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Being a dissertation submitted to the faculty of The Built Environment as part of the requirement for the award of the MSc International Real Estate and Planning of University College London: I declare that this dissertation is entirely my own work and that ideas, data and images, as well as direct quotations, drawn from elsewhere are identified and referenced.

Signature:

Date:

Acknowledge

I offer my sincere gratitude to my supervisor Prof. Alex Moss, for the guidance and the support during the preparation of this dissertation.

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Abstract

This research paper aimed at determining the key driving factors behind various types of international capitals inflow into London commercial real estate (CRE) market using both qualitative and quantitative methods.

The qualitative study is carried out by a survey composed with 21 questions, conducted through interviews and surveys with professionals from different backgrounds working in the London CRE market. The result demonstrates that investors prioritise generating considerable total returns (capital gain and yields) and analysing the economic environment over other drivers when investing in London CRE market.

For quantitative analysis, panel data series has been used to carry out a longitudinal study along the 10-years' timeline from Q1 2009 to Q4 2018. 20 individual data series on topics including socio-economic, demographic, bureaucratic characteristics, and projected investment returns have been collected from 15 European cities, including London, Paris, Frankfurt, Madrid Amsterdam, Brussels, Milan, Lisbon, Warsaw, Prague, Vienna, Stockholm, Oslo, Copenhagen and Helsinki. As the study of this reach paper targets on the London CRE market, markets of similar maturity in Europe have been selected to make the analysis more precise and relevant. We draw a conclusion that the most influential (statistically significant correlated) control variable group (based on the categorisation suggested by Lieser and Groh (2011)) is the Real Estate Investment Opportunities (urbanisation ratio and population growth) followed by Projected Investment Returns (including yield spread, real effective foreign exchange rate, rental growth, vacancy rate). Other key drives such as Economic Activity, Depth of Capital Market, Investor Protection and Legal Framework, Administrative Burdens and Regulatory Limitations are less statistically correlated with cross-border investment (XBI) activity. The Socio-Cultural and Political Environment is not statistically significant at all.

Emerging effects of Brexit on the international investment volume into London CRE were also examined. Both qualitative and quantitative studies illustrated that XBI activities remain stable – investors are increasing or keeping their current holdings of London CRE despite the Brexit uncertainty.

1. Introduction

The phenomenon of globalisation and internationalisation of investor capital has long been established in many asset classes, including real estate (RE). London, in particular, has emerged as the leading destination for cross border real estate investments (REI) transactions during the last two decades, impacting prices, volumes and industry structure – where different stakeholders from investors, developers, managers, brokers, consulting firms, and financing institutions, evolved from local business environment to a global approach to cater for in-bound and outbound international capital (InterCaps).

The 1980s financial deregulation established London as a global financial centre with foreign financial institutions setting up base in London. However, it took a decade more for foreign ownership of companies to accelerate, and foreign ownership of RE took longer. According to Lizieri and Mekic (2015), foreign ownership of London offices rose rapidly from 10% in 1980m to 20% in 1998 and then 65% by 2014. This is during a period of financial deregulation in foreign countries and their investment objectives. Since then, different players have entered and exited the London CRE markets but the dynamics in London CRE have certainly become more global, and foreign ownerships has increased over time.

The nature and characteristic of London's REI market made this city appealing to the international investors. CBRE research tracked that for 2019 H1, c.£31.75bn of global capital is targeting London. This is also evidenced in actual completed transactions in 2018, the total transaction volume reached £17.6bn among which 76% were dominated by the overseas investors.

The paper aimed at identifying and evaluating the importance of key determinants influencing cross-border REI into London commercial real estate (CRE). The study started with a review of relevant literature, prior research, published data, and trade publication within the frames of this field. There have been many published researches investigating international investment behaviour, but only a few studied the origins of the capital and focusing on cross-border investors. The commonly mentioned drivers behind the internationalisation of London CRE investment market include diversification, economic growth, stable legal and political environment, highly transparent, liquid CRE investment market, and high integration between capital markets (both equity and debt) with RE.

In general, REI can be categorised into two types: (i) direct investments: including acquisitions in office, retail, hotel, industrial sectors, amongst others: and (ii) indirect investments: purchase of units in a fund or a publicly or privately held company, non-traded or publicly-traded real estate investment trust (REIT) stocks. Our study focuses on cross-border capital inflow related to direct investments. We based findings through quantitative and qualitative approach. In addition to understanding long-term drivers, we will also investigate recent year's phenomena - the impact of the Brexit uncertainty on the appetite of global investors towards London CRE.

2. Research Aims and Objectives

The research aims to identify key factors behind InterCaps investing into London CRE market, and examine the degree of importance of these factors in influencing investment decisions.

To carry out the research aims, the study will uphold the following objectives with in-depth quantitative and qualitative analysis:

I. Conducted a qualitative survey to determine the importance of various parameters that explain the globalisation of capital into London commercial markets.

   The procedure is starting by screening and forming a holistic analysis on the key determinant factors that influence investment decisions for various types of international investors. This is based on various research already performed such as academic papers, market reports and qualitative surveys.

II. Ran a regression model on selected key determinants.

   Due to RE data limitation, a regression model will be derived based on data from London and other major European cities. We believe our approach could better explain the appeal of London (utilising data from other European major cities, with closer economic and political structure to overcome data limitation issue) versus using global data per other papers.

III. Acknowledge that certain drivers (including but not limited to) listed below may vary depending on origin and characteristics of different capital sources and will not easily be captured and explain quantitatively.

   For example, the rationale behind an Asian investor in London CRE could differ from a European investor investing in London. This is partly due to lack of data explaining capital source by origins over time, and partly due to matters unexplainable simply through figures. Therefore, we also conducted a qualitative survey to collect primary data and investigate various matters (including those listed below). We aim to understand the overview of the past decade activities, investor intentions, current market situation and draws a comparison across the critical point of Brexit. such as:

   - Portfolio diversification
   - Strategic investment
   - Current investment portfolio, and investment appetite
   - Impact of Brexit uncertainty. Examining impact of Brexit on InterInv: The paper will assess the changes in investors behaviour since June 2016 Brexit referendum, draws a comparison across the critical point pre and post Brexit referendum among various types of investors, and their opinions on future strategies
   - Challenges faced on cross-border investors in London CRE

IV. Discussion and conclusion.

Using the findings regarding international investors (InterInv) appetite and investment behaviour when considering London CRE based on the various determinants we reviewed, investigated and tested. Various limitations well also be discussed.

3. Review of Literature

It is necessary to contextualise the research already published ranging from academic papers, market reports and qualitative surveys. Furthermore, we reviewed London focused and Brexit related reports in detail.Findings can be categorised into the below topics:

3.1. Quantitative Literature

A number of theories have been utilised to explain investor behaviour with respect to cross border REI.

Dunning's eclectic theory (1977-2006) suggests that international investor must have specific monopolistic advantages over its competitors to successfully compete with local players. Holsapple, Ozawa and Olienyk (2006) adapt Dunning's theory of REI, suggesting diversification, projected returns, and transaction costs (cost of doing business in foreign countries and foreign exchange) could impact foreign investments. Moshirian and Pham (2000) acknowledged diversification as a strong driver for cross-border capital flows and this concept was further interpreted by Bardhan, A and Kroli. C.A. (2007). They emphasised that diversification of risk, changing customer demand and the appetite for high returns were concluded as key factors, which stimulated cross-border activity.

On the hand, D'Arcy and Keogh (1999) and Lee (2001 and 2005) used the new institutional economics theory which suggested that a country's attractiveness for investment is linked to its socio-economic environment and institutional framework. It is intuitive that that the economy size and growth is linked to XBI inflow. Chin, Dent, and Roberts (2006) suggest the most significant factors in a region's ability to attract foreign REI is a sound economic structure, and an expected strong economy. This is consistent with Chen and Hobbs (2003) who found that economy size positively impact investment activity as larger economies are more stable and able to withstand external macro shocks. Van Doorn, (2003) further suggest that GDP per capita being a factor in determining strategic RE asset allocation for RE fund managers. The increase of RE opportunities and market size should facilitate more cross-border RE inflows. Kurzrock et al. (2009) find that a high degree of agglomeration property in a location (in other words, higher urbanisation) leads to higher property valuations, and were more likely to attract interest from international investors.

REI is a capital-intensive business, and the deep and sophisticated capital markets should lead to higher cross border REI. Adair et al. (1999) and Adlington et al. (2008) find a developed and liquid capital market (including a stable financial and banking framework) is essential in the creation of a viable and sustainable property markets. REI in generally is conducted with leverage, and a commonly quoted determinant is the yield spread (i.e. the difference between rental income yield and cost of financing) Petros S. Sivitanides et al. (2003), where a higher yield spread is usually attracts further investments seeking to arbitrage the positive leverage effect.

The RE market in respective markets is further exposed to several local burdens/restrictions such as tenancy law, planning law, tax etc, impacting transaction and daily operational aspects of REI. (D'Arcy and Keogh, 1998). The overall strength of legal framework, regulation and institutions is essential in ensuring REI are safely protected for investors. The survey results from Chin, Dent,

and Roberts (2006) confirms this. Furthermore, they further found that political stability is key to investment decisions when entering emerging economies.

Lieser and Groh (2011) published one of the first broad base research, examining a large number of countries, potential determinants over a longer time period. By analysing 66 data series for 47 countries worldwide, covering the period from 2000 to 2009, they identified six key drivers that determine the international REI. They grouped these determinates of the attractiveness of RE markets into six key drives that affect international REI found the following ranking, based on by their effects on REI: (1) REI opportunities (proxied by urbanizations and demographics); (2) depth and sophistication of capital markets; (3) administrative burdens and regulatory limitations; and (4) investors protection and legal framework. However, (5) economic activity and (6) socio-cultural challenges, and political instabilities do not seem to have any effect, perhaps due to data limitations and effect of aggregation or assumption of linear model. Testing for individual factors, they showed all six factors did influenced international REI.

Fuerst, Micheva and Baum (2015) further extended Lieser and Groh's research, utilising legal, institutional, regulatory and property market indicators of cross-border RE capital to examine the relationship between the barriers and capital flows in 24 countries across Europe and Asia. In particular, they included direct property total returns taken from IPD (based on local currencies) to account for tactical pricing in different countries. Their results differ from Lieser and Groh (2011), showed that hardly any cross-border whether institutional, legal or regulatory barriers have significant impact on the level of RE inflows. RE market liquidity has the most significant impact on inflows domestic and foreign capital, suggesting investors are well-informed about the property market, and could be large global players who rely less on institutional barriers but focused in timely market entry and exit options. Interestingly, RE capital outflows increase if the country has less domestic institutional and legal barriers affecting domestic financial markets, macro-economy and property market transparency.

Lizieri and Mekic (2015) studied the how London evolved to become top investment destination and interpreted more on the reasons for investment in London. They suggested the 1980s financial deregulation of London, and later other foreign countries played an important role in establishing London as a top CRE investment destination.

However, they argued that investment capital has not always drawn to London CRE purely on a projected returns basis. They suggested that familiarity as one explanation for the fact that investing in London CRE may be a decision-making bias towards safety, contrary to market perfectness theory. The presence of global brokerage firms with standardised practices provides a sense of familiarity to investors as well. The notion of safety can be extended to flight to liquidity (saleability), where investors feels safer to be able to exit the investment. The high value of London CRE also has benefits for international investors. They are able to gain economies of scale, committing large amounts of capital swiftly rather than having to acquire multiple assets in smaller markets. Another key feature is in London is transparency. The size of London CRE leads to a high volume of rental and transactions comparable. The flow of information and research provide greater confidence to investors and thus lowering risk premia.

In recent reports, other commonly quoted factors such as (i) relative pricing; (ii) the judicial independence/ legal system; and (iii) the currency advantage to international investors right now makes the overall trend towards a more global and financialised London RE market.

3.2. Qualitative Literature

3.2.1. Key Factors Driving Cross-Border RE Investments

JLL Global Real Estate Transparency Index (GRETI) (2004 - 2018) introduce the concept of market transparency to explain cross-border RE investment. The index is based on a combination of quantitative market data (61 factors, 31%) and qualitative survey (125 factors, 69%) across 100 countries and 158 city markets. These factors are grouped and weighted into six broad sub-indices: performance measurement, market fundamentals, governance of listed vehicles, regulatory and legal, transaction process and sustainability. The results are presented in a composite score from 1 to 5, where 1 is a perfect total RE transparency. It also classified the countries into 5 tiers (Tier 1 - Highly Transparent to Tier 5 – Opaque).

The reports concluded the issues of greatest concern to the global investors: 1. Availability of accurate financial and market information; 2. Regulatory and legal environment; 3. Security of legal title and enforceability of the property rights; 4. Financial disclosure and governance of listed RE companies; 5. Zoning and building codes. Investors would also consider the size and depth of the market as it influences opportunities for them. Return level that could be achieved is also a key factor. In recent years, questions relating to environment, sustainability, anti-money laundering regulations and beneficial ownership disclosure were added in the surveys.

Results show throughout the 20 years, transparency of the emerging markets have been enhanced, however, the top tier group is still dominated by the Anglophone countries with a mature RE market like Australia, the United Kingdom, the United States, Canada and the Netherlands. In particular, London is the most transparent RE market at the city-level.

Another prominent industry publication, Emerging Trends in RE Europe (2019) by PwC and ULI, provides an outlook on key RE industry trends across markets. The 2019 report is based on the views of 885 individuals, from across 22 European countries, who completed surveys or were interviewed. They found that pricing and availability of suitable assets are the top relevant considerations for investors who made their decision of deployed capitals into Europe. This survey shows that 69% of investors are concerned about the availability and 61% for construction costs/pricing. Other factors being mentioned are cybersecurity (52%), interest rate movements (53%), currency volatility (41%), European economic growth (48%), global economic growth (46%), inflation (28%), and availability of finance (19%).

CBRE Global Investor Intentions Survey (2019) was conducted among CBRE clients between November 2018 and January 2019 which attracted 908 respondents globally. The developers/owners/operators are accounted for 27% of survey participants, multi-client investment managers made up 23%, private equity and REITs (public and private) together accounted for 29%. Other respondents included private individuals/family offices (7%), insurance companies (4%), pension funds (3%), banks (3%) and sovereign wealth fund (1%). It concluded that the motivation for capitals from different origins are differ from each other.

Diversification, capital gain, income producing, and yield are the four key reasons, the table below ranked the motivations for investors from EMEA, U.S., Asia and the rest of the world.

Ranking	EMEA	U.S.	Asia Pacific	Global
1	Diversification	Income	Income	Diversification
2	Income	Capital Value Growth	Diversification	Income
3	Yield	Yield	Capital Value Growth	Yield

Table 1 Motivations for Investors[1]

The CBRE Global Investor Intentions Survey (2019) also ranked the top six most popular countries for international investment (excluding the home market bias), respondents listed U.S. as their first choice, followed by the U.K., Australia, China, Japan and Germany.

The report also discussed about the preferable geographic countries that investors are keen on. It can be found that there is a strong correlation between investors' home countries and their preferred destination countries for their investments. This well-known issue of "home bias" varies across countries. The table below illustrates that more than 90% of the U.S. respondents prefer their home country for investment, on the contrary, only 17% of the investors from Hong Kong who prefer their home country. The table below shows that for the origin of capitals from Canada, Hong Kong, the U.K. and Singapore are much likely to invest internationally than the U.S., Australia, Japan and Germany.

