018.

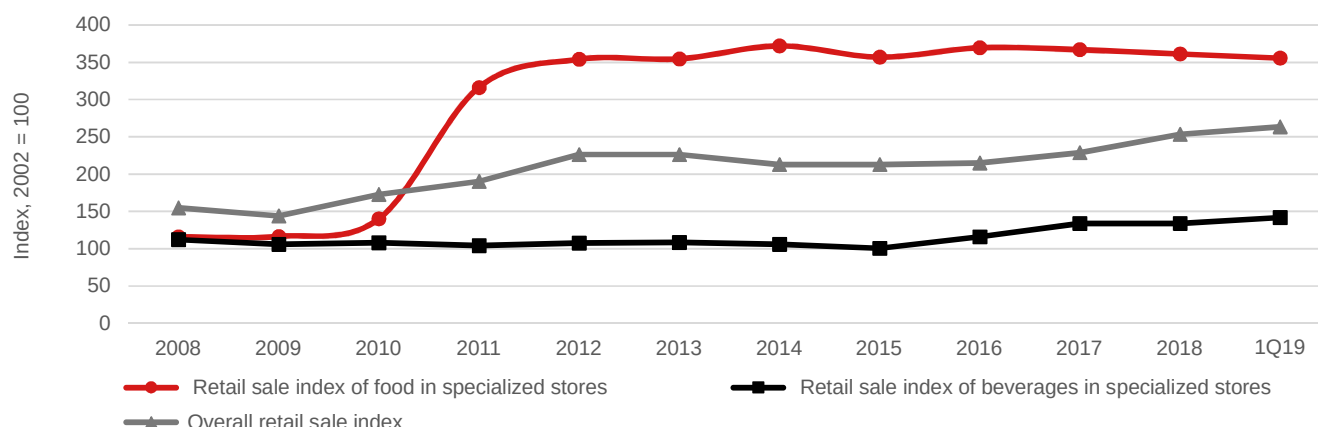
Beside international brand expansion, Thai-branded restaurants with the Japanese-theme like 'ZEN restaurant', 'AKA' and 'on the table' by ZEN group have presented its growth continuously in the Thailand market. ZEN group have started its business by opened ZEN restaurant in 1991 and launched AKA restaurant in 2007 and On the table restaurant in 2010 respectively. ZEN group also have expanded its portfolio continuously by acquiring local and international franchise brands and launched new brands. As of 2018, there were thirteen brands operated by ZEN group such as Tummour, Sushi Cyu, Singaporean granny's chicken rice and Vietnamese chain IWO Pho. The current brand under ZEN group was not specific about Japanese-theme like before, but also have various types of restaurant in their portfolio. In 2019, there were total 255 branches of ZEN group's restaurants. The objective of brand expansion was not only to increase the number of branch but also in order to create the brand that meet the consumer's needs.

Not only existing F&B brands have expanded its branches in recent years. A fashion brand like Uniqlo have rapidly expanded its presence in Thailand since 2011 and have about 35 store in total as of 2018. At the same time the brand has set new retail format called Uniqlo roadside store in Thailand. The roadside store format is well recognized and was firstly launched since 1985 in Japan, while the first Uniqlo roadside store in Thailand was launched in 2018 on Phatthanakan road. With the large retail space or more than 1,000 sqm occupied by UNIQLO in each branch, the brand is considered to be one of key tenants that can attract foot traffic to the retail centre.

For other categories apart from F&B and Fashion, the expansion of brands under Central Food Retail (CFG) such as Tops supermarket, Matsumoto Kiyoshi and FamilyMart has created a great deal of interest. Particularly, Tops brand which has a variety of format and segment from small format like tops daily to large format like Tops Superstore was a good example of supermarket brand that had a rapid expansion. The number of supermarket under CPF was a total of 276 branches as of 2018. The growth of supermarket branch was mainly due to an increase in purchasing power in recent years.

According to samples of brand expansion above, we could see the growth of retail brands in Thailand retail market continuously. The purpose of brand expansion is not only for increasing the number of outlets and stores, but it is related to several reasons including a change of company policy, creating alternative channels and exploring new opportunity to get close its consumer.

Figure 3-27: Thailand retail sales index and F&B constituents, 2008 to 1Q19



Source: JLL Thailand Research, Bank of Thailand

F&B trends in retail market is mainly related to foodservice industry. Retail sale index of food showed a significant increase from 2008 to 2018 and more than overall retail sale index during the year of 2011. It can indicate the growth of foodservice industry in recent years.

In between 2012 and 2017, Thailand foodservice market size growth rose between 8% and 12% per annum according to JLL Foodservice Trend report in 2019 and it was forecasted to increase by 11% per annum in between 2018 and 2022.

Based on the JLL report, there are 5 mega-trends happening, including 'the aspiration of experience over ownership', 'the demand for convenient and superior services', 'Collapsing barriers between consumers and production', 'purpose and profit come together' and 'the desire to be seen & served as unique'.

1. 'The aspiration of experience over ownership trend' is happened due to a change in consumer behavior from a goods based to an experience based. It is the combination of food and leisure which is the enhancement of product and service. The sample of activity happened by the trend is the seasonal food festivals.
2. 'The improvement of technology' have created the developments in several thing such as automation, e-commerce and etc. Moreover, technology helps to create alternative channels between buyer and seller to get the product and service faster and convenient. As a result, the demand for convenient and superior services trend is happened. An increase in the number of food delivery company is a good example that indicates this new trend.
3. 'Collapsing barriers between consumers and production trend' is driven by the concern of consumers on the origin of consumed product and its process. Sustainable consumption is an example of concerns. This trend creates peer to peer commerce and also demand for healthy and sustainable choices. Farmer market and healthy F&B products are good examples happened by the trend.
4. 'Purpose and profit come together trend' is the creation of better business for reducing negative impacts produced by our consumption. For example, several retail centres and stores are reducing the use of plastic bag. Organic products are continuously provided in vary retail centres.

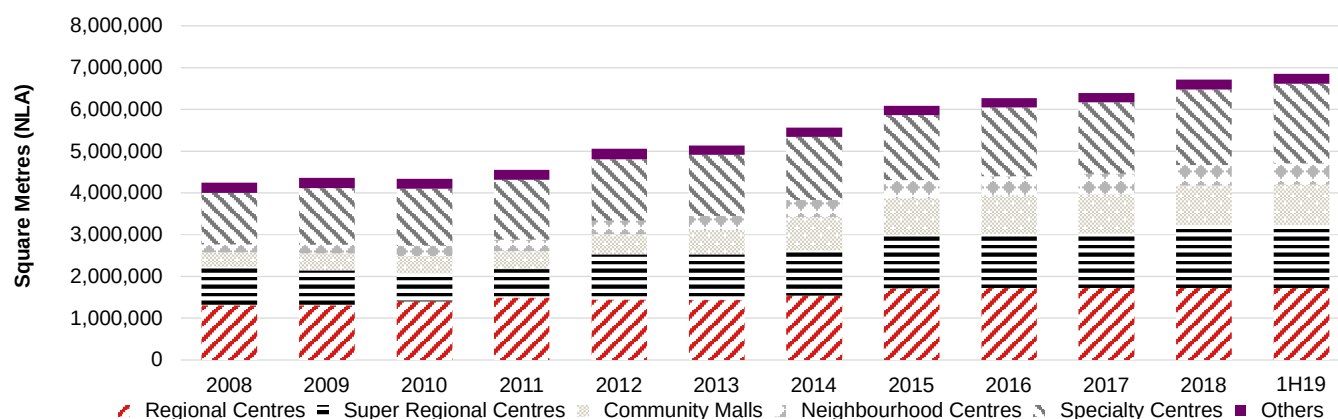
5. 'The desire to be seen & served as unique trend' comes from the rise of social media and expectation of consumer to express the individual tastes and desire. F&B is becoming one of goods like fashion that can introduce our identity through social media. Moreover, consumers also prefer to have products and services matching to their tastes. Consequently, special F&B space with designed environment such as food halls is popular driven by this trend.

3.5.2 Greater Bangkok supply dynamics

Existing Retail Stock in Greater Bangkok

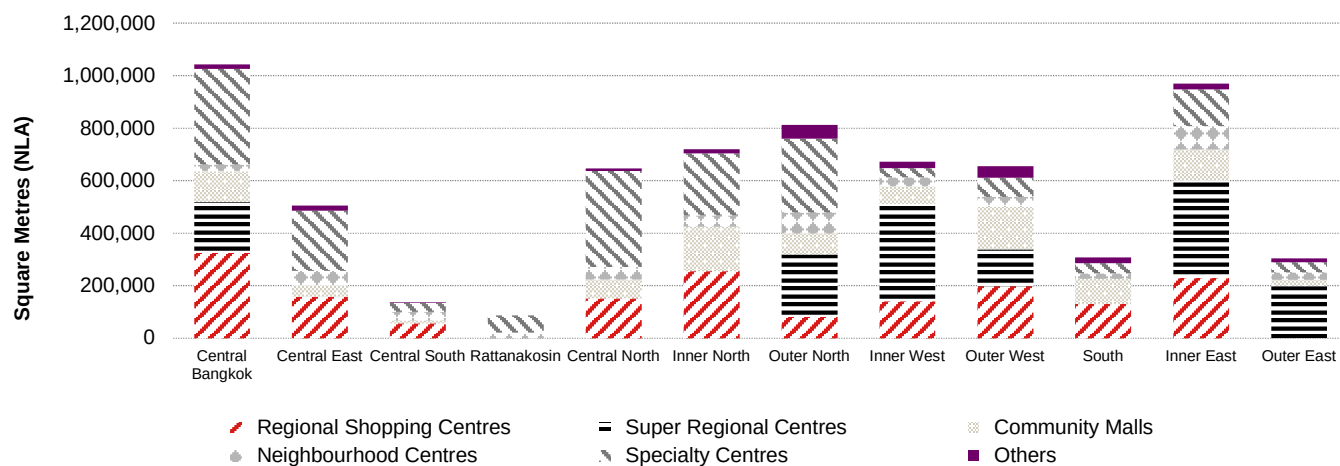
Bangkok Market-wide stock in 1H19 stood at 6,858,402 sqm, up from 6,716,900 sqm at end-2018. Between 2008 and 2018, NLA grew by 4.7% CAGR due to the completion of eighteen projects during the period. The majority of existing stock as of 1H19 consists of specialty centres, accounting for 27.8% of the total stock in 1H19 and the stock of Regional centres which accounts for 25.2%. The current market-wide vacancy rate is 8.0%.

Figure 3-28: Cumulative retail stock by centre type in Greater Bangkok, 2008 to 1H19



Source: JLL Thailand Research

Figure 3-29: Existing retail stock in Greater Bangkok by submarket and centre type as of 1H19



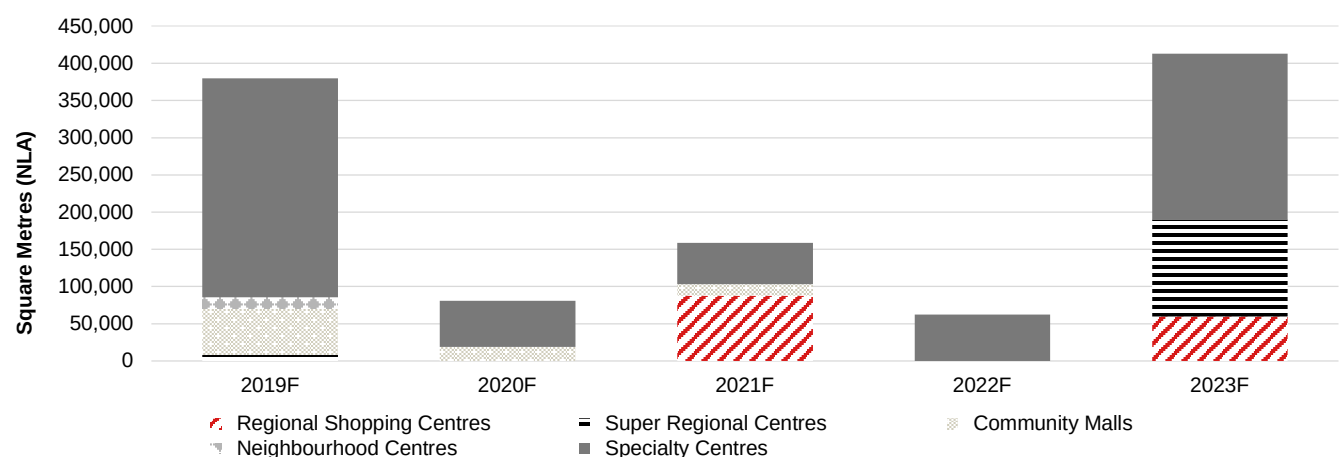
Source: JLL Thailand Research

Future Retail Supply in Greater Bangkok

Thirty-four projects are in the pipeline between 2019 and 2023 spanning 954,000 sqm (NLA) of space, equivalent to 13.9% of existing stock as of 1H19. New supply consists of one Super Regional Centre, two Regional Centres, six Community Malls, one neighbourhood centre and 24 Specialty centres.

Twelve projects are expected to complete within 2H19 (which are not reflected in the about chart) including Summer LaSalle, I'm Chinatown, People Park Onnuch, Lido Connect, MIXT Chatuchak, Central Village, Sino Park, Samyan Mitrtown, Siam Premium Outlet, Smile Square, Home Pro Charansanit Wong and Robinson Lifestyle Ladkrabang.

Figure 3-30: Future retail supply in Greater Bangkok by centre type through 2023

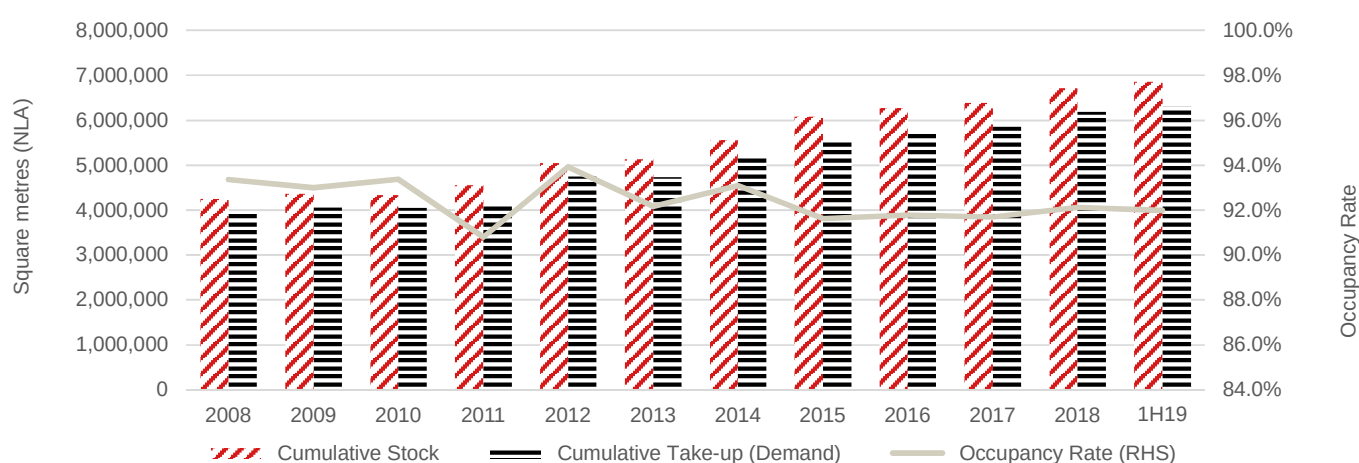


Source: JLL Thailand Research

Historical Supply and Demand Trends

Market-wide stock in 1H19 stands at 6,858,402 sqm NLA. Thirteen retail projects completed in 1H19 adding 149,090 sqm to stock. Notable new projects completing in the first half of 2019 include The Market Bangkok Phase I, 101 The Third Place, Donki Mall Thonglor, Cosmo Bazaar Phase 2 and Mega Edutainment, a new expansion of the Mega Bangna project. The fluctuation in Bangkok retail occupancy rate in between 2008 and 1H19 is in relation to supply and demand in each year. The overall occupancy rate remain unchanged at around 92% in 1H19 as a result of the additional of new supply and healthy pre-commitment rates in recent completed centres during the same period.

Figure 3-31: Cumulative market-wide retail stock, take-up (demand) and occupancy rate, 2008 to 1H19

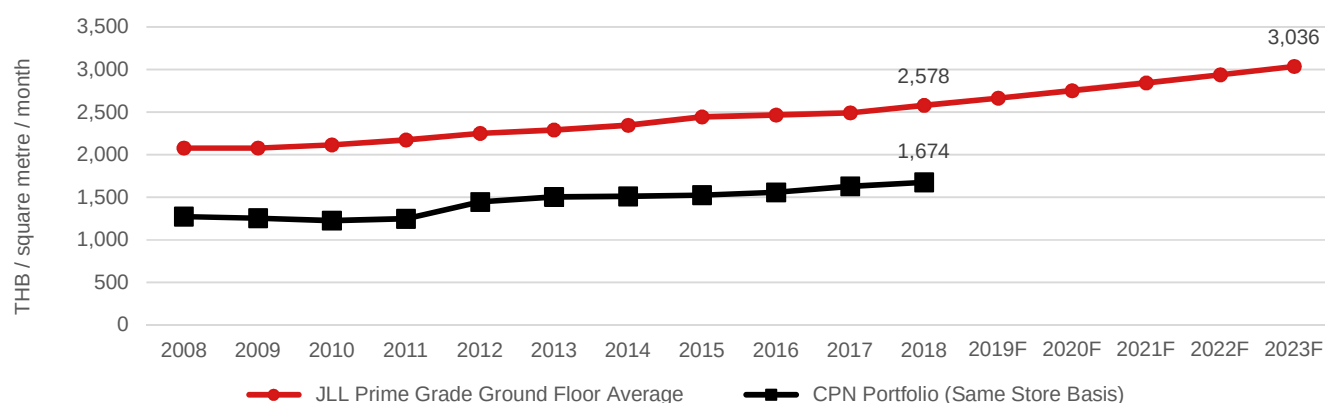


Source: JLL Thailand Research

3.5.3 Bangkok retail market rental dynamics

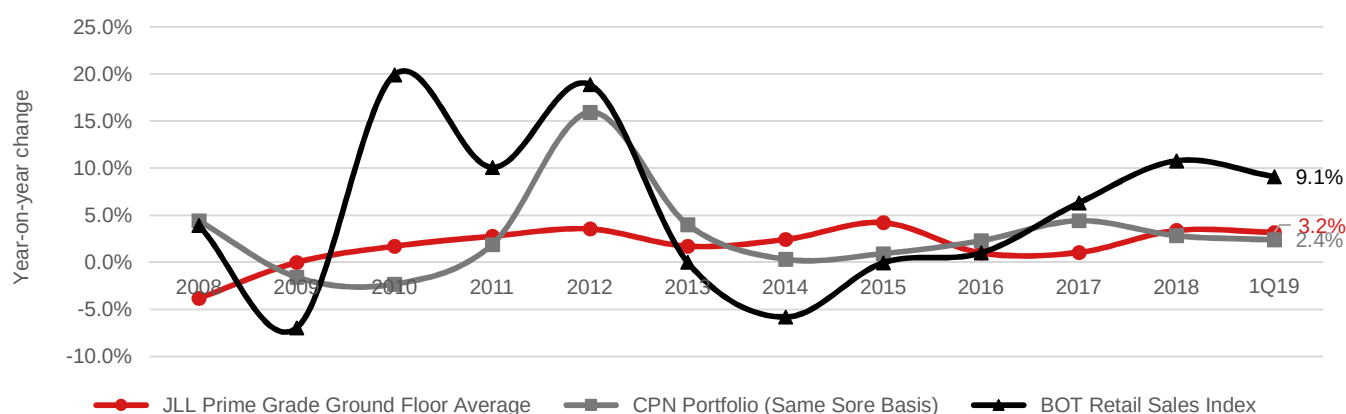
In between 2008 and 1H19, JLL Prime retail rental indicator, which estimates average monthly ground floor gross rents in prime grade shopping centres in Bangkok increased gradually over the last decade. The rental value rose by 2.2% CAGR between 2008 and 2018 and reached to averagely THB 2,615 per sqm per month in 1H19 increasing by 3.0% y-o-y. JLL also forecasted the rental value of Prime retail ground floor to rise continuously in the next five years and will reach THB 3,000 per sqm per month in 2023, increasing by 3.3% CAGR between 2019 and 2023. An increase in the rental value was mainly driven by the demand from both domestic and international tenants. The limited available prime grade retail space in city center was pushing the rental value to be high particular in some shopping centres, while new prime grade supply was limited due to scarce of suitable land for retail development.

Figure 3-32: Key historical and forecast rental trends, 2008 to 2023F



Source: JLL Thailand Research, CPN Investor Relations

Figure 3-33: Annual year-on-year change in key retail performance metrics, 2008 to 1Q19



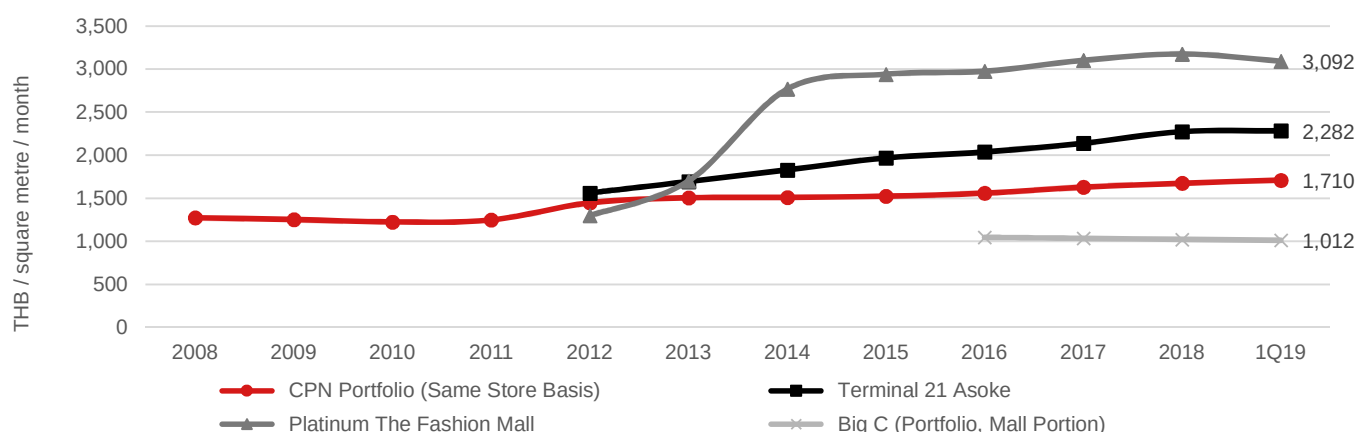
Source: JLL Thailand Research, CPN Investor Relations, Bank of Thailand

By analyzing changes in Prime Grade Gross rents, the BoT Retail Sales Index and CPN Same Store rents, there were the fluctuation in both rental values and retail index from 2008 to 2018. Several factors had an influence to a change such as limited new supply, political situation and consumer confidence. However, a change CPN Same Store Rents was in the relation to a change in Retail Sale Index as the data collected by CPN for the same store rent was included all CPN retail in Bangkok and provinces whereas prime grade Gross Retail change collected by JLL was represented only for the rental value of prime retail centres in Bangkok.

Rental incomes from four listed companies were taken into account for analyzing the rental value by type. The rental income of the Platinum Fashion Mall by Platinum Group achieved the highest rent compared to others at approximately THB 3,092 per sqm per month in 1Q19, while Big C's average rental income remained unchanged at approximately THB 1,000 per sqm per month in the same period. A huge difference in rental income was owed to the difference between types of retail centre. The Platinum fashion mall is classified as the specialty centre with majority of non-anchor tenant in the project is expected to have higher rental income than Big C, classified as a discounted store. Moreover, the location of the retail centre is also one of the key affecting the rental value. The Platinum Fashion Mall located in shopping destination area

can achieve the higher rental income than Big C with discounted stores located in both Bangkok and Provinces.

Figure 3-34: Other key rental performance metrics, 2008 to 1Q19



Source: JLL Thailand Research, CPN Investor Relations, Bank of Thailand

CPN's same store rent was a good indicator for a regional retail centre type. The same store rent was acquired from the rental and service of existing retail centres under CPN excluding new store during 2018. The rental income increased by 2.4% y-o-y in 1Q19. Meanwhile, Terminal 21's rental income was a good indicator for a special centre with anchor tenants including SF cinema, gourmet market and Fitness First. The location of the centre also was in Prime location. The rent remain unchanged at around THB 2,282 per sqm per month in 1Q19. The rent of Terminal 21 Asok might be higher than CPN's same store rent due to the number of store and locations. We note that at Tarad Thai, the only existing large-scale wholesale market in northern Bangkok, the average rent in 2018 was THB611 per sqm per month.

3.6 Chiang Mai retail market

Modern retail shopping centres in Chiang Mai can be found around Mueng Chiang Mai except inner city center area due to local planning regulation. There were variety types of retail in the area, including Regional centres, Community Malls, Neighbourhood centres and Specialty centres. Most of retail centres located nearby the main roads including Huay Kaew road, Chiang Mai – Lampang superhighway, Thapae road and Mahidol road. The size of retail centres in Chiang Mai were vary and have a range from small-scale to large-scale projects.

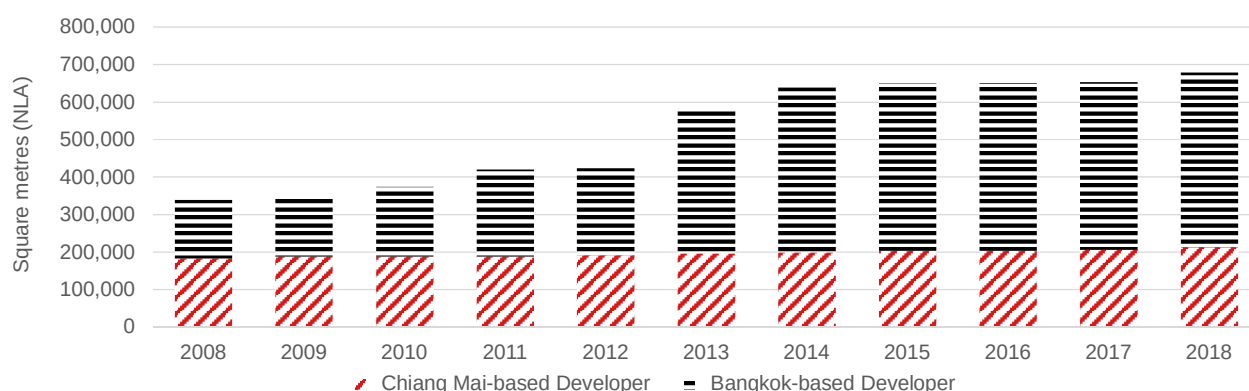
Figure 3-35: Chiang Mai retail centre map



3.6.1 Chiang Mai modern retail stock

In the past, the retail stock in Chiang Mai was mainly contributed by local developers. The first shopping area in Chiang Mai Kad Luang as known as Warorot market in the present. However, the Warorot was not modern shopping centre. The first modern shopping centre in Chiang Mai was Tantraphan department store in Pratu Thapae area completed in 1951 and closed down around 1999 due to the economic crisis and high competitive market.

