



Dynamic analysis of Istanbul office markets with highest demand and office rent

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Abstract

From the 1980s onwards, restructuring of economy and globalization has increased the size and number of companies in Istanbul and demand for modern office space which cannot be provided in the old CBD due to construction restrictions. Thus, multi-center development has started in the city in order to answer to the growing demand for modern office markets. The present study investigated the growth and decline of office rents in office markets which have highest demand and office rents. According to the results of the study, while office rents in the office markets with growth potential have increased, that of the markets with supply increased dramatically between 2011 and 2016. On the other hand, while office rents in all of the office markets were sharply declined in 2021 due to devaluation of Turkish Lira against USD. Although the pandemic has made Work from Home (WFH) and Hybrid working models a global trend, A class office demand stayed strong due to well-being requirements on office area. Thus, it is expected to have a positive impact on the economy of the city.

Keywords: Istanbul office market, Turkiye economy, rent analysis

1. Introduction

After 1980's, post-modern urban planning trends stimulated multi-center developments in large metropolitan cities throughout the World. Following this trend, Istanbul's urban structure was transformed from monocentric (Dokmeci and Ciraci, 1988) to a polycentric form as a result of rapid population growth (Dokmeci and Terzi, 2008), globalization (Dokmeci and Ciraci, 1999), being in a strategic location, economic restructuring and development of transportation and communication systems, change in lifestyles between 1960-1990 (Dokmeci and Berköz, 1994; Dokmeci, 1996; Dokmeci and Berköz, 1996). This situation has been already investigated by several studies such as by taking into consideration the spatial distribution of shopping malls (Ertekin et al., 2008), banks (Dokmeci and Evcil, 1995), hotels (Dokmeci and Balta, 1999), spatial distribution of physicians' offices (Dokmeci, 2002) and public and private hospitals etc. in Istanbul. The purpose of the present study is to illustrate the growth and decline of office rents in the office markets with highest demand and highest office rents.

There are several studies which investigated the changes in office rents with respect to location and building characteristics. One of them is given by Gloscock et al. (1990) which illustrates that rents vary across classes of buildings and also change according to geographical locations. Mills (2002) analyzed Chicago office market by using 543 observations included most of the market's larger buildings. He found that the rent price per square foot varies positively with building size, location and nearby amenities. Bollinger et al. (1998) applied office rent models by using data from

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Atlanta that span the years 1990-1996. As a result, they found that variables measuring locational differences in wage rates, transport rates and proximity to concentrations of support services and office workers play an important role in explaining spatial variation in office rents. Mourouzi-Sivitanidou (2002) investigated office rents across 18 office markets during 1986-1995. The empirical results reveal office employment factors, construction cost interest rates amenities and zoning in shaping inter-area differences in the equilibrium components of office rents. Dunse and Jones (1998) showed in their study that age and location as principal determinants of office rents in the city of Glasgow. According to the results of the study by Koster et al. (2014) Dutch firms are willing to pay an average about 4% more for a building that is 10 m taller, implying a substantial Premium associated with tall buildings.

Nagai et al. (2000) investigated the rental office market in the Tokyo CBD for the 1985-1994 fiscal years. They found that the characteristics related to transportation conveniences are less effective in explaining office rents than the characteristics related to the agglomeration of offices and the amenities of the office buildings themselves.

The review of the studies on office rents reveals that while there are extensive amount of studies in the developed countries, there are only few in the developing ones. One of the earlier studies on the subject is given by Dokmeci et al. (2000) on office rents distribution in Istanbul. According to their results, the growing companies which cannot find sufficient space in the old CBD, they establish themselves in Maslak which has good connection to the Airport, to the suburbs and to the industrial sites. Therefore, it had the highest office rent at that time. In a further study, Oven and Pekdemir (2006) proposed a factor analysis model to investigate the office rent determinants in Istanbul. Later, Ozus (2009) proposed a hedonic price model for the analysis. The results of the study illustrate that number of floors of the buildings, vacancy rate in the vicinity, social facilities in the buildings, aesthetics of the buildings, rental office floor, banks in the vicinity, and accessibility are the most important characteristics to affect the office rents. After the 1980s, globalization, economic restructuring, economic growth of the country and locational advantage between Europe and Asia played an important role in demand increase for office market in Istanbul (Berkoz and Turk, 2010).

Since the previous work does not investigate the changes in office price in Istanbul through time, the present paper analyses the changes in office rents in the offices markets with highest office rents and highest demand in Istanbul through time. The organization of the paper is as follows. Background information about office markets is given in the second section; changes in the office rents through time in major office markets with highest demand and office rents; and final section is devoted to a conclusion and suggestions for future research.

2. Turkiye Economic Overview

The Turkish economy is the 21st largest economy in the world and the 11th largest by GDP at PPP in the world with 802 billion USD according to recent data published in 2021.