[1] CBRE (2019a), Global Investor Intentions Survey 2019

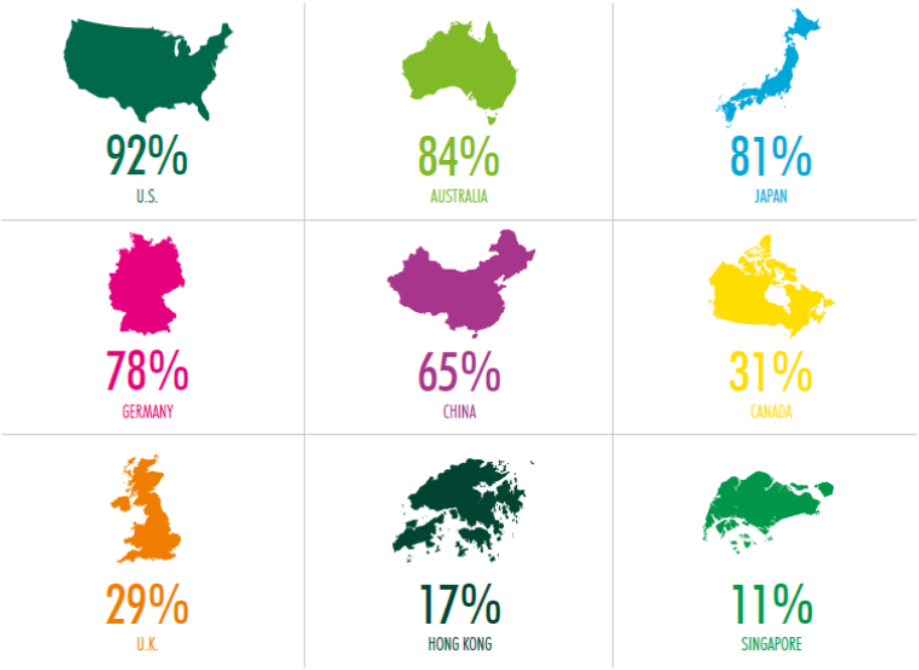


Table 2 % of Domestic Investors Choosing Home Market as Most Attractive[2]

3.2.2. Context of London Commercial Real Estate Market

3.2.2.1. Cross-border REI into London

The nature and characteristic of London's REI market made this city appealing to the international investors. The two figures below describe the quarterly capital transaction volumes of two traditional and dominated CRE markets in central London (City and West End) and grouped the data by domestic, overseas and unknown. Both figures demonstrated the market has attracted high percentage of the global capital inflow over the last decade (Q2 2009 – Q2 2019). This phenomenal is unique and international capital choose London as their investment destination due to it distinguish characteristics.

[2] CBRE (2019a), Global Investor Intentions Survey 2019

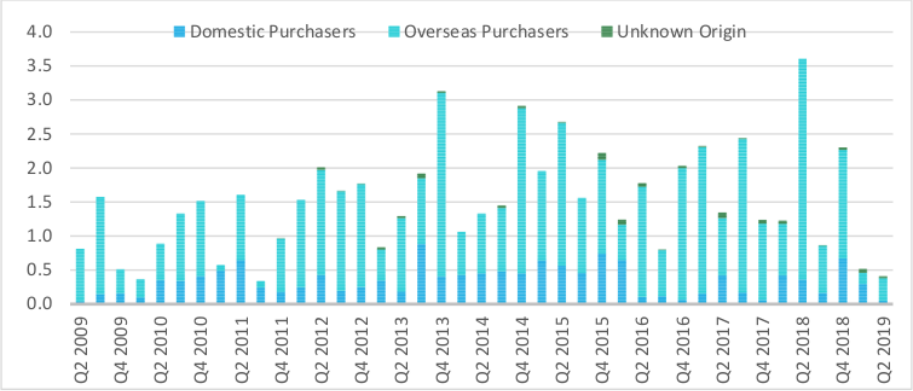


Figure 1 City market capital transactions[3]

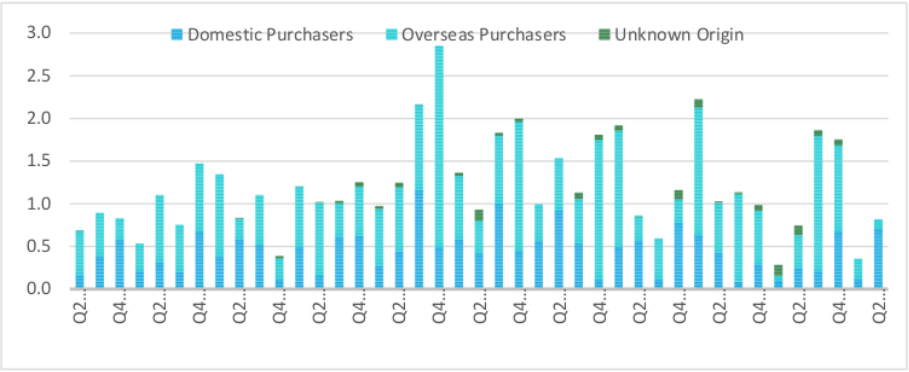


Figure 2 WestEnd market capital transactions[4]

These fundamental characteristics created an easy accessed market, CBRE research tracked that for 2019 H1, c.£31.75bn of global capital is targeting London. This is also evidenced in actual completed transactions in 2018, the total transaction volume reached £17.6bn (which is the best year since 2014) among which 76% were dominated by the overseas (Asian investors accounted for 41%, including 5 Broadgate £1bn being the largest single transaction).

3.2.2.2. Investment Sectors

Real Capital Analytics (2019)[5] drew attention to investors preferred asset classes. Office is consistently the most favourable investment class in London (ranging from 76% to 98% of total cross-border investment volume (XBINV) in between 2009 to H1 2019). Followed by hotels (10% in 2018), retail (6% in 2018) and industrial (less than 1% in 2018).

[3] CBRE (2019b), Central London Office Market Q2 2019 (PPT Databank)
[4] Ibid.
[5] RCA (2019)

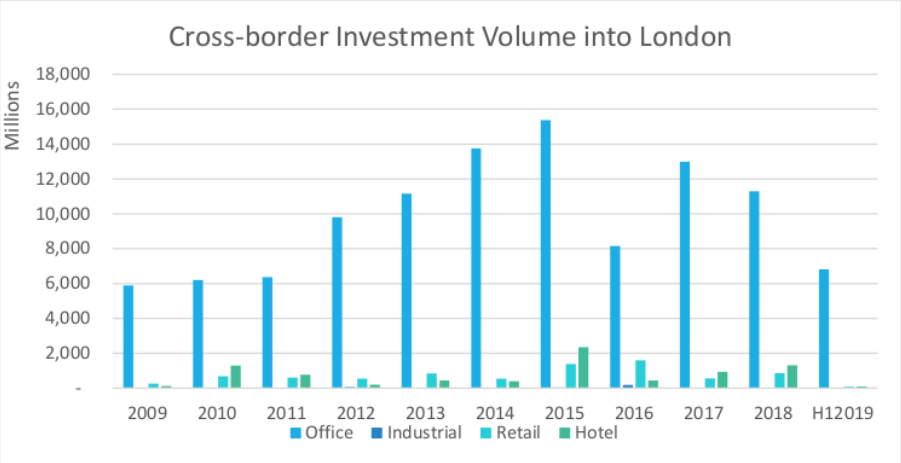


Figure 3 Cross-border investment volume into London by asset class (£)[6]

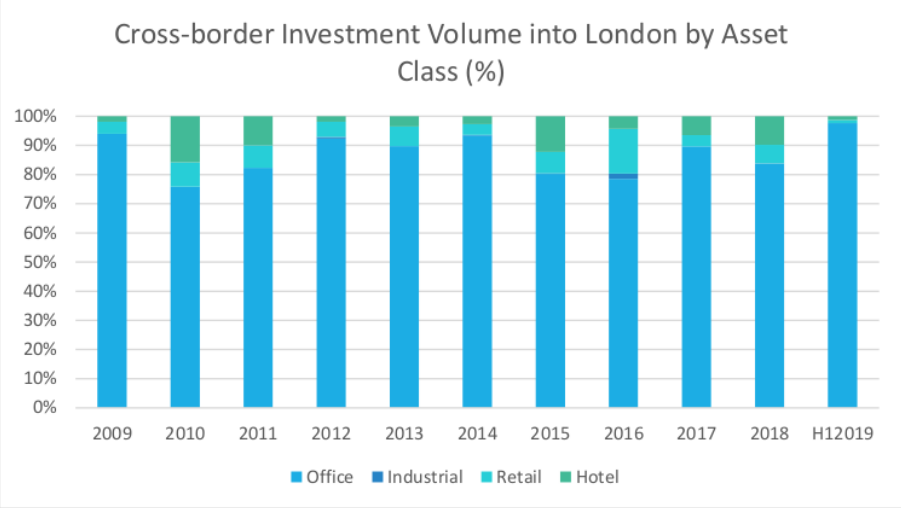


Figure 4 Cross-border investment volume into London by asset class (%)[7]

According to IPF (2018), the invested stocks by overseas investors are concentrated in office sector (71%), of which 50% are in London offices (28% City of London, 22% West End & Mid-town). As of end-2017, overseas investors own 54% of all London office stock. Namely 68% of office stocks in London City and 43% of office stocks in West End and Mid-town are owned by overseas investors.

[6] Ibid.
[7] RCA (2019)

	£bn by investor origin			% of total by investor origin		
	Total	UK	Overseas	Total	UK	Overseas
Retail	**175**	**151**	**24**	**34**	**42**	**16**
Standard Retail South East	51	41	10	10	11	6
Standard Retail Rest UK	21	20	1	4	6	1
Shopping Centre	57	49	8	11	14	5
Retail Warehouse	46	41	6	9	11	4
Office	**215**	**109**	**106**	**42**	**30**	**71**
City	63	20	43	12	6	28
West End, Mid Town	79	45	34	15	13	22
Rest South East	53	28	25	10	8	17
Rest UK	20	15	5	4	4	3
Industrial	**69**	**65**	**4**	**14**	**18**	**3**
South East	44	41	3	9	11	2
Rest UK	25	24	1	5	7	1
Other Commercial	**50**	**35**	**16**	**10**	**10**	**10**
Total	**509**	**360**	**151**	**100**	**100**	**100**

Figure 5 Invested stock by market segment, end-217[8]

3.2.2.3. Investor Type

According to IPF (2018), UK CRE stock is widely spread across types of owners and vehicles as of end 2017. The mix across both UK and overseas investors (as show on the table below), the split is evenly between direct investors 48% of total assets and indirect holdings with 44%. The four largest investor types are UK unlisted fund, UK listed companies and REITs, UK private companies and overseas unlisted funds. Within overseas investors unlisted funds represents 33% by owner type, sovereign wealth fund and government are 20%, and private companies and individuals holds 17%. Market share of overseas investors has increased from 15% in 2003 to 30% in 2007.

[8] IPF (2018)

UK Investors	2017 £bn	2017 % share	Change in market share (%)	
			From 2016	From 2003
Insurance Direct & Funds	42	8	0.0	-12
Pension Funds	42	8	0.2	-2
Unlisted & Collective Schemes	83	16	0.0	7
Listed Companies & REITs	73	14	-0.8	0
Private Companies	58	11	-0.9	-6
Estates & Charities	23	5	-0.2	0
Private Investors	14	3	0.0	0
Other Owners	22	4	0.3	-1
Sub-total	**357**	**70**	**-1.4**	**-14**
Overseas Investors				
Unlisted & Collective Schemes	52	10	0.4	..
SWF & Government	29	6	0.2	..
Private Companies, Individuals	26	5	0.2	..
Listed Companies & REITs	14	3	0.1	..
Insurance & Pension Funds	12	2	0.1	..
Other Owners	18	4	0.1	..
Sub-total	**152**	**30**	**1.2**	**15**
Total	**509**	**100**		

Figure 6 Commercial investment stock by owner type[9]

The European Association for Investors in Non-Listed Real Estate Vehicles (INREV) carries out Investment Intention Surveys since 2008, assessed the investment avenues (vehicle types) and investment strategy of choice by various sources/origins of capitals. Although the survey is not directed solely on cross borders investors into London, we believe the findings here also shed insightful materials for our research.

The results of this survey based on qualitative data provided directly by investors and fund of funds manager. They defined and differentiated RE investment vehicles in following types shown in the figure below. They collected responses 144 institutional investors and 10 fund of funds managers in 2019 report. Categorised investors by their domicile, 18.2% is Asia pacific, 55.2% is Europe and 26.6% is North America; by investor type, 6.5% is fund of funds, 51.3% is pension funds, 14.3% is insurance companies, 3.9% is banks, 3.9% are government institution and 20.1% are other parties include corporations, foundations, endowments, family offices, charities, sovereign wealth funds, investment consultant, non-profit organisations, high net worth individuals and other unspecified.

The survey shows that capitals from various origins access REI differently in terms of the investment vehicle used (based on a sample of 120 respondents).

- 39.4% of Asia Pacific investors' RE assets are held in open end funds, this vehicle is much less popular with European (9.3%) and North American (12.0%) investors.

[9] IPF (2018)

- Direct investment is most popular amongst European investors, accounting for 45.6% of their portfolios.
- For North American investors 30.1% of REIs are held directly, followed closely by separate accounts which make up 28.4% of their portfolios.

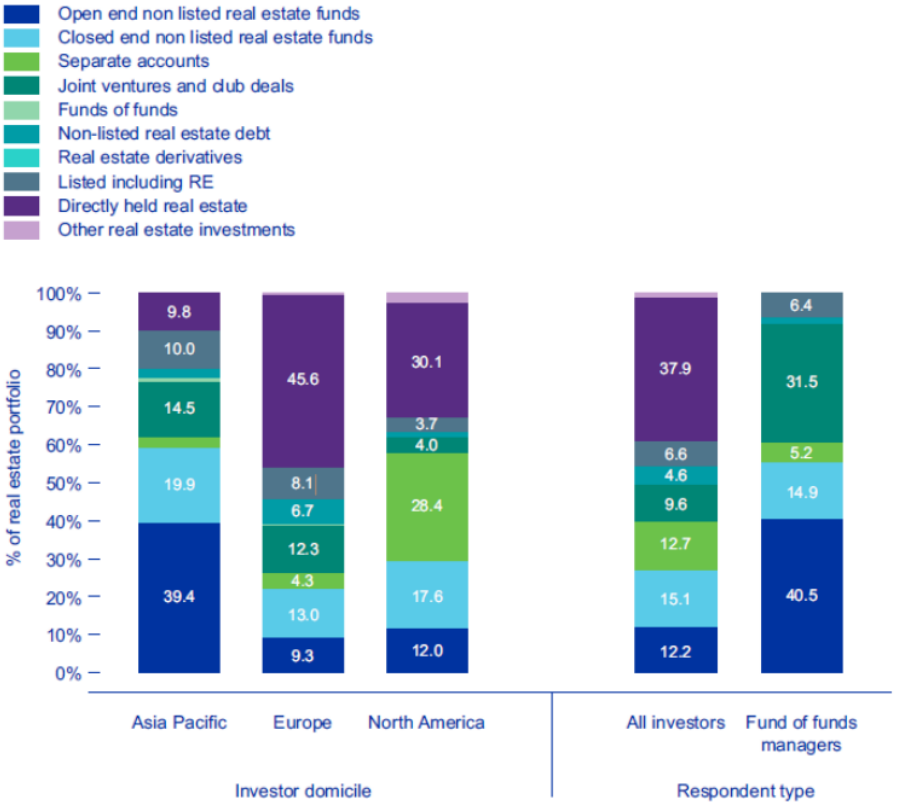


Figure 7 Current Allocations to real estate by vehicle type[10]

The survey also states that investors may act differently in terms of investment vehicles when they approach different RE markets (based on a sample of 116 respondents).

- For Asia Pacific capitals, the most popular vehicle for investing domestically is the open-end fund. JVs and club deals are the preferred way of their investments in Europe and the US.
- For European investors, the majority (56.7%) of investments in their home region are held directly, but direct holdings account for a very small percentage of European investment in Asia Pacific and the US. In Asia Pacific, European investors prefer listed RE securities and closed end funds, while in the US they prefer listed securities and non-listed debt investments.
- North American investors' portfolios outside the US are dominated by closed end fund investments (except for Americas ex US for which direct investments dominate, largely because of direct holdings of Canadian investors in their home market). For investments in

[10] INREV (2015 - 2019), Investment Intention Surveys

the US, North American investors' most popular vehicle is separate accounts which are 39.9% of their US portfolios.