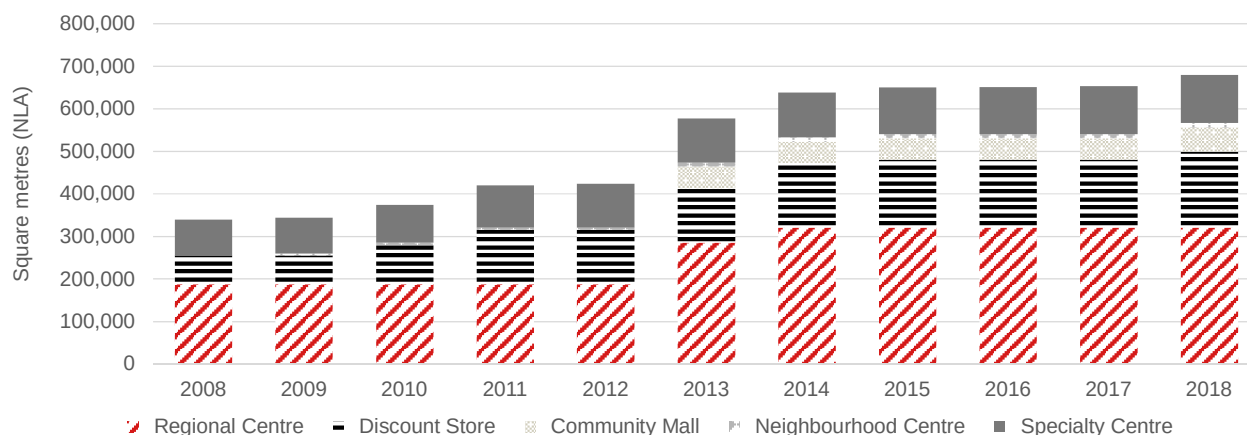
Figure 3-36: Cumulative modern retail stock in Chiang Mai by developer type, 2008 to 2018



Source: JLL Thailand Research

In between 2008 and 2010, majority of the stock by NLA was still mainly contributed by local developers, however, from 2011 to 2018 the proportion between local developers and regional developers was changed. New retail development during the period were contributed by regional developers such as CPN, BJC (Big C) and Ek-Chai Distribution System Co., Ltd (Tesco Lotus). In 2018, the retail centres developed by regional developers were accounted for 68.2% of the total Chiang Mai retail stock. Modern retail shopping centres in Chiang Mai are all located in Muang Chiang Mai district, the provincial capital and departure point for other parts of the North for tourists. The Chiang Mai retail market features a wide range of modern retail formats including regional centres, community malls, neighbourhood centres and specialty centres.

Figure 3-37: Cumulative modern retail stock in Chiang Mai by centre type, 2008 to 2018



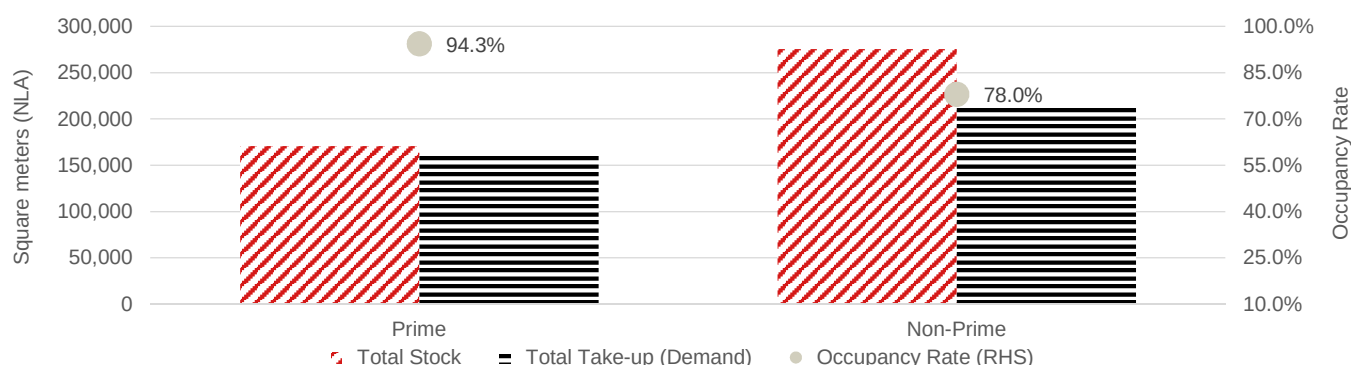
Source: JLL Thailand Research

Chiang Mai retail stock more than doubled between 2008 and 2018, increasing from 331,176 sqm NLA in 2008 to 671,276 sqm NLA in 4Q18, and growing by 60.3% between 2012 and 2018. The majority of retail stock by NLA in Chiang Mai were Regional shopping centres, accounted for 47.8% of total stock as of 4Q18. The minority of the stock were neighbourhood centres, accounted for 1.5% of the total stock. Notable regional retail centres in Chiang Mai were Kad Suan Kaew Shopping Mall, CentralPlaza Chiang Mai Airport, CentralFestival Chiang Mai, Promenada and MAYA Lifestyle Shopping Center. Pantip Plaza Chiang Mai is the city's largest IT specialist community mall. Out of the 671,000 sqm of existing retail space in Chiang Mai at the end of 2018, more than two-thirds of existing retail stock in Chiang Mai today is either owned or operated by Bangkok-based players.

3.6.2 Demand for modern retail in Chiang Mai

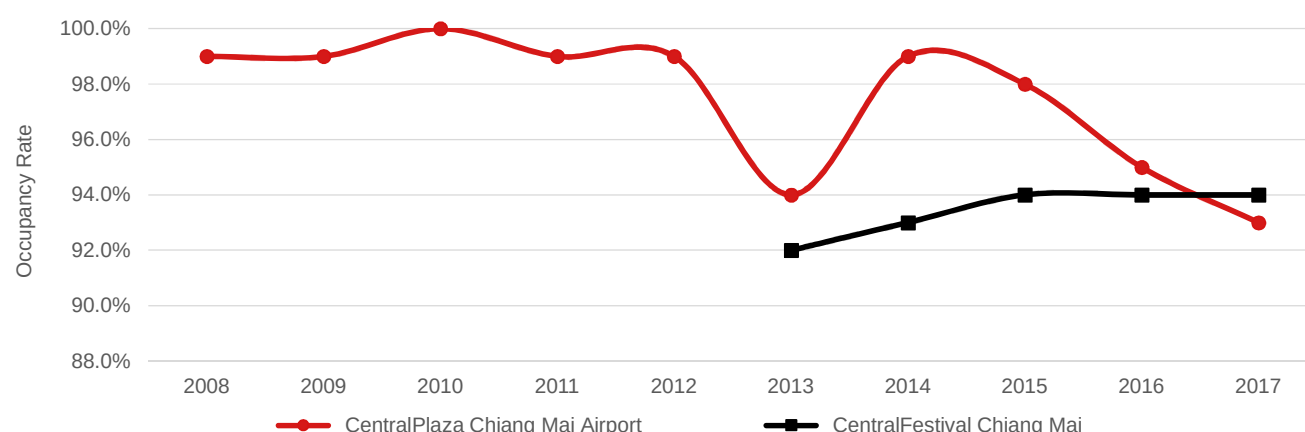
Based on JLL information collection in some Chiang Mai retail centres, Prime Grade retail centres including CentralPlaza Chiang Mai Airport, CentralFestival Chiang Mai and MAYA Lifestyle Shopping Center had the occupancy rate at over 90% as of 4Q18. Meanwhile, Non-Prime retail centres particular in old shopping centres had a wide range of occupancy rate between 40% and 100% as of survey period. Moreover, the historical occupancy rate of two CPN's projects in Chiang Mai had a range between 92% and 100% according to CPN's annual reports. It can indicate well leasing performance in the CPN's malls that were the key malls in Chiang Mai.

Figure 3-38: Total existing modern retail stock and take-up (demand) by project grade in Chiang Mai as of 4Q18



Source: JLL Thailand Research

Figure 3-39: Historical occupancy rate of CPN retail centres in Chiang Mai, 2008 to 2017



Source: JLL Thailand Research

Table 3-14: Tenants in leading Chiang Mai retail centres as of 4Q18

	CentralPlaza Chiang Mai Airport	CentralFestival Chiang Mai	MAYA Lifestyle Shopping Center	Kad Suan Kaew Shopping Centre	Promenada
Department Store	Robinson	Central	-	Central	-
Number of Anchors	6	9	6	7	5
Sample of Anchors	Tops Market, OfficeMate, Baan & Beyond, Major Cineplex, B2S, Food Park	Central Food Hall, B2S, OfficeMate, Virgin Active, Supersports, Power Buy, Major Cineplex, Sub-zero Ice Skate Club, Food Park	Rimping Supermarket, SF Cinema, EVEANDBOY, Sportsworld, CAMP x AIS, Maxx Professional Fitness	Tops Market, B2S, Sportsworld, Power Buy, Suoerports, Vista Cinema, Strong Gym	Rimping Supermarket, SF Cinema, Chi Chang Computer, Sportsworld, Toy R Us
Number of International brands	>15	>25	>25	>5	>5
Sample of International brands	Nike, Uniqlo, KFC, McDonald's, Watsons, Boots, the Body shops	TOPSHOP, Uniqlo, Zara, Marks & Spencer, BMW Studio, New Balance, Adidas, Skechers, Superdry	Tsuruha, Timberland, Etam, Havaianas, NYX, Wall Street English, Mi Store, ReCAMPER	Starbucks Coffee, KFC, Pizza Hut, Watsons, Swensen	TOM N TOMS, KFC, Mi Store, Watsons, Boots

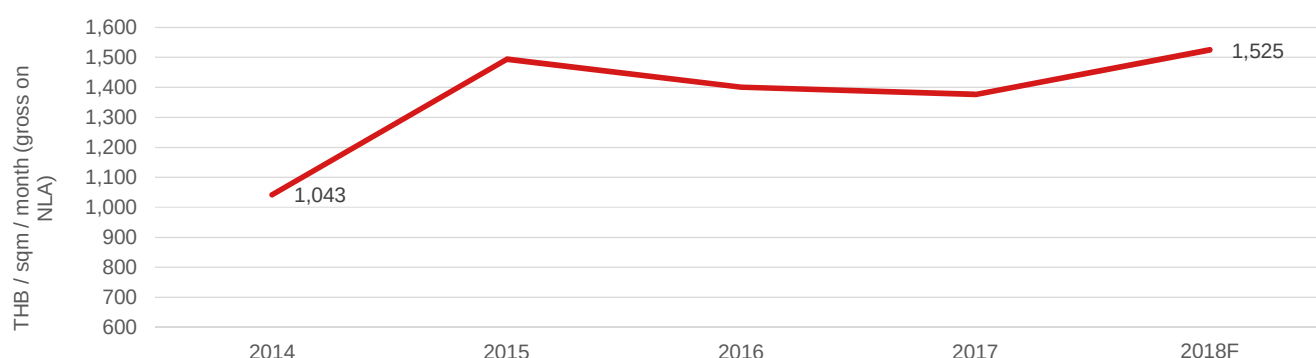
Number of Local brands	>10	>15	>10	>5	>5
Sample of Local brands	MK Restaurant, S&P, Shabu Shi, Jaspal, AIIZ, IT City, Big Camera, Pueng Noi Bakery, Tokyo Optic	MK Restaurant, S&P, Shabu Shi, Jaspal, AIIZ, IT City, Big Camera, J.I.B, BaNANA, MUJI	MK Restaurant, Big Camera, BaNANA, Chester's, Fuji, Make Up More	IT City, Tokyo Optic, Jaspal, Top Charoen	S&P, Pueng Noi Bakery, Aurora, Wine Connection, Black Canyon

Source: JLL Thailand Research, Industry Sources

3.6.3 Retail Rents in Chiang Mai

According to JLL survey, the rent value in Chiang Mai retail centre was vary in relation to location, leasing performance and type of centre. According to DBS group research in 2017, the rental revenue of CentralPlaza Chiang Mai Airport increased significantly in between 2014 and 2018. The annual rental revenue in 2014 was at THB 469 million or approximately THB 1,043 per sqm per month and forecasted to increase up to THB 686 million or approximately THB 1,525 per sqm per month in 2018.

Figure 3-40: Historical gross rents at CentralPlaza Chiang Mai Airport, 2014 to 2018F



Source: JLL Thailand Research, CPN PCL, DBS Vickers Securities Co., Ltd.

However, not all retail had the average rental value above THB 1,000 per sqm per month. Some community malls by other regional developers located in out of city centre area had the average rental value in 2017 at approximately THB 400 per sqm per month only.

3.7 Benchmarking key retail developer / operators

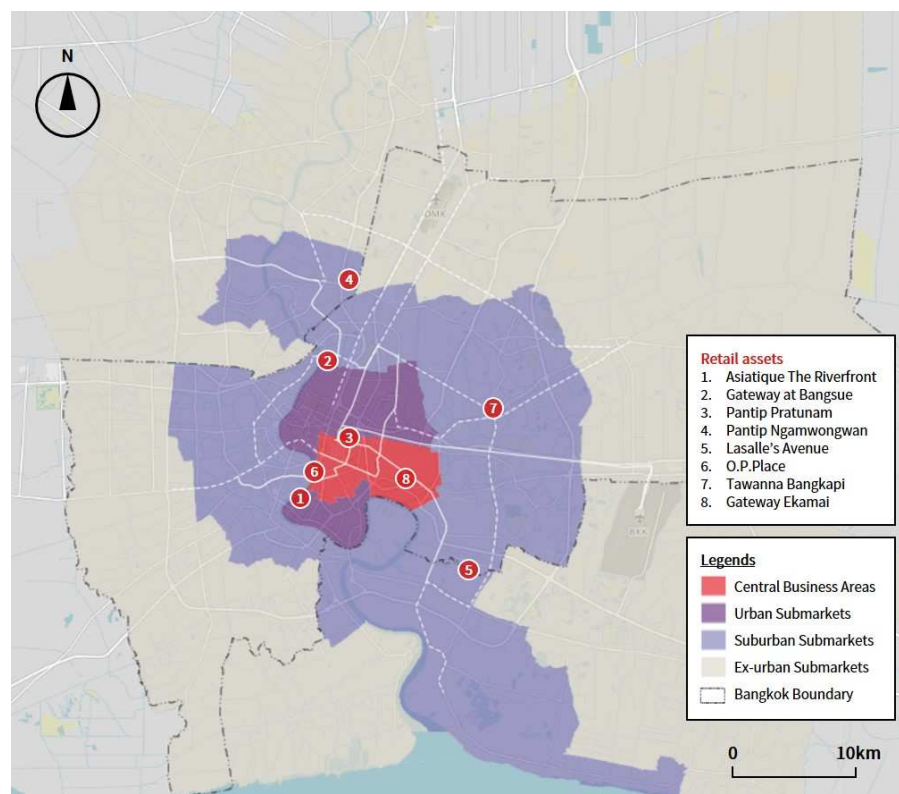
3.7.1 Key retail developers and operators in Thailand

Table 3-15: Asset World Corp (AWC) profile

Asset World Corp PCL (AWC)	
 ASSET WORLD CORPORATION	Asset World Corp PCL (AWC) is led under TCC Group, one of Thailand's largest development and investment conglomerate. Apart from retail business, AWC also invests in hospitalities and office buildings. At the present, AWC's portfolio consists of [10] retail projects spanning more than [340,000] sqm (NLA). In 2012, the group has restored the East Asiatic pier along the Chao Phraya River to the large-scale lifestyle destination under the name 'Asiatique the Riverfront'. The project has successfully become a main destination for both local and international tourists. In 2018, AWC opened one new shopping mall 'Gateway at Bangsue' in the north of Bangkok. The project consists of 36,526 sqm of retail space, featuring key anchor tenants. In addition, the group plans to fully launch AEC Trade Center by 2020, Thailand's first large-scale wholesale market aimed at international clientele.
List of key shopping centres as of 1Q19	• Pantip Plaza Pratunam, (30,805 sqm NLA) • Tawanna Bangkok (12,569 sqm NLA) • Pantip Plaza Ngamwongwan (37,415 sqm NLA) • Pantip Plaza Chiang Mai (13,436 sqm NLA) • Asiatique the Riverfront, 2012 (26,590 sqm NLA) • Gateway Ekamai, 2012 (33,153 sqm NLA) (Under management agreement and non-binding MOU with TCC Group) • Gateway at Bangsue, 2018 (36,526 sqm NLA) • O.P. Place Bangkok (2,455 sqm NLA) • Lasalle's Avenue (5,832 sqm NLA)
Future shopping centres	• Asiatique Pier and Boat, 3rd Quarter 2019 (700 sqm NLA) • Community Market Bangkok (2020 (Approx 25,000 sqm NLA) • AEC Trade Center, 2020 (Approx 145,000 sqm NLA) • Lasalle's Avenue (expansion) 1Q2020 (extension, 2020 (Approx 6,000 sqm NLA) • Asiatique the Riverfront extension, 2025 (Approx 40,000 sqm NLA) (Under non-binding MOU with TCC Group)

Source: JLL Thailand Research

Figure 3-41: Location of existing AWC retail assets in Greater Bangkok



Source: JLL Thailand Research

Table 3-16: Central Pattana PCL (CPN) profile

Central Pattana PCL (CPN)	
	Central Pattana PCL (CPN) is Thailand's largest developer and operator of shopping malls, with around 900,000 sqm (NLA) of retail space currently operating in Bangkok and more than 750,000 sqm (NLA) in provinces. In addition to being Thailand's largest retail player, CPN is also one of Bangkok's largest office space developers, with more than 200,000 sqm (NLA) under its current umbrella. The wider Central Group portfolio (included in commentary further in this section) includes another 850,000 sqm of retail space. Looking onward, aside from recently tapping into residential market by launching a number of condominium projects adjacent to its retail developments, CPN has planned to continuously enhance its existing retail projects both within Bangkok and upcountry. Currently, CPN's pipeline include CentralPlaza Ratchaphruek, and Central Village. The details for the latter two projects are to be disclosed in the future. In 2Q18, CPN announced new plan to open a new international luxury outlet, Central village in Outer East of Bangkok. The outlet will be the first outlet developed by CPN and is expected to open in 3Q19.
List of key shopping centres	• CentralPlaza Ladprao ,1982 (Approx. 55,500 sqm NLA) • CentralPlaza Ramindra ,1993 (Approx. 17,000 sqm NLA) • CentralPlaza Chiangmai Airport, 1996 (Approx. 37,500 sqm NLA) • CentralWorld ,2003 (Approx. 185,800 sqm NLA) • CentralPlaza Khonkan ,2009 (Approx. 82,400 sqm NLA) • CentralPlaza Bangna ,2002 (Approx. 55,500 sqm NLA) • CentralFestival Hatyai ,2013 (Approx. 111,000 sqm NLA)

	- Central Embassy, 2014 (Approx. 41,000 sqm NLA) - Central Plaza WestGate, 2015 (Approx. 140,000 sqm NLA) - Central Festival EastVill, 2015 (Approx. 62,500 sqm NLA) - Central Plaza Nakhon Ratchasima, 2017 (Approx. 104,500 sqm NLA) - Central Phuket, 2018 (Approx. 63,000 sqm NLA)
Future shopping centres	- Central Village, the luxury outlet near Suvarnabhumi Airport in the outer east of Bangkok scheduled to open in 3Q19. - Central Plaza Ayutthaya was recently announced and expected to open in 4Q19. - Porto de Phuket will be new retail format by Central group - Dusit Central Park, a joint venture project between Central Pattana PCL and Dusit Thani PCL is in a proposed stage

Source: JLL Thailand Research

Table 3-17: The Mall Group profile

The Mall Group	
	The Mall Group is another leading retail developer and operator in Thailand, with more than 550,000 sqm (NLA) in total development pipeline including Siam Paragon and the EmDistrict. The Mall Group is currently investing in a new retail projects in Central East Submarket, the EmSphere (60,000 sqm NLA), situated close to the Emporium and the EmQuartier on Sukhumvit Road. Expected to complete in 1Q19, the EmSphere, combined with the EmQuartier and the Emporium, will fulfil "The EmDistrict" collection as The Mall Group claimed to be "World extraordinaire shopping district". Furthermore, the company is planning to develop a Super Regional Centre named The Bangkok Mall opposite BITEC Bang Na which is expected to complete in 2020.
List of key shopping centres	- Siam Paragon - JV with Siam Piwat, 2005 (Approx. 191,000 sqm NLA) - The EmQuartier, 2015 (Approx. 100,000 sqm NLA) - The Emporium, 1997 (Approx. 57,250 sqm NLA) - The Mall in Bangkok - all branches (Approx. 211,500 sqm NLA) - The Mall Korat, 2000 (Approx. 192,000 sqm NLA) - Blu Port Hua Hin, 2016 (Approx. 110,000 sqm NLA)
Future shopping centres in Bangkok	- The EmSphere is under construction and scheduled to open in 2023 - The Bangkok Mall expect to launch in 2023 - The Mall Ramkhamhaeng 2 is under redevelopment and schedule to reopen in 2021 - Blu Pearl Phuket was announced its plan in 2014, but the project was not started its construction yet.

Source: JLL Thailand Research

Table 3-18: Siam Piwat profile

Siam Piwat	
	Siam Piwat is known as the owner of several retail projects of nearly 500,000 sqm in Siam area in Central Bangkok, including Siam Center, Siam Discovery Center and Siam Paragon (co-ownership with The Mall Group). In addition, Siam Piwat announced plans to consolidate with MBK and Siam Square group called "Siam Synergy" in order to propel the district as a world-class commercial hub. Total development pipeline is approx. 341,500 sqm. Siam Paragon is a recommended project that fits with client's position as it is a luxury shopping centre housing over 250 leading local and international brands, an aquarium, a movie theatre, and a convention and exhibition centre named "Royal Paragon Hall". Siam Paragon has become a destination for international tourists from around the world. In 2Q18, Siam Piwat announced the JV with Simon Property for developing luxury premium outlet in Outer East. The outlet will add approximately 50,000 sqm to the retail stock in 3Q19. It is potential to be a direct competitor for Central Village developed by CPN

List of key shopping centers in Bangkok	• Siam Paragon - JV with The Mall Group ,2005 (Approx. 191,000 sqm NLA) • Siam Discovery Center, launched in 1997 and last renovation in 2016 (Approx. 26,500 sqm NLA) • Siam Center, launched in 1974 and last renovation in 2014 (Approx. 19,000 sqm NLA) • Ha Ha Market* - JV with MBK ,2014 (Approx. 18,000 sqm NLA) • Paradise Park* - JV with MBK ,2010 (Approx. 90,000 sqm NLA) • ICONSIAM - JV with CP Group (Approx. 215,000 sqm NLA) *Note that Siam Piwat exited these projects with MBK Group acquiring 100% of ordinary shares of Paradise Park and HaHa Market in 2017
Future shopping centers in Bangkok	Siam Premium Outlet Bangkok, a joint venture project with Simon Property Group is proposed and expected to open in 3Q19.

Source: JLL Thailand Research

Table 3-19: Siam Future Development PCL profile

Siam Future Development PCL	
	Siam Future Development is widely known as Thailand's leading operator of open-air shopping centres. Presently the company owns altogether 22 operating projects. Total project area in the pipeline is around 425,000 sqm. The latest large scale project is Mega Bangna, a gigantic shopping complex with total leasable area of 180,000 sqm. Co-developed with Swedish firm IKANO, the project is anchored with five major tenants, namely Major Cineplex, HomePro, Robinson Department Store, Big C and IKEA. The centre recently added another 10,000 sqm of leasable spaces with 40 locally well recognized upscale restaurants in December 2017.
List of key shopping centres	• Mega Bangna ,2012 (Approx. 180,000 sqm NLA) – JV with IKANO Pte Ltd. (IKEA) • Esplanade Ratchada ,2007 (Approx. 44,000 sqm NLA) • The Avenue Chaeng Wattana (Approx. 21,000 sqm NLA) • Other small-scale projects , e.g marketplace (Approx. 102,400 sqm NLA)
Future shopping centres	• Mega North (Rangsit area) proposed stage

Source: JLL Thailand Research

Table 3-20: LHMH / Siam Retail Development profile

LHMH / Siam Retail Development	
	LH Mall & Hotel and Siam Retail Development currently operates three retail projects: Fashion Island, Terminal 21 Asok and Terminal 21 Pattaya After, the company launched a project at Sukhumvit – Asoke intersection next to BTS Asoke Station, Terminal 21. It is renowned for its unique decoration and zoning based on famous places around the world, such as Tokyo, London, San Francisco and Istanbul. Under its five-year investment plan, the affiliate between Land and Houses Group and Siam Retail planned to open another Terminal 21 complex in Pattaya in 2018 Being Thailand's leading mall developer. Development currently launched retail development projects in provinces; Pattaya and Korat. Total development pipeline is approx. 155,000 sqm.
List of key shopping centres	• Fashion Island, 1995 (Approx. 180,000 sqm NLA) • Terminal 21 Asoke, 2011 (Approx. 40,000 sqm NLA) • Terminal Korat, 2016 (Approx. 70,000 NLA) • Terminal 21 Pattaya, 2018 (Approx. 5,000 sqm NLA)
Future shopping centres	• Terminal 21 Rama 3 is under construction process (As of 1H19) • Terminal 21 Khon Kaen proposed stage

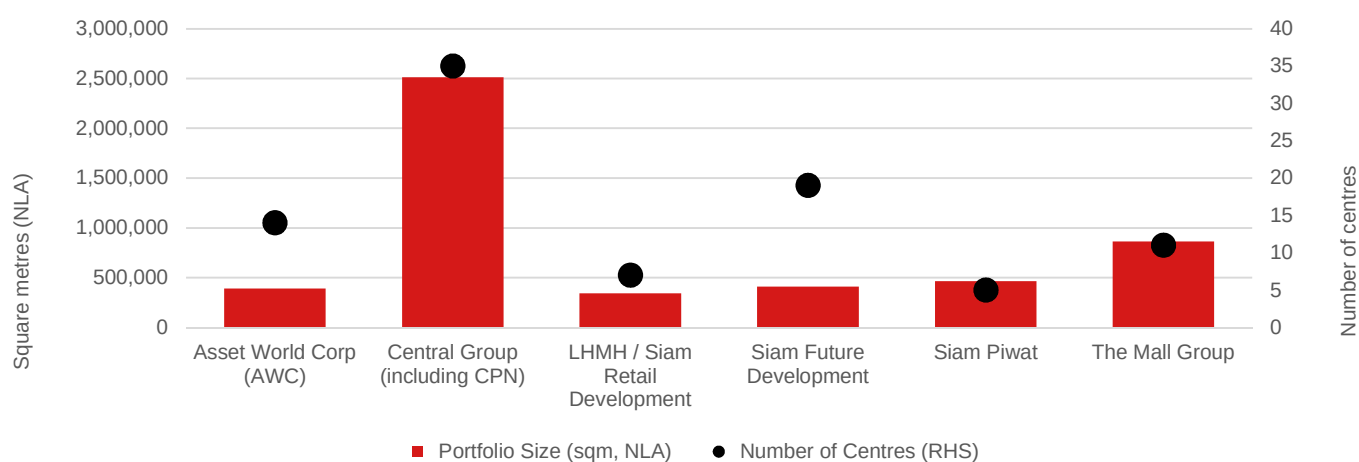
Source: JLL Thailand Research

3.7.2 Nation-wide retail stock by major developer / operator

In terms of retail development, six retail developers can be considered as Thailand key developers according to the number of malls, Net Leasable Area (NLA) and their reputation. The retail centre developed by these key developers are contributed more than 4,980,000 sqm in Nation-wide stock.