In the era of COVID-19 pandemic, partial rebound in the economy has started to be recorded in the last quarter of 2020 in line with the increase in retail sales, industrial production and credit payments whereas consumer sentiment remains cautious. In 2021 GDP growth was recorded as 11% y/y. According to the latest data, GDP realized \$802 billion and \$9,539 per capita.

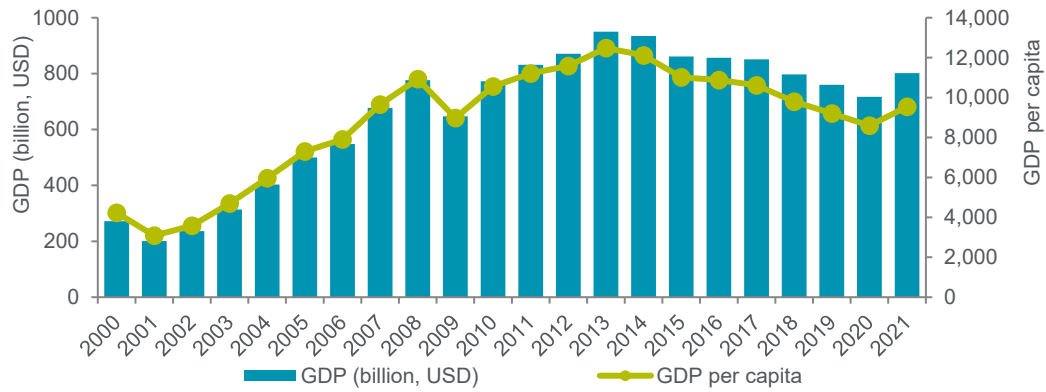


Figure 1 Turkish GDP and GDP Per Capita (TURKSTAT, 2022 (The data is based on 2009 series))

Following the CPI inflation hike starting from the second half of 2018, which fluctuated within a band of 17.9% – 25.24%, headline inflation rate sharply fell to its lowest rate in almost three years and recorded at single digit level, 9.26% in September 2019, for the first time since July 2017. However, inflation re-accelerated and recording double digit levels again at 11.84% by the end of 2019. Starting from 2020, inflation level was recorded in the level of 11.0% - 12.0%. In 2021, inflation exceeded the 15-18% band recorded in the first half of the year and remained in the 19-36% band in the second half of the year. At the end of 2021, inflation increased above the seasonal trends with the negative impact of the pandemic on the economy and fluctuation in FX; was recorded as 36.08%. In line with the forecasts, it is expected to decrease and remain again at double-digit levels in 2022. The annual D-PPI also rose throughout 2021 in parallel with the CPI and was recorded as 79.89% at the end of 2021, with a significant increase compared to the same period of the previous year.

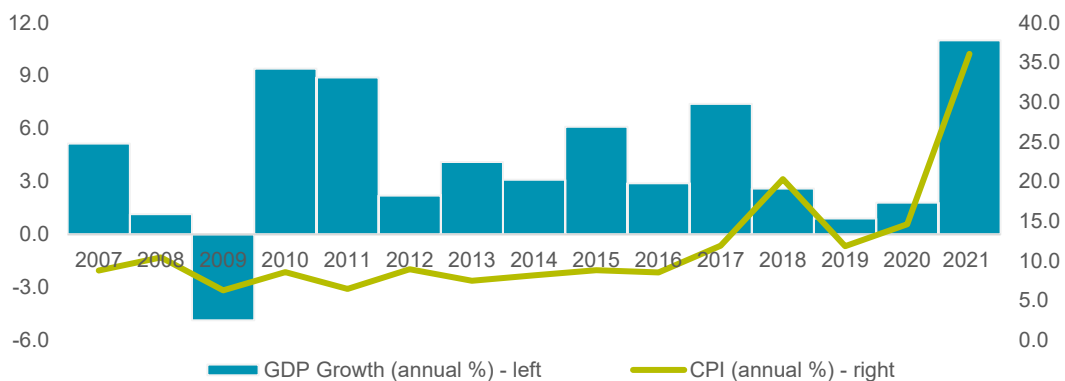


Figure 2 GDP and CPI (inflation) Growth, TURKSTAT, 2022

The unemployment rate fluctuated around 10% in the last decade, with an exception in 2008 and 2009 where it increased to around 12% as a result of the economic slowdown. A declining trend observed in the following periods. However, the unemployment rate started to increase especially in the second half of 2014 and kept increasing. Seasonally adjusted unemployment increased to 13.1% and 13% by the end of 2019 and 2020, respectively. In 2021, the unemployment rate indicated a decrease starting from the second half of the year comparing the first half by removal of Covid-19 restrictions in the third quarter and recorded as the lowest rate in 2 years. The seasonally adjusted unemployment rate slightly decreased to 11.4% in November and closed up with 11.2% in December 2021. According to the recent data unemployment rate is 12.0% for 2021. Yet, it is expected to decrease by year end and Moody's Analytics forecast for unemployment rate are respectively 10.71% and 10.27% for 2022 and 2023.