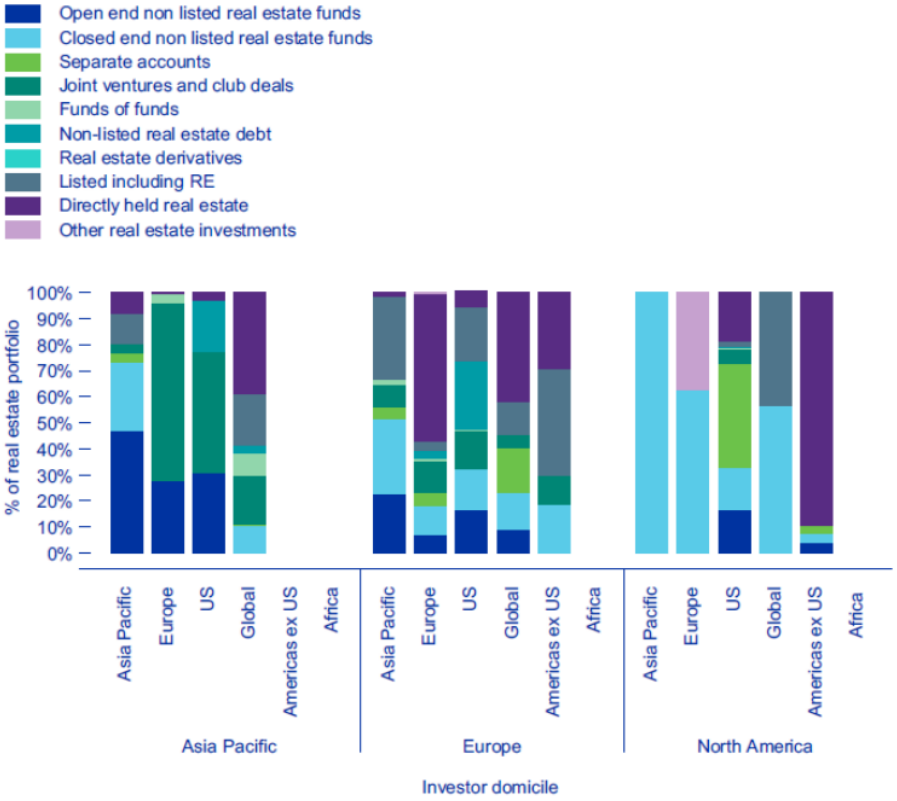


Figure 8 Current allocations to real estate by regional strategy & vehicle type[11]

3.2.2.4. Investment Style

This paper also refers to INREV Investment Intentions (2009) as a guideline for investment style of cross-border investors into the UK. When looking across investor domiciles, there is a clear preference for core among Asia Pacific investors, but a higher risk adjusted return preference for investors of other regions, especially those based in North America.

Among the European investors there are significant variations across investor domiciles in terms of how they view the attractiveness of risk-adjusted performance. For example, there is a strong preference for core among Dutch, French and Swiss investors. Value added investments are favoured most by those based in Finland, Sweden and the UK, while opportunity is mentioned only by Finnish, French and Swiss investors.

[11] INREV (2015 - 2019), Investment Intention Surveys

Both Canadian and US investors show a clear preference for value-added with some also indicating a preference for opportunity. In Asia Pacific, investors based in Japan or Korea have a stronger preference for core than those in Australia.

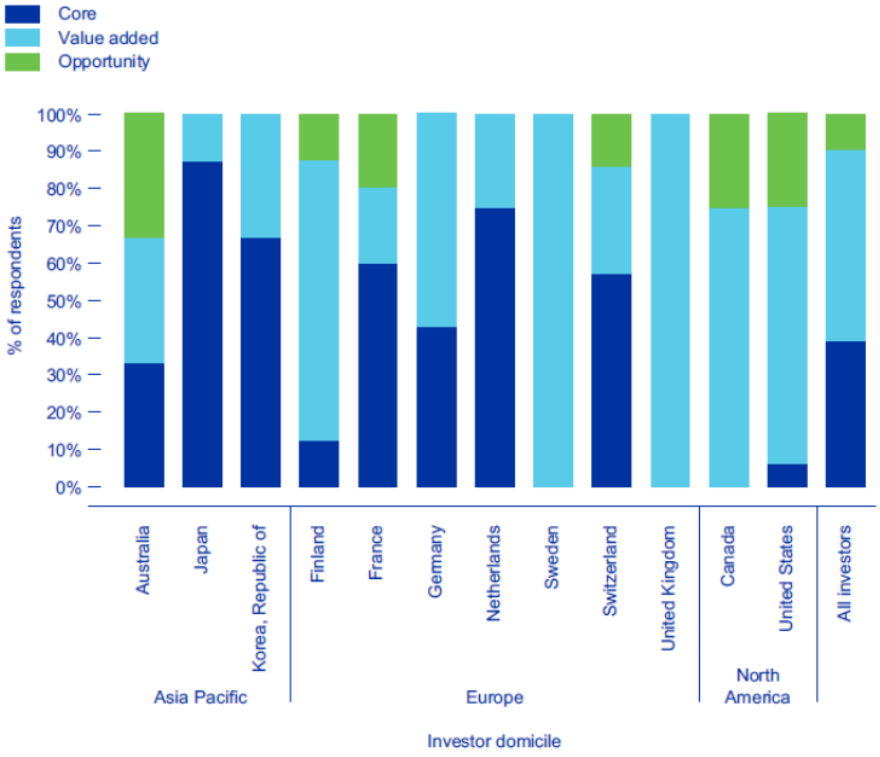


Figure 9 Preferred investment styles by investor domicile[12]

3.2.2.5. The Scenario of Brexit

Brexit could dramatically alter the outlook for the UK economy and XB CEI inflow into London. With the current political climate, the trajectory of Brexit's investment impact will depend primarily on the decision of deal or no-deal. Miles Gibson, CBRE (2019) places a 40% probability on a no-deal exit (at any date). Capital Economics (2019) argued that under a no deal scenario, returns could contract in the near-term, as property yields jump and rental values are hit. However, further rises would be prevented by interest rates decreasing; If a deal could be secured, they expect higher interest rates to put upward pressure on yields and cause sharper falls in capital values from next year; and if Brexit is repeatedly delayed, yields could increase further in the near term, interest rates would be expected to rise by less. Nevertheless, under any Brexit scenario, Capital Economics expected the economy could be growing around 2% y/y by 2021, which would support a recovery in all-property rental values. Coupled with the 'wait and see' attitude adopted by most businesses, the market remains highly quiet as both

[12] INREV (2015 - 2019), Investment Intention Surveys

investors and owners are deterred by the increased trading risks, potential currency volatility, as instigated by the continuing uncertainty surrounding Brexit.

The report further discussed different sectors into details. For office market, it argues that there will be a slowdown in the employment growth which is expected to weigh on office occupier markets. However, they expect regional office rental value growth to outperform Central London as supply pipelines appear more constrained. For the retail sector, the retail rental values are expected to fall further amid an oversupply of property. For industrial, a slower rental values growth and higher yields are expected to cause industrial capital value to fall, however, given the shift in relative pricing in favour of this sector, the fall in value shall be less than the traditional ones.

INREV Investment Intention Survey (2019) shows the consistency of UK's dominant position amongst investors as preferred destination for their global RE investment. It can be found that from 2015 to 2019, the UK office market consistently ranked in the top three most preferred investment destinations apart from 2017. Emerging Trends RE Europe by PwC performed a survey regarding impact of Brexit on UK REI in various years. The results showed a falling % of respondents that believe investment volume will decrease throughout the years (92% in 2017; 81% in 2018; and 78% in 2019).

We further compared the survey results with actual transaction data from CBRE Research (2019) International Investment in UK. The figure shows that on 2016 at the event of Brexit announcement, the Central London investment volume dropped but recovered moderately back to 2014/15 levels during 2017-18. In 2019 the transaction volume is severely impacted by the Brexit uncertainty, it is only 50% of the 2018 H1. We can conclude that despite all the negativity news, investors remain confident in UK REI and British economy until recently.

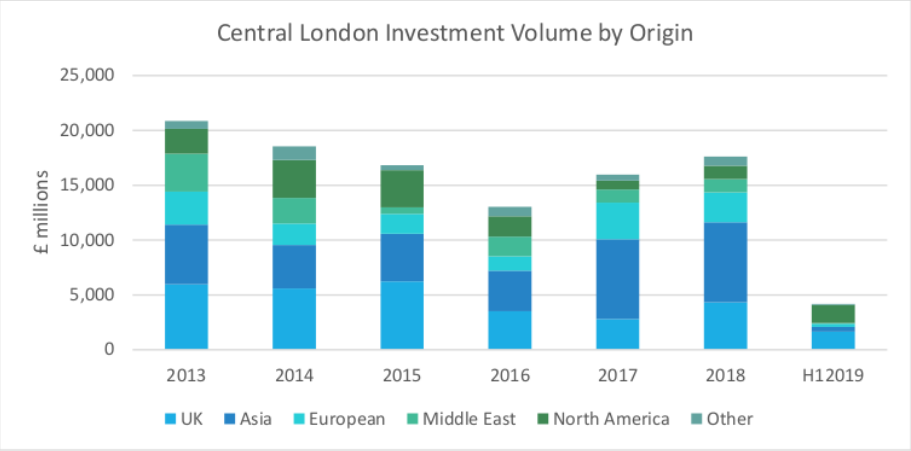


Figure 10 International investment in the UK[13]

According to CBRE data below, the market uncertainty certainly affected the investment transaction volume, especially to the international investors. For Q2 2019, it can be seen from

[13] CBRE (2019c), Central London Market Update August

the pie charts below, in both City and West End markets, the UK institutions, UK property companies and other UK buyers are active on the market compare to the international capital. While comparing this situation with the 10 years figures which has been described above, it is rarely to see the domestic players are taking the leading position.

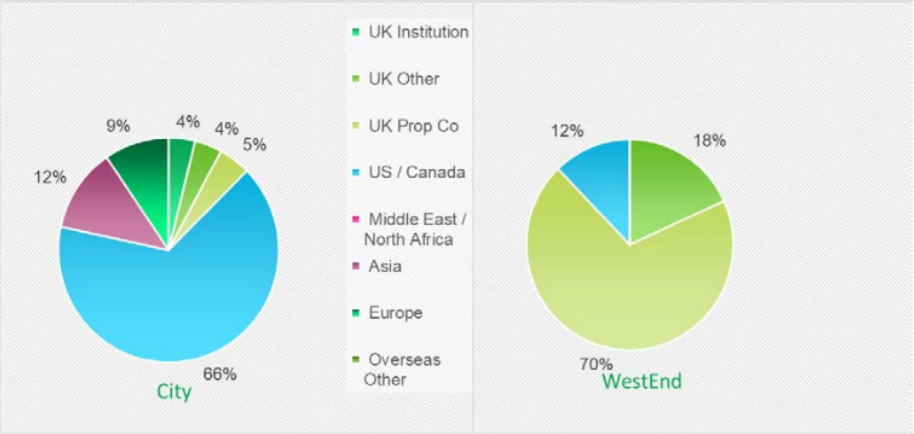


Figure 11 West End & City investment transactions by purchaser[14]

3.2.3. Investment Outlooks

Per RICS commercial survey (2019), investor appetite for London office space appears to be holding up. Investor demand has remained flat over the last year suggesting a generally stable trend in London office capital value in the near term (see chart below). However, 63% of respondents from London in the RICS survey think that the London market is in the downturn phase of the cycle versus 51% of the respondents when asked about the national property cycle phase.

[14] CBRE (2019b)

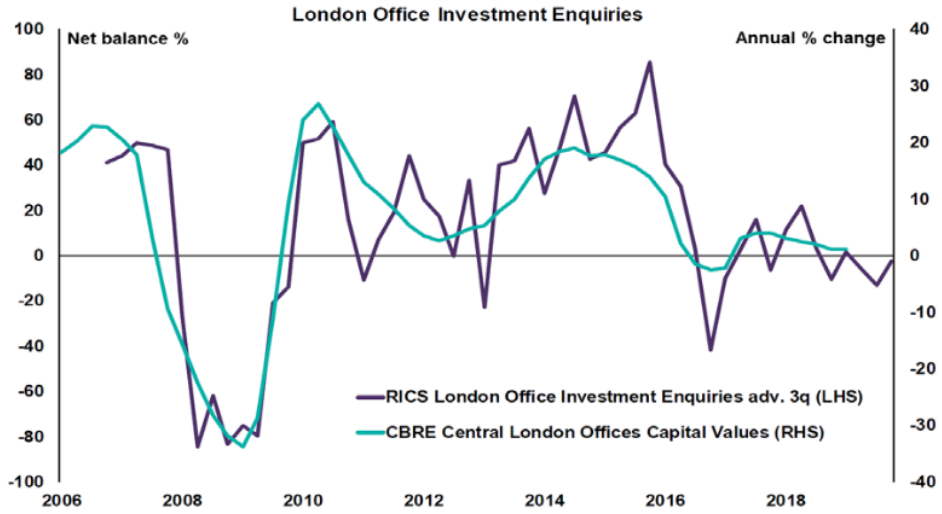


Figure 12 London office capital values are likely to remain stable[15]

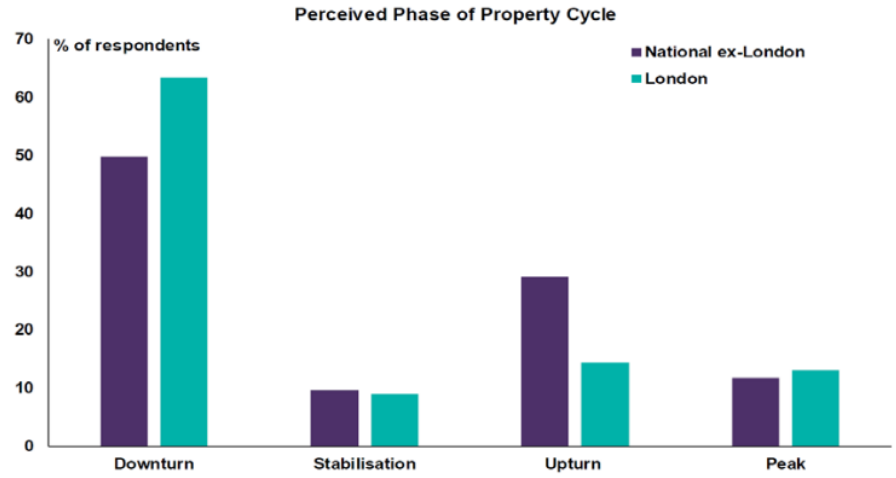


Figure 13 Majority believe the London market is in the downturn phase[16]

[15] RICS (2019)
[16] RICS (2019)

4. Methodology and Data

4.1. Data Design & Collection

Based on the research objectives and the literature review above, the study to include both quantitative and qualitative analysis focusing on London CRE investment has been designed, the following sections show the methodology and framework to build up respective database:

4.1.1. Qualitative

The dependent variable is XBINV into the specific cities. Data from Real Capital Analytics (RCA) from 2009 to 2018 has been used, where we included several types of CRE (see below) serve to better determine the impact and the drivers of cross-border activity to all CRE.

- Office
- Retail
- Industrial
- Hotels

To select the control variables, grouping is based on Lieser and Groh (2011) and added a Projected Investment Returns group (similar to Property Returns variable used by Fuerst, Micheva and Baum (2015)). The control variables are listed below (and in the table below as well as their expected influence with the dependent variable, i.e. XBINV, (please see the respective definition and further explanation for all the control variables in the Appendix).

(i) Economic Activity: it is intuitive that that the economy size and growth is linked to XBI inflow

(ii) Real Estate Investment Opportunity: the increase of RE opportunities and market size should facilitate more cross-border RE inflows

(iii) Depth of Capital Market: REI is a capital-intensive business, and the deep and sophisticated capital markets should lead to higher cross border REI

(iv) Investor Protection and Legal Framework

(v) Administrative Burdens and Regulatory Limitations

(vi) Socio-Cultural and Political Environment: for (iv), (v), (vi), the overall strength of legal framework, regulation and institutions is essential in ensuring REI are safely protected for investors

(vii) Projected Investment Returns: higher expected returns should attract higher investment volume

20 individual data series from 15 European cities, namely London, Paris, Frankfurt, Madrid Amsterdam, Brussels, Milan, Lisbon, Warsaw, Prague, Vienna, Stockholm, Oslo, Copenhagen and Helsinki (and country level data for certain variables where relevant) have been collected through a range of supranational database, trade publications, third-party research website/tools and professional consultancy reports (listed below in Table 3).

We were able to compile data across 40 periodic intervals - from Q1 2009 to Q4 2018. In selective cases where data points are missing, we consistently apply the two methods suggested by Nardo et al. (2005) in the following order: (i) interpolate between the adjacent data records; and (ii) use the latest available data. To correct for skewness of the cross-sectional data, for instance cross border investment volume, GDP, GDP per capita and total stock, we apply the natural logarithmic transformation. These will be used as parameters in

econometric analyses in the later session to measure the rationale and relevance/correlation coefficient of elements described below in the Table 3.

Data series have been combined into four control variables respectively (i) Loan Market Index; (ii) Property and Legal Rights Index; (iii) Socio-Cultural and Political Environment Index; and (iv) Yield Spread. The methodology is as below:

(i) In the Depth of Capital Market (CM) subgroup, we averaged the "Ease of Access to Loans" and the "Soundness of banks" indexes, created a new control variable named "Loan Market Index", max with 100, the higher the figure is, the easers access to loan and a more stable banking system for this market.

(ii) Under Investor Protection and Legal Framework (IPLF), we combined the indexes for property right and legal right, generated a single control variable known as Property and Legal Rights (max with 100). In addition, we normalised the JLL Transparency Index which originally ranged from 1-5 (1 = most transparent) to max of 100 (where 100 = most transparent).