CPN has both the highest number of NLA and the number of mall compared to other key retail developers' stock and and more than 50% of total nation-wide stock by key developers was contributed by CPN. The size of CPN's nation-wide stock increased continuously particular in provincial areas in recent years.

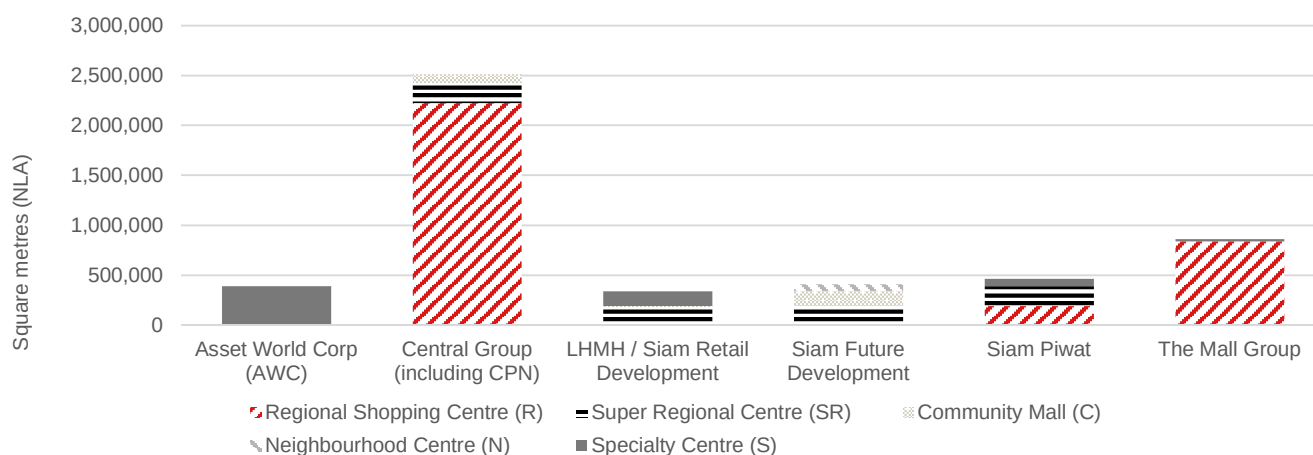
Figure 3-42: Nation-wide retail portfolios of leading developer / operators as of 1H19



Source: JLL Thailand Research

Note: Total NLA is an estimated area and included the area of anchor tenant and department store. The total NLA of Central Pattana (CPN) in the chart is combined all projects under CPN and Central Group. NLA of any joint venture projects is also included in the total NLA of each developer.

Figure 3-43: Nation-wide retail portfolios of leading developer / operators by centre type as of 1H19



Source: JLL Thailand Research

Note: Total NLA is an estimated area and included the area of anchor tenant and department store. The total NLA of Central Pattana (CPN) in the chart is combined all projects under CPN and Central Group. NLA of any joint venture projects is also included in the total NLA of each developer.

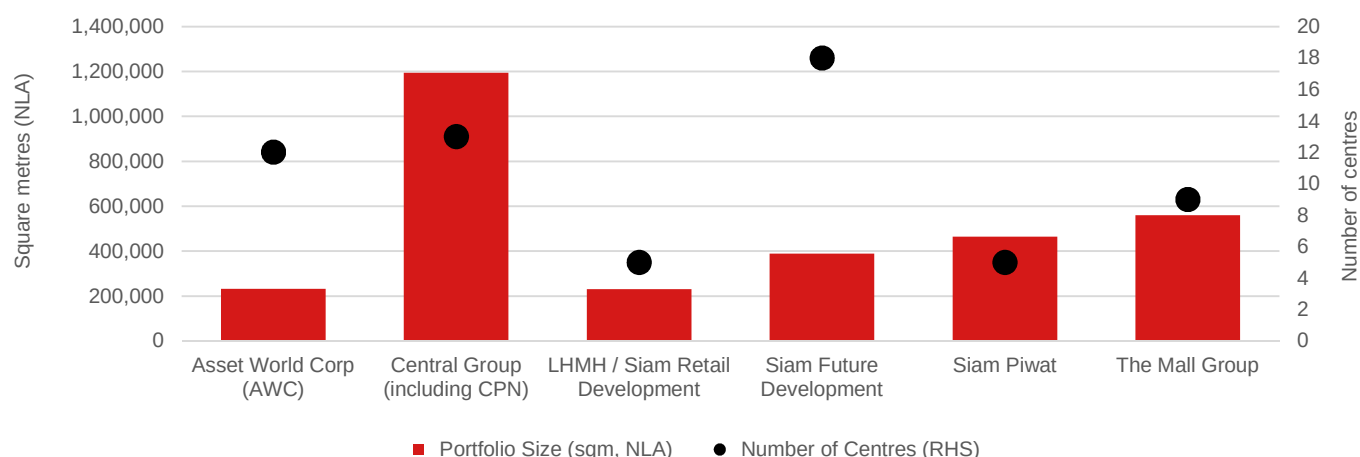
Over 60% of Nation-wide retail projects by key developers are classified as prime grade projects due to its location, reputation of developer, quality of the centre and selection of brands. Two out of six key developers including CPN and the Mall group have focused to develop Regional Shopping Centres. Meanwhile, the supply of Super Regional Centres such as CentralWorld, Mega Bangna and Fashion Island are contributed by four key developers including CPN, Siam Future Development, Siam Piwat and Siam Retail Development.

Specialty stock by key developers was mainly contributed by AWC. As they are retail centres that specialise in a specific range of merchandise and related items, most projects of AWC are well recognized by specific products and services. For example, Pantip Plaza Pratunam is a hub of IT products, gaming center and e-sport area. Pantip Plaza Ngamwongwan is a centre of Amulet market, IT products and also flea market. Tawanna Bangkok is the first and largest all-day community market in Bangkok providing affordable products and services and is well-situated amongst a number of other key retail destinations serving the Bangkok catchment area including The Mall Bangkok, Tesco Lotus and Makro.

Out of six key retail developers, or only AWC will contribute the stock of wholesale centre with approximately 145,000 sqm NLA. The project named AEC Trade Center will be one of a kind wholesale market that will operate with one-stop service concept and under B2B model.

3.7.3 Greater Bangkok retail stock by major developer / operator

Figure 3-44: Greater Bangkok retail portfolios of leading developer / operators as of 1H19



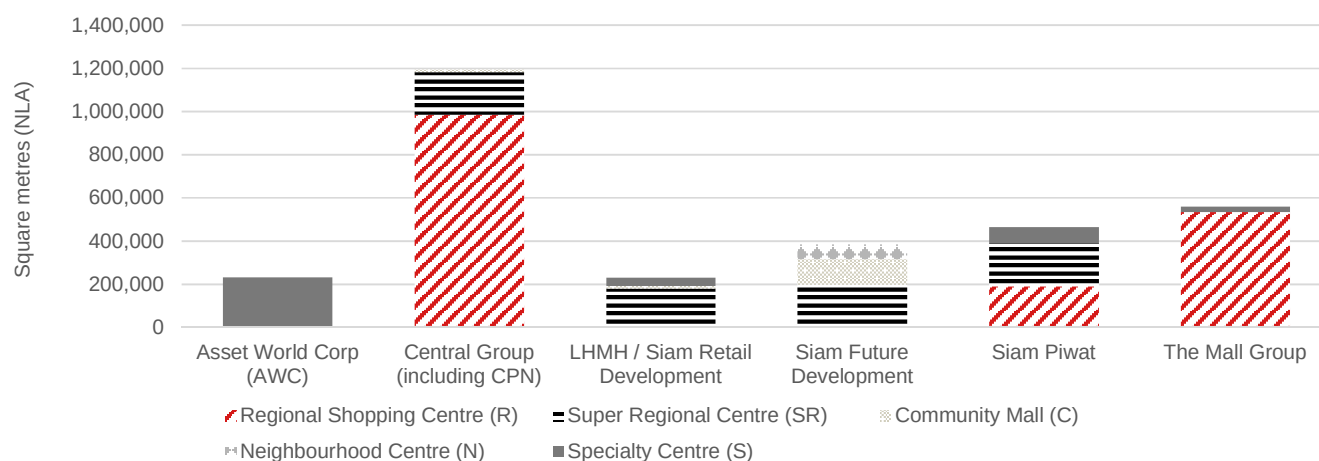
Source: JLL Thailand Research

Note: Total NLA is an estimated area and included the area of anchor tenant and department store. The total NLA of Central Pattana (CPN) in the chart is combined all projects under CPN and Central Group. NLA of any joint venture projects is also included in the total NLA of each developer.

In Bangkok, CPN also had a majority of share in the total Bangkok stock, accounted for 17.4% of the market-wide stock in 1H19. Meanwhile, the leasable area of retail centres by the mall group was accounted for 8.2% of the total stock in Bangkok during the same period. Consequently, these two developers were considered to be a key developer in Bangkok with a number of large-scale project in their portfolio. The large concentration of space in greater Bangkok stems from the region's substantially higher (than national average) household incomes.

Apart from CPN and The Mall Group, Asset World Corp PCL (AWC), Siam Future Development, Siam Piwat and LHHM / Siam Retail Development were key developers that contributed retail space in Bangkok Metropolitan Region (BMR) and had an influence in the Bangkok market. Several remarkable projects were contributed by these developers. For example, Siam Paragon was a joint venture project between Siam Piwat and The Mall Group located in Siam square area. Mega Bangna by Siam Future Development was a large-scale retail project that also was a home for the first IKEA in Thailand. ICONSIAM, the latest large-scale retail centre in Bangkok was developed by a joint venture between Siam Piwat, CP Group and Magnolia Quality Development Co., Ltd.

Figure 3-45: Greater Bangkok retail portfolios of leading developer / operators by centre type as of 1H19



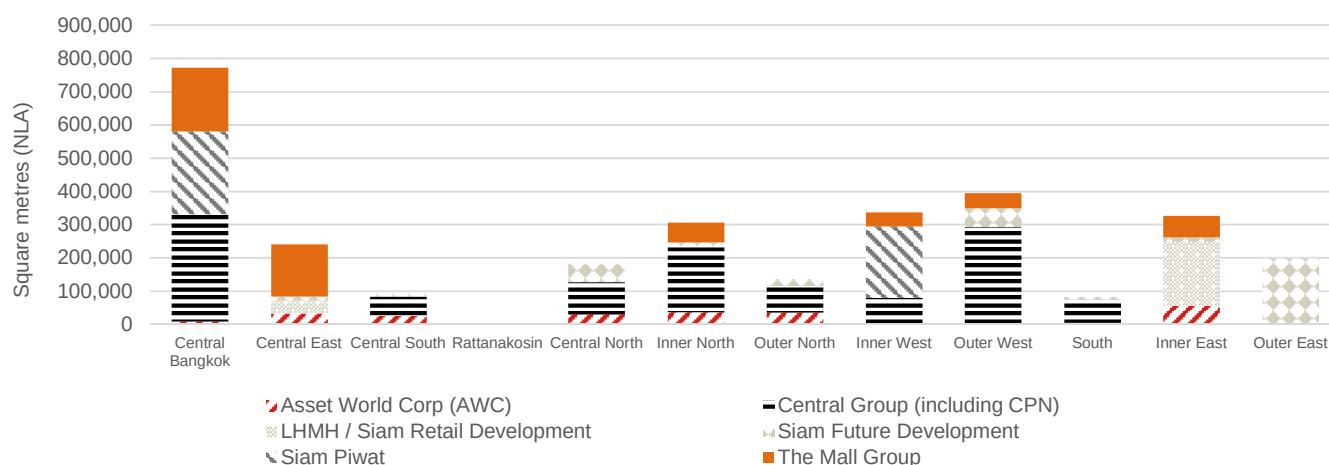
Source: JLL Thailand Research

Note: Total NLA is an estimated area and included the area of anchor tenant and department store. The total NLA of Central Pattana (CPN) in the chart is combined all projects under CPN and Central Group. NLA of any joint venture projects is also included in the total NLA of each developer.

In 1H19, four out of six key developers owned Super Regional Centres in their portfolio in Bangkok, while there were no super regional centre developed by the Mall group. Moreover, Regional shopping centres were mainly developed by three key developers including Central Pattana (CPN), Siam Piwat and the Mall Group. Siam Future Development had almost 45% of the Siam Future Development's stock in community mall and neighbourhood centre types. In addition, five out of six key developers contributed retail space in specialty centre.

Meanwhile, Specialty stock was mainly contributed by AWC. Most of AWC's asset was the key specialised store in Bangkok such as Pantip Plaza Pratunam, Pantip Plaza Ngamwongwan and Pantip Plaza Bangkok. All three malls were widely acknowledged for specialized products including IT and amulet products.

Figure 3-46: Greater Bangkok retail stock by submarket by leading developer / operator as of 1H19



Source: JLL Thailand Research

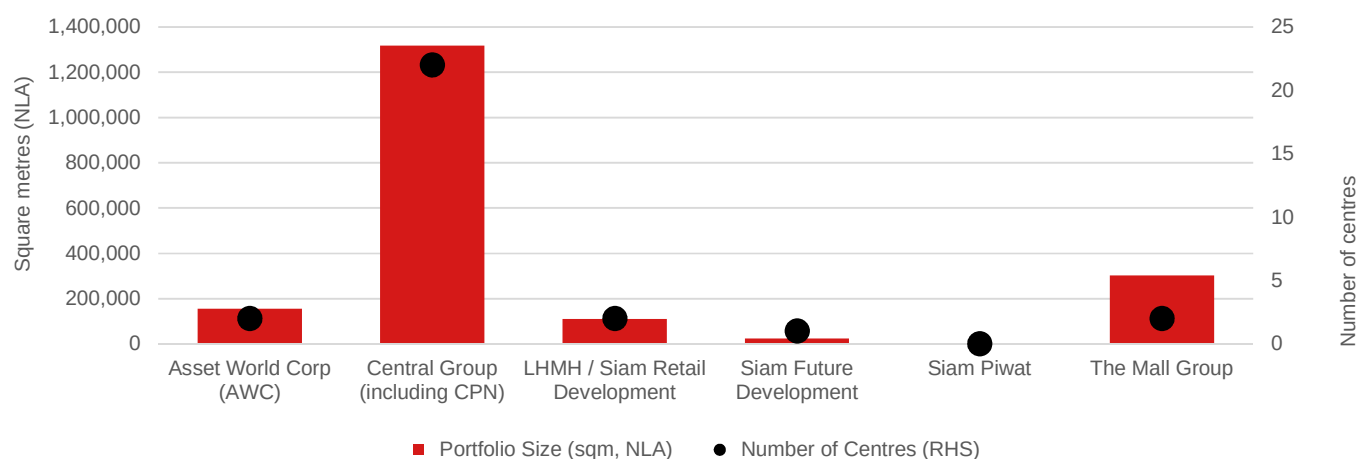
Note: Total NLA is an estimated area and included the area of anchor tenant and department store. The total NLA of Central Pattana (CPN) in the chart is combined all projects under CPN and Central Group. NLA of any joint venture projects is also included in the total NLA of each developer.

Eleven out of twelve submarkets consists of the retail development contributed by key retail developers. Central Bangkok submarket including Pathum Wan, Bang Rak and Sathorn districts located by key developers' retail centres such as Siam Paragon by a joint venture company of Siam Piwat and the Mall group, Center Point of Siam Square by Asset World Corp, Siam Discovery Center by Siam Piwat and CentralWorld by CPN. Meanwhile, the stock of Outer East submarket where covers six districts including Khlong Sam Wa, Min Buri, Nong Chok, Lat Krabang, Bang Phli, Bang Sao Thong and Bang Bo was mainly contributed by Mega Bangna project by Siam Future Development.

Note that none of key developers' projects exists in Rattanakosin submarket which included Phra Nakhon, Pom Prap Sattru Phai and Samphanthawong as there is the limitation of planning regulation in the area.

3.7.4 Provincial retail stock by major developer / operator

Figure 3-47: Provincial retail stock by leading developer / operator as of 1H19



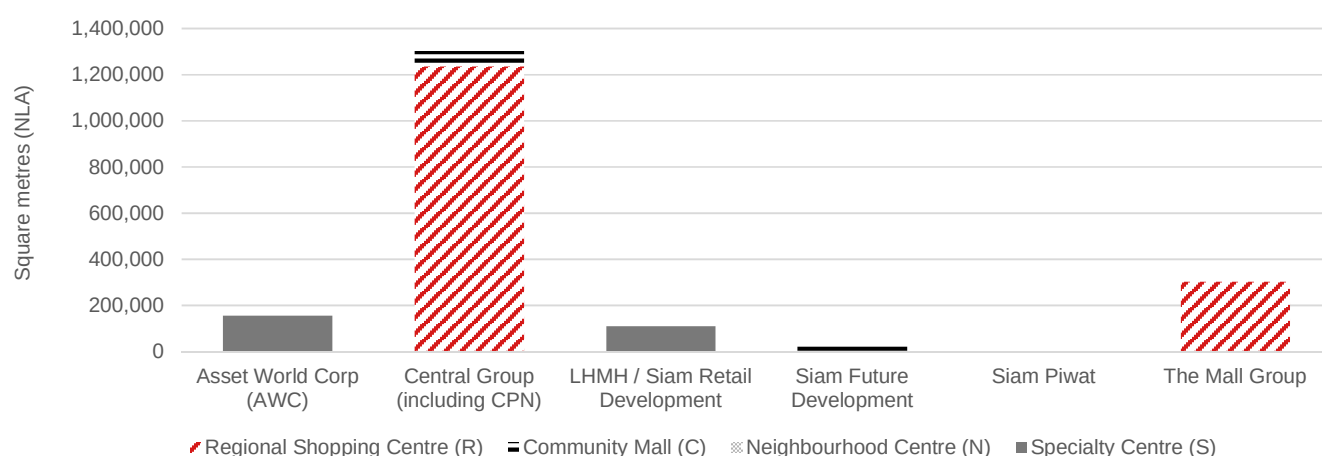
Source: JLL Thailand Research

Note: Total NLA is an estimated area and included the area of anchor tenant and department store. The total NLA of Central Pattana (CPN) in the chart is combined all projects under CPN and Central Group. NLA of any joint venture projects is also included in the total NLA of each developer.

In upcountry, shopping centres particular in regional centre type were developed by CPN. The leasable area of CPN's provincial retail centres was accounted for more than 1,300,000 sqm NLA. The latest CPN's provincial project was CentralPhuket. Meanwhile, the Mall group had the second highest number of NLA, or accounted for approximately 300,000 sqm NLA of the provincial stock by key retail developers. Moreover, LHMH/ Siam Retail Development had recently opened the large-scale retail centre in Chonburi under Terminal 21 brand, called Terminal 21 Pattaya in 4Q18. AWC is presently developing and holding a test run of the AEC Trade Center, slated to fully launch in 2020.

Out of six retail developers, Siam Piwat has no current retail project in provinces. However, the developer contributes most of notable retail projects such as Siam Paragon and ICONSIAM.

Figure 3-48: Provincial retail stock by leading developer / operator by centre type as of 1H19



Source: JLL Thailand Research

Note: Total NLA is an estimated area and included the area of anchor tenant and department store. The total NLA of Central Pattana (CPN) in the chart is combined all projects under CPN and Central Group. NLA of any joint venture projects is also included in the total NLA of each developer.

In provincial area, CPN and the Mall group mainly contributed regional retail centres to the provincial stock by key developers. Furthermore, only CPN and Siam Future have community malls in provincial area. Meanwhile, no key retail developers have a Super Regional centre type in the provincial area.

Specialty Centres stock in provincial areas was mainly contributed by AWC and LHMH / Siam Retail Development. Notable projects by key developers included Terminal 21 Pattaya and Korat, and Pantip Plaza Chiang Mai which is the largest IT specialist community shopping mall in Chiang Mai.

3.7.5 Future supply pipeline of major developer / operators

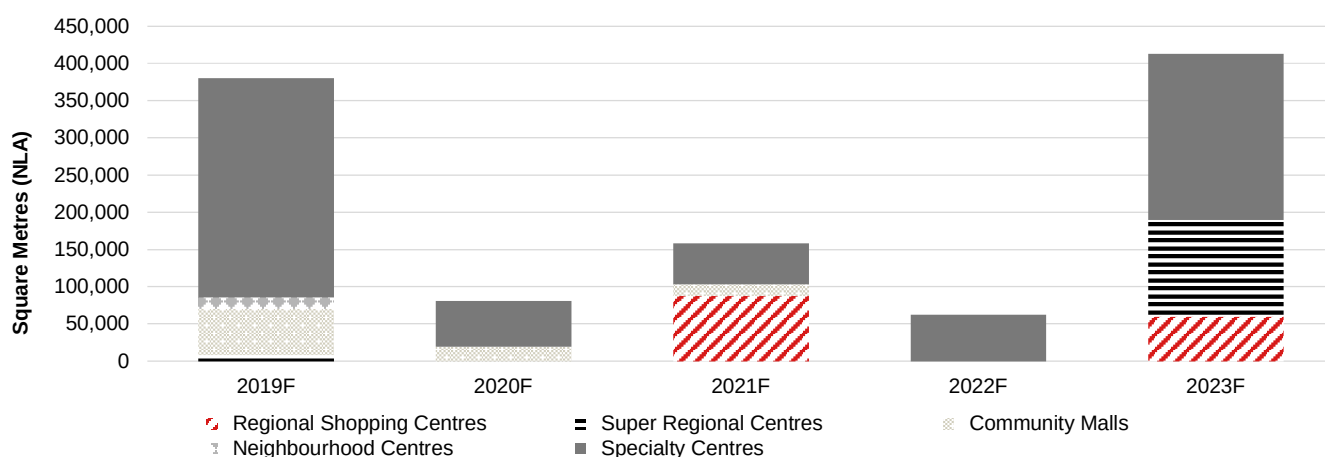
Table 3-21: List of formally announced future supply from leading developer / operators as of 1H19

	Developer	Market Segment	Centre Type	Estimated Quarter / Year Completion	NLA (sqm)
Bangkok					
Central Village	CPN PCL	P	S	3Q19	40,000
Siam Premium Outlet	Siam Piwat Simon Co., Ltd.	P	S	3Q19	50,000
Market Place Thonglo (Redevelopment)	Siam Future Development PCL	NP	C	1Q20	15,500
ICONSIAM Phase II	Siam Piwat / CP Group and Magnolia Quality Development Co., Ltd	P	R	1Q21	20,000
The Mall Ramkhamhaeng 2	The Mall Group	P	R	4Q21	88,000
Terminal 21 Rama III	LHMH / Siam Retail Development	P	S	2Q22	N/A
The EmSphere	The Mall Group	P	R	1Q23	60,000
Bangkok Mall	The Mall Group	P	SR	1Q23	130,000
Dusit Central Park	CPN PCL and Dusit Thani PCL	P	S	4Q23	N/A
Provinces					
CentralPlaza Ayuthaya	CPN PCL	P	R	4Q19	N/A
Porto de Phuket	CPN PCL	P	S	4Q19	N/A
Blu Pearl Phuket	The Mall Group	P	S	N/A	N/A

Source: JLL Thailand Research

In terms of future retail supply, 34 projects are in the pipeline between 2019 and 2023 spanning 954,000 sqm (NLA) of space, equivalent to 13.9% of existing stock as of 1H19. Most of new supply consists of one Super Regional Centre, two Regional Centres, six Community Malls, one neighbourhood centres and 24 Specialty centres. Thirteen projects completed in the first half of 2019, totaling more than 149,000 sqm (NLA) of new supply. In addition, at least 12 other projects are expected to complete by the end of 2019.

Future retail supply in Greater Bangkok by centre type through 2023



Source: JLL Thailand Research

3.8 Typical retail lease terms

Generally, leasing of the property is normally required to do a contract to guarantee and secure the right of ownership for both landlord and tenant. The information of the contract should be indicated clear details of the property such as its location, size and condition. However, the process of leasing agreement may be different in relation to the leasing period.

Based on Thailand's regulation for leasing, the property leased by leasee with more than 3 years is required to register the transaction at the land authority in order to have official right of ownership along the contract period. Meanwhile, the property with a leasing period with no longer than 3 years is not required to register at the government's office and can make the agreement contract in privately between landlord and occupier. This is because a leasing contract with no longer than 3 years is already obligated under Thailand's regulation.