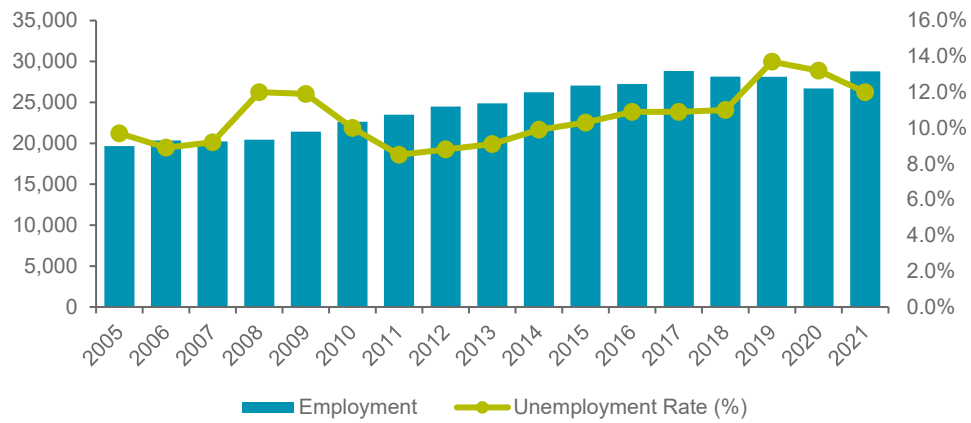


Figure 3 Employment (2005-2021) TURKSTAT, 2022

As end of 2021, total foreign trade volume reached USD 496.7 billion, which was USD 398.2 billion in year before. Turkey's exports increased to USD 225.3 billion by the end of the year in 2021 due to the effect of the reduction of pandemic concerns and the initiation of vaccination. Import trade volume reached at USD 271.4 billion while the proportion of import to cover export was 83.0% in 2021. In addition, Turkey's foreign trade deficit was recorded as USD 46.1 billion with a decrease of 7.5% compared to previous year. After the increase in export and import trade volume recorded in 2021, export trade volume increased by 32.8%, while imports increased by 23.6% in 2021.

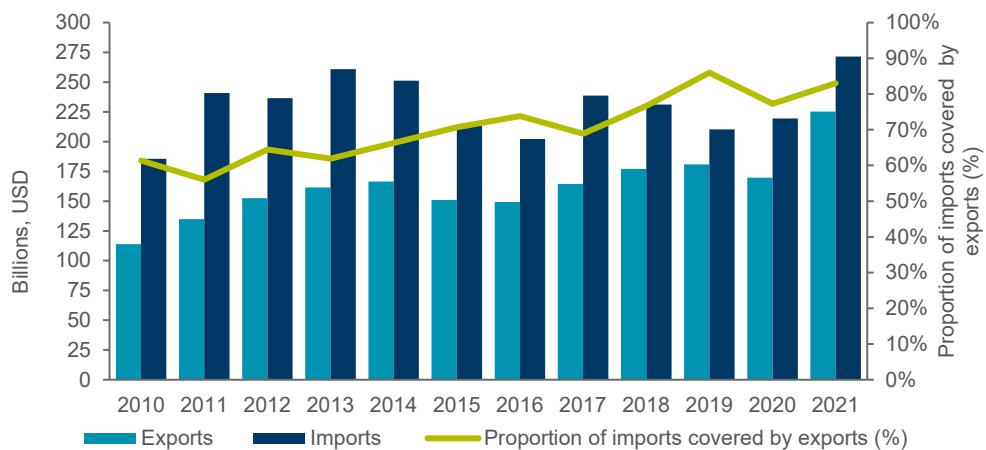


Figure 4 Foreign Trade (2010-2021), TURKSTAT, 2022

Net foreign direct investments, which have exhibited a weak performance since 2011, performed better during 2015. However, foreign direct investment recorded a decline in 2017 and 2019, total FDI inflow reached USD 9.57 billion with a decrease of 23.5% compared to the year before. By the end of 2021, foreign direct investment was limited to 7.8 billion with a decrease of 18.2% compared to the previous year. Real estate share of foreign direct investment in 2020 is 50.5%. Moreover, recovery has been observed on foreign direct investment increased by 80.7% in 2021 and recorded as USD 14.1 billion. Real estate share of foreign direct investment in 2021 is 40.8% with a value of USD 5.8 billion, while the share of real estate investment decreased 19.2% compared to the year before.