(iii) A control variable known as Socio-cultural and Political Environment (SCPE) index (where max=100) has been created, a weighted average of Control of Corruption (Percentile Rank with 100 max), Government Effectiveness (Percentile Rank with 100 max), Political System & Absence of Violence/ Terrorism (Percentile Rank with 100 max), Regulatory Quality (Percentile Rank with 100 max), Rule of Law (Percentile Rank with 100 max) and Voice and Accountability (Percentile Rank with 100 max).

(iv) Yield Spread is the product of property yield minus 5-year government bond yield. This represents the difference between the potential property return vs. the cost of financing.

(v) With the transformations above, all of the control variables have consistent unit where an additional one unit equal to 1% increase for the respective variable.

Control Variables	Abbreviation	Index	Source	Expected Correlation
Economic Activity (EA)				
GDP per capita	GDPP	World Development Indicators (WDI)[17]	World Bank	+
Real GDP Growth	GDPG	WDI	World Bank	+
Inflation, Average Consumer Prices	INF	WDI	World Bank	+
Real Estate investment opportunity (REIO)				
Investment Volume	TOTALINV	-	Real Capital Analytics (RCA)	+
Urban Population	URBANPOP	WDI	World Bank	+

[17] The World Bank (2008 - 2018), World Development Indicators (WDI)

Population Growth	POPG	WDI	World Bank	+
Depth of Capital Market (CM)				
Loan Market Index	LOAN	Global Competitiveness Index (GCI)[18]	World Economic Forum (WEF)	+
5-year Government Bond Yield	BOND	-	Bloomberg [19]	-
Foreign Direct Investment, Net Inflows	FDI	WDI	World Bank	+
Investor Protection and Legal Framework (IPLF)				
Property and Legal Rights	PROPLEGAL	GCI	WEF	+
Real Estate Transparent Composite Index	TRANSPARENCY	Global Real Estate Transparency Index[20]	JLL	+
Administrative Burdens and Regulatory Limitations (ABRL)				
Paying taxes: Total tax rate (% of profit)	TOTALTAX	Doing Business	World Bank	-
Dealing with construction permits: Time (days) score	PERMITS	Doing Business	World Bank	-
Socio-Cultural and Political Environment (SCPE)				
Socio-Cultural and Political Environment	SOCIOPOL	Worldwide Governance Indicators (WGI)[21]	World Bank	+
Brexit Uncertainty (since June 2016 =1)	BREXIT	The 2019 UK Market Outlook	CBRE	-
Projected Investment Returns (PIR)				
Real Effective Exchange Rate	FX	WDI	World Bank	+/-
Prime Yield	YIELD	-	CBRE[22]	+/-

[18] World Economic Forum (2008-2018), The Global Competitiveness Index (GCI)
[19] Bloomberg Terminal (2008-2018), 5 Year Yield for Government Bond
[20] JLL (2004 - 2018), Global Real Estate Transparency Index Reports
[21] The World Bank (2008 – 2018), Worldwide Governance Indicators (WGI)
[22] CBRE (2008 – 2018), Global Research ERIX LIVE Market Data

Yield Spread	SPREAD	-	CBRE [23] & Bloomberg [24]	+
Vacancy Rate	VAC	-	CBRE[25]	-
Rental Growth	RENTG	-	CBRE[26]	+

Table 3 Raw data samples and sources

4.2. Data Analysis and Results Interpretation

4.2.1. Qualitative

The survey (attached in Appendix) follows the methodology described in the previous section.

Investor Background

First of all, this survey investigates investors' background categorised as below,

(i) Origin of Capital – Asia, North America, Europe, U.K., Australia, Other;

The majority of respondents are international investors looking at the XBI transactions (4/27 is U.K. based capital who has cross-border mandates). The respondence has been collected is widely distributed across various regions. See Figure 14.

(ii) Type – Public Property Company and Listed REIT, Private Property Company, Property Fund, Family Office, Private Investor, Developer, Owner-Occupier, Other

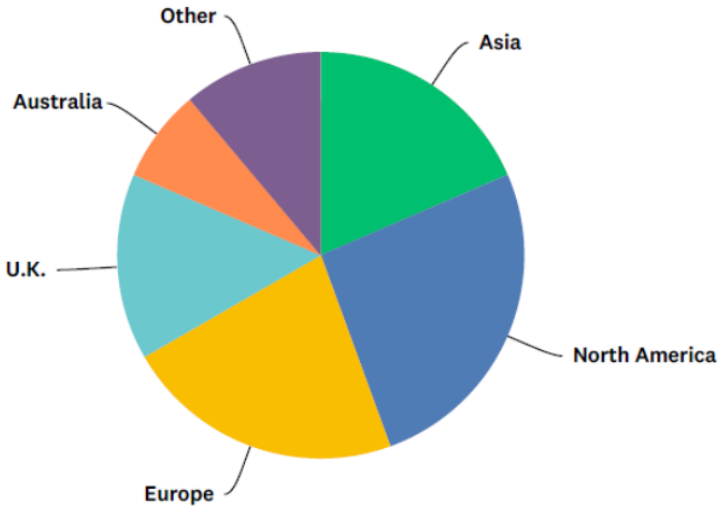
The results/feedbacks have been collected from our interviewers which most are from property funds (10/27), followed by public and private company (4/27) and 2/3 of them are investors who hold experience for more than 5 years in the field which IPF (2018) in the literature review section 3.2.2.3. holds the same findings. See Figure 15.

(iii) Duration of looking at London CRE market – <2 years, 2-5 years, 5-10 years, > 10 years.

As can be seen in Figure 17, 70% of the respondents has considered CRE market for at least 5 years.

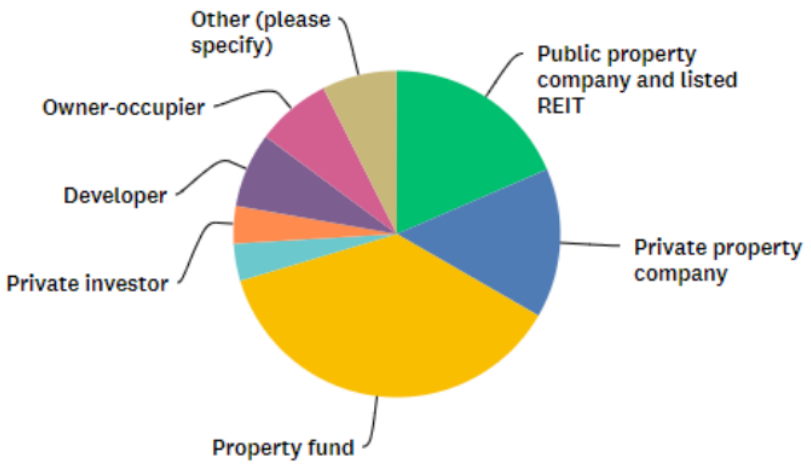
[23] Ibid.
[24] Bloomberg Terminal (2008-2018), 5 Year Yield for Government Bond
[25] CBRE (2008 – 2018), Global Research ERIX LIVE Market Data
[26] Ibid.

Figure 14 Origin of capitals



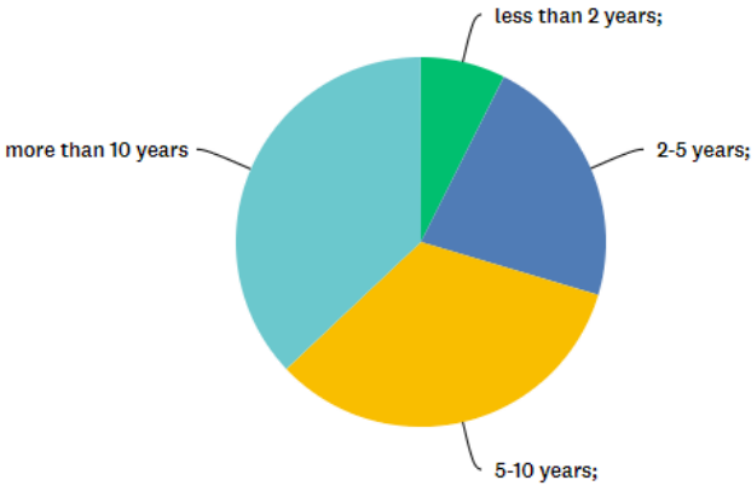
ANSWER CHOICES	RESPONSES	
Asia	18.52%	5
North America	25.93%	7
Europe	22.22%	6
U.K.	14.81%	4
Australia	7.41%	2
Other	11.11%	3
TOTAL		27

Figure 15 Type of investors



ANSWER CHOICES		RESPONSES	
Public property company and listed REIT		18.52%	5
Private property company		14.81%	4
Property fund		37.04%	10
Family office		3.70%	1
Private investor		3.70%	1
Developer		7.41%	2
Owner-occupier		7.41%	2
Other (please specify)	Responses	7.41%	2
TOTAL			27

Figure 16 How long have you been looking and/or investing in the London commercial real estate market?



ANSWER CHOICES	RESPONSES	
less than 2 years;	7.41%	2
2-5 years;	22.22%	6
5-10 years;	33.33%	9
more than 10 years	37.04%	10
TOTAL		27

The survey carries out an investigation on investment strategy, purpose of London investment, later business plans, opinion on London CRE market and the current scenario of Brexit; also raise questions on submarket they are focusing, size of investment in London, investment avenues, sectors invested, financing and their opinions and thoughts on other geographic cities/regions.

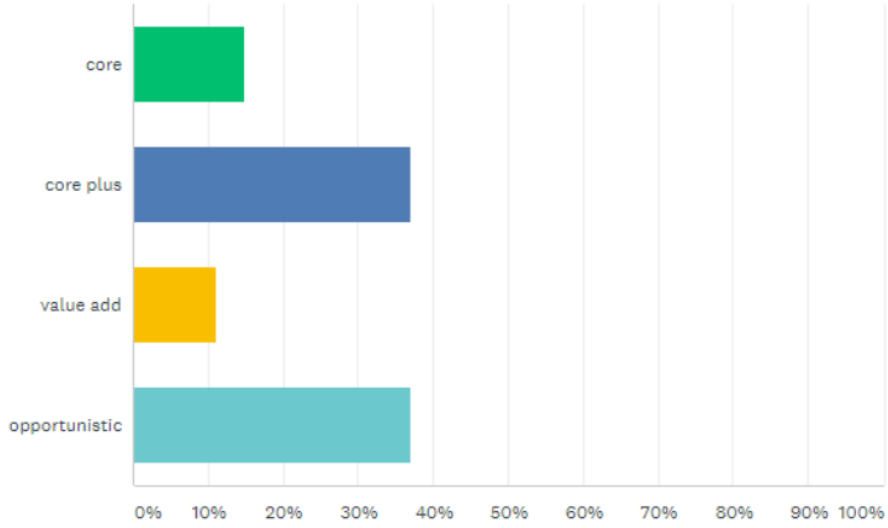
Investment Strategy and Key Determinants Investing in Real Estate as an Asset Class

Most of the investors are treating London as one of the major destinations for their capital to be deployed and looking into submarket area such as the City of London, Midtown or across London subregions (City of London, Mayfair, Midtown, Canary Wharf or Greater London area). some investors are also looking at other European cities. The most popular destinations are France, Germany, and Benelux.

The survey show that investors are focusing in investment strategy of core plus asset that can generate considerable total returns (capital gain and yields); or opportunistic opportunities that can make noticeable higher projected profits. This finding is consistent with the quantitative result (see below in section 4.2.2) where control variables related to REI opportunities (such as yield spread, rental growth and vacancy rate etc.) shows statistically significant correlation impacts. Other key purposes of investing into London including strategic

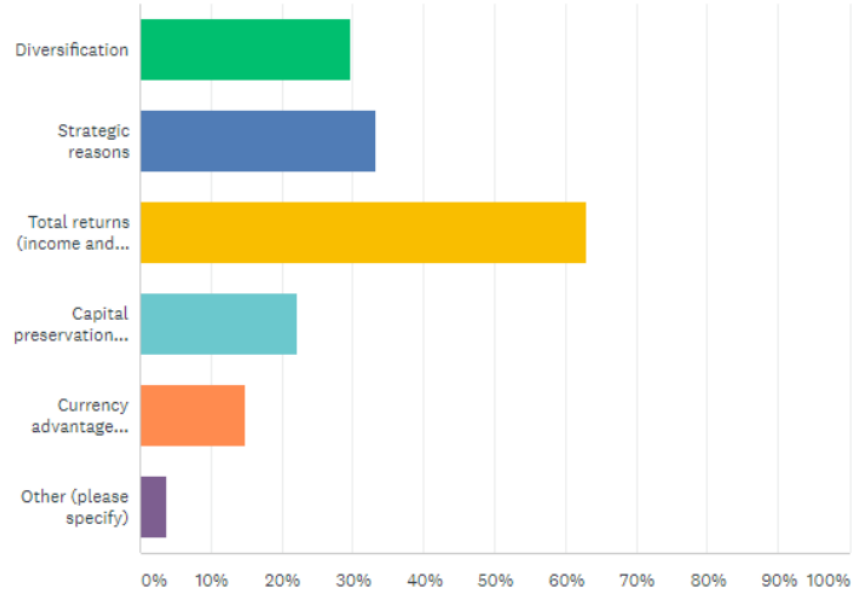
reasons, capital preservation, diversification and currency advantage. Notably, the survey shows the importance of two unquantifiable determinates – strategic reasons and diversification, which justifies the qualitative and quantitative approaches to our study. This finding coincides with the results from CBRE Global Investor Intentions Survey 2019 (see Table 1) where diversification, income, capital growth, and yield are often ranked as top investment motivations for capital from various regions.

Figure 17 Investment strategy



ANSWER CHOICES	RESPONSES	
core	14.81%	4
core plus	37.04%	10
value add	11.11%	3
opportunistic	37.04%	10
TOTAL		27

Figure 18 Main purpose of investment



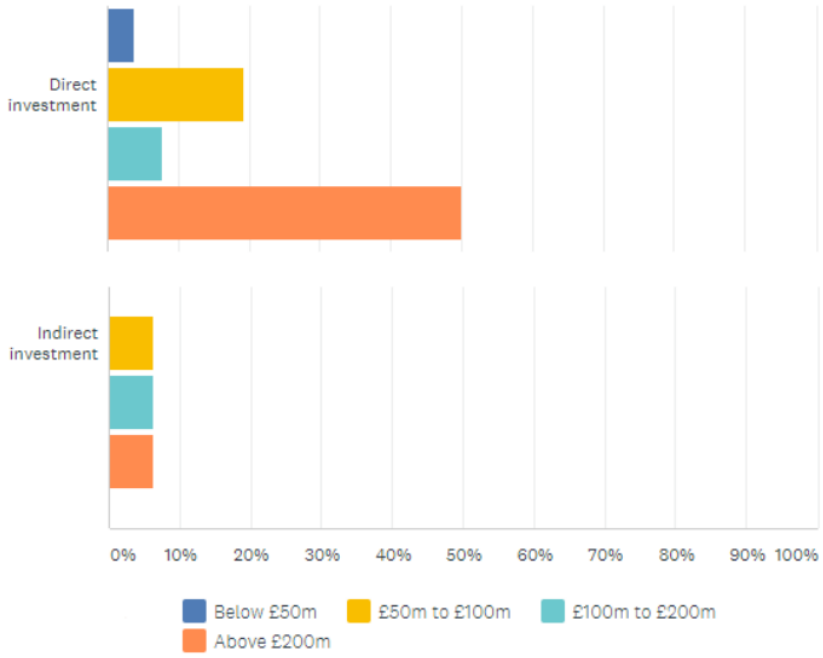
ANSWER CHOICES		RESPONSES	
Diversification		29.63%	8
Strategic reasons		33.33%	9
Total returns (income and capital growth)		62.96%	17
Capital preservation and long term capital growth		22.22%	6
Currency advantage (non-GBP investor)		14.81%	4
Other (please specify)	Responses	3.70%	1
Total Respondents: 27			

Investment Avenues, Sectors and Financing

Interviewees are investing into both direct (87.5%) and indirect (12.5%) RE market but dominated by direct investment for ticket size in between £100-200 million and over £200 million (15 out of 21 responses):

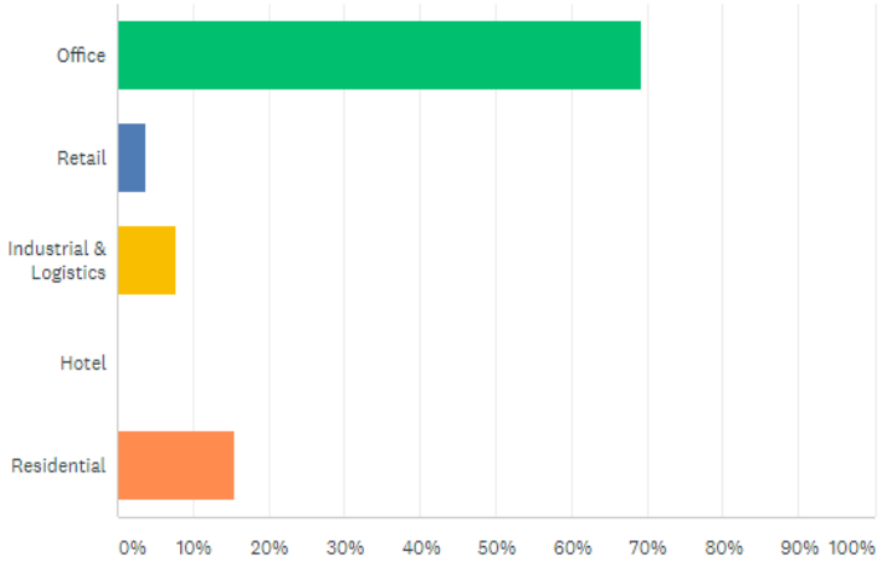
- Mainly concentrated in office sector. This result is similar to data from RCA (2019) and IPF (2018) per illustrated in literature review section 3.2.2.2.
- The funds are financed with 50-65% LTV.