Note that typical lease contract from conventional retail mall operator is traditionally separated in two parts; Lease Agreement and Service Agreement. Within the lease agreement, nominal rent agreed are separated into two agreements. While proportion of such split may vary, typical lease agreement is broken down as 70% as an actual lease and another 30% as "Utility Service" or "Furniture lease". This splitting of income can be beneficial to lessor as recognizing smaller amount as other type of income will lessen burden on its property taxes. This split in rent is not to be confused with Common Area Management (CAM) fee, where extra amount is collected on top of agreed rent to provide for maintenance, security, air conditioning, garbage disposal and etc. in the common area which the lessee shares with other tenants.

In general, there are two types of rental payment method which are percentage of GP and fixed rents

Gross Percentage Rent (GP)

- GP is a method of payment tied to an agreed percentage of sales which mean when tenant sales increase landlord will collect more rents and when tenant sales decrease landlord will receive less rents.
- Limited downside risk and also limited upside potential.
- More risk to landlord / developers.
- Landlord / developers would prefer high percentage as they believe that they yield more risk in this type of payment.

- GP rates generally vary between 10% and 18% of monthly sales / turnover.

Fixed rents

- Fix amount of payment which considered as more risk to tenant.
- Less risk to landlord / developers as they receive fix amount of income.
- More preferable in landlord / developer's perspective as they do not have to bear the business risk of each tenant.
- Most small – mid size magnet tenants pay fix rents as they do not want to limited upside potential.

Percentage of GP + Fixed rents

- Ensure some minimum amount of income for landlord / developers.
- Finding balance between the two method of payment which could ease tenant and landlord / developers to reach an agreement.
- Most tenants across the market are on fixed rent agreements. For example, within CPN's (nation-wide) portfolio, 63% of tenants are on fixed agreements. The remaining 37% of tenants on GP contracts are generally foreign brands, in particular F&B outlets, fast fashion chains, and cinemas.

Note that tenants in some shopping centres are still under long-term lease agreement which is the traditional style of rental payment in the past. However, most current shopping centres are applied GP and fixed rents as a rental payment method.

Lease length

Lease length in Bangkok retail centres generally ranges from 1 years to 3 years for both fixed rents and Gross Percentage (GP) options. However, lease length is also depended on the agreement between retail developers and their leasee. Thus, the contract period is possible to be six month or any specific month for some retail projects.

Tenant incentives

Tenant incentive is normally offered as rent free period and/or decoration period. Rent free period and decoration period are the period that is not considered to pay rent at the period of time. Rent free period usually ranges from 15 days to 90 days primarily depending on the agreement between retail developers and the leasee and the lease length.

Rental escalations

Rental escalation is usually depended on contract agreement between retail developers and their leasee. The performance of retail centres and retail sales also affect the escalation of rent. Therefore, the rent can be adjusted after renewal of lease or every three years.

Table 3-22: Typical retail lease agreement types by tenant segment

	Main Category	Sub Category	GP	Fix	Long-term Lease
1	Fashion	Mass Market Fashion	.	.	
2	Gold, Jewelry, Watch, Optical & Accessories	Jewelry and Gold Shop	.	.	.
		Optical Shop	.	.	
		Watch Shop	.	.	
3	Household	Furniture	.		.
		Book store	.		
4	Electronic, Mobile & gadgets	All in one electronics shop			.
		Mobile Shops		.	
		Camera Shops		.	
5	Service	Financial & banking		.	

		Telecommunication	.
		Laundry Service	.
		Convenient Store	.
		Bag, Shoes, ,Jewelry, Keys and Watch Service shop	.
		Post Service	.
		Pet Shop	.
		Car Cleaning Service	.
		Tour Service Provider	.
		Other Supporting Service	.
6	Health & Beauty	Spa and Massage	.
		Pharmacy Store	.
		Fitness Center	.
		Cosmetics & Skincare	.
		Hair Cut , Salon and Nail Shop	.
		Beauty & Dental Clinic	.
7	Café' & Dessert	Coffee shop	.
		Ice Cream Shop	.
		Bakery Shop	.
8	Restaurants	Quick Service Restaurant	.
		Mass Market Restaurant	.
9	Food Court and Take-Away F&B	Food Court	.
		Take-Away Food Shop	.
		Take-Away Drinks Shop	.
10	Entertainment	Karaoke	.
		Theatre	.
		Game Center	.
		Bowling	.
		Children Play Center	.
11	Education	Education	.
12	Operator	Department Store	.
		Hypermarket	.
		Supermarket	.
13	Other	Co-Working Space	.
		Event Space	.
		Lounge	.

Source: JLL Thailand Research

Table 3-23: Sample lease agreements in various CPN retail centres

Project	Tenant	Rental Payment	Term of contract	% of total Leaseable Area
CentralPlaza Ubonratchathani	Anchor	GP	1-3 years	22%
	Non-Anchor	Fixed Rent	1-3 years	64%
		GP	1-3 years	14%
CentralPlaza Nakhon Si Thammarat	Anchor	GP	3 years	20%
	Non-Anchor	Fixed Rent	3 years	66%
		GP	3 years	14%
CentralFestival Chiangmai	Anchor	GP	12-15 years	20%
	Non-Anchor	Fixed Rent	1-3 years	60%
		GP	1-3 years	20%
CentralFestival Hatyai	Anchor	GP	1-3 years	23%
	Non-Anchor	Fixed Rent	1-3 years	63%
		GP	1-3 years	14%
CentralPlaza Khonkan	Anchor	Long-term lease	30 years	11%
	Non-Anchor	GP	15 years	13%
		Fixed Rent	1-3 years	71%
CentralPlaza Chiangrai	Anchor	GP	1-3 years	5%
		GP	1-3 years	5%
		Fixed Rent	9 years (Renew every 3 years)	15%

CentralPlaza Lampang	Non-Anchor	Fixed Rent	1-3 years	83%
		GP	1-3 years	2%
	Anchor	GP	1-3 years	17%
	Non-Anchor	Fixed Rent	1-3 years	74%
CentralPlaza Suratthani		GP	1-3 years	9%
	Anchor	Fixed Rent	1-3 years	4%
		GP	1-3 years	19%
	Non-Anchor	Fixed Rent	1-3 years	65%
CentralPlaza Chaengwattana		GP	1-3 years	12%
	Anchor	GP	15 years	19%
	Non-Anchor	Fixed Rent	1-3 years	76%
		GP	1-3 years	5%

Source: JLL Thailand Research, Central Pattana PCL (CPN)

3.9 Retail development and valuation

3.9.1 Land Costs

Land cost is one of main costs affecting to the development viability. Moreover, the difference in land cost is driven by several factors such as location, the period of transaction and etc. Therefore, the share of land cost compared to the total investment cost is different up to the project.

By analyzing CPN's retail financial information, eight projects with freehold land have a range of land cost to investment cost ratio between 14.0% and 26.9% as well as a vary range of land area between 24 rai and 76 rai. Although all projects are the same format that is classified as a regional centre, the ratio and land size are vary depending on the location.

Table 3-24: Sample land costs as a share of total investment cost

Project	Location	Period Completed	Land Area (Rai)	Total Land Cost (THB Billion)	Land Cost (THB per sqw)	Investment Cost (THB Billion)	Land to Investment Cost Ratio
CentralPlaza Chaengwattana	Bangkok	4Q08	24	0.82	85,417	4.67	17.6%
CentralPlaza Khonkaen	Khonkaen	4Q09	45	0.84	46,667	3.87	21.7%
CentralPlaza Chiang Rai	Chiang Rai	1Q11	52	0.43	20,433	1.58	26.9%
CentralPlaza Suratthani	Suratthani	4Q12	62	0.45	18,145	2.03	22.2%
CentralFestival Chiang Mai	Chiang Mai	4Q13	71	0.65	22,887	4.20	15.5%
CentralPlaza Ubonratchathani	Ubonratchathani	2Q13	76	0.30	9,868	1.84	16.3%
CentralFestival Hatyai	Song Khla	4Q13	50	0.86	43,000	4.81	17.9%
CentralPlaza Nakhon Si Thammarat	Nakhon Si Thammarat	3Q16	51	0.23	11,275	1.64	14.0%

Source: JLL Thailand Research, CPN PCL

Note: The period in which each project completed is not the same period in which land transactions took place (specific transaction period data are unavailable)

3.9.2 Construction costs

In between 2012 and 2017, average construction costs of low-rise and high-rise retail centres fluctuated around THB 16,500 per sqm and THB 22,700 per sqm respectively, while the high construction costs was around THB 19,200 per sqm for low-rise retail centres and THB 27,900 per sqm for high-rise retail centres. Small-scale / low-rise construction costs generally range between THB 17,000 and THB 20,000 per sqm while costs for larger-scale / high-rise centres range between THB 23,000 and THB 29,000 per sqm The

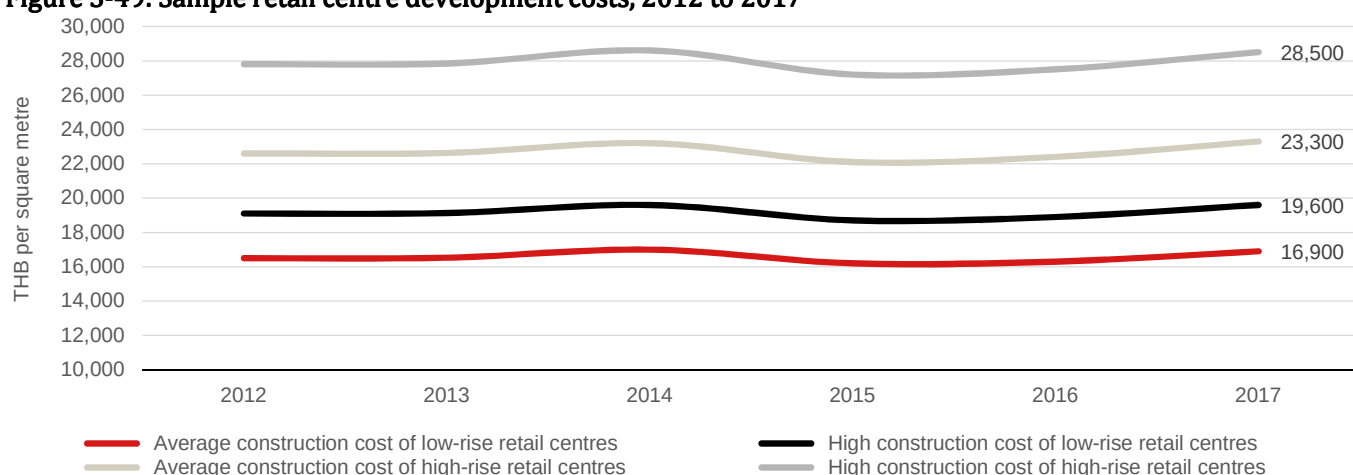
construction cost in the figure above was only illustrated as an overview for general retail development in Thailand. However, formats, positioning and locations of retail centres are also affecting the construction cost.

According to JLL information, Large-scale format retail centres were mostly recognized as a regional retail type and have a vary range of construction cost depending on its segment. The construction cost for mass market segment retail centres have a range between THB 24,000 per sqm and THB 30,000 per sqm depending on its location, while the construction cost of luxury retail centre may be required up to THB 50,000 per sqm.

At the same time, the construction cost of small-scale format retail centres such as a neighbourhood centre and a community mall had a wide range between THB 17,000 per sqm and THB 20,000 per sqm in relation to its location and segment as well.

Note that the estimated construction cost by Arcadis was no longer published data for Thailand. However, Thailand average construction cost by Arcadis in 2016 was in a range between THB 20,500 per sqm and THB 26,500 per sqm and the cost for a Prime-Grade retail centre was in a range between THB 27,500 per sqm and THB 28,500 per sqm.

Figure 3-49: Sample retail centre development costs, 2012 to 2017



Source: JLL Thailand Research, The Valuers Association of Thailand

Note: Low-rise data represents buildings of three storeys or less while high-rise data represents buildings of four or more storeys.

3.9.3 Investment returns, transactions and appraisal values

Table 3-25: Average annual dividend yields of publicly traded REITs and PFPOs, 2013 to 2018

Name	Inception Year	Type	Tenure	Ticker	2013	2014	2015	2016	2017	2018
CPN Retail Growth Leasehold Property Fund	3Q05	PFPO	Leasehold	CPNRF	6.78%	8.24%	5.57%	5.20%	*	*
CPN Retail Growth Leasehold REIT	4Q17	REIT	Leasehold	CPNREIT					2.66%	4.71%
Future Park Leasehold Property Fund	4Q06	PFPO	Leasehold	FUTUREPF	7.49%	5.52%	6.24%	5.43%	6.59%	6.12%
Talaad Thai Leasehold Property Fund	4Q10	PFPO	Leasehold	TTLPF	7.69%	5.58%	7.02%	6.28%	6.53%	6.76%
Thai Retail Investment Fund	3Q11	PFPO	Freehold	TRIF	0.61%	2.65%	2.34%	3.90%	*	*
Tesco Lotus Retail Growth Freehold and Leasehold Property Fund	2Q12	PFPO	Freehold and Leasehold	TLGF	4.22%	6.03%	5.55%	5.01%	4.93%	4.57%
Crystal Retail Growth Leasehold Property Fund	2Q13	PFPO	Leasehold	CRYSTAL	0.00%	7.87%	7.41%	7.15%	6.40%	5.80%
LH Shopping Centers Leasehold Real Estate Investment Trust	4Q14	REIT	Leasehold	LHSC			0.21%	5.58%	5.10%	3.88%

Source: JLL Thailand Research, Stock Exchange of Thailand

Note: CPNRF was converted to CPNREIT in 2017; TRIF was delisted when AWC bought out the fund in 2017. Dividend yields calculated on a rolling 12-month basis.

Table 3-26: Recent en-bloc retail centre transactions as of 4Q18

Asset	Address	Sale Date	GFA (sqm)	Total Investment Value (THB Billion)	Estimated Price per sqm on GFA (THB)	Vendor	Buyer	End of Lease Period
Terminal 21 Asok	Asok-Sukhumvit Junction, Watthana, Bangkok	4Q14	97,905	6.227	63,602	L&H Property Co., Ltd.	LHSC	3Q40
CentralPlaza Rama 2	Rama II Road, Bang Khun Tian, Bangkok	4Q17	251,182	7.186	28,609	CPNRF	CPNREIT	3Q25
CentralPlaza Rama 3	Sathu Pradit Road, Yannawa, Bangkok	4Q17	169,740	9.179	54,077	CPNRF	CPNREIT	3Q35
CentralPlaza Pinklao and Pinklao Tower	Borommaratchachonnani Road, Bangkok Noi, Bangkok	4Q17	188,345	5.543	29,430	CPNRF	CPNREIT	4Q24
CentralPlaza Chiangmai Airport	Mahidol Road and Wualai Road, Mueng, Chiang Mai	4Q17	122,991	10.494	85,323	CPNRF	CPNREIT	2Q44
CentralFestival Pattaya Beach	Pattaya Sai 1 Road, Nong PBang Lamung, Chonburi	4Q17	70,095	8.154	116,325	CPN Pattaya Co., Ltd.	CPNREIT	3Q37

Source: JLL Thailand Research, Stock Exchange of Thailand

Most transactions were in REIT segment and were processed for leasehold assets. Estimated price per sqm for each asset were mainly related to the remaining lease period. Higher remaining lease period was resulted to higher estimated price per sqm.

Table 3-27: Retail appraisal value, 4Q16

Asset	Address	Appraisal Period	NFA (sqm)	Total Appraised Value (THB Billion)	Estimated Price per sqm NFA, THB	Current Ownership Right
Commercial units in The Platinum Fashion Mall	Petchburi Road, Ratchathewi, Bangkok	4Q16	18,505*	6.881	371,837	The Platinum Group PCL

Source: JLL Thailand Research, The Platinum Group PCL

Note: This is only the area of commercial space totaled 921 units in the Platinum Fashion Mall, not the number of Mall GFA.

Given the lack of freehold asset transaction, the appraisal value of 921 commercial units in the Platinum Fashion Mall were presented to illustrate the freehold retail space estimated price per sqm. Note that the location of the Platinum fashion mall is in Bangkok shopping destination area. High price per sqm can be expected.

4 Bangkok Office Market Overview

4.1 Bangkok office market overview

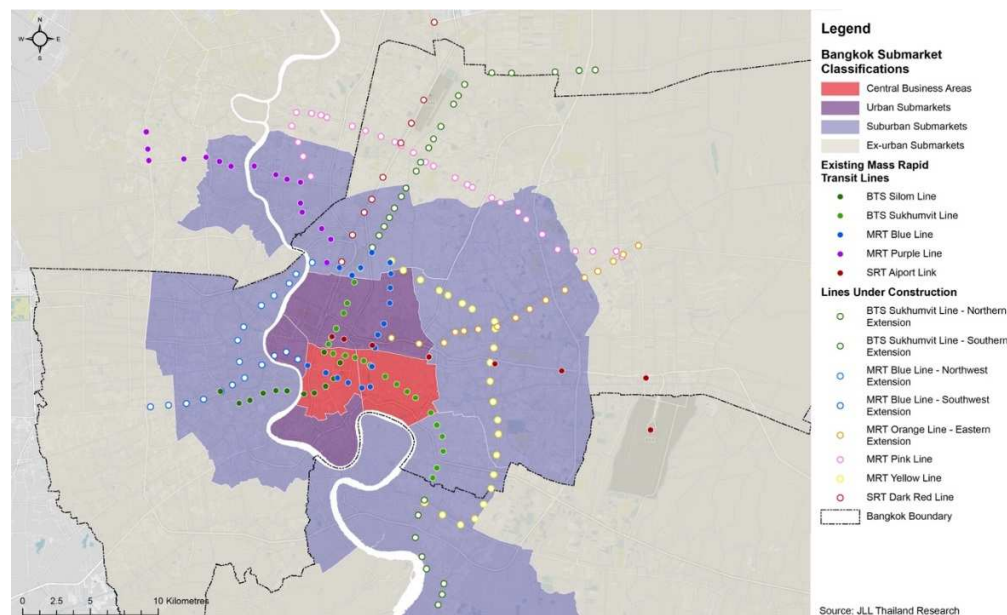
In terms of geography, we analyze the Bangkok office market through the lens of twelve submarkets as described in Table 4-1 and illustrated in the Figure 4-1 below. Our submarkets align with official administrative boundaries with constituent districts (khet / amphoe) being grouped by dominant functions, incorporating the presence of residential space, office stock, dining, entertainment and recreational options and so forth.

Table 4-1: Bangkok submarket description

Submarket	Districts (Khet / Amphoe)
Central Bangkok	Bang Rak, Pathum Wan, Sathorn
Central East	Khlong Toey, Wattana
Central South	Bang Kho Laem, Yannawa
Rattanakosin	Phra Nakhon, Prom Pap Sattru Phai, Samphanthawong
Central North	Din Daeng, Dusit, Huay Kwang, Phaya Thai, Ratchathewei
Inner North	Bang Sue, Chatuchak, Lat Phrao, Muang Nonthaburi
Inner West	Bang Phlat, Bangkok Noi, Bangkok Yai, Chom Thong, Khlong San, Pasi Charoen, Rat Burana, Taling Chan, Thonburi
Inner East	Bang Kapi, Bung Kum, Khan Na Yao, Prawet, Saphan Sung, Suan Luang, Wang Thonglang
South	Bang Na, Phra Kanong, Muang Samut Prakan, Phra Pradaeng
Outer North	Bang Khen, Don Muang, Lak Si, Sai Mai, Pak Kret, Muang Pathum Thani, Khlong Luang, Thanyaburi, Nong Suea, Lat Lum Kaeo, Lam Luk Ka, Sam Khok
Outer West	Bang Bon, Bang Khae, Bang Khun Thien, Nong Khaem, Thawi Wattana, Thung Khru, Phra Samut Chedi, Bang Kruai, Bang Yai, Bang Bua Thong, Sai Noi
Outer East	Khlong Sam Wa, Lat Krabang, Min Buri, Nong Chok, Bang Bo, Bang Sao Thong, Bang Phli

Source: JLL Thailand Research

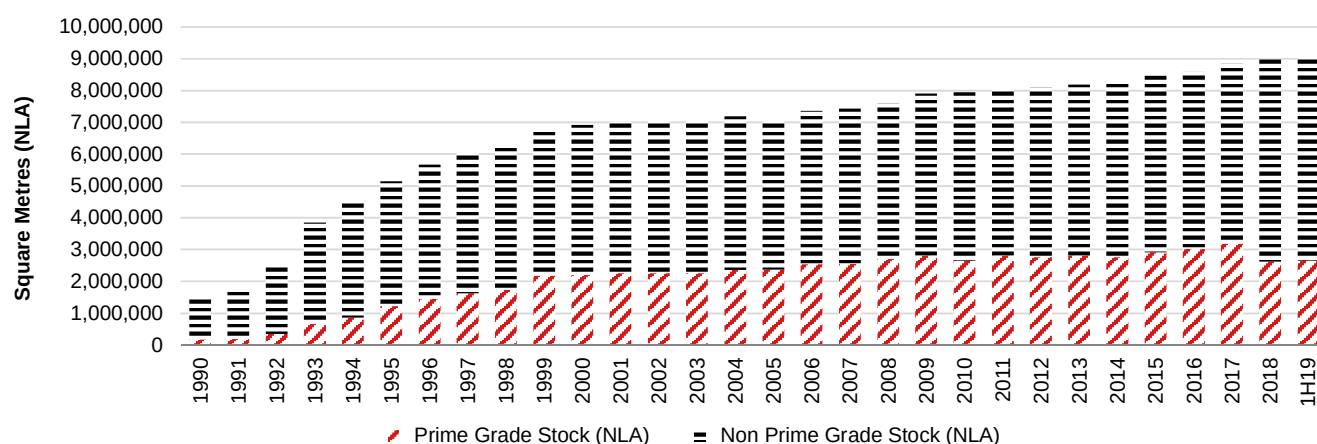
Figure 4-1: Bangkok submarkets map



At the end of 2018, total office stock across Bangkok totaled 9,010,059 sqm (NLA – please note all figures reported in this document are on an NLA basis). There currently exist 2,629,354 sqm of prime grade space (A+, A, A- Grade Office Buildings, please refer to the glossary at the end of this section for more details on definitions and grading criteria) across the market, or 29% of market-wide stock. Approximately 20% of all space (~1.8 million sqm) in the market is classified as owner-occupied.

As illustrated in Figure 4-2 below, more than two-thirds (69.1%) of existing stock today is more than 20 years old – aging stock is a key driver of occupier movement over the last five years.

Figure 4-2: Cumulative office stock by segment, 1990 to 1H19

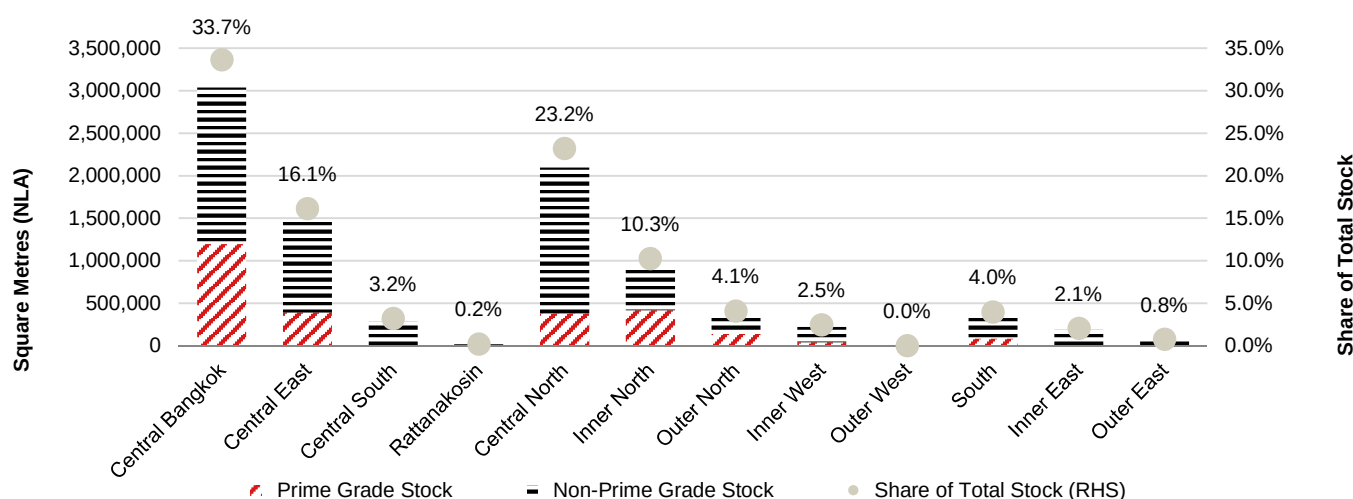


Source: JLL Thailand Research

As stock ages, we periodically downgrade assets that no longer meet prime grade criteria (while in certain cases also upgrading assets that have undergone significant renovations). For example, while 2018 saw the completion of 165,976 sqm of new prime grade space across four projects, cumulative prime grade stock decreased as we downgraded 29 projects totaling 728,752 sqm that no longer meet prime grade criteria. This rigorous process led to the “shrinking” of cumulative prime grade stock between 2009 and 2010, 2011 and 2012, 2013 and 2014, as well as 2017 and 2018 despite new completions in each period.

Bangkok does not have a single central business district, rather it has several key nodes with large, but distinct clusters of office space, including Silom, Sathorn, Ploenchit / Wireless, and Asoke. To better capture market dynamics, we group these core office locations into the Central Business Areas (CBA) as illustrated in Figure 4-1. The CBA is divided into two submarkets, Central Bangkok (Pathum Wan, Bang Rak and Sathorn districts) and the Central East (Watthana and Khlong Toey districts). Figure 4-3 below illustrates the amount of existing office stock by segment across all twelve submarkets.

Figure 4-3: Existing office stock by submarket and segment, 1H19



Source: JLL Thailand Research

The CBA accounts for half of the market's total stock and more than 60% of the market's prime grade stock. We note the three of Asset World Corp's (AWC) office assets including Empire Tower, Athenee Tower and 208 Wireless Road are located in Central Bangkok. The remaining office asset, Interlink Tower, is located in the South submarket.