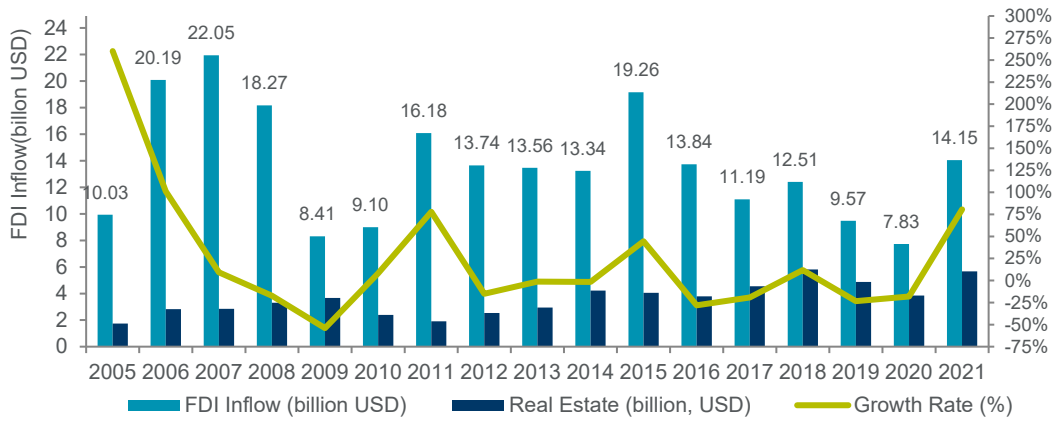


Figure 5 Foreign Direct Investment (2005-2021), Economy of Trade, 2022

The CBRT (Central Bank of the Republic of Turkey) has adopted a floating FX rate regime with the primary objective of achieving price stability, after the 2001 banking crisis in Turkey. It is observed that exchange rates increased gradually reacting to change in domestic and global markets, however a declining trend followed each time after a significant increase. Since the beginning of 2016, unexpected period of political uncertainty has intensified the downward pressure on the exchange rate. As of second quarter of 2018, Turkish currency has collapsed and highly devaluated depending on the many reasons such as the deterioration of political relations with US government, increase of the risk perception towards developing countries, the US Central Bank Fed's interest rate hikes and slowdown of the international capital flows. Indeed, the Turkish Lira depreciated by around 40% against USD and 34% against the EUR from the date of December 2017 to December 2018. The exchange rate remained to accelerate in 2019. Starting from 2020, FX continued to increase, and USD/TRY recorded at 7.20 in Q3 2020, while it was accelerated to 7.86 in Q4 2020. 2020-year average of USD/TRY and EUR/TRY recorded at 7.00 and 8.03, respectively, while Turkish Lira depreciated by around 30% against USD and 43% against EUR from the date of December 2019 to December 2020. At the beginning of 2021, USD/TRY was recorded at 7.38 with a slight decrease in Q1, after that USD/TRY begin rising accelerated again recorded at 8.38 in Q2. In Q3, it was recorded as 8.54 on average and continued its upward trend. USD/TRY rose sharply in the last quarter of the year and tested 18.38 in December. After the government announced a new financial system called "Foreign Exchange-Protected Turkish Lira Deposit", the Turkish Liras gained value against USD and the average of Q4 was recorded as 11.08. Thus, in 2021 average USD/TRY was recorded as 8.90. At the beginning of 2022, USD/TRY continued to upward trend.

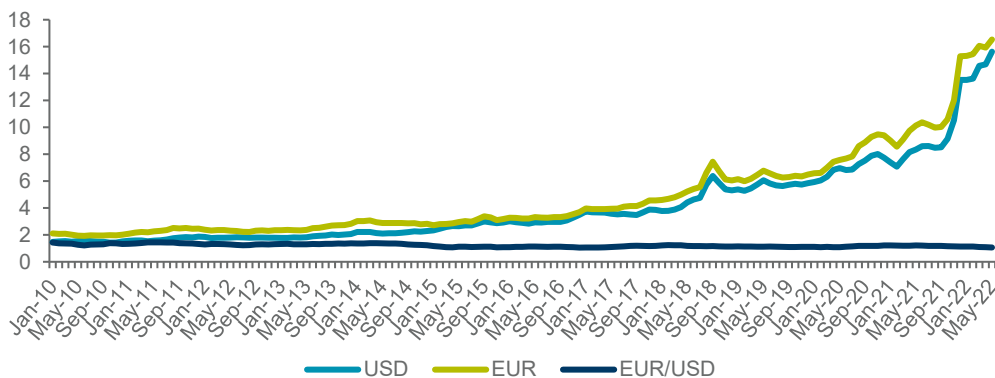


Figure 6 Exchange Rates (2010-2021), CBRT, 2022

Starting from 2014, the CBRT had decided to implement necessary measures at its disposal to contain the negative impact of these developments on inflation and macroeconomic stability. In this respect, policy rate has been decreased gradually from 10% to 7.50% between 2014 January to 2015 February and the same rate continues to October 2016. CBRT raised the upper bound of the interest rate corridor and late liquidity window lending rate in first nine months of 2017 and

increased from 8% to 24% from 2018 May to 2018 September and keep unchanged until the end of June 2019. As of July 2019, the policy rate has been gradually decreased to 19.75% in July and August, 16.5% in September and 14% in October 2019. The CBRT pressed on with its easing cycle in May 2020 delivering a ninth straight cut in order to support the post-pandemic recovery, bringing the policy rate down to 8.25% in May 2020, while it is increased to 10.25% in September, then 15.0% in November 2020 to ensure a stronger real rates buffer. Furthermore, the CBRT sharply hiked the policy rate by 200 basis points to 17.0% in December 2020, within the aim of cooling the inflation. The CBRT increased the policy rate from 17% to 19% in March 2021, and this rate remained stable until the end of September. Afterwards, the interest rate cuts were made 4 times as of September, and the interest rate was reduced to 14% in December. Until August 2022, the interest rate was held constant at 14%.