Figure 19 Current London real estate investment portfolio



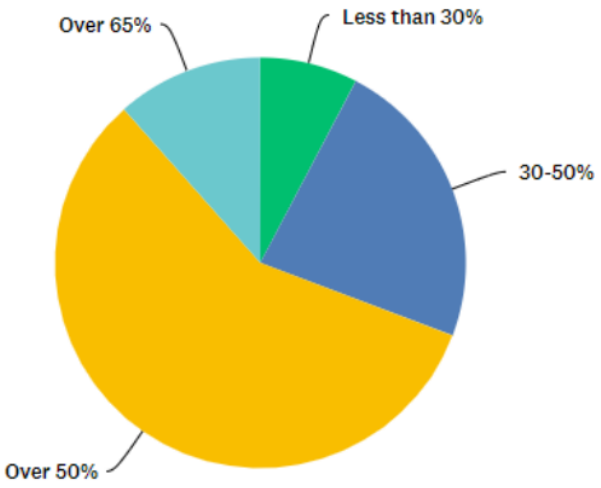
	BELOW £50M	£50M TO £100M	£100M TO £200M	ABOVE £200M
Direct investment	1	5	2	13
Indirect investment	0	1	1	1

Figure 20 Main asset class currently considered in the London market



ANSWER CHOICES	RESPONSES	
Office	69.23%	18
Retail	3.85%	1
Industrial & Logistics	7.69%	2
Hotel	0.00%	0
Residential	15.38%	4
TOTAL		26

Figure 21 Financing Loan to Value %

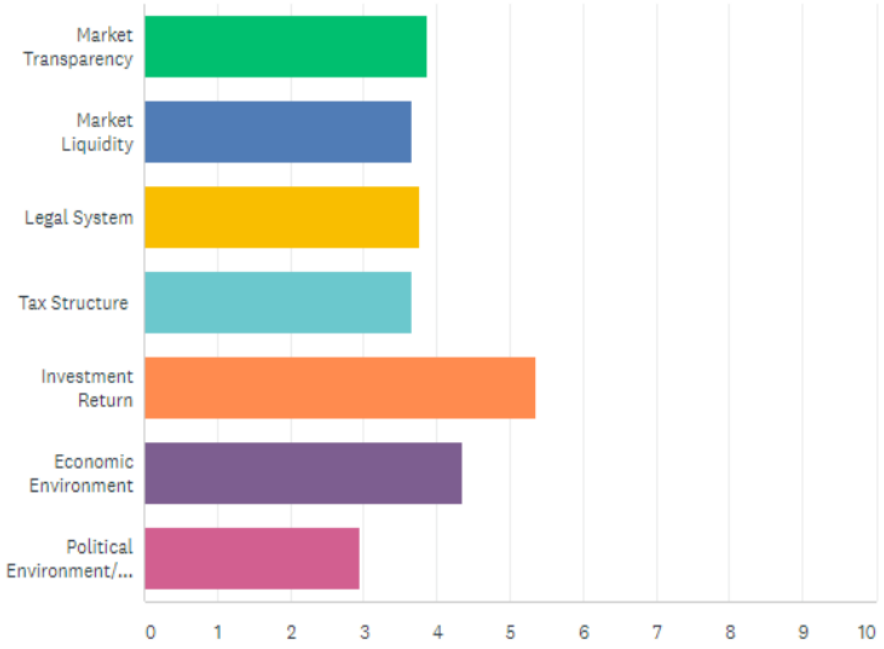


ANSWER CHOICES	RESPONSES	
Less than 30%	7.69%	2
30-50%	23.08%	6
Over 50%	57.69%	15
Over 65%	11.54%	3
TOTAL		26

Key Determinants of Investing in London CRE

More specific questions towards Interviewers' London existing portfolio has been raised in this survey. Most of the surveyees ranked the relatively high investment return and economic environment as London's most distinguish characteristics. This is consistent with the quantitative result showing control variables related to economic activity and REI opportunity are mostly statistically significant. Market transparency, the legal system and market liquidity also make this market unique and appealing.

Figure 22 The distinguish characters attract investors to invest in London



	1	2	3	4	5	6	7	N/A	TOTAL	SCORE
Market Transparency	19.23% 5	15.38% 4	3.85% 1	3.85% 1	3.85% 1	26.92% 7	15.38% 4	11.54% 3	26	3.87
Market Liquidity	8.00% 2	12.00% 3	8.00% 2	28.00% 7	8.00% 2	16.00% 4	16.00% 4	4.00% 1	25	3.67
Legal System	4.35% 1	4.35% 1	26.09% 6	21.74% 5	13.04% 3	21.74% 5	4.35% 1	4.35% 1	23	3.77
Tax Structure	4.00% 1	8.00% 2	16.00% 4	16.00% 4	36.00% 9	8.00% 2	8.00% 2	4.00% 1	25	3.67
Investment Return	41.67% 10	16.67% 4	8.33% 2	8.33% 2	8.33% 2	8.33% 2	4.17% 1	4.17% 1	24	5.35
Economic Environment	11.54% 3	26.92% 7	7.69% 2	15.38% 4	15.38% 4	11.54% 3	7.69% 2	3.85% 1	26	4.36
Political Environment/ Social Stability	3.70% 1	3.70% 1	22.22% 6	7.41% 2	14.81% 4	7.41% 2	37.04% 10	3.70% 1	27	2.96

Brexit: Investment Intention

Our survey also asked the key concerns investors have on their existing London and the key challenges they have. The feedbacks show that investors are concerned about the Brexit issue, the capital value of existing asset and the occupier market. Brexit is causing uncertainty to the financial market which including the CRE market and having further consequences on inflation CPI index, interest rate and the currency exchange rate; Capital value of the assets have been depreciated since the Brexit referendum; occupier market is facing challenges as well, the tenant demand, the capital expenditure on maintenance of building quality, and the more incentives required which squeezed the effective rental level all make investors having a difficult time in terms of asset management. Key challenges also include the high competition in the market while bidding, and some commented that despite the market uncertainty pricing of certain deals/assets are still high.

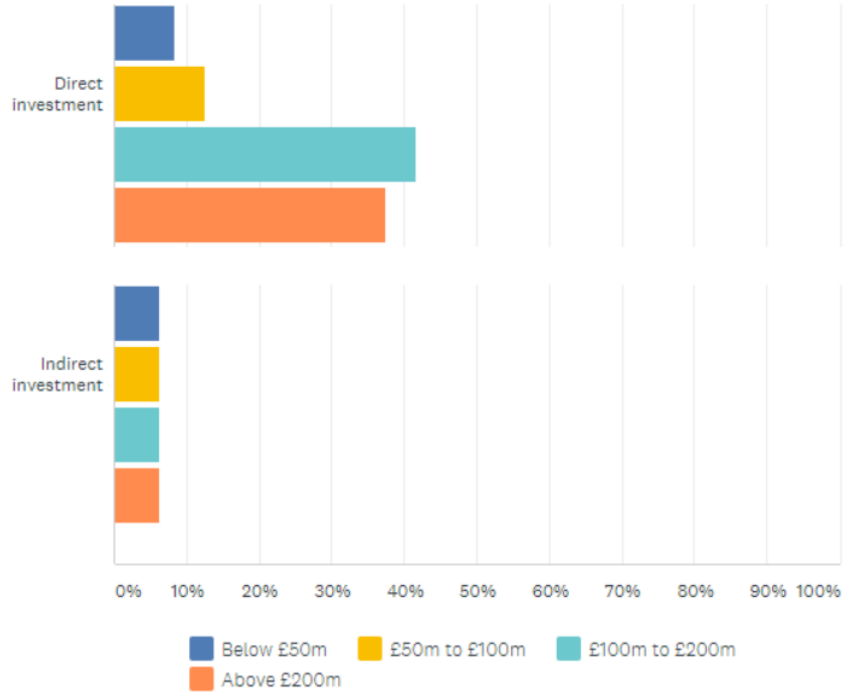
On the topic of Brexit, 38.46% of the interviewers estimate a hard Brexit with no deal, 61.54% believes the U.K. will leave EU with a deal and expect the market to have moderate increase post Brexit (52%). On the other hand, the CRE market in London does have a solid foundation and holds unique characteristics to attract international capitals. Most respondents believe the Brexit is only a short-term political disturbance and intending to add-on more asset once the market has some level of certainty.

Due to the uncertainty this incident brings for London's CRE market, 42.31% investors decreased their investment in London, however, rest of the respondents are increasing or remaining their position of holding RE assets in London. Our result is consistent with the findings from INREV Investment Intention Survey (2019) and the actual transaction data from CBRE Research (both discussed in Section 3.2.5).

The figure below shows investors' business plan post Brexit, majority of the capitals are still concentrated on the direct investment for the volume of £100m to £200m and will add the London portfolio size after H1 2020. The INREV Investment Intention Survey (2019) that has been studied in the literature review (Section 3.2.5) also made the same conclusion.

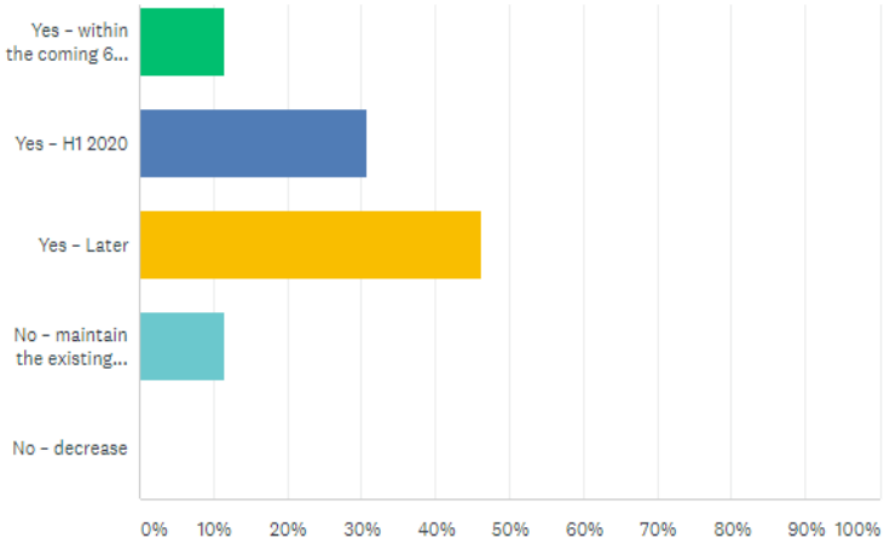
Feedbacks on their post Brexit strategy also shows that most of the investors will remain their focused in the office market after Brexit and will increase the assets holdings (76.92%).

Figure 23 How much investors are intending to add to the current London portfolio



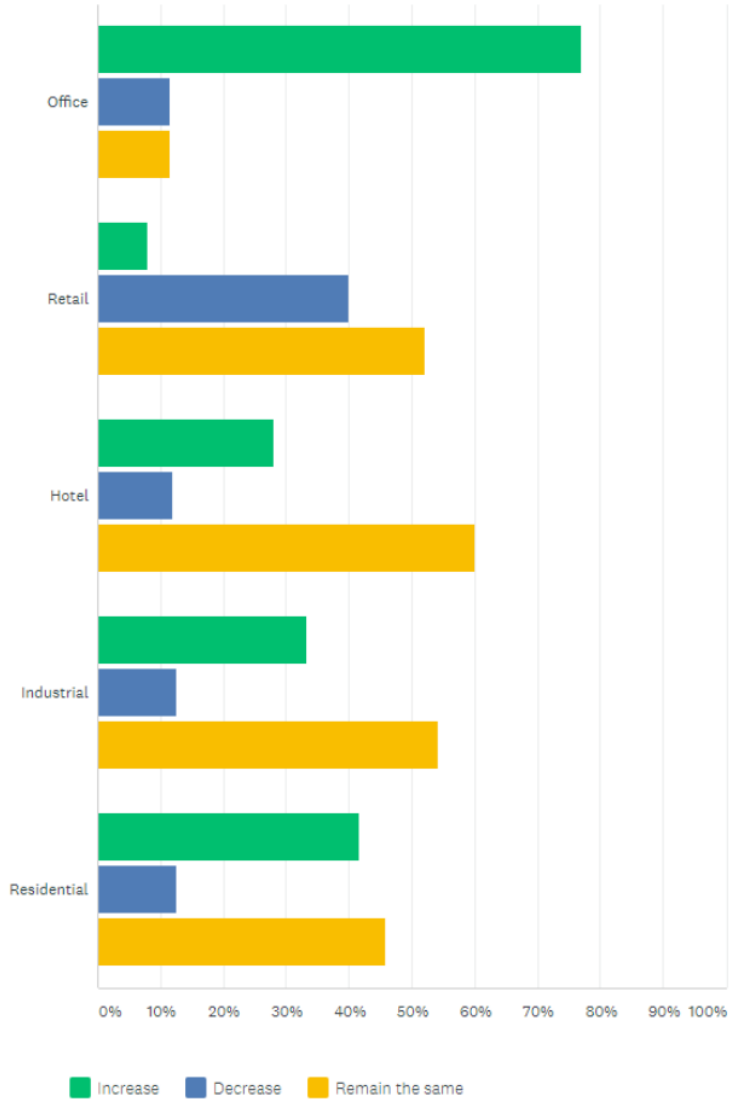
	BELOW £50M	£50M TO £100M	£100M TO £200M	ABOVE £200M
Direct investment	2	3	10	9
Indirect investment	1	1	1	1

Figure 24 Short-term business plan



ANSWER CHOICES	RESPONSES	
Yes - within the coming 6 months	11.54%	3
Yes - H1 2020	30.77%	8
Yes - Later	46.15%	12
No - maintain the existing portfolio	11.54%	3
No - decrease	0.00%	0
TOTAL		26

Figure 25 Investment appetite for post Brexit



	INCREASE	DECREASE	REMAIN THE SAME	TOTAL RESPONDENTS
Office	76.92% 20	11.54% 3	11.54% 3	26
Retail	8.00% 2	40.00% 10	52.00% 13	25
Hotel	28.00% 7	12.00% 3	60.00% 15	25
Industrial	33.33% 8	12.50% 3	54.17% 13	24
Residential	41.67% 10	12.50% 3	45.83% 11	24

Investors are looking at other markets, major European cities and markets at other continents. France, Germany, Benelux are popular destinations that investors are looking at in the continental Europe.

4.2.2. Quantitative

4.2.2.1. Panel Data Analysis

Panel regression is a modelling method adapted to panel data, also called longitudinal data or cross-sectional data. It is widely used in econometrics, where the behaviour of statistical units (i.e. panel units) is followed across time. Those units can be firms, countries, states, etc. Panel regression allows controlling both for panel unit effect and for time effect when estimating regression coefficients. Therefore, the use of panel data is suggested as the most appropriate methodology for statistical analysis, given the nature and the data collection of this research project. Other models such as time-series and cross-sectional are insufficient in capturing the level of data-points required to produce fitting results based on the conditions set out within their respective definitions.

To interpret in detail, we use EViews software (version 10) to run panel regression.

4.2.2.2. Test for Multi-Collinearity

Multi-collinearity can lead to inaccurate results, which in turn has deeper ramification to the overall conclusion of the analysis (Morgan et al, 2013). We took an ex-ante method to detect multicollinearity by creating a correlation matrix between control variables. In the instance where there are extreme correlations (>0.55), and the p-test which shows significant, between 2 control variables, then one of them has been dropped out of regression. Detailed correlation figures have been listed below and the full test result is attached in the Appendix.