4.2 Recent supply and demand dynamics

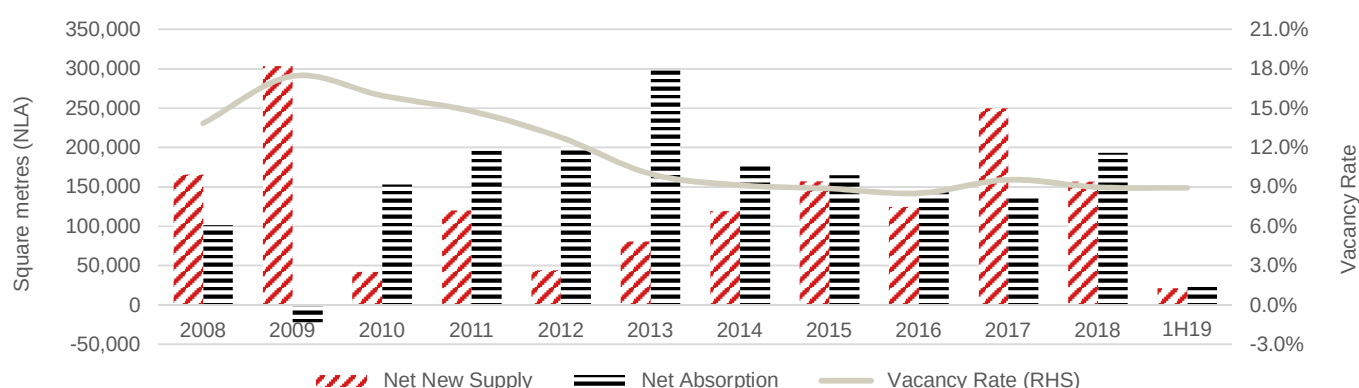
4.2.1 Market-wide macro dynamics

The speculative boom in the late 1980s and early 1990s that contributed to the Asian Financial Crisis (AFC) beginning in 1997 created a massive oversupply situation that saw the market-wide vacancy rate peak at 32% in 1999 before stabilizing around 13% between 2005 and 2008 as space in Crisis-era buildings was taken-up. The first wave of new demand-driven supply completed between 2006 and 2009, when a total of 846,223 sqm of space entered the market. We note that more than half of this space came from projects

suspended during or in the wake of the AFC, including some of today's leading buildings such as The Offices @ CentralWorld, Q House Lumpini and Exchange Tower.

In the current market, all (non owner-occupied) buildings are still built on a speculative basis, but development is largely driven by existing and/or expected demand based on market conditions. With the market adopting a more stable demand driven approach, supply and demand have been reasonably well balanced over the last decade. Between 2008 and 2018, an average of 142,304 sqm of net new supply (new completions minus withdrawals) has been added to the market each year. Roughly half of net new supply has come in the prime grade segment, averaging 71,932 sqm of new additions each year during the same period. Since 2008, market-wide net absorption has averaged 160,579 sqm (NLA) per annum, with average prime grade net absorption clocking in at 117,054 sqm per year.

Figure 4-4: Net new supply*, net absorption and vacancy market-wide – all segments, 2008 to 1H19



Source: JLL Thailand Research

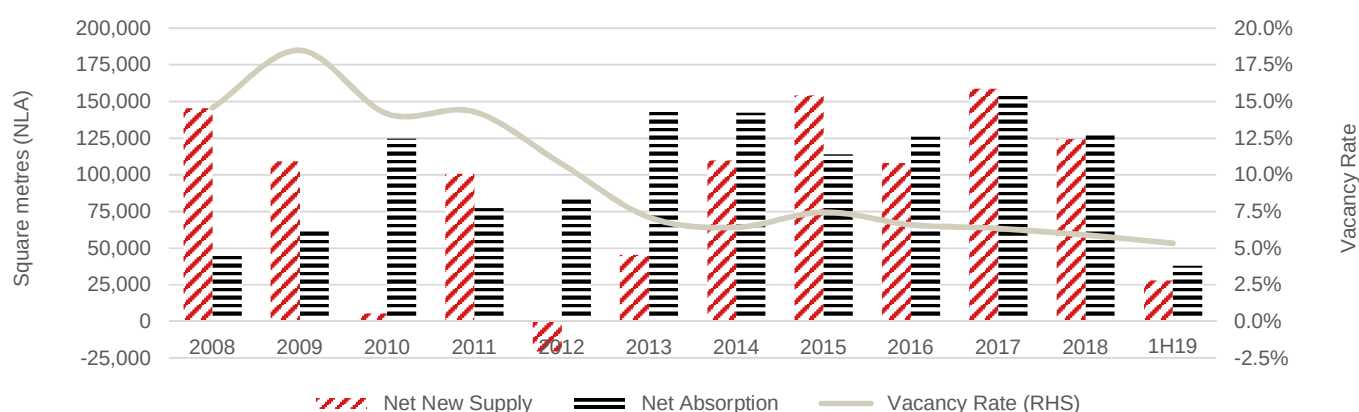
Note: Net new supply refers to total new completions in each year less withdrawals (e.g., demolitions and conversions to other uses); net absorption describes the total change in occupier demand between two periods

In 2009, the market-wide vacancy rate peaked at 17.4% as a large wave of new supply that launched before the onset of the global recession completed. Despite a stagnating global economy, Bangkok's office market began recovering in 2010 with the vacancy rate falling below pre-recession levels by 2012. As developers exercised caution during the recession era, only a relatively small amount of new supply completed between 2010 and 2013. Sustained demand for office space from both international and domestic tenants outpaced the limited office stock additions between 2010-2013, resulting in a continuous decline in vacancy rates and rapidly rising rents.

As of 1H19, the market-wide vacancy rate stands at 8.9%, a slight increase from the 8.8% rate seen at the end of 2018. More importantly, the market-wide vacancy rate has stabilized in the range of 8-9% since 2014 with a low point of 8.5% at end-2016. On the surface, it appears that there currently exists a healthy balance between supply and demand, yet during the same period rents have continued to rise at a quick

pace. Rising rents suggests the current vacancy range is frictional, meaning that there exists a relatively large amount of space in the market that is simply undesirable to occupiers.

Figure 4-5: Net new supply*, net absorption and vacancy market-wide – prime grade, 2008 to 1H19



Source: JLL Thailand Research

Note: Net new supply refers to total new completions in each year less withdrawals (e.g., demolitions and conversions to other uses) and the re-grading of buildings which have undergone significant renovations (upgrades) or are aging and no longer meet Grade A criteria); net absorption describes the total change in occupier demand between two periods

The prime grade segment, as illustrated in Figure 4-5 above closely resembles the longer-term market-wide trend. Market-wide prime vacancy peaked in 2009 at 18.5% and reached pre-recession levels by 2012 with a strong rebound in demand and relatively little new supply. Since 2013, market-wide prime vacancy has stabilized within the 6-7% range, with only minor supply-driven fluctuations. As of 1H19, the market-wide prime grade (Grade A) vacancy rate stands at 5.3%, a new modern record low dating back to 1991.

4.2.2 Key submarket micro dynamics

The Central Bangkok and South submarkets are most directly relevant to Asset World Corp's current office holdings. The follow figures and discussion illustrate key physical performance indicators in these submarkets.

Central Bangkok is home to the largest concentration of office stock in the market, with roughly one-third of total market-wide stock totaling more than three million sqm. Central Bangkok is home to key business nodes / areas including Silom, Sathorn, Wireless, Ploenchit and Chidlom and forms the core of Bangkok's Central Business Areas. It hosts 1.2 million sqm of prime grade space, equivalent to 46% of total market-wide prime grade stock and is home to Bangkok's largest for-lease office building, Empire Tower as well as two other AWC assets, Athenee Tower and 208 Wireless Road. Figure 4-6 provides a map of Central Bangkok while Figures 4-7 and 4-8 describe supply and demand activity since 2005 in Central Bangkok, with the former covering all grades of space and the latter covering prime grade space.

Figure 4-6: Central Bangkok submarket map

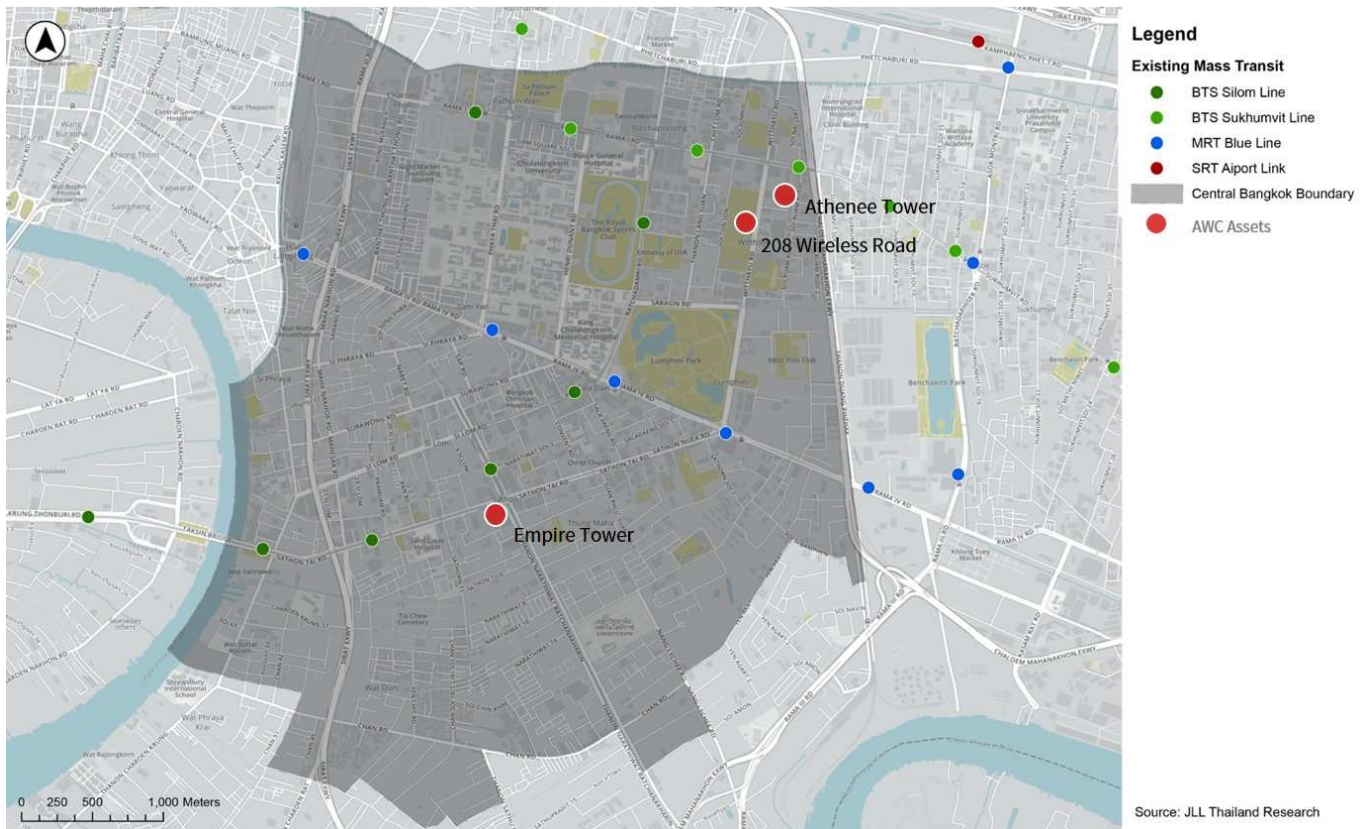
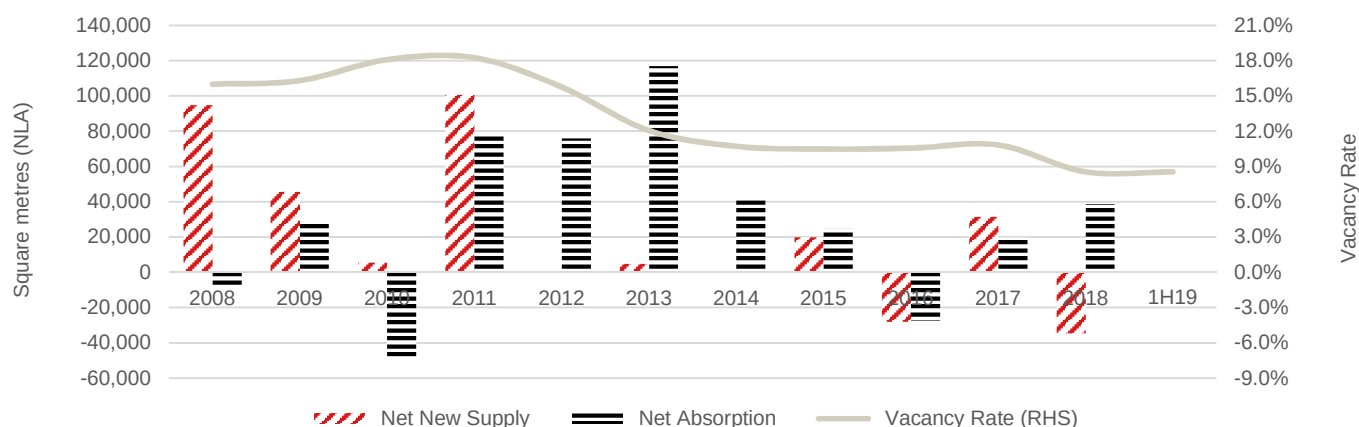


Figure 4-7: Net new supply*, net absorption and vacancy in Central Bangkok submarket – all segments, 2008 to 1H19

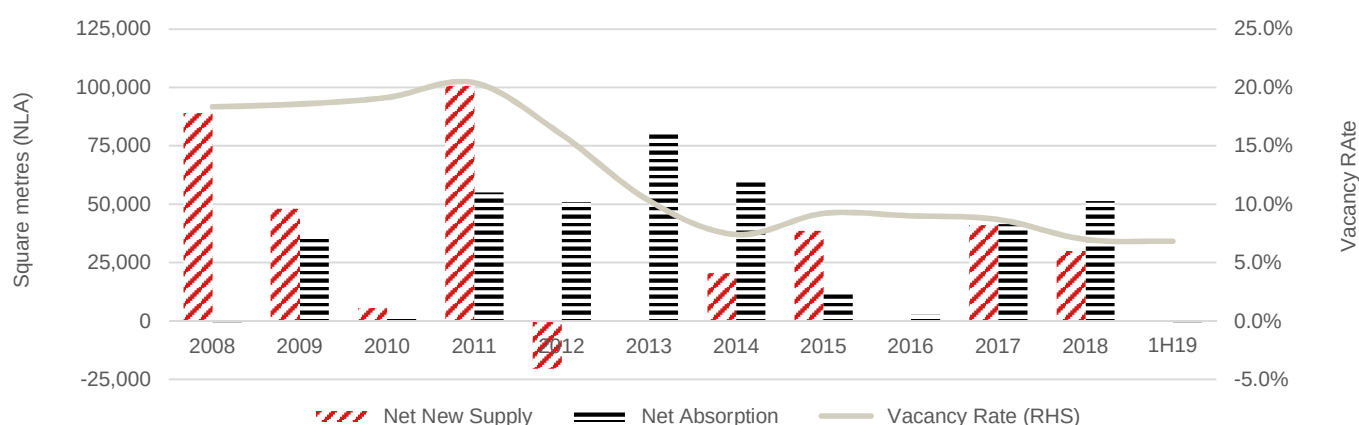


Source: JLL Thailand Research

Note: Net new supply refers to total new completions in each year less withdrawals (e.g., demolitions and conversions to other uses); net absorption describes the total change in occupier demand between two periods

Between 2008 and 2018 an average of 21,851 sqm of (net) new supply has entered the Central Bangkok submarket each year, inclusive of withdrawals. By comparison, annual average net absorption during the period was 30,905 sqm. As of 1H19, the vacancy rate across all grades of space in Central Bangkok was 8.5%, the second lowest level on record dating back to 1991 – only 1Q19 was lower at 8.4%.

Figure 4-8: Net new supply*, net absorption and vacancy in Central Bangkok submarket – prime grade, 2008 to 1H19



Source: JLL Thailand Research

Note: Net new supply refers to total new completions in each year less withdrawals (e.g., demolitions and conversions to other uses) and the re-grading of buildings which have undergone significant renovations (upgrades) or are aging and no longer meet Grade A criteria; net absorption describes the total change in occupier demand between two periods

Focusing on the prime grade segment, between 2008 and 2018 an average of 32,090 sqm of (net) new supply has entered the Central Bangkok submarket annually, inclusive of withdrawals and project upgrades / downgrades. By comparison, annual average net absorption during the period was 35,616

sqm. As of 1H19, the prime grade vacancy rate in Central Bangkok was 6.8%, the second lowest level on record dating back to 1991 after the 6.6% value recorded in 1Q19.

We note that Empire Tower currently has a higher vacancy rate (14.4%) than the market average of 8.9% (1H19). There is a clear opportunity to improve performance by restacking smaller tenants and creating larger blocks (e.g., whole floor / multiple contiguous floors, totaling 2,000-6,000 sqm) of space which are currently in high demand.

The South submarket contains office buildings strung along Sukhumvit Road and the first six to seven kilometres of Bangna-Trad Road (see Figure 4-9 for a submarket map). Historically the South submarket has been home to both foreign and domestic occupiers in the wholesale / retail trade and manufacturing sectors. Nearly all office buildings in the South submarket pre-date the AFC (1997) and there are currently only three Grade A projects, which completed between 2015 and 2017. Figure 4-10 below illustrates supply and demand dynamics since 2008 across both prime and non-prime segments while Figure 4-11 describes activity in the non-prime segment only.

Figure 4-9: South submarket map

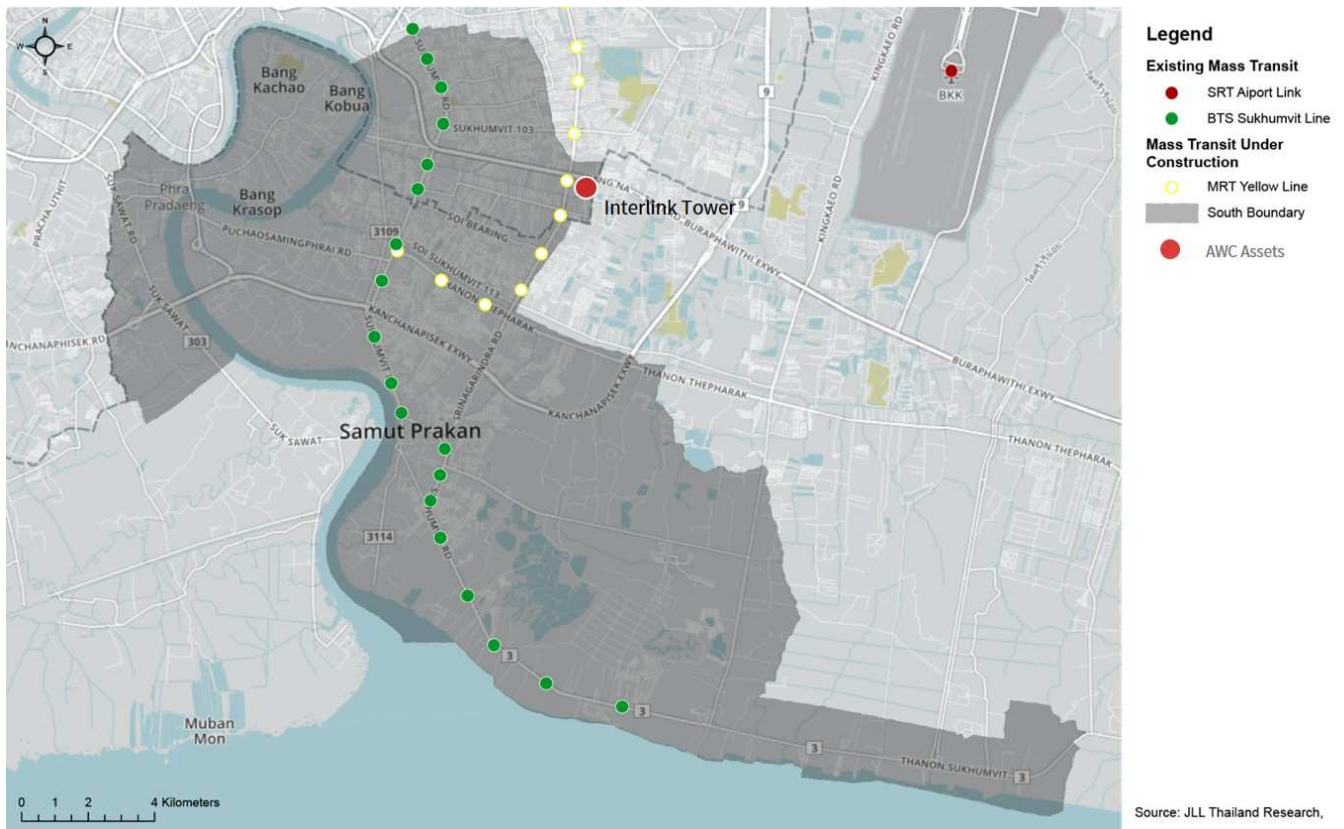
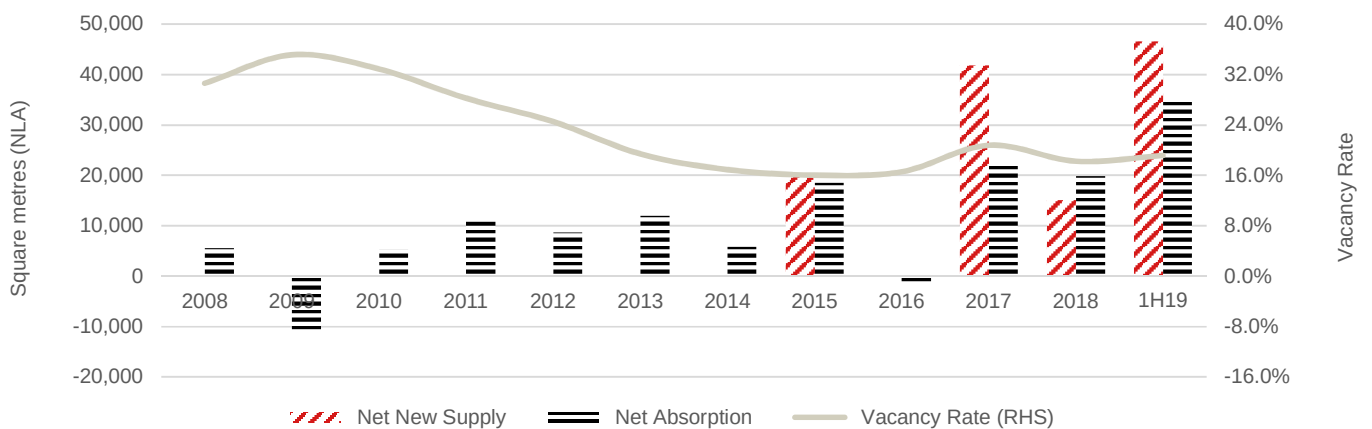


Figure 4-10: Net new supply*, net absorption and vacancy in the South submarket – all segments, 2008 to 1H19



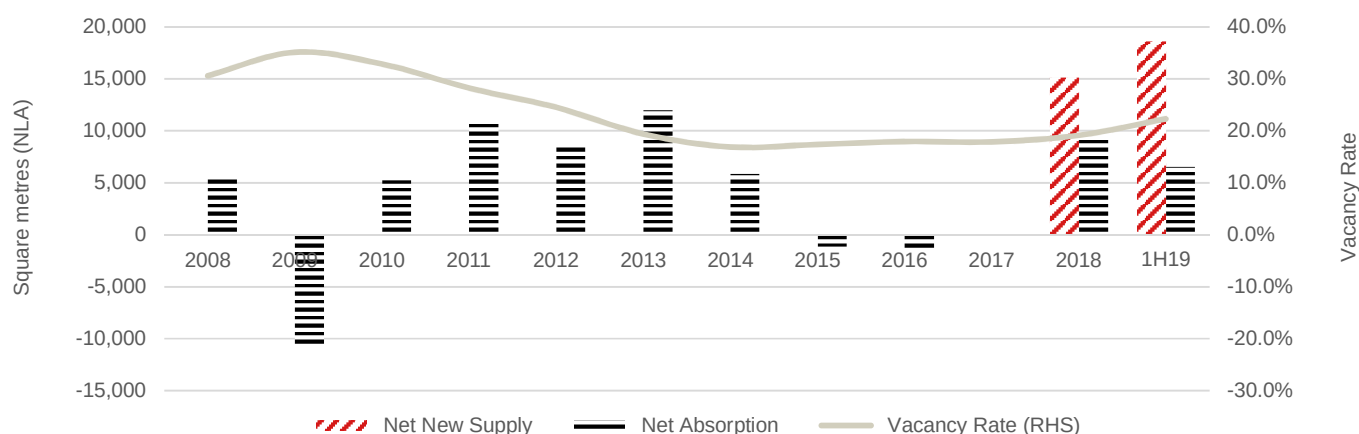
Source: JLL Thailand Research

Note: Net new supply refers to total new supply in each year less withdrawals (e.g., demolitions and conversions to other uses); net absorption describes the total change in occupier demand between two periods

As of 1H19, the South submarket has 357,437 sqm of stock. No new supply in the submarket completed between 1995 and 2014. In 2015, Thai Life Insurance opened a new building for their own-use, the first Grade A project in the submarket. In 2017 two new Grade A projects completed, Bhiraj Tower @ BITEC and M Tower (which is fully leased by Bangchak Corporation PCL). In 2018 two new Grade B projects entered the market, including the new owner-occupied headquarters for Chia Tai (a subsidiary of the Charoen Pokphand Group) and Summer LaSalle by the Bhiraj Buri Group. In 1Q19, two new projects completed – the Grade A True Digital Park near BTS Punnawithi station on Sukhumvit Road and Thai Zhong Tower, a Grade B building on Bangna-Trad Road. Newly completed projects since 2017 have been the primary driver of positive net absorption in the submarket.

While net absorption has been positive in most years since the wider market began recovering from the global recession, the current vacancy rate of 19.2% is the highest of all 12 submarkets we track across Bangkok.

Figure 4-11: Net new supply*, net absorption and vacancy in the South submarket – non-prime segment, 2008 to 1H19



Source: JLL Thailand Research

Note: Net new supply refers to total new supply in each year less withdrawals (e.g., demolitions and conversions to other uses); net absorption describes the total change in occupier demand between two periods

As of 1H19, non-prime stock in the South submarket totals 267,887 sqm, with no new non-prime supply entering the market between 1995 and 2017. As illustrated in Figure 4-11 above, the current non-prime vacancy rate as of 1H19 stands at 22.3%.