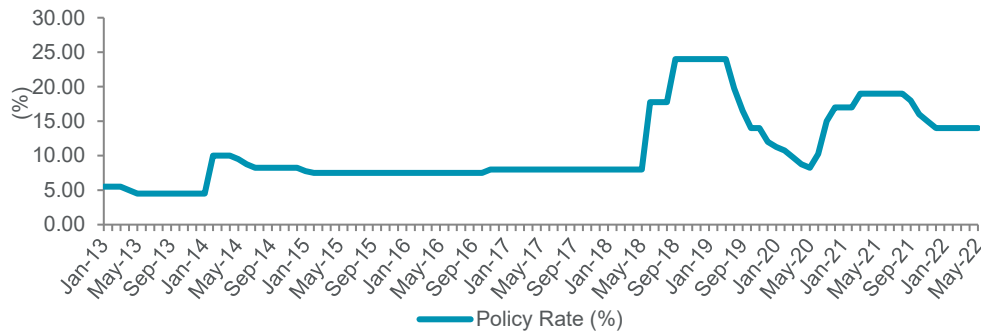


Figure 7 Policy Rate CBRT, 2022

Starting from January 2021, the method used in the business tendency surveys for determining enterprises to apply the surveys has been updated. Economic confidence index increased to 96.7, amid increase in confidence among service providers 121.7 from 114.7 and retail trade 121.5 from 119.4 m/m in May 2022. Only construction confidence index decreased 81.7 from 83.45 m/m in May 2022. Furthermore, confidence among consumers increased to 67.6 from 67.3 m/m in May 2022. The economy is likely to observe some rebound in 2022 along with the expected improvement in external position within partial recovery in foreign trade and tourism revenue.

The historical trends in sectoral, consumer and real sector confidence index are indicated below:

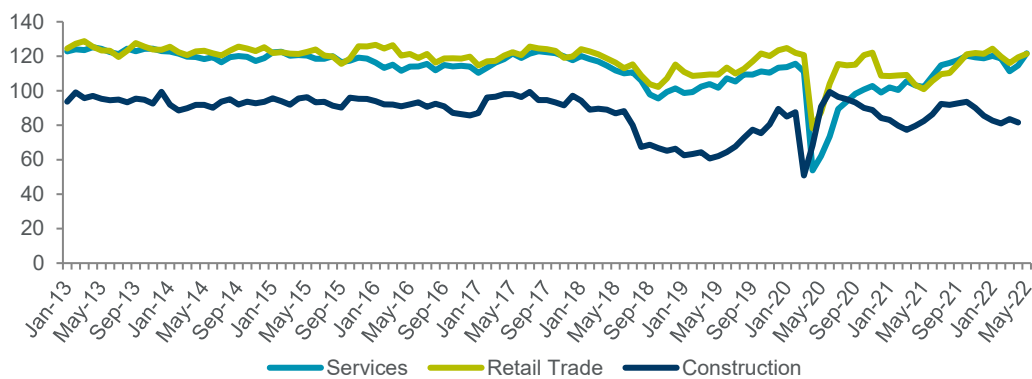


Figure 8 Sectoral Confidence Index, TURKSTAT, 2022

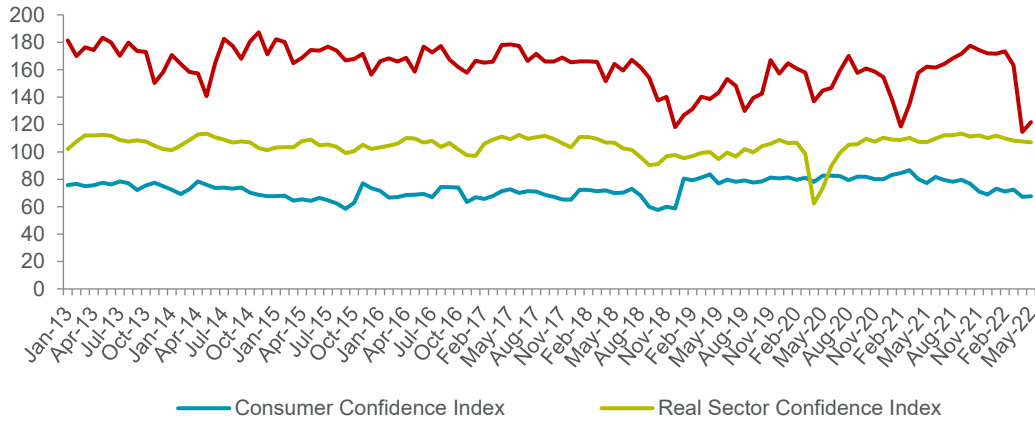


Figure 9 Consumer / Real Sector Confidence Index, TURKSTAT and CBRT, 2022

The table below shows the economic summary of Turkey, with forecasted indicators.