Through this process the following parameters has been removed (i) yields, (ii) 5-year bond yield, (iii) total investment volume, (iv) property and legal rights, (v) GDPP (as listed on the horizontal headings). Brexit uncertainty index has not been considered for this multi-collinearity test as it is only a dummy series. There are now 14 control variables as well as the Brexit uncertainty index.

Correlation Matrix	Property Yield	5 year's govt. bond yield	Total investment volume	Prop & Legal Rights	GDPP
JLL Transparency Index	-0.57		0.77		
Socio Politics index				0.57	0.72
Population Growth					0.62
Property yield		0.67	-0.76		
Spread		-0.82			0.62

Table 4 Correlation matrix

4.2.2.3. Equation

We used a natural logarithm on the $XBINV$ as a dependent variable within the regression analysis, while the proposed 14 factors as control variables on the right side of the equation. The corresponding regression is as follows:

$$\ln XBINV_{it} = \alpha_{ij} + \beta_1 EA_{it} + \beta_2 REIO_{it} + \beta_3 \mathrm{CM}_{it} + \beta_4 \mathrm{IPLF}_{it} + \beta_5 \mathrm{ABRL}_{it} + \beta_6 SCPE_{it} + \beta_7 PIR_{it} + \varepsilon_{it}$$

For: i = country; t = time;

XBINV = Cross-border Commercial Real Estate Investment in USD billion;

EA = Economic Activity;

REIO = Real Estate Investment Opportunities;

CM = Depth and Sophistication of Capital Markets;

IPLF = Investor Protection and Legal Framework;

ABRL = Administrative Burdens and Regulatory Limitations;

SCPE = Socio-cultural and Political Environment;

PIR = Projected Investment Returns;

$\varepsilon_{it} \sim N\ (0; \sigma_\mu^2)$ = error term.

4.2.2.4. Panel Data Selection (Pooled OLS, Fixed Effects or Random Effects model)

Three Panel Data Regression models has been carried out, namely Pooled OLS, fixed effects and random effects model.

The first result is from Pooled OLS model, it is Ordinary Least Squares technique run on a panel data where the major limitation is that this model neglect the cross section and time series of the data. This model does not distinguish between the varies cities that we have, in other words, by combining 15 cities by pooling we deny the heterogeneity of individuality that may exist among these cities. The following table shows the regression results using the Pooled OLS model,

Dependent Variable: LNCBINV
Method: Panel Least Squares
Date: 08/27/19 Time: 17:14
Sample: 2009Q1 2018Q4
Periods included: 40
Cross-sections included: 15
Total panel (balanced) observations: 600

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.674930	1.584270	-0.426020	0.6703
GDPG	0.158074	0.025361	6.232933	0.0000
INF	0.104695	0.045433	2.304363	0.0216
FX	0.037305	0.013364	2.791464	0.0054
LNFDI	-0.000483	0.000954	-0.506190	0.6129
RENTG	0.015919	0.006635	2.399318	0.0167
VAC	-0.030637	0.015719	-1.948968	0.0518
SPREAD	0.514545	0.034627	14.85983	0.0000
URBANPOP	-0.021607	0.004760	-4.538892	0.0000
POPG	0.305766	0.136912	2.233297	0.0259
LOAN	0.010564	0.005323	1.984514	0.0477
TRANSPARENCY	0.156445	0.009731	16.07699	0.0000
TAX	0.004430	0.005229	0.847143	0.3973
PERMITS	0.010498	0.003269	3.210946	0.0014
SOCIOPOL	-0.080908	0.007347	-11.01231	0.0000

R-squared	0.670893	Mean dependent var	6.719144
Adjusted R-squared	0.663017	S.D. dependent var	1.593487
S.E. of regression	0.925023	Akaike info criterion	2.706686
Sum squared resid	500.5656	Schwarz criterion	2.816609
Log likelihood	-797.0058	Hannan-Quinn criter.	2.749477
F-statistic	85.18123	Durbin-Watson stat	0.631920
Prob(F-statistic)	0.000000		

Figure 26 Panel regression, Pool OLS model

From the results, the r-square (a measure for goodness of fit) of this model is 0.67 and with probability on F-test is below 0.05 which means the p-value is less than the significance level, reject the null hypothesis that all slope coefficients are equal to zero, in other word the model is valid. The result shows that foreign direct investment, vacancy, tax does not have significant influence on XBINV.

The second test is fixed effects model starting with a two-ways model that include a cross-section fixed and a period fixed. The fixed effects model allows for heterogeneity or individuality among 15 cities by allowing them to have their own intercept value. The results are shown below,

Dependent Variable: LNCBINV
Method: Panel Least Squares
Date: 08/27/19 Time: 17:15
Sample: 2009Q1 2018Q4
Periods included: 40
Cross-sections included: 15
Total panel (balanced) observations: 600

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-32.32376	6.854107	-4.715969	0.0000
GDPG	0.036103	0.040484	0.891793	0.3729
INF	-0.003990	0.093514	-0.042666	0.9660
FX	0.046331	0.016086	2.880146	0.0041
LNFDI	-0.000602	0.001125	-0.535126	0.5928
RENTG	0.015105	0.007217	2.092815	0.0368
VAC	-0.015565	0.021263	-0.731996	0.4645
SPREAD	0.495494	0.043450	11.40371	0.0000
URBANPOP	0.353739	0.078669	4.496542	0.0000
POPG	0.309421	0.170980	1.809687	0.0709
LOAN	-0.010982	0.012360	-0.888511	0.3747
TRANSPARENCY	0.107674	0.040247	2.675320	0.0077
TAX	0.006144	0.016205	0.379141	0.7047
PERMITS	-0.001496	0.005329	-0.280689	0.7791
SOCIOPOL	0.001484	0.037171	0.039913	0.9682

Effects Specification

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

R-squared	0.765084	Mean dependent var	6.719144
Adjusted R-squared	0.735498	S.D. dependent var	1.593487
S.E. of regression	0.819526	Akaike info criterion	2.546199
Sum squared resid	357.3034	Schwarz criterion	3.044518
Log likelihood	-695.8598	Hannan-Quinn criter.	2.740185
F-statistic	25.86024	Durbin-Watson stat	0.778569
Prob(F-statistic)	0.000000		

Figure 27 Panel regression, Fixed Effects (two-ways)

We then performed a Redundant Fixed Effects test – Likelihood Ratio. The results suggest that only Cross-Section Fixed Effects is valid, the period Fixed Effects is redundant, as demonstrated in the table below,

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section and period fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	9.838425	(14,532)	0.0000
Cross-section Chi-square	138.145815	14	0.0000
Period F	1.170289	(39,532)	0.2260
Period Chi-square	49.385713	39	0.1232
Cross-Section/Period F	4.024671	(53,532)	0.0000
Cross-Section/Period Chi-square	202.292086	53	0.0000

Figure 28 Redundant Fixed Effect Test

Based on the Redundant Fixed Effects tests, a one-way Cross-Section Fixed Effects model has been carried out, to get the result as below,

Dependent Variable: LNCBINV
Method: Panel Least Squares
Date: 08/27/19 Time: 17:21
Sample: 2009Q1 2018Q4
Periods included: 40
Cross-sections included: 15
Total panel (balanced) observations: 600

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-39.15151	5.853319	-6.688771	0.0000
GDPG	0.066941	0.026452	2.530652	0.0117
INF	-0.044677	0.046444	-0.961949	0.3365
FX	0.042784	0.013768	3.107411	0.0020
LNFDI	-0.000534	0.001103	-0.483988	0.6286
RENTG	0.016067	0.006505	2.469803	0.0138
VAC	-0.027099	0.019568	-1.384916	0.1666
SPREAD	0.432578	0.036218	11.94371	0.0000
URBANPOP	0.442246	0.059670	7.411558	0.0000
POPG	0.294537	0.158118	1.862769	0.0630
LOAN	0.015643	0.007497	2.086739	0.0374
TRANSPARENCY	0.108793	0.029227	3.722367	0.0002
TAX	0.003945	0.014326	0.275385	0.7831
PERMITS	-0.000554	0.005017	-0.110331	0.9122
SOCIOPOL	-0.009263	0.031636	-0.292785	0.7698

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.744930	Mean dependent var	6.719144
Adjusted R-squared	0.732422	S.D. dependent var	1.593487
S.E. of regression	0.824278	Akaike info criterion	2.498509
Sum squared resid	387.9571	Schwarz criterion	2.711027
Log likelihood	-720.5527	Hannan-Quinn criter.	2.581238
F-statistic	59.55710	Durbin-Watson stat	0.769176
Prob(F-statistic)	0.000000		

Figure 29 Panel regression Fixed Effects (one-way), Cross-Section Fixed Effects

From the results, the r-square 0.74 and with probability on F-test is below 0.05. The model shows that real GDP growth, real effective foreign exchange rate, rental growth, yield spread, urban population, transparency index, and loan market index are positively correlated with XBINV. The remaining control variables are inflation, foreign direct investment, vacancy rate, population growth, tax, permits and social politics index which do not influenced the XBINV significantly.

The last model that has been went through is the random effects panel regression model. In the random effects model, the individual-specific effect is a random variable that is uncorrelated with the explanatory variables, whereas in the fixed effects model, the individual-specific effect is a random variable that is allowed to be correlated with the explanatory variables (Kurt Schmidheiny, 2018).

Dependent Variable: LNCBINV
Method: Panel EGLS (Cross-section random effects)
Date: 08/27/19 Time: 17:25
Sample: 2009Q1 2018Q4
Periods included: 40
Cross-sections included: 15
Total panel (balanced) observations: 600
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.674930	1.411726	-0.478089	0.6328
GDPG	0.158074	0.022599	6.994735	0.0000
INF	0.104695	0.040485	2.586007	0.0100
FX	0.037305	0.011908	3.132642	0.0018
LNFDI	-0.000483	0.000850	-0.568057	0.5702
RENTG	0.015919	0.005912	2.692568	0.0073
VAC	-0.030637	0.014007	-2.187175	0.0291
SPREAD	0.514545	0.030855	16.67602	0.0000
URBANPOP	-0.021607	0.004242	-5.093645	0.0000
POPG	0.305766	0.122001	2.506255	0.0125
LOAN	0.010564	0.004743	2.227066	0.0263
TRANSPARENCY	0.156445	0.008671	18.04196	0.0000
TAX	0.004430	0.004660	0.950682	0.3422
PERMITS	0.010498	0.002913	3.603394	0.0003
SOCIOPOL	-0.080908	0.006547	-12.35825	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.824278	1.0000

Weighted Statistics

R-squared	0.670893	Mean dependent var	6.719144
Adjusted R-squared	0.663017	S.D. dependent var	1.593487
S.E. of regression	0.925023	Sum squared resid	500.5656
F-statistic	85.18123	Durbin-Watson stat	0.631920
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.670893	Mean dependent var	6.719144
Sum squared resid	500.5656	Durbin-Watson stat	0.631920

Figure 30 Panel regression, Random Effect

4.2.2.5. Hausmann Test

Hausmann Test examine if the random effects estimate is insignificantly different from the unbiased fixed effects estimate (Kennedy, 2008). If the null hypothesis of no correlation is rejected, the random effects model is not applicable as individual effects are significantly correlated with at least one regressors in the model, and fixed effects model is more appropriate. Otherwise the random effects model can be implied.

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	165.738612	14	0.0000

** WARNING: estimated cross-section random effects variance is zero.

Figure 31 Hausmann Test

The result as above, shows that the p-value is significantly smaller than 0.05, which carries out that we shall have the fixed effects model as the most consistent estimator for out data.

4.2.2.6. Further Test on Fixed Effects Model - Residual Cross-Section Dependence Test

It is commonly assumed that disturbances in panel data models are cross-sectionally independent, however, there are many evidences showing that it is not always the case in panel data regressions. We run a Panel Cross-Section Dependence Test where the null hypothesis is no correlation between the residuals and the control variables. If the p-value is statistically significant below conventional level, the Cross-Section dependence exist. Our result below shows Cross-Section Dependence.

Residual Cross-Section Dependence Test
Null hypothesis: No cross-section dependence (correlation) in residuals
Equation: Untitled
Periods included: 40
Cross-sections included: 15
Total panel observations: 600
Cross-section effects were removed during estimation

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	352.3899	105	0.0000
Pesaran scaled LM	17.07152		0.0000
Bias-corrected scaled LM	16.87922		0.0000
Pesaran CD	5.169005		0.0000

Figure 32 Residual Cross-Section Dependence Test

4.2.2.7. Fixed Effects Model (Final Model)

To overcome this issue, we run fixed effects model with using FGLS (feasible generalised least square) specification. If you select Cross-Section SUR (SUR is commonly referring to Parks estimator), Eviews estimates a FGLS specification correcting for both cross-section heteroskedasticity and contemporaneous correlation. For the coefficient covariance method, we also applied the Cross-Section SUR (PCSE) with no degree of freedom correction to compute robust covariances to handle cross-section correlation. See below for the result using the methodology above.

Dependent Variable: LNCBINV
Method: Panel EGLS (Cross-section SUR)
Date: 08/27/19 Time: 17:32
Sample: 2009Q1 2018Q4
Periods included: 40
Cross-sections included: 15
Total panel (balanced) observations: 600
Linear estimation after one-step weighting matrix
Cross-section SUR (PCSE) standard errors & covariance (no d.f. correction)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-37.02512	2.456390	-15.07298	0.0000
GDPG	0.073776	0.010466	7.048840	0.0000
INF	-0.023328	0.020902	-1.116036	0.2649
FX	0.036333	0.004395	8.266327	0.0000
LNFDI	-0.000196	0.000335	-0.584929	0.5588
RENTG	0.013136	0.002385	5.508054	0.0000
VAC	-0.021721	0.006786	-3.200750	0.0014
SPREAD	0.332677	0.021583	15.41413	0.0000
URBANPOP	0.448335	0.024250	18.48773	0.0000
POPG	0.319774	0.065343	4.893793	0.0000
LOAN	0.011259	0.003394	3.317601	0.0010
TRANSPARENCY	0.086181	0.012953	6.653573	0.0000
TAX	0.016763	0.004815	3.481220	0.0005
PERMITS	0.001697	0.001901	0.892614	0.3724
SOCIOPOL	-0.019259	0.011878	-1.621377	0.1055

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.910101	Mean dependent var	9.486243
Adjusted R-squared	0.905693	S.D. dependent var	11.75884
S.E. of regression	0.993164	Sum squared resid	563.2201
F-statistic	206.4496	Durbin-Watson stat	1.091014
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.738185	Mean dependent var	6.719144
Sum squared resid	398.2152	Durbin-Watson stat	0.722768

Figure 33 Fixed-Effects model (FGLS weight)

From the results, the r-square 0.91 and with probability on F-test is below 0.05. Our model shows statistically significant correlation (+/- per listed below) of the following control variables with XBINV,

- Economic Activity (EA); Combine Coefficient 0.074
  - Real GDP growth (+); Coefficient 0.074
- Real Estate investment opportunity (REIO); Combine Coefficient 0.768
  - Urban population (+); Coefficient 0.448
  - Population growth (+); Coefficient 0.320
- Depth of Capital Market (CM)
  - Loan market index (+); Coefficient 0.011
- Investor Protection and Legal Framework (IPLF)
  - Transparency index (+); Coefficient 0.086
- Administrative Burdens and Regulatory Limitations (ABRL)

  - Tax (-); Coefficient 0.017. However, our finding is surprisingly as we expected a negative correlation here as a lower tax ought to lead to higher net return to investors
- Projected Investment Returns (PIR); Combine Coefficient 0.404
  - Real effective foreign exchange rate (+); Coefficient 0.036
  - Rental growth (+); Coefficient 0.013
  - Vacancy rate (-); Coefficient 0.022
  - Yield spread (+); Coefficient 0.333

The remaining control variables does not show statistically significance vs. XBINV:

- Inflation (EA)
- Foreign direct investment (CM)
- Permits (ABRL)
- Social politics index (SCPE)

Next, the Brexit Uncertainty dummy control variable has been added to the panel regression (results per below). The results are similar with the findings above, with the exception that loan market index is now not statistically significant. Brexit Uncertainty variable shows a positive correlation with XBINV. It appears that cross-border investors are in general not worried about Brexit. This is consistent with the investment volume data from CBRE and RCA until 2018. The decrease in cross-border transaction volumes only appear in 2019.