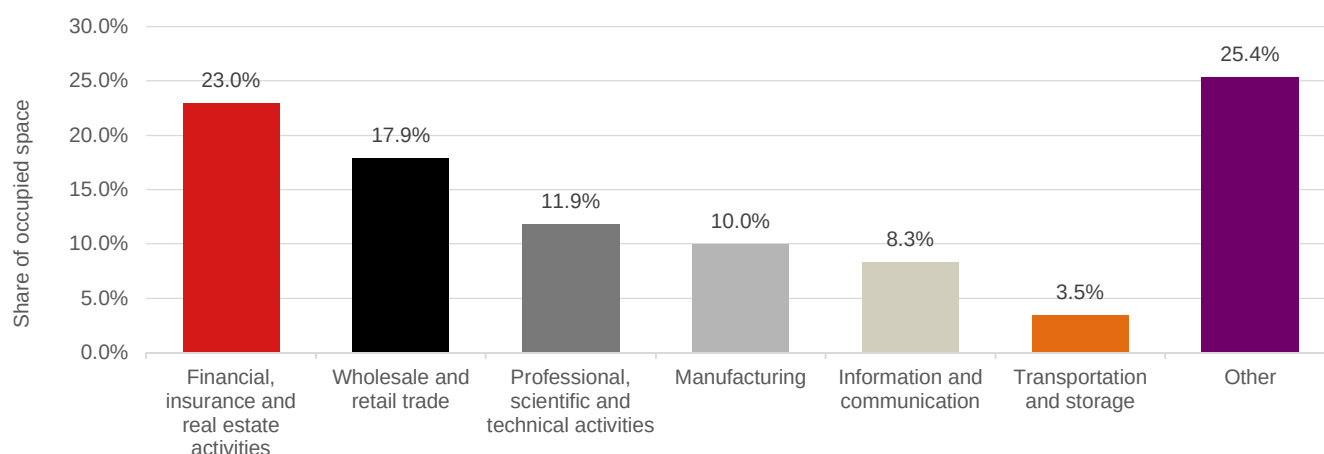
There are three underlying drivers of the high vacancy rate. First, given that nearly all of the projects in the South pre-date the AFC, many are aging and landlords have generally not directed any capital expenditure towards major renovations. Second, the design of most of these buildings is very inefficient in terms of occupier space utilization, making them unattractive to new tenants who have higher expectations. Third is the opening of Summer LaSalle (9,000 sqm) in 2018 which is still 70.0% vacant.

4.2.3 Occupier demand by industry – existing

Each year, we carry out surveys of occupier demand by industry as categorized by the Thailand Standard Industrial Classification (TSIC), which is in turn based on the International Standard Industrial Classification system developed by the United Nations. These surveys are carried out after the close of the first quarter each year as most occupier leasing / movement activity typically occurs in the fourth quarter and subsequent first quarter of the year.

Our 2018 survey, representing occupier demand at the close of 1Q18 covers more than 6,000,000 sqm of space, including all Grade A buildings and most Grade B and C projects. The survey excludes owner-occupied projects and represents more than 80% of all for-lease office space in the market. According to our survey, 56% of occupier demand across the market comes from Thai firms (and 44% from foreign firms). Figure 4-12 below illustrates market-wide occupier demand by major industry across all grades of for-lease space.

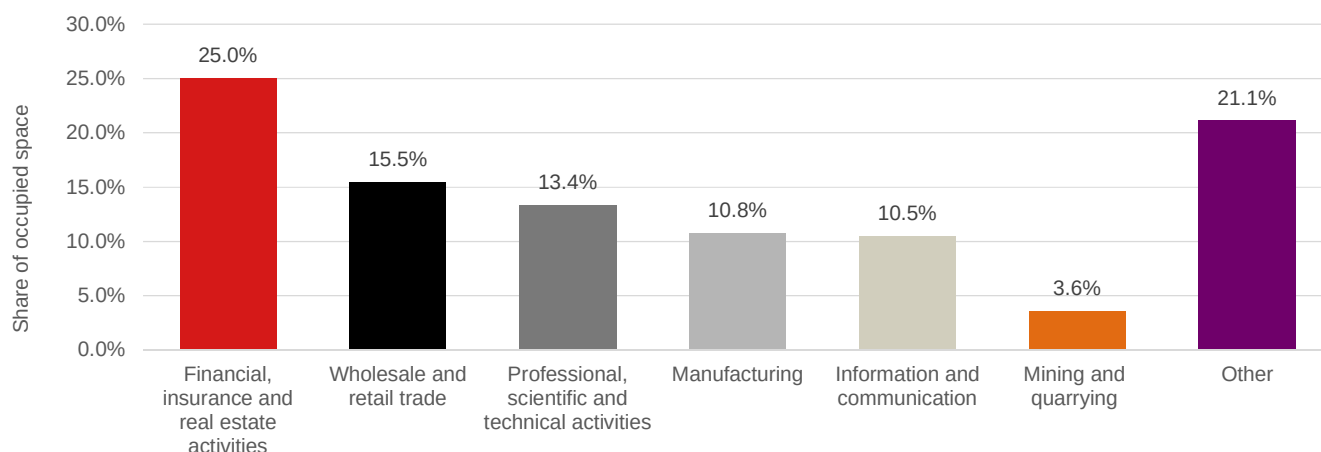
Figure 4-12: Top 6 occupier industry segments in for-lease projects (all grades), market-wide, 1Q18



Source: JLL Thailand Research

Bangkok's office market is relatively diverse in terms of industry sectors. While the Finance, Insurance, and Real Estate (FIRE) sector is the largest source of demand at 23.0%, the next four sectors account for more than 48% of demand, give Bangkok a well-balanced pool of demand. In this respect, Bangkok is quite different from other leading regional markets like Singapore and Hong Kong where the FIRE sector dominates or in Kuala Lumpur and Jakarta where the energy sector is a significant source of office demand. It is also more balanced than Metro Manila, which relies heavily on demand from BPO / KPO operators. Balanced occupier demand provides a cushion against global and regional macroeconomic fluctuations. For example, prior to the onset of the last global recession, market-wide vacancy in Bangkok was 13.3% in 2007 and peaked at 17.4% in 2009 before moving downward. Global externalities do tend to have a larger impact on the Grade A segment where more than half of total demand comes from foreign occupiers – the market-wide Grade A vacancy rate rose from 11.5% in 2007 to 18.5% in 2009. Figure 4-13 below illustrates market-wide occupier demand by industry in Grade A projects as of 1Q18.

Figure 4-13: Top 6 occupier industry segments in for-lease projects (prime grade), market-wide, 1Q18

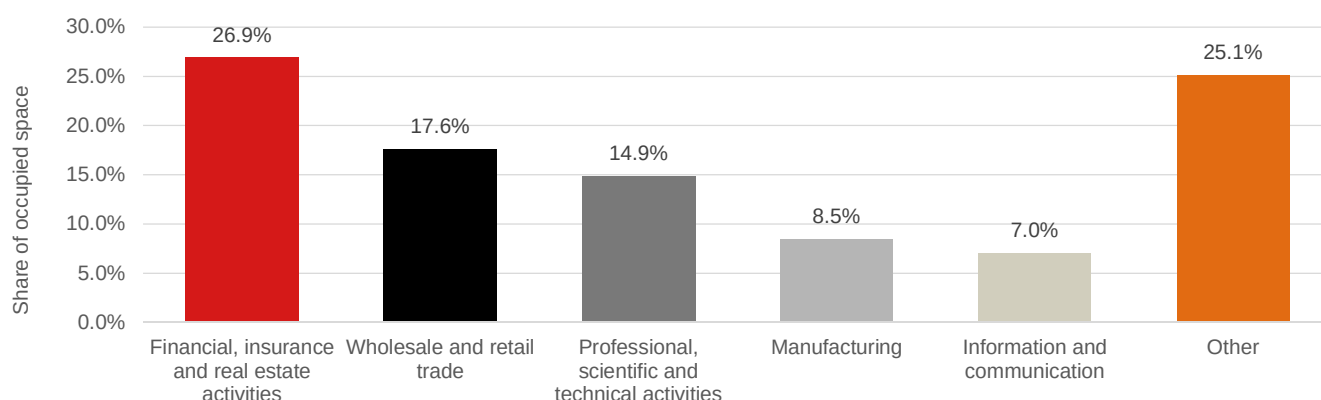


Source: JLL Thailand Research

Much like the market as a whole, Grade A space is well-balanced. The FIRE sector accounts for 25% of Grade A occupier demand, slightly larger than the 23% market-wide figure, but the next four industry sectors account for more than 50% of demand.

In Central Bangkok (see Figure 4-14), the FIRE sector accounts for 26.9% of all occupier demand with the next four industry sectors totaling 48.0% of demand. Thus while the core of Bangkok's office market is home to a reasonably large share of FIRE occupiers, other top sectors balance out the submarket's demand profile.

Figure 4-14: Top 5 occupier industry segments in for-lease projects (all grades), Central Bangkok submarket, 1Q18

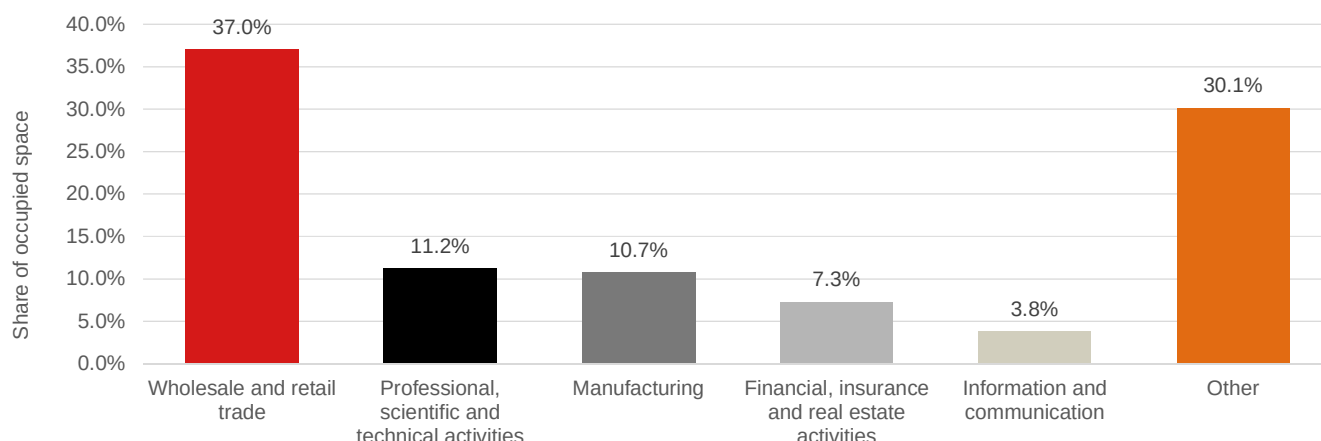


Source: JLL Thailand Research

Unlike most other submarkets in Bangkok, the South submarket is dominated by a single industry sector (see Figure 4-15), with occupiers operating in Wholesale and Retail trade accounting for 37% of demand. The South is the location of choice for these occupiers both for occupancy cost (low rent) considerations

as well as geographically proximity to the CBA but also with good access to the Eastern Seaboard via the motorway where many firms have manufacturing and/or logistics facilities.

Figure 4-15: Top 5 occupier industry segments in for-lease projects (all grades), South submarket, 1Q18



Source: JLL Thailand Research

Similarly, occupiers in the Manufacturing sector (10.7% of demand) also choose the South submarket for cost and accessibility reasons. We note that much of the demand in the FIRE sector is effectively back office locations for larger firms, rather than headquarters functions.

4.2.4 Occupier demand – recent growth drivers

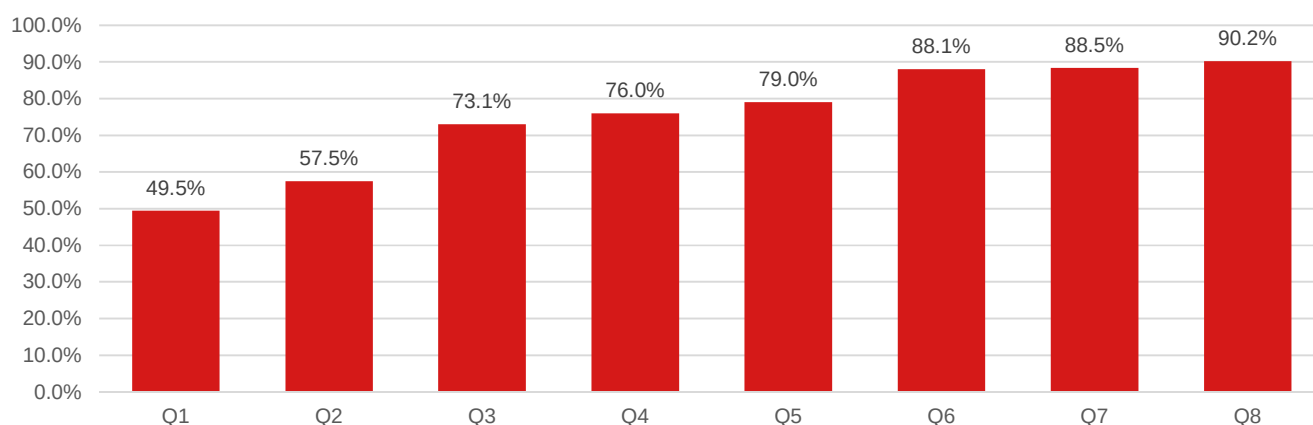
As of 1H19, the market-wide prime vacancy rate is 5.3%, the lowest figure on record dating back to 1991. There are three key factors underpinning strong demand for prime space. The first is occupier flight to quality while the second and third are the rapid emergence of technology occupiers and flex space providers as major sources of demand growth.

Since 2014, a total of 23 new prime grade projects spanning more than 700,000 sqm of space has completed across the market. This new wave of supply has for the first time brought truly world class office space to the market and occupiers have responded by relocating away older premises to the new buildings. With respect to larger occupiers with footprints of 1,000 sqm more, the majority of occupiers relocating (or flying to quality) to new buildings are taking more space and paying higher rents than in their previous locations. In the cases where occupiers are relocating but taking the same (or less) amount of space, they are not downsizing due to smaller employee headcounts, but rather these new buildings offer much more efficient spaces, with generally large, column-free floorplates that allow for better space utilization.

To underscore the immense popularity of new buildings, we have analyzed eight leading prime grade projects that have completed since 2014 and observed occupancy over time, illustrated in Figure 4-16 below. The eight projects include AIA Capital Center (2014), AIA Sathorn (2015), Bhira Tower @

EmQuartier (2015), FYI Center (2016), G Tower (2016), Gaysorn Tower (2017), Singha Complex (2018), and the T-One Building (2018).

Figure 4-16: Normalized aggregate occupancy across eight leading new projects completed since 2014 from opening date



Source: JLL Thailand Research

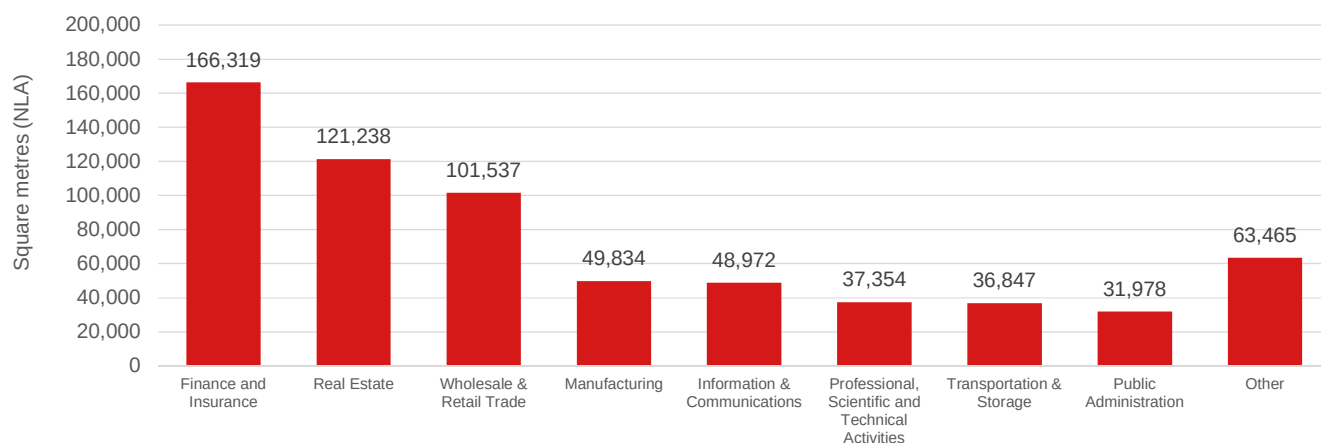
The figures in the chart indicate that across the eight projects, an average of 49.5% of space was physically occupied by the end of the first quarter of operations, suggesting strong pre-commitments during construction. This is in stark contrast to projects that completed between 2007 and 2013, where the average occupancy on opening was in the range of 5-10%. Such strong pre-commitments are not unique to prime grade buildings. For example in 2018, two Grade B projects, Ari Hills and Ladphrao Hills were both 100% pre-leased on opening.

New demand in recent years has been fueled by growth in both the finance and insurance and the real estate activities segments. The finance segment accounted for 25.3% of total new demand between 2014 and 2018 (see Figure 4-17), more than 165,000 sqm (note: these figures cover for-lease space and do not include new owner-occupied premises).

With respect to finance, Siam Commercial Bank (SCB) is a prime mover, having leased more than 35,000 sqm on the open market over the last few years as organic business growth has outstripped SCB's capacity at offices they own. Other banks such as Kasikornbank, UOB, and Krungsri have added more than 110,000 sqm of new corporate offices that they own (which as owner-occupied premises are excluded from the charts presented in this section).

Growth in the insurance sector has been led by foreign (and foreign-local JV) occupiers such as Krungthai-AXA, FWD Insurance, and Bupa Health Insurance which collectively leased more than 30,000 sqm of new space during the period. Domestic insurance companies such as Thai Life Insurance, which added 19,800 sqm of owned corporate space to its portfolio in 2015 typically prefer to own their real estate, much like their finance sector counterparts. That said, SCB Life Assurance (an affiliate of SCB) leased 10,000 sqm during the period, the second largest transaction in the segment.

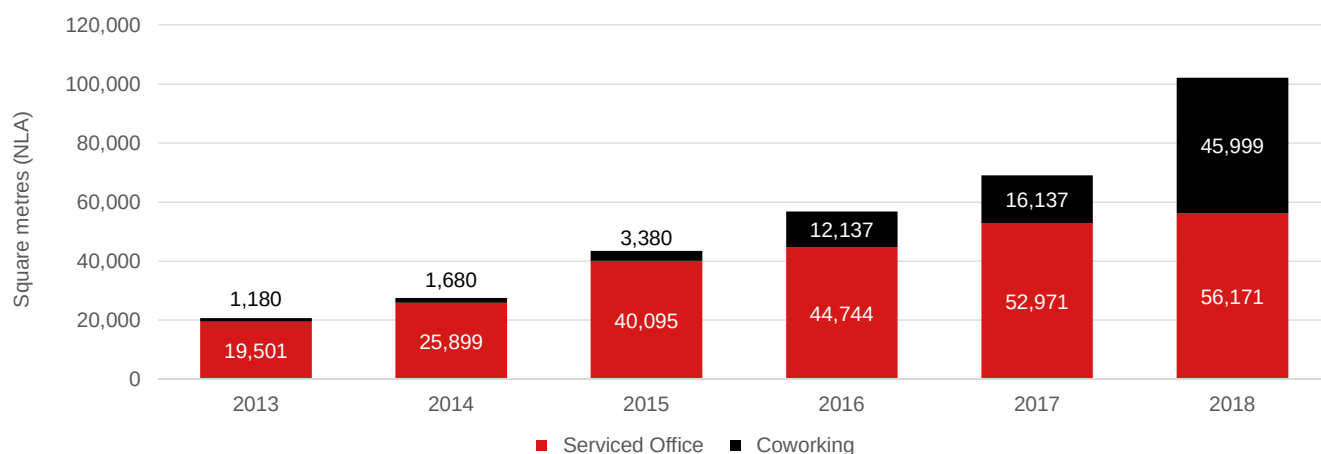
Figure 4-17: Highest growth industries by new space taken, 2014 to 2018



Source: JLL Thailand Research

The Real Estate segment accounted for 18.4% of new demand since 2014, a total of more than 121,000 sqm. Within the segment, flexspace providers are the largest driver, accounting for more than half of new demand in the segment. Flexspace, which includes traditional serviced offices from providers like Regus and Servcorp as well as coworking providers like WeWork and JustCo have expanded by five times since 2013 as illustrated in Figure 4-18 below.

Figure 4-18: Flexspace provider expansion by operator type, 2013 to 2018



Source: JLL Thailand Research

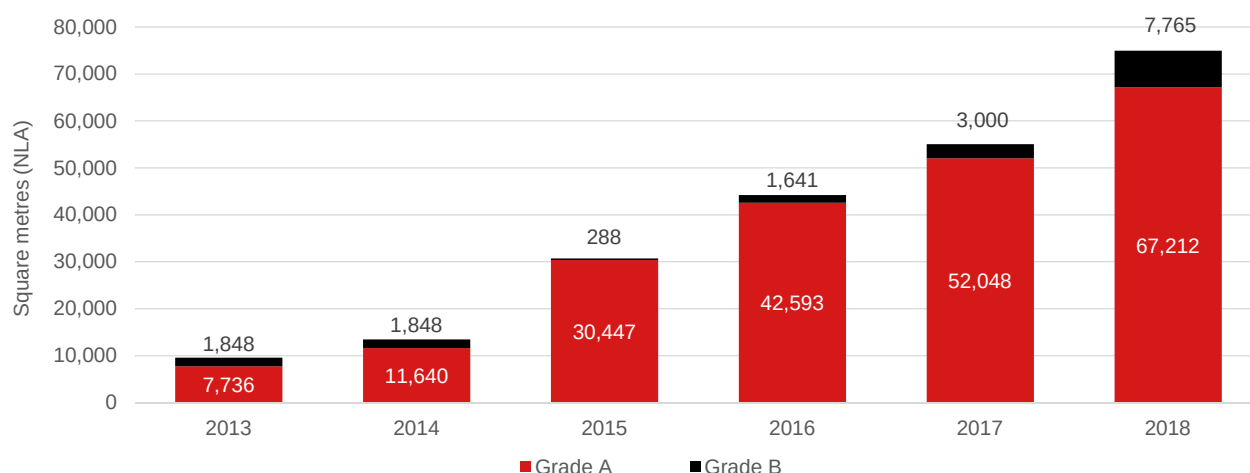
Growth in the flexspace segment accounted for nearly 12% of total new demand since 2014. Flexspace providers now take-up more than 100,000 sqm of space across the market with about 62% of demand located in prime grade office properties. More than 85% of existing flexspace is located within the CBA with about 83% of this demand located in prime grade office buildings.

About 4% of total demand for Grade A CBA assets comes from the Flexspace segment while the figure is just about 1% market-wide.

One of the key growth factors is that coworking operators take a much larger amount of space per location than traditional serviced office providers. In the past, serviced office operators have generally taken spaces of 1,000 sqm to 1,500 sqm, though some recent transactions are as large as 2,000 sqm. New foreign coworking operators like WeWork and JustCo are aggressively and are leasing spaces in the range of 3,000 sqm to 9,000 sqm. Much of the potential expansion of flexspace providers is yet to be realized, with nearly 40,000 sqm of pre-leasing activity for new projects completing in 2019 or later.

The next four sectors, Wholesale & Retail Trade, Manufacturing, Information & Communications and Professional, Scientific, and Technical activities account for most (36.1%) of the remaining growth between 2014 and 2018 or more than 235,000 sqm. These are key sectors for owners of assets in the CBA, particularly owners of Grade A properties. Across these four segments sit leading multi-national technology firms, including Agoda, Amazon, Apple, Booking.com, Facebook, Garena, Google, Huawei, JD.com, Lazada, Microsoft, Shopee, and Tencent. Recent growth in the broader tech sector is illustrated in Figure 4-19.

Figure 4-19: Leading tech firm expansion in Bangkok, 2013 to 2018



Source: JLL Thailand Research

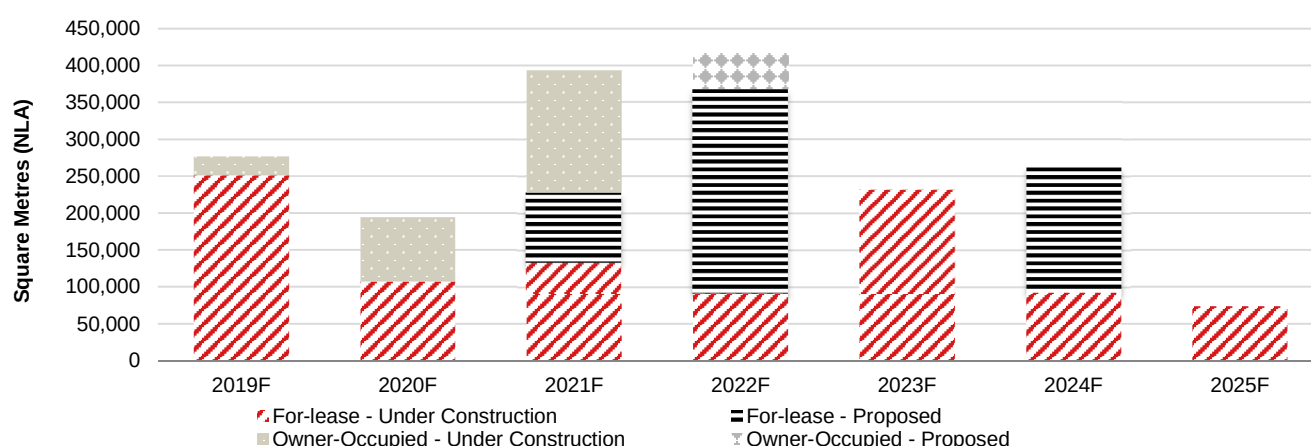
Leading tech firms increased their total footprint by seven times between 2013 and 2018 and accounting for nearly a quarter of all new demand with the four segments above, and nearly 10% of total new demand since 2014 and now take-up more than 70,000 sqm of space, mostly in prime grade buildings in the CBA. While growing e-commerce providers such as Shopee and Lazada are largely fueled by domestic consumption, other firms like Huawei and Agoda have large footprints with regional mandates. For example, in 2016 Huawei chose Bangkok for its Southeast Asia R&D hub – Huawei is now Bangkok's largest tech occupier, taking more than 15,000 sqm of space across the market.