Table 1 Economic Summary, TURKSTAT and CBRT, 2022 F: Forecast Source: Moody’s Analytics

Economic Indicators	2017	2018	2019	2020	2021	2022F	2023F
GDP Growth (y/y, %)	7.4	2.6	0.9	1.8	11	3.5	4.0
FDI (y/y, %)	-20.3	17.3	-30.5	-16.2	-12.1	-	-
Fixed Investment (y/y, %)	8.3	-0.3	-12.4	7.2	7.2	0.23	2.02
Industrial Production (y/y, %)	8.7	1.6	-0.6	1.6	17	8.34	2.71
Unemployment Rate (%)	9.9	12.7	13.1	13.2	12.2	10.7	10.3
Consumer Price Index (y/y, %)	11.9	20.3	11.8	14.6	36.08	68.04	20.31
€: ₺ (Average)	4.14	5.69	6.31	8.04	10.49	17.51	21.83
\$: ₺ (Average)	3.64	4.84	5.66	7.02	8.90	15.80	18.07
Monetary Policy Rates (Average)	8	15.5	20.6	10.2	17.6	13.97	12.9
Interest Rates: 10-year (%)	11.1	15.9	15.8	12.8	17.1	25.13	19.90

3. Background

Istanbul population grew from 8 to 16 million between 2000-2020 by being the major destination of migration (Yazgi et al. 2014; Koramaz and Dokmeci, 2020) and being the most important business, education, and cultural center of the country. This result in population and employment growth of the peripheral districts and the multi-center development of its structure (Dokmeci, 2009) and on the other hand, the decline of the old ones due to their old structure which are not convenient for the new businesses requirements with respect to lack of space and lack of quality of buildings and construction restrictions (Dokmeci and Ozus, 2005). Afterword, although some revitalization projects were implemented to deal with this problem, they were successful to some extent (Ozus et al., 2011) but they could not provide space for large scale modern office buildings due to conservation restrictions in the historical centers (Dokmeci et al., 2007 Arslanlı et al., 2017). Thus, this results in multi-center development in the North and in the periphery of the city. Their optimum number and location were investigated by Dokmeci (1996) in another study.

After 1980s, economic restructuring, increase in service sector as in other countries, development of transportation and communications systems and globalization which all played an important role for the development of office markets in Istanbul as in other large cities of the World

(Ozus, 2009). Increase in the amount of foreign investment due to restructuring of regulations for foreign investments also played an important role for the development of office markets. In addition, Istanbul's strategic location between Asia and Europe has contributed to the growth of its office markets (Dokmeci and Berkoz, 1994; Berkoz and Eyupoglu, 2007; Berkoz and Turk, 2010). Finally, total office area reached to 6.474.381 m² as of beginning 2022 while it was 3,2 million m² as of 2012.

With the increase of supply, the average vacancy rate reached 10% as of Q4 2014 and it reached to 26% as maximum in 2019 in overall Istanbul. New development activities have slowed down and vacant areas have been absorbed during the period, current vacancy rate is 21% in 2022.

After the construction of the Bosphorus bridge in 1975, Sisli, which has relatively more modern buildings than Beyoglu(old business center) became the most important office market between 1975 and 2000. Later, as a result of economic development and globalization, there was need for larger and more modern office buildings which resulted in further development of office market toward the North in Levent area. Now, between Levent and Maslak area is the backbone of the major business area of Istanbul. Majority of the headquarters of prestigious banks, and well-known industrial companies, research and development, advertisement, real estate and insurance companies, shopping malls and hotels are congregated in this axis supported by the modern housing projects in nearby. As an extension of this business axis, new office markets were developed such as in the European side, Gayrettepe/Zincirlikuyu, Barbaros and Kagithane/Cendere; in the Asian side, Atasehir, Kozyatagi, Altunizade, Kavacik and Umraniye as the most demanded and with the highest rent office markets.

In 2018, due to devaluation of Turkish Lira against foreign currency, foreign currency use in rental contracts has banned by law. Moreover, recent dollar crises caused the decline of office rent in USD basis to the lowest level during the last 15 years. On the other hand, this situation has stimulated heavily occupier demand by local and international firms in this market areas.

4. Dynamism of Office Markets with Highest Demand and Rents between 2011-2021.

From the 1980s onwards, restructuring of economy and globalization has increased the number and size of companies and demand for office space accordingly. Indeed, Istanbul has become an attractive location for the international business firms due to its strategic location between Europe and Asia. Since the old CBD did not have sufficient space for the modern office buildings, they were established themselves in different locations as a leapfrog of the old CBD or a new sub-center. Each location has different office rent and the reason of difference is investigated by a previous study by Ozus (2009). The present study investigates the changes in office rents between 2011 and 2021 in different locations with highest demand and with highest rent price in Istanbul through time (Table-2).