Dependent Variable: LNCBINV
Method: Panel EGLS (Cross-section SUR)
Date: 08/27/19 Time: 17:33
Sample: 2009Q1 2018Q4
Periods included: 40
Cross-sections included: 15
Total panel (balanced) observations: 600
Linear estimation after one-step weighting matrix
Cross-section SUR (PCSE) standard errors & covariance (no d.f. correction)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-35.20088	2.549085	-13.80922	0.0000
GDPG	0.072809	0.010645	6.839884	0.0000
INF	-0.011179	0.021391	-0.522632	0.6014
FX	0.037603	0.004392	8.561434	0.0000
LNFDI	-0.000232	0.000334	-0.696370	0.4865
RENTG	0.011659	0.002458	4.743853	0.0000
VAC	-0.017797	0.006812	-2.612405	0.0092
SPREAD	0.335211	0.021823	15.36041	0.0000
URBANPOP	0.419803	0.026638	15.75930	0.0000
POPG	0.350108	0.066719	5.247508	0.0000
LOAN	0.003756	0.004061	0.924925	0.3554
TRANSPARENCY	0.079005	0.013423	5.885791	0.0000
TAX	0.021482	0.004977	4.316098	0.0000
PERMITS	0.000823	0.001982	0.415134	0.6782
SOCIOPOL	-0.009683	0.012415	-0.779911	0.4358
BREXIT	0.182448	0.075364	2.420887	0.0158

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.907684	Mean dependent var	8.876983
Adjusted R-squared	0.902987	S.D. dependent var	11.12004
S.E. of regression	0.994033	Sum squared resid	563.2184
F-statistic	193.2559	Durbin-Watson stat	1.091665
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.738728	Mean dependent var	6.719144
Sum squared resid	397.3898	Durbin-Watson stat	0.728063

Figure 34 Fixed-Effects model (with Brexit dummy control variable)

5. Discussions & Limitations

5.1. Discussion

The quantitative analysis from the panel data regression draws a conclusion that the most influential control variable group is the REI Opportunities follow by Projected Investment Returns. Other key drivers namely Economic Activity, Depth of Capital Market, Investor Protection and Legal Framework, Administrative Burdens and Regulatory Limitations are statistically correlated (though less important) with XBINV activity. The Socio-Cultural and Political Environment is not statistically significant not all.

Results from the qualitative survey confirms that investors are prioritising total returns (capital gain and yields) and analyse the economic environment when investing in London CRE market. This finding is consistent with quantitative result mentioned above, where control variables indicating Projected Investment Returns (such as yield spread, rental growth and vacancy rate etc.) are one of the two most significant variable. This also matching with survey result from Emerging Trends in RE Europe (2019) by PwC and ULI, where they found pricing and availability of suitable assets being top considerations for investors.

Comparing findings of this paper with literature reviews, both qualitative and quantitative results agree with Lieser and Groh's paper (2011) who provided regression evidence that REI Opportunities variables ranked the upmost important factor amongst all other groups. Combined with our findings regarding the importance of Projected Investment returns, we agree with Fuerst, Micheva and Baum (2015)'s findings that investors are well-informed about the property market, which implies that they are mature and can evaluate the return and risk when investing in different liquid RE market. Results showing statistical correlation of other factors such as Investor Protection and Legal Framework, Administrative Burdens and Regulatory Limitations but not Socio-cultural and Political Environment coincide with Lieser and Groh (2011). Interestingly, Fuerst, Micheva and Baum (2015) suggested that are not statistically important while our results show that these control variables do have smaller influence levels with regards to XBINV.

Through conducting the qualitative survey, it can be found that diversification and strategic rationale are two others key motivations behind cross-border investment. This reflects Dunning's eclectic theory (1977-2006) and related research (per discussed earlier) regarding the need for international investor to have specific advantages to compete versus local players, in this instance portfolio advantage from diversification.

With regards to potential impact from Brexit Uncertainty, the qualitative survey illustrates 76.92% of respondents are increasing or keeping their current holdings of London CRE despite the Brexit issue. It is consistent with market reports from INREV (2019) and actual transaction volumes tracked by CBRE Research. Furthermore, the survey shows that most cross-border investors are keen to increase their exposure to London office sector among all asset classes. This is another sign that cross borders investors may not be overly concerned about the impact of Brexit on employment, and thus office demand and capital value. We cross-checked the impact of Brexit by inserting a Brexit uncertainty dummy into the panel data regression. Interestingly, the outcome coefficient is significantly positive, i.e. Brexit Uncertainty period during the last 3 years resulted in slightly higher cross-border RE inflow.

5.2. Limitations

For the qualitative data, 27 survey responses have been collected for this paper. If more time and resources permitted, a data base of over 50 responses are ideal which would enable us to carry out a study with results closer to a normal distribution.

Additional improvements could be made through further investigation on Brexit results. The findings for this paper on Brexit uncertainty (both qualitatively and quantitatively) suggested a positive correlation, where the originally expectation is a negative figure. Retesting the quantitative regression model in later years upon a resolution to the Brexit is suggested, moreover, for the qualitative survey a periodic update could be conducted to keep tracking the Impact of Brexit on the investors' appetite regarding London REI as Brexit on force – track the responses over a period of time to see how the emerging Brexit situation influences capital inflow.

Further enhancements for this report could be studies on (i) XB capital inflow by its origins; (ii) determinants influencing investment behaviour of domestic capitals; (iii) asset classes break down; (iv) the analysis could be extended to many other cities where the data is available.

6. Conclusions

Globalisation of the whole financial market has transformed the investment behaviour across an array of asset classes. As RE is one of the major asset classes, cross-border transactions are commonly occurring in the top-ranking gateway cities.

Our study focuses on cross-border capital inflow related to direct investments in London, one of the main international REI destinations. The history and development behind overseas capital in London CRE has been studied and reviewed various academic papers and market surveys attempting to explain the attraction of London CRE for XBI. Based on several identified key determinants, both quantitative and qualitative analysis have been conducted, and found that REIO (including urbanisation ratio and population growth) and Projected Investment Returns (yield spread, real effective foreign exchange rate, rental growth, and vacancy rate) are the two most influential factors that international capitals are considering.

Going forward, London as one of the most mature CRE market - liquid, transparent, with a depth of attractive RE investment opportunities, is believed to hold the structural advantage (economic and institutional characteristics, as well as market liquidity and opportunities) and continue as an important investment destination for international capitals. Our findings during the current Brexit uncertainty period confirms this.

In addition to market size and liquidity (REI opportunities), and availability of attractive deals (project investment returns), government policies contributing to higher real GDP growth, larger urban population, higher population growth, an easier access to loan, a more stable financial and banking system, as well as a better tax structure, can further enhance the attractiveness of London.

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APPENDICES

APPENDIX 1. Control variables definitions

Control Variable	Definition
Economic Activity (EA)	
GDP per capita	measure the value of countries' economic outputs/ population. It is also a measurement of the standard of living and how prosperous a country is.
Real GDP Growth	nominal GDP growth rate adjusted for inflation.
Inflation, Average Consumer Prices	The rate of change of the general price level of good and services in an economy
Real Estate Investment Opportunity (REIO)	
Investment Volume	Total volume of domestic and international CRE investment in a city
Urban Population (%)	Percentage of people living in urban areas against the total population
Population Growth	Increase in the number of individuals in a population
Depth of Capital Market (CM)	
Loan Market Index	Averaged the "Ease of Access to Loans" and the "Soundness of banks" indexes (We based to max of 100). Ease of Access to Loans - This data series measures the perceived simplicity of obtaining a bank loan in a country with only a good business plan and no collateral; Soundness of banks - This data series measures the perceived "Soundness of Banks" Banks in a country. With higher values indicating that banks are generally healthy with sound balance sheets and low values indicating that banks are in danger of insolvency and may require a government bailout.
5-year Government Bond Yield	Interest rate that a government pays to borrow money for a length of time, in this case 5 years. This is also a proxy for financing cost.
Foreign Direct Investment, Net Inflows	Inflows of FDI in the reporting economy comprise capital provided (either directly or through other related enterprises) by a foreign direct investor to an enterprise resident in the economy (FDI enterprise).
Investor Protection and Legal Framework (IPLF)	
Property and Legal Rights	Combined the indexes for property right and legal right. (We based to max of 100). Legal Rights - With higher scores indicating that collateral and bankruptcy laws are better designed to expand access to credit. The legal rights index measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending. Property rights - is an assessment of the ability of individuals to accumulate private property, secured by clear laws that are fully enforced by the state.
Real Estate Transparent Composite Index	JLL and LaSalle have been tracking real estate transparency and championing higher standards for

	20 years. Global Real Estate Transparency Index (GRETI) now covers 100 countries and 158 cities. The survey has been extended to quantify 186 separate elements of transparency.
Administrative Burdens and Regulatory Limitations (ABRL)	
Paying taxes: Total tax rate (% of profit)	Taxes on income, profits, and capital gains are levied on the actual or presumptive net income of individuals, on the profits of corporations and enterprises, and on capital gains, whether realized or not, on land, securities, and other assets. Intergovernmental payments are eliminated in consolidation.
Dealing with construction permits: Time (days) score	Calendar days required for all procedures for business in the construction industry to build a warehouse. This is a proxy for easiness of local planning regime.
Socio-Cultural and Political Environment (SCPE)	
Socio-Cultural and Political Environment	(where max=100), a weighted average of Control of Corruption (Percentile Rank with 100 max), Government Effectiveness (Percentile Rank with 100 max), Political System & Absence of Violence/ Terrorism (Percentile Rank with 100 max), Regulatory Quality (Percentile Rank with 100 max), Rule of Law (Percentile Rank with 100 max) and Voice and Accountability (Percentile Rank with 100 max). Control of Corruption - This data series measures the perception of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Countries in which seemingly public power is frequently used for private gain receive a low rating score. Government Effectiveness - The quality of public services, the capacity of the civil service and its independence from political pressures; and the quality of policy formulation. Political System & Absence of Violence/ Terrorism - The likelihood that the government will be destabilized by unconstitutional or violent means, including terrorism. Regulatory Quality - “Regulatory Quality” measures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Rule of Law - “Rule of Law” measures the extent to which agents have confidence in and abide by the rules of society, in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence. Voice and Accountability - The extent to which a country’s citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.
Brexit Uncertainty (since June 2016 =1)	A dummy data series where showing period with Brexit uncertainty starting from Q2 2016.
Projected Investment Returns (PIR)	

Real Effective Exchange Rate	The weighted average of a country's currency in relation to an index or basket of other major currencies
Prime Yield	The ratio of net rental income over market value for properties with higher quality or better locations (prime properties)
Yield Spread	The difference of prime yield to 5-year government bond yield, it represents the proxy for the profit generated through a levered investment in RE
Vacancy Rate	Unoccupied space/ total stocks
Rental Growth	Growth rate of prime rental level over a period of time

APPENDIX 2. Survey - Global Capitals investing in Central London Commercial Real Estate

Global Capitals investing in Central London Commercial Real Estate

1. Are you investing in the commercial real estate?

- ◯ Yes
- ◯ No

2. Origin of capital

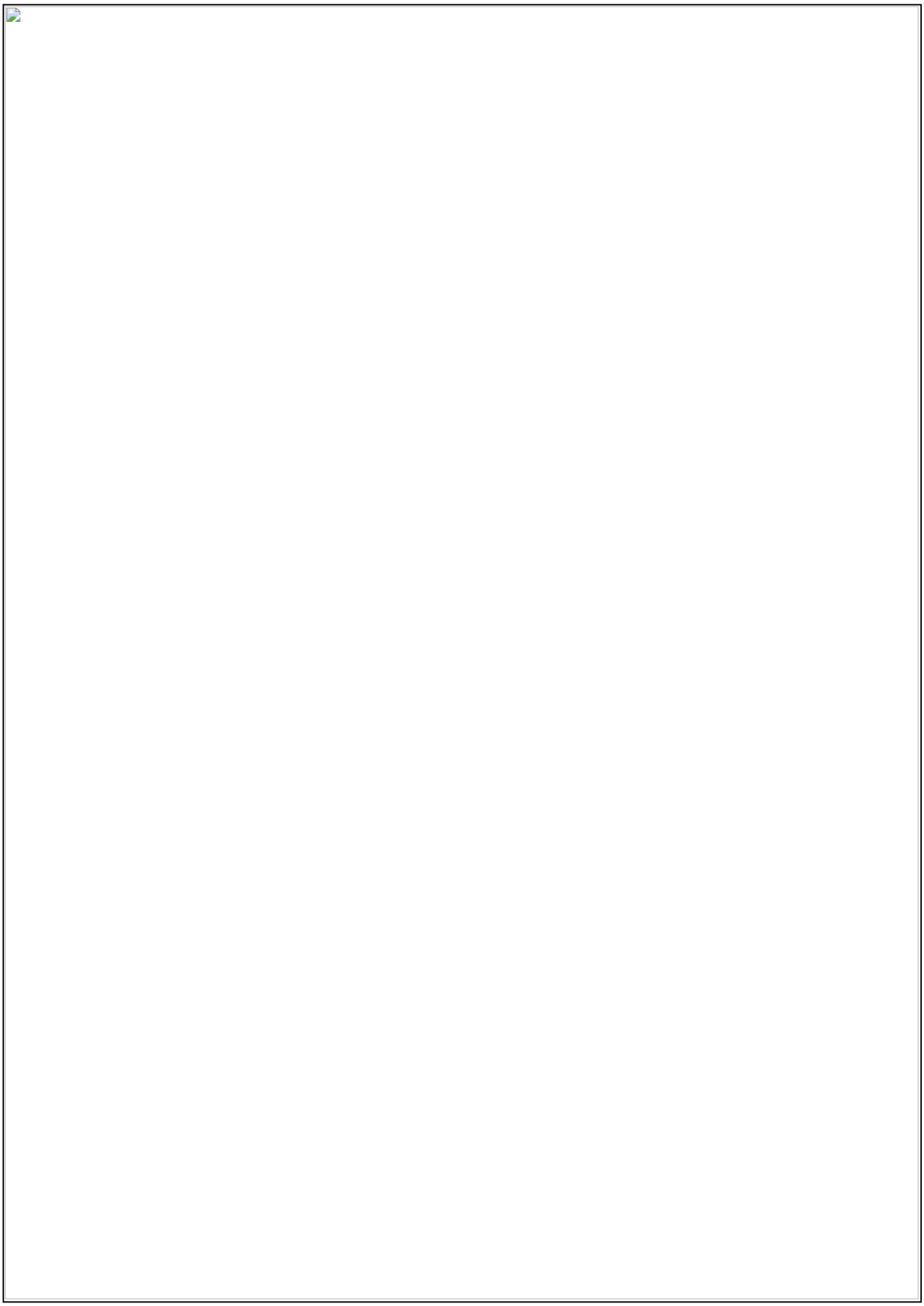
- ◯ Asia
- ◯ North America
- ◯ Europe
- ◯ U.K.
- ◯ Australia
- ◯ Other

3. Describe yourself by types of investors

- ◯ Public property company and listed REIT
- ◯ Private property company
- ◯ Property fund
- ◯ Family office
- ◯ Private investor
- ◯ Developer
- ◯ Owner-occupier
- ◯ Other (please specify)

4. Investment strategy

- ◯ core
- ◯ core plus
- ◯ value add
- ◯ opportunistic



8. Main purpose of your London investment – please select the top 2 reasons

- [ ] Diversification
- [ ] Strategic reasons
- [ ] Total returns (income and capital growth)
- [ ] Capital preservation and long term capital growth
- [ ] Currency advantage (non-GBP investor)
- [ ] Other (please specify)

9. Current London real estate investment portfolio

	None	Below £50m	£50m to £100m	£100m to £200m	Above £200m
Direct investment	☐	☐	☐	☐	☐
Indirect investment	☐	☐	☐	☐	☐

10. Name the top three concerns of your existing London investment

11. What are the key challenges and/or experience learnt to date when investing in London?

12. Are you looking to add to your current London portfolio size?

- ◯ Yes – within the coming 6 months
- ◯ Yes – H1 2020
- ◯ Yes – Later
- ◯ No – maintain the existing portfolio
- ◯ No – decrease

13. How much are you intending to add to your current London portfolio?

	None	Below £50m	£50m to £100m	£100m to £200m	Above £200m
Direct investment	☐	☐	☐	☐	☐
Indirect investment	☐	☐	☐	☐	☐

14. Main asset class currently considered in London market

- ◯ Office
- ◯ Hotel
- ◯ Retail
- ◯ Residential
- ◯ Industrial & Logistics

Other (please specify)

15. Financing – LTV level for London investment(s)

- ◯ Less than 30%
- ◯ 30-50%
- ◯ Over 50%
- ◯ Over 65%

16. How has Brexit uncertainty influenced your current investment in London?

- ◯ Increased investment in London
- ◯ Decreased investment in London
- ◯ No change regarding investment in London