Forecast supply dynamics

As of this writing, we are tracking 49 projects spanning 1,841,470 sqm of space that have been officially announced to the market that are scheduled for completion between 2H19 and 2026. This official future

supply is illustrated in Figure 4-20 below. In addition, there are more than a dozen projects that are rumoured in the market that may account for up to 800,000 sqm of new supply starting in 2022.

Figure 4-20: Total known future office supply in Bangkok through 2025 by project type and status



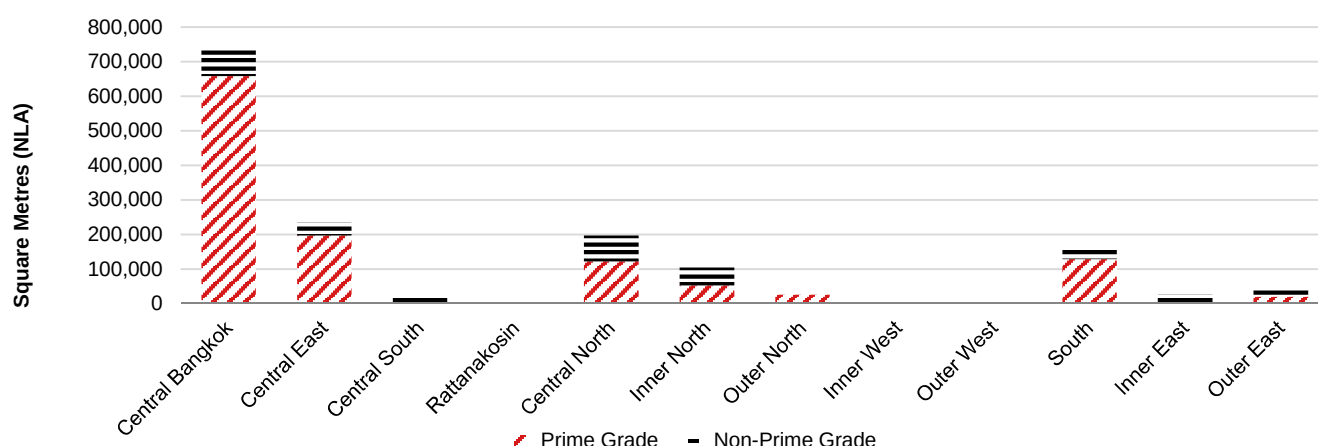
Source: JLL Thailand Research

Note: Proposed projects are those that have been officially announced by the developer / investor but which are not yet under construction. Completion dates for proposed projects are generally in line with developer / investor announcements unless JLL feels strongly to the contrary (e.g., it is not physically possible to build a 60,000 sqm net building in two years).

As illustrated in Figure 4-20, nearly 1.3 million sqm (across 40 projects) of future supply is currently under construction and scheduled for delivery through 2025 while another 17 projects totaling about 630,000 sqm of space are currently proposed and in various stages of planning. In addition, the fifth and final tower expected at One Bangkok spans 139,000 sqm and is expected in 2026 (or possibly later) while the proposed redevelopment of the UK Embassy site on Wireless Road should encompass around 150,000 sqm – neither project is shown in Figure 4-20 but both are accounted for in Figure 4-21 below.

Eight of the 40 projects currently under construction and totaling 260,000 sqm are owner-occupied and should not have a noticeable impact on the for-lease market when completed. Fourteen of the 32 remaining for-lease projects are located in the CBA, accounting for 600,000 sqm of new supply under construction – while the majority of projects are located in decentralized submarkets, they are generally quite small in size. Figure 4-21 illustrates all for-lease projects announced to the market, under construction and proposed by submarket and project grade.

Figure 4-21: Total known future for-lease office supply in Bangkok through 2025 by submarket and grade



Source: JLL Thailand Research

More than 47% (737,845 sqm) of announced market-wide future for-lease supply through 2025 will be located in Central Bangkok, geographically competitive to Empire Tower, Athenee Tower and 208 Wireless Road. About 46% (338,000 sqm) of this supply will come from One Bangkok by Frasers Property and TCC Assets. The remaining major projects in Central Bangkok will be built by Central Pattana PCL (CPN), Raimon Land PCL, and Thai Obayashi.

Also in the CBA, the Central East submarket should see 235,000 sqm of new supply over the forecast horizon, with 60% coming from The PARQ, developed by TCC Assets by having Frasers Property Holdings Thailand Co. Ltd. (a wholly owned subsidiary of Frasers Property) as a Development Manager.

The Central North and Inner North submarkets, historically key decentralized locations for leading foreign and domestic occupiers, are expected to welcome about 300,000 sqm of new for-lease supply through 2025.

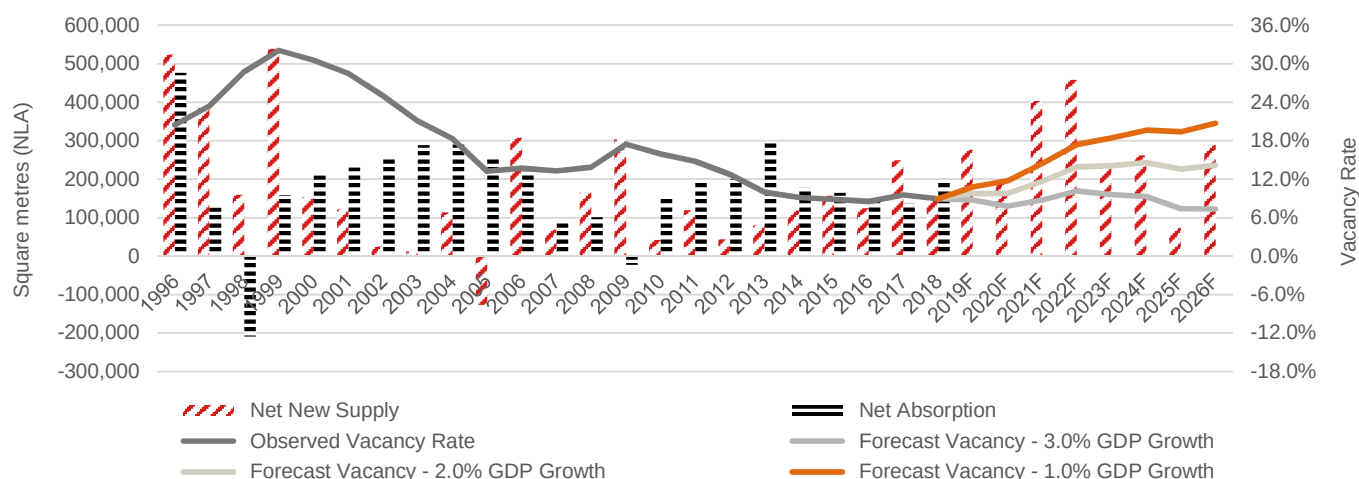
In the South submarket, the location of Interlink Tower, there are several for-lease projects scheduled for completion through 2022 totaling 163,000 sqm of space, including new builds by AIA (2022) and The Mall Group (2022).

On an average annualized basis, we thus expect about 228,000 sqm of new for-lease supply to complete each year through 2025. This is in comparison to the 142,000 sqm of average new supply completed each year between 2008 and 2018. While the future supply forecast may seem like an oversupply situation could come about over the medium-term, we believe that continued occupier flight to quality and general economic growth underpinning occupier expansion will support take-up in these new projects.

4.2.5 Forecast demand dynamics

Historically speaking, total occupier demand (take-up) in Bangkok is very tightly correlated with national real GDP growth. Given the tight correlation, we have run a linear regression comparing historical real GDP growth with total occupier demand and the results indicate an R squared value of 0.97. Thus in forecasting future demand across the market, we incorporate this historical trend and use GDP forecasts provided by Oxford Economics, a third party data provider, to estimate future vacancy rates based on known future supply and possible GDP growth scenarios. Figure 4-22 below illustrates three different GDP growth scenarios and corresponding vacancy rates.

Figure 4-22: Market-wide demand forecast scenarios through 2026 (all grades)



Source: JLL Thailand Research

At present, Oxford Economics forecasts an average of 3.0% per year GDP growth through 2026. Based on our model, this suggests that occupier demand will remain strong and vacancy rates will remain at or below current levels, despite the seemingly large amount of new supply coming to market. If average annual GDP growth slows to 2% per year, the next few years will still see single digit vacancy rates, however with the large amount of new supply expected in 2021 and 2022, rates will move into the low double digits, roughly to pre-GFC levels.

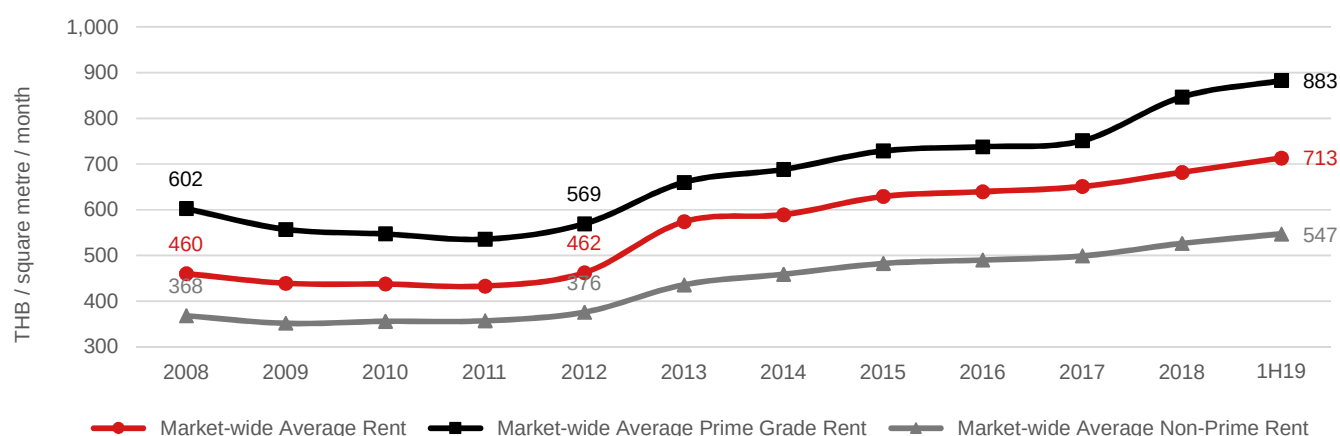
While we cannot comment on the macroeconomic outlook beyond 3rd party data, it is very clear that the next two years should be tilted in favour of landlords.

4.3 Recent rental growth and other financial indicators

4.3.1 Historical rental growth

As of 1H19, average rental rates across Bangkok are at all-time (nominal) highs, regardless of location and quality of space. Looking back, rents last peaked in 2008 at the onset of the global recession and bottomed out in 2011. Relative to peaks and troughs in vacancy rates, there appears to be a lag of 12-18 months between vacancy hitting highs / lows and rents doing the same. As illustrated in Figure 4-23, the average market-wide gross rent currently stands at THB 713 / sqm / month, an increase of 6.7% year-on-year and 55.0% higher than the end-2008 pre-GFC peak of THB 460 / sqm / month.

Figure 4-23: Market-wide average achieved monthly gross rents by segment, 2008 to 1H19



Source: JLL Thailand Research

Note 1: Rental rates are calculated on the basis of achieved values of transactions of at least 1,000 sqm, including relocations, expansions, and renewals

Note 2: Rental rates are stock-weighted rather than a simple average, meaning rental changes in large buildings such as Empire Tower have a bigger impact on rental movement than smaller buildings such as 208 Wireless Road.

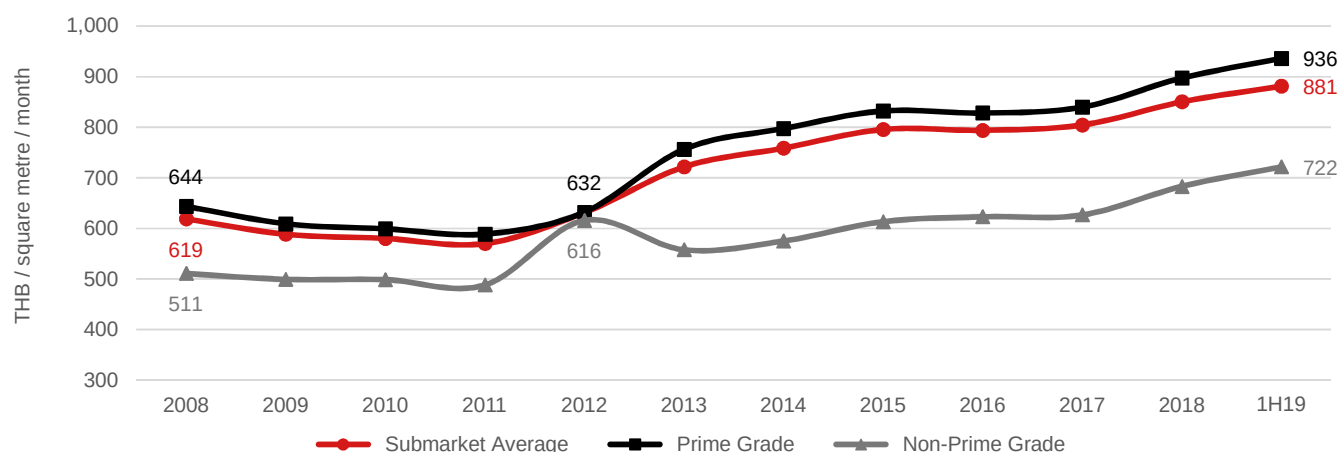
Prime grade rents rose by 6.8% year-on-year in 1H19, propelled by several new completions and landlords in top buildings taking advantage of vacancy rates at or near record lows. Prime grade rents are up by 46.7% since the pre-GFC peak of THB 602 / sqm / month in 2008. In the non-prime segment, which includes Grade B and C buildings, rents increased by 5.2% year-on-year and are up by 48.6% since 2008.

As the market recovered from the GFC in 2012 and 2013, rents began to increase substantially, driven by large amounts of net absorption, including nearly 300,000 sqm in 2013 alone, the largest figure recorded in a single year since 1995. Between 2012 and 2018, average market-wide rents have increased by a compound annual growth rate (CAGR) of 6.7%. During the same period the prime and non-prime segments grew by a CAGR of 6.9% and 5.8% respectively.

At the submarket level in Central Bangkok (see Figure 4-24), long-term growth dynamics are similar to the market as a whole, with rates continuing to hit all-time highs after last peaking in 2008 and hitting a low during the GFC in 2011. The market-wide average gross rent in Central Bangkok was THB 881 / sqm / month in 1H19, representing year-on-year growth of 5.8%, slightly higher than the 5.1% CAGR witnessed between 2012 and 2018.

Given that Central Bangkok has a large amount of prime grade stock and much of it pre-dates the Asian Financial Crisis, average prime grade rents in the submarket are only slightly higher than the submarket average at THB 936 / sqm / month. As occupiers have voted with their feet, moving to newly-completed projects, prime grade rental growth has been faster than the submarket as a whole, with year-on-year growth of 6.7% and a CAGR of 6.0% between 2012 and 2018. On the other hand, non-prime rents in the segment have only increased by 1.7% (CAGR) between 2012 and 2018, as lower quality buildings tend to suffer as occupiers relocate to newer, higher quality premises.

Figure 4-24: Central Bangkok average achieved monthly gross rents by segment, 2008 to 1H19



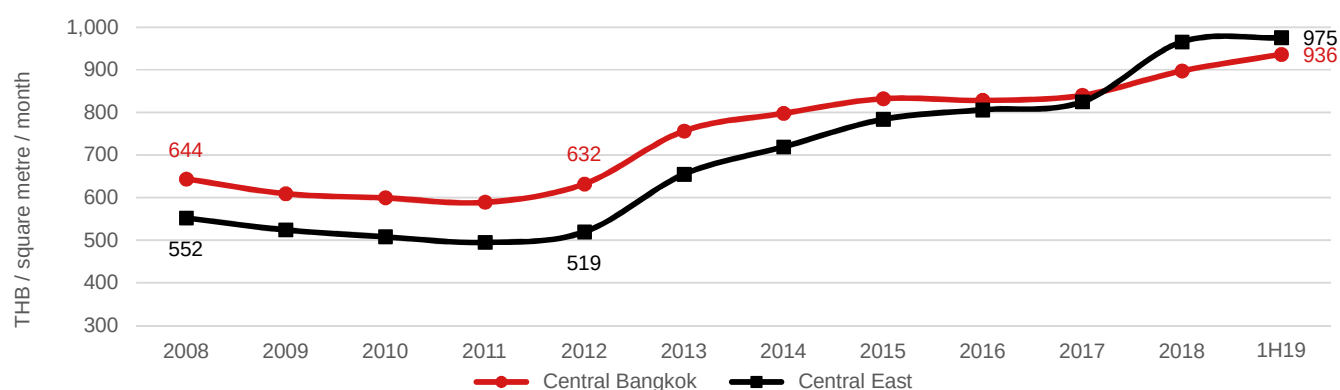
Source: JLL Thailand Research

Note 1: Rental rates are calculated on the basis of achieved values of transactions of at least 1,000 sqm, including relocations, expansions, and renewals

Note 2: Rental rates are stock-weighted rather than a simple average, meaning rental changes in large buildings such as Empire Tower have a bigger impact on rental movement than smaller buildings such as 208 Wireless Road.

The impact of newer buildings on rental rates is more clearly illustrated by comparing prime grade rental growth between Central Bangkok and the Central East submarkets. The Central East has roughly one-third the amount of prime grade stock compared to Central Bangkok, some 391,000 sqm compared to 1.2 million sqm. Of the current prime grade stock in the Central East, about 130,000 sqm has completed since 2015 and its stock-weighted impact on submarket rents is highly evident as indicated in figure Figure 4-25.

Figure 4-25: Comparison between prime grade rents in Central Bangkok and the Central East, 2008 to 1H19



Source: JLL Thailand Research

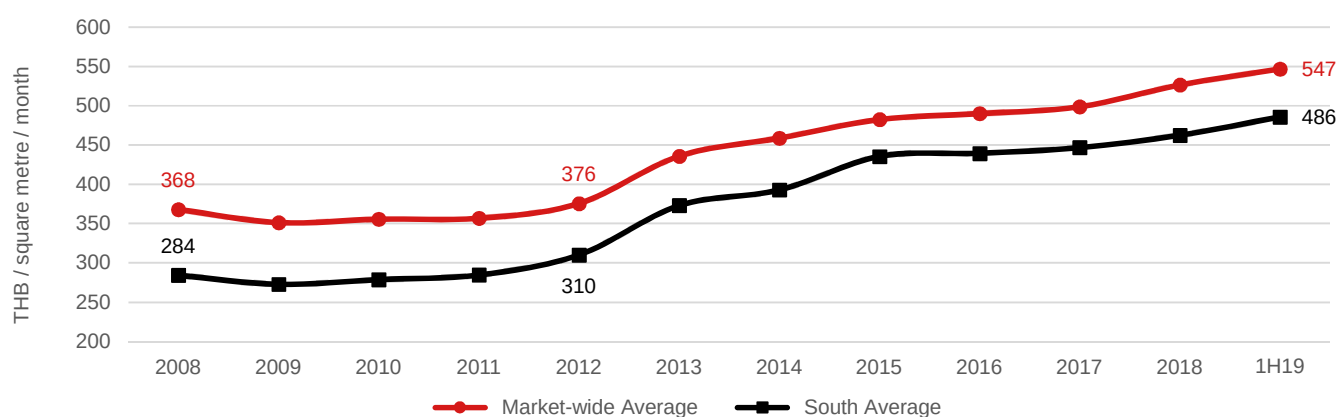
Note 1: Rental rates are calculated on the basis of achieved values of transactions of at least 1,000 sqm, including relocations, expansions, and renewals

Note 2: Rental rates are stock-weighted rather than a simple average, meaning rental changes in large buildings such as Empire Tower have a bigger impact on rental movement than smaller buildings such as 208 Wireless Road.

Between 2012 and 2018, prime rents in the Central East have increased by 10.9% per year (CAGR), compared to the 6.0% CAGR seen in Central Bangkok. The large upward movement in the Central East in 2018 was driven in large part by the first wave of renewals at Bhiraaj Tower @ EmQuartier, where asking rents of THB 1,350 / sqm / month position it as the third most expensive building in the market. At the same time, the T-One Building completed in 2018 with asking rents in excess of THB 1,000 / sqm / month.

In the South submarket, the location of Interlink Tower, all existing stock with the exception of Bhiraaj Tower @ BITEC and True Digital Park is non-prime. As Bhiraaj Tower @ BITEC only completed in late 2017 and True Digital Park completed in 1Q19, there are no historical comparables between projects of different quality in the submarket. As of 1H19, the average gross rent in the non-prime segment of the South submarket was THB 486 / sqm / month, up 4.3% year-on-year.

Figure 4-26: Comparison between average non-prime gross rents market-wide and in the South submarket, 2008 to 1H19



Source: JLL Thailand Research

Note 1: Rental rates are calculated on the basis of achieved values of transactions of at least 1,000 sqm, including relocations, expansions, and renewals

Note 2: Rental rates are stock-weighted rather than a simple average, meaning rental changes in large buildings such as Empire Tower have a bigger impact on rental movement than smaller buildings such as 208 Wireless Road.

While y-o-y growth lagged more centrally located submarkets with higher quality products, the CAGR in the South submarket between 2012 and 2018 is 6.9%, outpacing the market-wide CAGR of 5.8% during the same period, suggesting that despite the older quality and generally less attractive location for high-paying occupiers, landlords in the submarket have also witnessed healthy performance since the end of the recession.

4.3.2 Rental forecast expectations

Since 1995, average (CAGR) growth of rental rates across the market has paced long-term inflation around the 2.0% per year mark, while since the last peak in 2008, rental rates have increased by 4.0% per year (CAGR). As Thailand and indeed Bangkok lack good quality secondary data, such as detailed, consistent labor and employment data by sector, it is very difficult to develop a robust forecast model to predict specific rental rates over the forecast horizon.

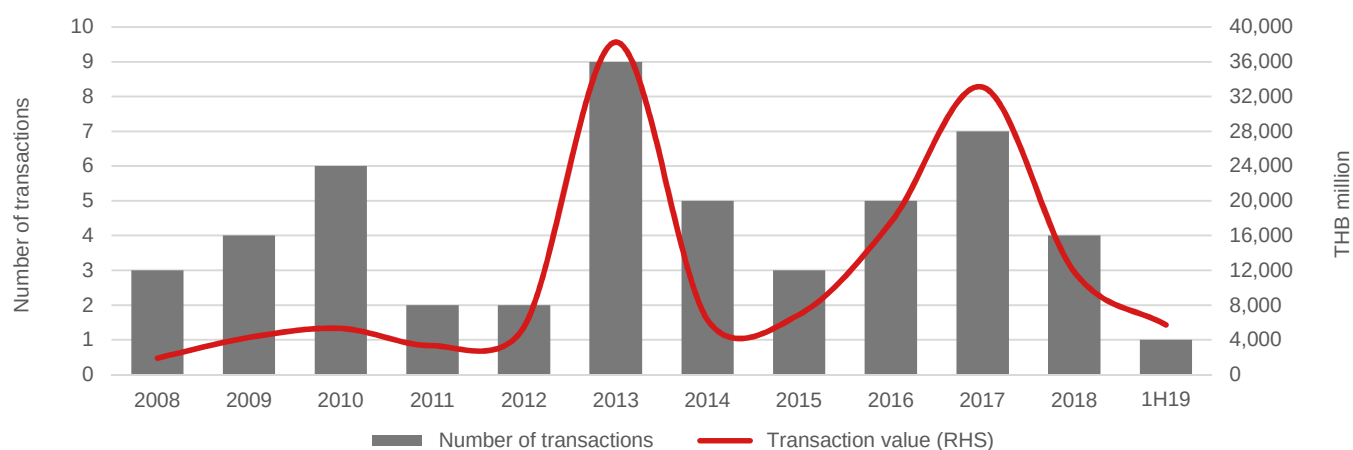
We believe that the 10-year CAGR of 4.0% is a solid target for the market as a whole through 2021, given the relatively limited amount of new supply coming to market, particularly in the Central Business Areas. It is very possible that rental rates in the prime segment, particularly in Central Bangkok and the Central East where vacancy is currently at or near record lows will see more rapid growth. While some landlords of older Grade A buildings may offer competitive renewal rates to key anchor tenants in a bid to retain them in the face of new supply coming to market, we believe that the majority of office building owners will attempt to max out escalation clauses in lease agreements (typically 15-20% every three years), driving rental growth. In the South submarket, short-term dynamics are less clear. While we do not see any reason why forecast rental would lag market-wide growth, we also do not see anything driving significant outperformance over the next few years.

Beyond 2021 and into 2022 and 2023 when a large amount of new supply is expected to enter the market, the forecast becomes much less clear. Given that the majority of new supply is Grade A and will be built to international quality specifications (e.g., LEED and WELL Gold and/or Platinum levels), it is possible that rents could continue to rise, albeit at a more modest rate as the owners of new projects seek to maximize their position in the market as having “the best” buildings. We have seen this happen in recent years with stiff competition between top newer buildings like Gaysorn Tower, Park Ventures and Bhira Tower @ EmQuartier. On the other hand, some landlords may choose to offer more competitive rates to lure occupiers away from the “top” new buildings and we could see a real deceleration in rental growth. That said, we do not foresee negative rental growth barring major domestic or external macroeconomic changes, such as another global recession.

4.3.3 Capital markets

Bangkok's office market is generally considered to be illiquid by most investors in that very few office buildings ever trade on the open market outside of sponsored REITs and the previous property fund (PFPO) structure. Indeed the last arm's length transaction between two unrelated private parties was in 2015 with the acquisition of Sun Towers by a subsidiary of Singha Estate PCL. This transaction was in fact a corporate acquisition rather than a direct asset transfer, with the buyer acquiring shares in the vendor, including existing debts and liabilities. Prior to that was the sale of Equinox Tower (now SJ Infinite I) by Major Development PCL to WHA PCL in 2014 and then the sale of Liberty Square on Silom Road in 2013. Figure 4-26 below illustrates the number of en-bloc office building transactions per year since 2008 along with the corresponding reported (or estimated values where details are not public) transaction values.