Table 2 Istanbul Prime Office Areas Unit Rent 2011-2021(\$/m²) (Cushman&Wakefield, 2022)

	2011	2016	2021
Levent	38	41	22
Gayretepe/Zincirlikuyu	32	27	12
Kağıthane/Cendere	-	-	10
Barbaros	29	22	-
Maslak	24	28	13
Airport	13.5	14	8
Kozyatağı	20	26	16
Altunizade	21	23	12
Kavacik	19	17	10
Umraniye	20	21	12

Table 3 Istanbul Office Market Summary (Cushman&Wakefield, 2022)

	2019	2020	2021	2022 q1
Supply (sq.m)	6,46	6,46	6,46	6,46
Vacancy (%)	24.8	22.7	21.5	20.0
Take-up (sq.m)	316,000	329,000	304,507	123,424
Prime Rent (CBD, sq.m/mo)	\$32	\$25	\$22	\$23
Prime Rent (CBD, sq.m/mo)	₺170	₺170	₺240	₺320
Prime Yield (CBD, %)	7.75	7.75	7.75	7.75

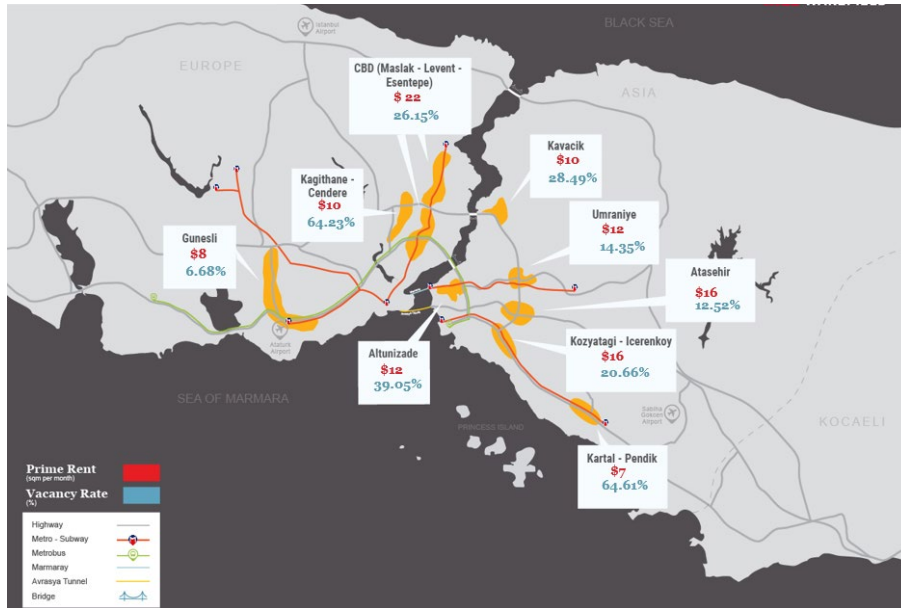


Figure 10 Istanbul Prime Office Areas Map- Rent and Vacancy Rates (Cushman&Wakefield 2021)

Levent office market is the most important office area in Istanbul. Levent office market was developed in the 2000s, as an extension of Sisli business center which was the major office market of Istanbul between 1975-2000 (Dokmeci, 2009). Industrial buildings owned by the major companies were transformed into office buildings by these firms or office developers. Currently, Levent has the highest office rent and is the most demanded office market in which office rent was increased from \$38/m² in 2011 to \$41/m² in 2016 while it decreased to \$22/m² in 2021 due to dollar crises (Cushman & Wakefield, 2021). The reason for the highest demand for this area is the existence of large, modern and prestigious office buildings and easy access to the airport and other centers.

While Gayrettepe/Zincirlikuyu Office market had the second highest office rent price (\$32/m²) in 2011 due to recently built modern office buildings, its price decreased to \$27/m² in 2016 due to limitations of expansions. Finally, its price was decreased to \$12/m² due to dollar crises in 2021. Although Barbaros Avenue had the third office rent price (\$29/m²) with its modern office buildings and easy accessibility in 2011, its rent price was decreased to \$22/m² in 2016 due to construction restrictions.

Maslak had the fourth office rent price (\$24/m²) in 2011, it increased to the second place (\$28/m²) in 2016 due to its highest demand and constantly development of new modern office buildings with locational advantages such as being in front of a well-known university and easy access to the airport. As a result of dollar crises its office rent price decreased to a third place (\$13/m²) in 2021.

Altunizade office market started to develop in the 1980s as a leapfrog expansion of the European side CBD to the Anatolian side after the construction of Bosphorus Bridge in 1975. In 2011, its office rent price (\$23/m²) was the fifth one due to height limitations in this zone. Its office price increased to \$23/m² in 2016 due to increasing demand for office space in the Anatolian side and easy accessibility of its location. Its office rent price decreased to \$12/m² due to dollar crises 2021.