17. How has Brexit uncertainly influenced your current investment in Europe?

- ◯ Increased investment in Europe (non-UK)
- ◯ Decreased investment in Europe (non-UK)
- ◯ No change regarding investment in Europe (non-UK)

18. Expected type of Brexit?

- ◯ Brexit with a deal vs Europe
- ◯ Brexi with no-deal vs Europe

19. Post Brexit, what is your expected investment intention in central London?

- ◯ Moderate increase
- ◯ Large increase
- ◯ Maintain the same
- ◯ Moderate decrease
- ◯ Large decrease

Add any comments

20. Post Brexit, what's your investment appetite for the following sectors in central London

	Increase	Decrease	Remain the same
Office	☐	☐	☐
Retail	☐	☐	☐
Hotel	☐	☐	☐
Industrial	☐	☐	☐
Residential	☐	☐	☐

21. Which other gateway cities/markets (non-London) are you investing or considering?

APPENDIX 3. Correlation matrix between control variables (Test for multi-collinearity)

Covariance Analysis: Ordinary
Date: 08/25/19 Time: 17:25
Sample: 2009Q1 2018Q4
Included observations: 600

Correlation Probability	C_ID	DATE	LNCBINV	LNGDPP	GDPG	INF	FX	LNFDI	LNTOTALINV	LOAN	VAC	YIELD	URBANPOP	POPG	PROPLEGAL	PERMITS	RENTG	SPREAD	SOCIOPOL	TAX	TRANSPAR	BREXIT	_5YRBOND
C_ID	1.000000 -----																						
DATE	0.000000 1.0000	1.000000 -----																					
LNCBINV	-0.435392 0.0000	0.409340 0.0000	1.000000 -----																				
LNGDPP	0.116948 0.0041	0.066275 0.1048	0.110666 0.0067	1.000000 -----																			
GDPG	0.084990 0.0374	0.626196 0.0000	0.330570 0.0000	-0.125086 0.0021	1.000000 -----																		
INF	-0.022183 0.5876	-0.317227 0.0000	-0.141847 0.0005	-0.088739 0.0297	-0.175680 0.0000	1.000000 -----																	
FX	-0.049671 0.2244	-0.516212 0.0000	-0.116748 0.0042	0.228471 0.0000	-0.468351 0.0000	0.185969 0.0000	1.000000 -----																
LNFDI	-0.479199 0.0000	-0.015285 0.7087	0.225500 0.0000	0.161609 0.0001	-0.077749 0.0570	0.068851 0.0920	0.062880 0.1239	1.000000 -----															
LNTOTALINV	-0.537461 0.0000	0.406076 0.0000	0.777095 0.0000	0.266230 0.0000	0.323708 0.0000	-0.162067 0.0001	-0.065638 0.1082	0.234318 0.0000	1.000000 -----														
LOAN	0.523217 0.0000	0.133522 0.0010	0.028197 0.4906	0.443041 0.0000	0.093438 0.0221	-0.042375 0.3001	-0.074527 0.0681	-0.087457 0.0322	0.026558 0.5162	1.000000 -----													
VAC	-0.115798 0.0045	-0.153516 0.0002	-0.247598 0.0000	-0.261589 0.0000	-0.212706 0.0000	-0.145668 0.0003	-0.210149 0.0000	0.241700 0.0000	-0.403709 0.0000	-0.250824 0.0000	1.000000 -----												
YIELD	0.137376 0.0007	-0.680182 0.0000	-0.614123 0.0000	-0.488152 0.0000	-0.427711 0.0000	0.246764 0.0000	0.198688 0.0000	-0.044740 0.2739	-0.756194 0.0000	-0.267913 0.0000	0.413307 0.0000	1.000000 -----											
URBANPOP	-0.199048 0.0000	0.046805 0.2523	0.223898 0.0000	0.484509 0.0000	-0.045203 0.2689	-0.078042 0.0561	0.026358 0.5193	0.304632 0.0000	0.216478 0.0000	0.337352 0.0000	0.108907 0.0076	-0.195498 0.0000	1.000000 -----										
POPG	0.107674 0.0083	0.005494 0.8932	0.228757 0.0000	0.622456 0.0000	-0.014951 0.7148	0.032599 0.4254	0.229319 0.0000	0.043892 0.2831	0.336655 0.0000	0.420896 0.0000	-0.453982 0.0000	-0.370436 0.0000	0.323080 0.0000	1.000000 -----									
PROPLEGAL	0.158728 0.0001	-0.255605 0.0000	0.184305 0.0000	0.432851 0.0000	-0.069569 0.0886	0.201285 0.0000	0.355123 0.0000	0.040506 0.3219	0.250362 0.0000	0.288052 0.0000	-0.296307 0.0000	-0.189810 0.0000	0.090636 0.0264	0.453791 0.0000	1.000000 -----								
PERMITS	0.147282 0.0003	0.239615 0.0000	0.225535 0.0000	0.444764 0.0000	0.104599 0.0104	-0.176995 0.0000	0.079258 0.0523	0.099296 0.0150	0.298542 0.0000	0.211982 0.0000	-0.129084 0.0015	-0.424870 0.0000	0.150125 0.0002	0.261539 0.0000	0.549793 0.0000	1.000000 -----							
RENTG	0.114268 0.0051	0.420827 0.0000	0.163767 0.0001	0.181108 0.0000	0.406230 0.0000	-0.052423 0.1997	-0.226851 0.0000	-0.146701 0.0003	0.240522 0.0000	0.011463 0.7793	-0.170450 0.0000	-0.454000 0.0000	0.071138 0.0817	0.126525 0.0019	0.027068 0.5081	0.237357 0.0000	1.000000 -----						
SPREAD	0.125314 0.0021	0.255571 0.0000	0.297010 0.0000	0.268536 0.0000	0.201077 0.0000	-0.313465 0.0000	-0.206769 0.0000	0.085833 0.0356	0.049123 0.2296	0.229127 0.0000	0.136903 0.0008	-0.116036 0.0044	0.312960 0.0000	0.167415 0.0000	0.028240 0.4899	0.119987 0.0032	0.024825 0.5439	1.000000 -----					
SOCIOPOL	0.423295 0.0000	-0.042820 0.2950	-0.050897 0.2132	0.723137 0.0000	0.001927 0.9624	-0.005217 0.8985	0.229705 0.0000	0.113415 0.0054	0.000504 0.9902	0.521455 0.0000	-0.256598 0.0000	-0.181109 0.0000	0.314496 0.0000	0.470207 0.0000	0.566866 0.0000	0.540417 0.0000	0.122252 0.0027	0.330300 0.0000	1.000000 -----				
TAX	-0.318325 0.0000	-0.096177 0.0185	0.120263 0.0032	0.008665 0.8322	-0.150449 0.0002	-0.145826 0.0003	-0.113493 0.0054	-0.139006 0.0006	0.165264 0.0000	-0.024381 0.5511	0.044848 0.2727	-0.056197 0.1692	0.186671 0.0000	0.032230 0.4307	-0.359514 0.0000	-0.496296 0.0000	-0.031871 0.4358	-0.014116 0.7301	-0.439310 0.0000	1.000000 -----			
TRANSPARENCY	0.550417 0.0000	-0.197177 0.0000	-0.623797 0.0000	-0.408590 0.0000	-0.035257 0.3886	0.059577 0.1450	-0.093918 0.0214	-0.489128 0.0000	-0.766477 0.0000	-0.102508 0.0120	0.268333 0.0000	0.568773 0.0000	-0.501378 0.0000	-0.335485 0.0000	-0.335212 0.0000	-0.387228 0.0000	-0.056697 0.1654	-0.029485 0.4710	-0.216540 0.0000	-0.052837 0.1962	1.000000 -----		
BREXIT	1.07E-17 1.0000	0.773661 0.0000	0.313421 0.0000	0.064985 0.1118	0.469808 0.0000	-0.144924 0.0004	-0.369302 0.0000	0.033616 0.4111	0.314403 0.0000	0.334997 0.0000	-0.226780 0.0000	-0.588099 0.0000	0.036317 0.3745	0.029495 0.4708	-0.237229 0.0000	0.139042 0.0006	0.275537 0.0000	0.091104 0.0256	-0.042914 0.2940	-0.077382 0.0582	-0.151506 0.0002	1.000000 -----	
_5YRBOND	-0.014603 0.7211	-0.585648 0.0000	-0.578535 0.0000	-0.484236 0.0000	-0.398585 0.0000	0.378261 0.0000	0.270299 0.0000	-0.090361 0.0269	-0.474591 0.0000	-0.327159 0.0000	0.136407 0.0008	0.665966 0.0000	-0.348208 0.0000	-0.340152 0.0000	-0.131075 0.0013	-0.336038 0.0000	-0.281427 0.0000	-0.818220 0.0000	-0.352902 0.0000	-0.021926 0.5919	0.351360 0.0000	-0.408825 0.0000	1.000000 -----

Covariance Analysis: Ordinary
Date: 08/25/19 Time: 17:25
Sample: 2009Q1 2018Q4
Included observations: 600

Correlation Probability	C_ID	DATE	LNCBINV	LNGDPP	GDPG	INF	FX	LNFDI	LNTOTALINV	LOAN	VAC
C_ID	1.000000 -----										
DATE	0.000000 1.0000	1.000000 -----									
LNCBINV	-0.435392 0.0000	0.409340 0.0000	1.000000 -----								
LNGDPP	0.116948 0.0041	0.066275 0.1048	0.110666 0.0067	1.000000 -----							
GDPG	0.084990 0.0374	0.626196 0.0000	0.330570 0.0000	-0.125086 0.0021	1.000000 -----						
INF	-0.022183 0.5876	-0.317227 0.0000	-0.141847 0.0005	-0.088739 0.0297	-0.175680 0.0000	1.000000 -----					
FX	-0.049671 0.2244	-0.516212 0.0000	-0.116748 0.0042	0.228471 0.0000	-0.468351 0.0000	0.185969 0.0000	1.000000 -----				
LNFDI	-0.479199 0.0000	-0.015285 0.7087	0.225500 0.0000	0.161609 0.0001	-0.077749 0.0570	0.068851 0.0920	0.062880 0.1239	1.000000 -----			
LNTOTALINV	-0.537461 0.0000	0.406076 0.0000	0.777095 0.0000	0.266230 0.0000	0.323708 0.0000	-0.162067 0.0001	-0.065638 0.1082	0.234318 0.0000	1.000000 -----		
LOAN	0.523217 0.0000	0.133522 0.0010	0.028197 0.4906	0.443041 0.0000	0.093438 0.0221	-0.042375 0.3001	-0.074527 0.0681	-0.087457 0.0322	0.026558 0.5162	1.000000 -----	
VAC	-0.115798 0.0045	-0.153516 0.0002	-0.247598 0.0000	-0.261589 0.0000	-0.212706 0.0000	-0.145668 0.0003	-0.210149 0.0000	0.241700 0.0000	-0.403709 0.0000	-0.250824 0.0000	1.000000 -----
YIELD	0.137376 0.0007	-0.680182 0.0000	-0.614123 0.0000	-0.488152 0.0000	-0.427711 0.0000	0.246764 0.0000	0.198688 0.0000	-0.044740 0.2739	-0.756194 0.0000	-0.267913 0.0000	0.413307 0.0000
URBANPOP	-0.199048	0.046805	0.223898	0.484509	-0.045203	-0.078042	0.026358	0.304632	0.216478	0.337352	0.108907

	YIELD	URBANPOP	POPG	PROPLEGAL	PERMITS	RENTG	SPREAD	SOCIOPOL	TAX	TRANSPAR	BREXIT	_5YRBOND

	0.0000	0.2523	0.0000	0.0000	0.2689	0.0561	0.5193	0.0000	0.0000	0.0000	0.0076
POPG	0.107674	0.005494	0.228757	0.622456	-0.014951	0.032599	0.229319	0.043892	0.336655	0.420896	-0.453982
	0.0083	0.8932	0.0000	0.0000	0.7148	0.4254	0.0000	0.2831	0.0000	0.0000	0.0000
PROPLEGAL	0.158728	-0.255605	0.184305	0.432851	-0.069569	0.201285	0.355123	0.040506	0.250362	0.288052	-0.296307
	0.0001	0.0000	0.0000	0.0000	0.0886	0.0000	0.0000	0.3219	0.0000	0.0000	0.0000
PERMITS	0.147282	0.239615	0.225535	0.444764	0.104599	-0.176995	0.079258	0.099296	0.298542	0.211982	-0.129084
	0.0003	0.0000	0.0000	0.0000	0.0104	0.0000	0.0523	0.0150	0.0000	0.0000	0.0015
RENTG	0.114268	0.420827	0.163767	0.181108	0.406230	-0.052423	-0.226851	-0.146701	0.240522	0.011463	-0.170450
	0.0051	0.0000	0.0001	0.0000	0.0000	0.1997	0.0000	0.0003	0.0000	0.7793	0.0000
SPREAD	0.125314	0.255571	0.297010	0.268536	0.201077	-0.313465	-0.206769	0.085833	0.049123	0.229127	0.136903
	0.0021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0356	0.2296	0.0000	0.0008
SOCIOPOL	0.423295	-0.042820	-0.050897	0.723137	0.001927	-0.005217	0.229705	0.113415	0.000504	0.521455	-0.256598
	0.0000	0.2950	0.2132	0.0000	0.9624	0.8985	0.0000	0.0054	0.9902	0.0000	0.0000
TAX	-0.318325	-0.096177	0.120263	0.008665	-0.150449	-0.145826	-0.113493	-0.139006	0.165264	-0.024381	0.044848
	0.0000	0.0185	0.0032	0.8322	0.0002	0.0003	0.0054	0.0006	0.0000	0.5511	0.2727
TRANSPARENCY	0.550417	-0.197177	-0.623797	-0.408590	-0.035257	0.059577	-0.093918	-0.489128	-0.766477	-0.102508	0.268333
	0.0000	0.0000	0.0000	0.0000	0.3886	0.1450	0.0214	0.0000	0.0000	0.0120	0.0000
BREXIT	1.07E-17	0.773661	0.313421	0.064985	0.469808	-0.144924	-0.369302	0.033616	0.314403	0.334997	-0.226780
	1.0000	0.0000	0.0000	0.1118	0.0000	0.0004	0.0000	0.4111	0.0000	0.0000	0.0000
_5YRBOND	-0.014603	-0.585648	-0.578535	-0.484236	-0.398585	0.378261	0.270299	-0.090361	-0.474591	-0.327159	0.136407
	0.7211	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0269	0.0000	0.0000	0.0008

1.000000 -----											
-0.195498 0.0000	1.000000 -----										
-0.370436 0.0000	0.323080 0.0000	1.000000 -----									
-0.189810 0.0000	0.090636 0.0264	0.453791 0.0000	1.000000 -----								
-0.424870 0.0000	0.150125 0.0002	0.261539 0.0000	0.549793 0.0000	1.000000 -----							
-0.454000 0.0000	0.071138 0.0817	0.126525 0.0019	0.027068 0.5081	0.237357 0.0000	1.000000 -----						
-0.116036 0.0044	0.312960 0.0000	0.167415 0.0000	0.028240 0.4899	0.119987 0.0032	0.024825 0.5439	1.000000 -----					
-0.181109 0.0000	0.314496 0.0000	0.470207 0.0000	0.566866 0.0000	0.540417 0.0000	0.122252 0.0027	0.330300 0.0000	1.000000 -----				
-0.056197 0.1692	0.186671 0.0000	0.032230 0.4307	-0.359514 0.0000	-0.496296 0.0000	-0.031871 0.4358	-0.014116 0.7301	-0.439310 0.0000	1.000000 -----			
0.568773 0.0000	-0.501378 0.0000	-0.335485 0.0000	-0.335212 0.0000	-0.387228 0.0000	-0.056697 0.1654	-0.029485 0.4710	-0.216540 0.0000	-0.052837 0.1962	1.000000 -----		
-0.588099 0.0000	0.036317 0.3745	0.029495 0.4708	-0.237229 0.0000	0.139042 0.0006	0.275537 0.0000	0.091104 0.0256	-0.042914 0.2940	-0.077382 0.0582	-0.151506 0.0002	1.000000 -----	
0.665966 0.0000	-0.348208 0.0000	-0.340152 0.0000	-0.131075 0.0013	-0.336038 0.0000	-0.281427 0.0000	-0.818220 0.0000	-0.352902 0.0000	-0.021926 0.5919	0.351360 0.0000	-0.408825 0.0000	1.000000 -----