Figure 4-26: Number of en-bloc office building transactions and total transaction value, 2008 to 1H19



Source: JLL Thailand Research, Stock Exchange of Thailand, Real Capital Analytics

With the lack of assets available for sale in the market, it is difficult to discern any specific trends with respect to the number of transactions or total annual transaction value. That said, there are a few notable events to point out. In the early 2000s through 2006, a number of foreign institutional investors made acquisitions through schemes designed to boost real estate investment in the wake of the Asian Financial Crisis. Leading investors from the United States such as LaSalle Investment Management (LIM) and Lehman Brothers each acquired several assets, while at the same time, Singapore's GIC partnered with Land and Houses / Quality Houses to acquire a number of distressed office assets, which were completed and/or renovated. In 2006 the GIC / LH / QH partnership divested a number of assets into the stock exchange via Property Fund for Public Offerings (PFPOs), a mutual fund based vehicle that served as the predecessor to today's REITs (and which still trade on the exchange). After no reported transactions in 2007, both Lehman Brothers and LIM exited, with local investors taking over.

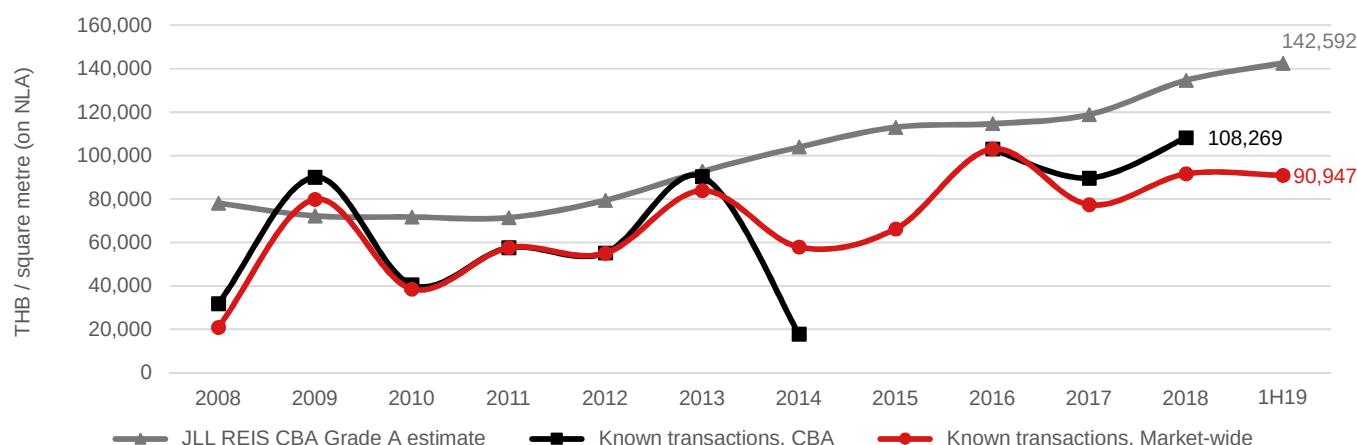
The spike in transactions and transaction value in 2013 was largely the result of the launch of the Thai Commercial Investment Freehold and Leasehold Fund (TCIF), a PFPO sponsored by the TCC Group. The uptick in transactions since 2015 has been largely led by new REIT IPOs of both prime for-lease assets and non-prime owner-occupied assets. The relatively large numbers in 2017 are mostly attributed to the buyback / buyout of TCIF by the TCC Group / Asset World Corp PCL.

Over the last two decades, JLL have maintained a database of all known transactions while also working with our Valuations and Capital Markets teams to both track actual capital values (sale prices) and estimate values where few to no transactions have taken place. Figure 4-27 below illustrates three different sets of data.

The first is our long running estimate of en-bloc capital values for freehold Grade A office buildings in the CBA. This is a notional value based on real-world transactions and JLL estimates. We note that this value is designed to encompass all Grade A stock in the CBA and the actual figures are likely lower than what a new building would trade at given the fact that most buildings in the CBA are at least 15-20 years old.

The second set of data are based on actual transactions, both freehold and leasehold, strata-titled and en-bloc, covering all grades of space (A, B and C) in the CBA while the third covers all types of transactions market-wide.

Figure 4-27: Estimated capital values of en-bloc and strata-titled office transactions, 2008 to 1H19



Source: JLL Thailand Research, JLL Real Estate Intelligence Service (REIS), Stock Exchange of Thailand, Real Capital Analytics

As of 1H19, our in-house estimates for CBA Grade A values and actual transactional evidence for Grade A properties point to an average capital value in the range of THB 130,000 to THB 142,000 per square metre, with the market-wide figure lagging by about 35%. The 10-year CAGR (2008 to 2018) for our in-house estimates is 5.6%. Table 4-2 below provides a list of notable transactions since 2013.

Table 4-2: Notable office transactions, 2013 to 1H19

Year	Building	NLA (sqm)	Grade	Submarket	Tenure	Years Remaining*	Transaction Type	Transaction Category	Total Sale Price (THB)	Price per sqm (THB)	Net Yield**
2013	Liberty Square	18,000	B	Central Bangkok	Freehold	n/a	En-bloc	Arm's Length	1,900,000,000	105,556	4.7%
2013	Empire Tower	158,021	A	Central Bangkok	Freehold	n/a	En-bloc	PFPO	15,000,000,000	94,924	5.4%
2013	208 Wireless Road	12,668	A-	Central Bangkok	Freehold	n/a	En-bloc	PFPO	1,400,000,000	110,515	5.2%
2014	Equinox Tower	20,122	B	Inner North	Freehold	n/a	En-bloc	Arm's Length	2,050,000,000	101,879	4.9%
2014	Siripinyo Building	18,364	B	Central North	Freehold	n/a	En-bloc	PFPO	1,700,000,000	92,572	4.6%
2015	Sun Towers A & B	60,426	B	Inner North	Freehold	n/a	En-bloc	Arm's Length	4,500,000,000	74,471	5.5%
2016	Park Ventures Ecoplex	26,313	A+	Central Bangkok	Leasehold	27	En-bloc	REIT	3,053,000,000	116,026	7.3%
2016	Sathorn Square	73,181	A+	Central Bangkok	Leasehold	26	En-bloc	REIT	6,947,000,000	94,929	7.1%
2016	Exchange Tower	42,888	A	Central East	Freehold	n/a	En-bloc	REIT	4,800,000,000	111,919	6.8%
2016	Mercury Tower	24,765	A-	Central Bangkok	Leasehold	19	En-bloc	REIT	2,420,000,000	97,719	7.0%
2018	Bhiraj Tower @ EmQuartier	49,732	A	Central East	Leasehold	26	En-bloc	REIT	6,605,000,000	132,812	6.2%

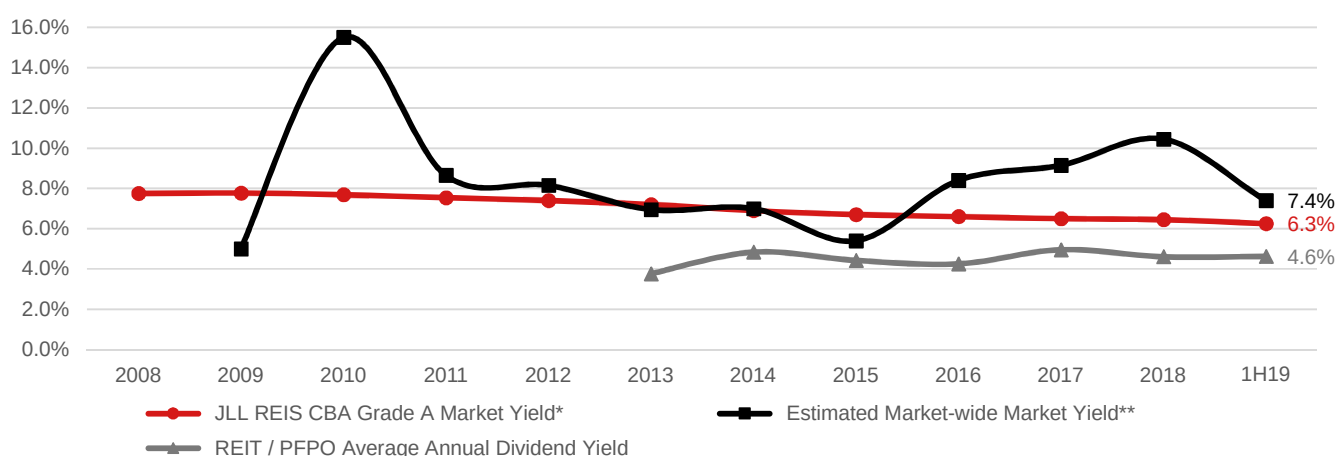
Source: JLL Thailand Research, Stock Exchange of Thailand, Real Capital Analytics

*Note 1: Years remaining on leases to the PFPO and not necessarily reflective of length of ground lease

**Note 2: Net yields are estimates based on both publicly disclosed figures and JLL estimates for revenue, operating expenses, transaction costs, etc. Over the last five years, estimated net yields have ranged between 4.7% and 7.4%. While there is no discernable trend in yield movement over time, it is clear that freehold offerings command a lower yield. This is broadly in line with evidence from other markets around the region.

In addition to estimating capital values over time, JLL also maintains an estimate for market yields (gross, exclusive of transaction costs) for Grade A buildings in the CBA. This yield series is illustrated in Figure 4-28 alongside estimated average net yields from all known office transactions across the market and our analysis of average annual dividend yields of REITs and PFPOs by real estate sector over the last five years based on public disclosures from the Stock Exchange of Thailand and calculated by JLL.

Figure 4-28: Estimated office market yields, 2008 to 1H19



Source: JLL Thailand Research, JLL Real Estate Intelligence Service (REIS), Stock Exchange of Thailand, Real Capital Analytics

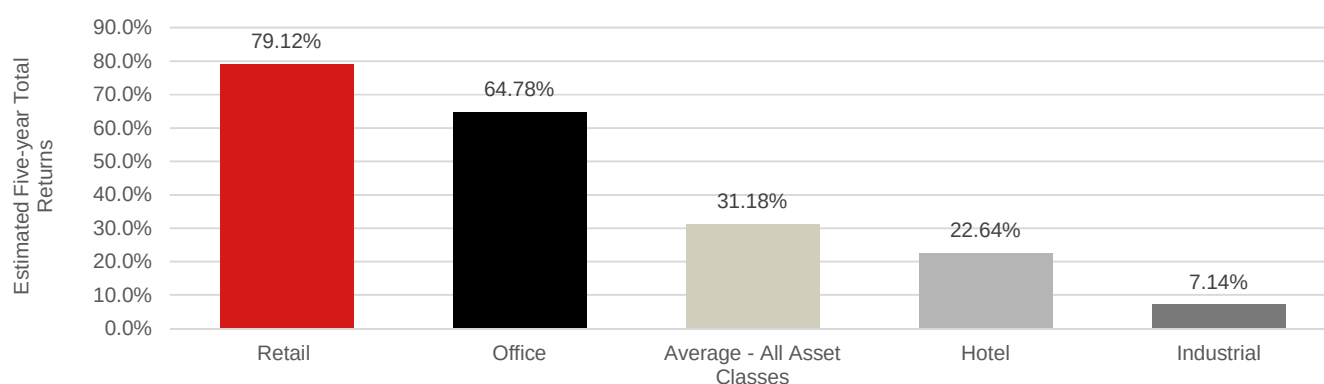
*Note 1: Gross yield estimate; exclusive of transaction costs

**Note 2: Net yields are estimates based on both publicly disclosed figures and JLL estimates of actual transactions for revenue, operating expenses, transaction costs, etc

Looking back at actual and estimated yields over the last decade, it is clear that yields are compressing. The compression is being driven by a combination of factors that include significant investor appetite (both direct investment and in the capital markets via REITs and PFPOs), lack of assets available for sale and rapidly rising land values. Looking forward over the next five years, we expect these factors to drive further yield compression, which we expect to land in the mid-5% range within a few years.

Analyzing investor returns from another angle, Figure 4-29 below describes the total returns of REITs and PFPOs by real estate sector over the last five years based on public disclosures from the Stock Exchange of Thailand and calculated by JLL.

Figure 4-29: Estimated five-year REIT / PFPO total returns by asset sector, 1H14 to 1H19



Source: JLL Thailand Research, Stock Exchange of Thailand

4.4 Typical lease arrangements

4.4.1 Lease length and basic structure

Nearly all occupier leases in Bangkok are structured around 3+3 or 3+3+3 terms. An occupier will typically sign an initial 3-year agreement with one or two potential 3-year renewal periods. Between each possible renewal period, most agreements will stipulate maximum rental escalations, usually between 15-20%. Occupiers will negotiate with landlords, often with the support of a broker acting in a tenant representation role to minimize escalations between terms. Importantly, the language used most lease agreements is highly tenant favourable and nearly all agreements will give occupiers the right to renew. In other words, it is quite rare for the landlord to have the power to evict a tenant, short of gross violations of the lease agreement.

We note that it is extremely rare for occupiers of any size to sign lease agreements longer than three years. The short lease lengths are because any lease longer than three years must be registered with the Land Department and there are significant costs associated with lease registration. For large anchor tenants who may wish to secure a new premises for a longer-term, the "3+3" model is still used, but instead of a total possible term of six or nine years, additional renewal periods are built in such that the lease agreement may cover a total term of 12 or 15 years.

4.4.2 Understanding rent and service agreements

Unlike most other markets around the region where occupiers sign a single rental agreement that includes the gross rent to be paid (e.g., USD 50 / sqm / month) and a service charge (either a fixed amount or a small percentage of the rent) where the service charge is generally reflective of the actual operational costs incurred by the landlord, occupiers in the Bangkok market sign two agreements, a rental agreement and a service agreement.

Assuming an occupier and landlord agree upon a rental rate of THB 1,000 / sqm / month, the occupier will sign a rental agreement and a service agreement. In most instances, the rental agreement will stipulate a cost of 50-60% of the total rental rate (e.g., THB 500-600 / sqm / month in this case) while the service

agreement will stipulate the remaining cost of 40-50% (e.g., THB 400-500 / sqm / month). The cost / rate included in the service agreement is almost never reflective of the actual cost of operating an office building. Instead the rationale for separate agreements with a relatively even balance of the overall rental rate is because (landlord) rental income is taxed at a much higher rate than (landlord) income related to service provision. Thus by splitting lease agreements, landlords are able to lessen their tax burden.

4.4.3 Typical lease incentives

Landlords in Bangkok generally offer few incentives relative to other markets around the region. The key incentives that are on offer typical revolve around rent free periods and parking slot allocations.

Rent Free – most smaller occupiers in the market signing new lease agreements will be offered 2-3 months of free rent, which will cover the time necessary for fitting out a new space and possibly extend on a limited basis into the actual lease term. Rent free periods are not offered between 3+3 renewal periods. For larger occupiers, landlords may choose to offer as much as 6-8 months of rent free periods, including ample time for the fit-out process as well as a few months for free once the occupier is operational. There is no rule of thumb for larger occupiers, as each landlord will take a different approach to secure tenants.

Parking – the typical market convention in Bangkok is to offer one free (car) parking slot for each 100 square metres of space leased. These parking spaces may be dedicated (assigned to the occupier) or flexible (unassigned). As most office buildings in Bangkok lack sufficient parking to meet total occupier demand (including paid monthly demand), it is rare for landlords to agree to additional free parking allocations. In some cases, landlords will make specific (assigned) additional allocations to large anchors on a paid-basis.

Other – landlords seeking to secure large anchors, either in new projects or existing projects with large amounts of vacancy space may offer a variety of financial and non-financial incentives that include dedicated reception areas/desks in the lobby, dedicated/secure lift access, naming rights and/or exterior signage.

4.5 Ownership of assets

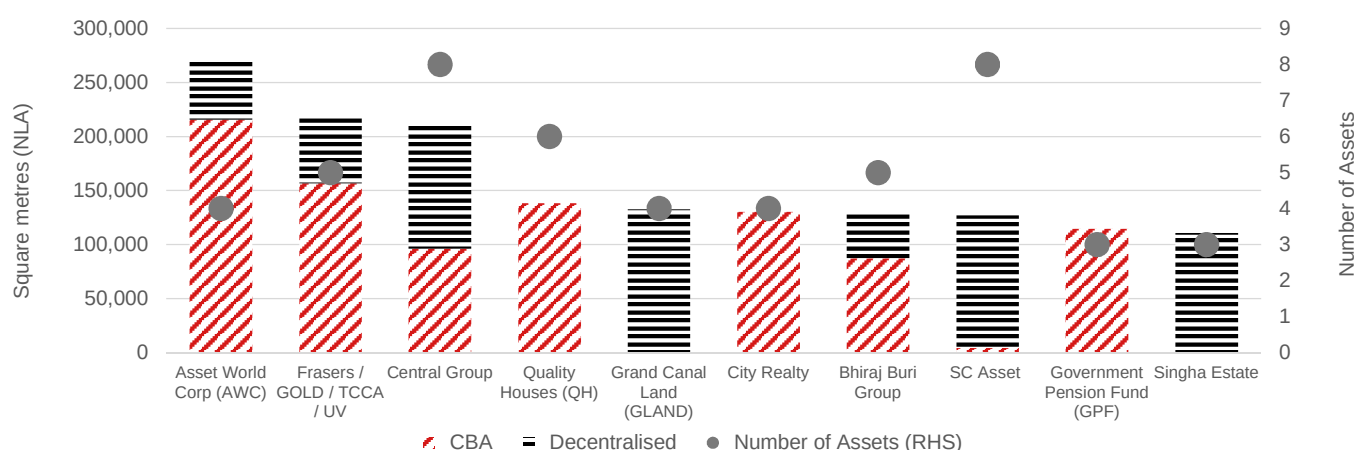
Over the last five years, estimated net yields have ranged between 4.7% and 7.3%. While there is no discernable trend in yield movement over time, it is clear that freehold offerings command a lower yield. This is broadly in line with evidence from other markets around the region.

In addition to estimating capital values over time, JLL also maintains an estimate for market yields (gross, exclusive of transaction costs) for Grade A buildings in the CBA. This yield series is illustrated in Figure 4-28 alongside estimated average net yields from all known office transactions across the market and our analysis of average annual dividend yields of REITs and PFPOs by real estate sector over the last five years based on public disclosures from the Stock Exchange of Thailand and calculated by JLL.

The Central Group currently owns eight assets where part or all space is leased on the open market spanning 212,000 sqm. No other investor (or group) owns more than 200,000 sqm of office space that is for lease.

In terms of future supply, Frasers Property Holdings (Thailand) and TCC Assets accounted for roughly one-third of space scheduled for delivery through 2026 with 640,000 sqm across seven buildings at The PARQ and One Bangkok projects in Central Bangkok.

Figure 4-30: Top 10 largest office asset owners in Bangkok as of 1H19*



Source: JLL Thailand Research, Stock Exchange of Thailand

*Note: includes assets currently leased to PFPOs / REITs

Asset World Corp (AWC) is also the largest owner of office buildings in the CBA, with three buildings spanning over 215,000 sqm of space, following by entities under the wider TCC Group, Quality Houses, and City Realty.

Acronyms

AFC	– Asian Financial Crisis
AIA	– American International Assurance Company Limited
AWC	– Asset World Corp Public Company Limited
BITEC	– Bangkok International Trade and Exhibition Centre
BPO	– Business Processing Outsourcing
CAGR	– Compound Annual Growth Rate
CBA	– Central Business Areas
CP	– Charoen Pokphand
FIRE	– Finance, Insurance and Real Estate
GDP	– Gross Domestic Product
GIC	– Government of Singapore Investment Corporation
GOLD	– Goldenland Development PCL
KPO	– Knowledge Processing Outsource
LEED	– Leadership in Energy and Environmental Design
LH	– Land and Houses PCL
LIM	– LaSalle Investment Management
NLA	– Net Leaseable Area
PFPO	– Property Fund for Public Offering
QH	– Quality Houses PCL
REIT	– Real Estate Investment Trust
SCB	– Siam Commercial Bank
TCCA	– TCC Assets Company Limited
TCIF	– Thai Commercial Investment Freehold and Leasehold Fund
THB	– Thai Baht
TSIC	– Thailand Standard Industrial Classification
USD	– United States Dollar
UV	– Univentures PCL

Glossary

For-lease (Building) – The term used to describe an office building where most, if not all of the usable space is made available for renting / leasing to individual occupiers who do not have an ownership stake in the building.

Gross Rent – Gross Rent is inclusive of all building outgoing costs and represents rental rates as typically quoted by landlords and/or brokers to occupiers on a net lettable area (NLA) basis.

Net Absorption – The term is used to describe the total change in demand (occupied space) within a given time period, including in situ expansion, relocations, new market entrants and market withdrawals. The indicator is measured in square metres and can be either positive or negative.

Net Leaseable (or Lettable) Area – Abbreviated as NLA, this term refers to the amount of space, measured in square metres, in an office building that is available for tenant occupancy. This is typically the measurement on which rent is paid.

Non-Prime Grade – The term describes Grade B and Grade C buildings collectively, representing those buildings that do not meet JLL Prime Grade (Grade A) standards in terms of location, facilities, amenities, fittings, or a combination thereof.

Owner-Occupied (Building) – Owner-occupied buildings are typically developed for the purposes of a single tenant being the sole occupier. In some cases, the occupier may not actually own the building or the land, but may have signed a long-term lease agreement under a Build to Suit arrangement, such as is the case with Unilever House on Rama IX road. A small proportion of space in certain buildings may be leased to third parties, particularly for retail use (e.g., F&B, banking and other daily necessities).

Prime Grade – High quality office space meeting various rigorous criteria for excellent location, facilities, amenities, and fittings. Also commonly referred to throughout the report as “Grade A.”

Vacancy Rate – The percentage of total stock that is unoccupied in a given period.

Bangkok Office Grading Criteria

Criteria	Prime Grade			Non-Prime Grade	
	Grade A+	Grade A	Grade A-	Grade B, B+, B-	Grade C
Proximity to Mass Transit Infrastructure	Have direct access or less than 5 minutes walk to BTS/MRT stations	Have direct access or less than 5 minutes walk to BTS/MRT stations	5 - 10 minutes walk to BTS/MRT stations	5 - 10 minutes walk to BTS/MRT stations	No BTS/MRT stations in proximity
Age of the Building	Typically less than 10 years old, excellent everyday maintenance	Typically less than 15 years old, excellent maintenance	Typically less than 20 years old, good maintenance	Typically less than 20 years old, fair maintenance	Typically greater than 20 years old, poor maintenance
General Condition & Image of the Building	Excellent unique and remarkable architecture design	Excellent	Good	Fair	Poor
Floor Plate	Greater than 1,200 sqm size, regular shape floor plate without structural encumbrances and flexibility of internal layout	Greater than 1,000 sqm size, regular shape floor plate without structural encumbrances and flexible layout	Greater than 1,000 sqm size, regular shape floor plate with structural encumbrances	900-1,000 sqm size, irregular shape floor plate with structural encumbrances and difficult to subdivide	Less than 900 sqm size, irregular shape floor plate with structural encumbrances and difficult to subdivide
Car Parking	Min. 1 space/100 sqm, providing enough space/ convenient to find parking space with efficient entrance/exit and high level of security system/ guards in the parking area	Min. 1 space/100 sqm, convenient to find parking space with efficient entrance/exit and high level of security system/ guards in the parking area	Min. 1 space/100 sqm, convenient to find parking space with efficient entrance/exit and high level of security system/ guards in the parking area	Min. 1 space/100 sqm, less convenient to find parking space with efficient entrance/exit	Less than 1 space/100 sqm, inconvenient to find parking space with inefficient entrance/exit
Finishing & Lobby	High quality internal and external finishing, grand lobby area, and known as environmentally sustainable building	High quality internal and external finishes and grand lobby area	High quality internal and external finishes and less grand lobby area	Medium quality internal and external finishes and less grand lobby area	Low quality internal and external finishes
Lifts	Efficient, zoned and high speed lift system and separate serviced lift	Efficient, zoned and high speed lift system and separate serviced lift	Efficient, zoned and high speed lift system and separate serviced lift	Inefficient, zoned and low speed lift system and separate serviced lift	Inefficient, unzoned and low speed lift system without separate service lift
Air Conditioning System	Water cooled chilled water system	Water cooled chilled water system	Water cooled chilled water or water-cooled package system	Water cooled chilled water or water-cooled package system	Water-cooled package system or split type
Fire & Safety System	Two air-pressurized fire exits with sprinklers, smoke and heat detectors	Two air-pressurized fire exits with sprinklers, smoke and heat detectors	Two air-pressurized fire exits with sprinklers, smoke and heat detectors	One air-pressurized fire exit with sprinklers, smoke and heat detectors	Insufficient system, lacking either air-pressurized fire exit, sprinklers or smoke detector
Ceiling Height	Min. 2.8 meters	Min. 2.7 meters	2.6 - 2.7 meters	2.5 - 2.6 meters	Below 2.5 meters
Amenities	Wide variety of retail and F&B facilities	Wide variety of retail and F&B facilities	Wide variety of retail and F&B facilities	Some retail and F&B facilities	Limited retail and F&B facilities
Building Management	Excellent management by professional international or experienced local property management company, or renovation before 20 years	Excellent management by international or experienced local property management company, or renovation before 20 years	Good management by international or local property management company, or renovation after 20 years	Fair management by international or local property management company	Poor management by international or local property management company
Typical Tenant Profile	Large to medium size MNCs and prominent domestic companies	Large to medium size MNCs and prominent domestic companies	Medium to small size MNCs and prominent domestic companies	Large to medium size domestic companies	Medium to small size domestic companies

Source: JLL Thailand Research

Thailand Industrial Standard Classification System

Agriculture, Forestry and Fishing

Mining and Quarrying

Manufacturing

Electricity, Gas, Water and Sanitation

Construction

Wholesale and retail trade; repair of motor vehicles and motorcycles

Accommodation and food service activities

Transportation and storage

Information and communication

Financial and insurance activities

Real estate activities

Professional, scientific and technical activities

Administrative and support service activities

Public administration and defence; compulsory social security

Education

Human health and social work activities

Arts, entertainment and recreation

Activities of extraterritorial organizations and bodies

Other service activities

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