Kozyatağı started to develop in the 1980s as a result of construction of a new town (Ataşehir) with 100,000 population together with two large shopping centers, offices, hospitals and hotels. Its office rent price (\$20/m²) was sixth one in 2011. Its office rent price increased to \$26m² in 2016 due to high demand for offices in the Anatolian side and its high accessibility at the intersections of highways. Although its office rent decreased to \$16/m² due to dollar crises, it increased to the second place in ranking in 2021 among the highest priced office markets.

After 1960s, Umraniye has started to develop as a squatter settlement nearby an industrial site. After the construction of peripheral highways, its population growth was increased by being at the intersection of these highways and by having easy accessibility to different sites of the city. These advantages have contributed to its formation as a sub-center in the Anatolian side. Its office market was increased as a leapfrog expansion of the European side office market area. Its office rent was increased from \$20/m² in 2011 to \$21/m² in 2016 due to its higher accessibility to the different parts of the city. However, its office rent decreased to \$12/m² due to dollar crises in 2021.

Kavacik office market was developed as a leapfrog expansion of Maslak Office market area to the Anatolian side of the city. Although Kavacik was originally a squatter area, construction of the second bridge and the peripheral highways stimulated its growth highly demanded as office market area. However, while its office rent was \$19/m² in 2011, it decreased to \$17/m² in 2016 due to lack of appropriate urban structure. Furthermore, office rent was decreased to \$10/m² in 2021 due to dollar crises.

Airport office market serves especially textile, communication and international companies (Ozus, 2009). It could not be developed much due to height restrictions. Its office rent was \$13.5 /m² in 2011 and it increased to \$14/m² in 2016. This price was reduced to \$8/m² due to dollar crises in 2021, which is the lowest among those considered. With the closure of the Ataturk Airport in 2019, the occupier profile of the region is expected to be changed in the future.

Cendere/Kağıthane office market area is a new development as an extension of Maslak office market toward the West. Its office rent was \$10/m² in 2021.

Thus, the results of the study illustrate that while office rents decline in the office markets without growth potential between 2011-2016, office rents increase in the office markets with growth potential such as in Maslak and Kozyatagi.

Although these are the highest demand and highest rent price office markets, their trend is the lowest if we take into consideration their situation during the last fifteen years. Thus, this situation stimulates heavily local and international companies to occupy in these markets.

5. Conclusion

During the post-modern era, the number of office buildings increased as a result of restructuring of economy, globalization and growth of service sector in Istanbul which is the largest and the most important socio-economic and the cultural center of the country. Moreover, development of transportation systems in order to answer to the increasing traffic needs contributed to the decentralization of CBD activities resulted in multi-center development of the city. In addition, improving telecommunication systems has also contributed to this trend as in many other countries. Development of these new office markets has great impact on the distribution of demand for office space and office rents. Thus, in this study, the trend of office markets with the highest demand and rent price are investigated in Istanbul between 2011 and 2021. Each sub-center has different locational and transportation characteristics. New sub-centers provided opportunity

to be built large and modern office buildings with necessary infrastructure with international standards. However, haphazard development of some of the office markets are not functionally and physically efficient. Thus, they are evaluated under their real estate value. In addition, it is observed that the office rents of markets in strategic locations with growth potential have increased between 2011 and 2016, on the other hand the ones which does not have it they decreased during the same period. Although Altunizade and Umraniye are in strategic locations, but their office rents are not increasing much due to building height restrictions, and by having squatter background. Atasehir where white collar workers prefer to live hosts under construction Istanbul International Finance Center (IIFC) Project with 1,5million m² leasable area will enter the office market by end of 2022 of which at least 50% are expected to be occupied by state banks and financial authorities.

Therefore, there is desperate need for planned development of new office markets sub-centers in order to prevent transportation congestions, to create life quality, to use efficiently land potential and to protect their real estate values. In terms of the future development of office market in Istanbul, the location of the new sub-centers should be determined by using comprehensive research methods, not only for the benefits of the private sectors as it is today, but also for the economic benefits of the city. Otherwise, in the free market economy, private investor would use the land for the sole purpose to get maximum net return over a period of time but creating almost unmanageable problems for generations to come.

After Covid 19, stay at home restrictions accelerated remote working trends with work from home and hybrid working models. In a post-pandemic environment, meaning of the offices has been changing, and the purpose of the office will likely be for more collaboration, connectivity, socializing, innovation activities. New office occupiers desire convenience, functionality and wellbeing. This situation ensures that the A class office demand remains strong post pandemic period.

The results of the study can be useful to the investors, real estate agents, architects, urban planners and policy makers. Using GIS and spatio-temporal analytical methods with larger data sets. Time-series analysis of office rents and hierarchical economic impact analysis of office markets over each other can be other extensions of the study.

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Resume

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