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Estimating the Total Value of Ireland's Commercial Property Stock

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Abstract

In order to aid a better understanding of Ireland's commercial property market for financial stability purposes, there is a need to understand the overall size and relative importance of certain sectors as an appropriate benchmark. This *Note* integrates a variety of new data sources in order to get a broader understanding of the value of Ireland's commercial and industrial property stock, with a focus on the concentration of certain sub-segments of commercial property across Ireland. Using administrative data on rental value estimates at the property level, I impute a market valuation for all commercial properties in Ireland based on the evolution of market rental yields. The analysis reaches a headline estimate for market value of Ireland's total commercial property stock, including Residential properties held by professionally-managed investors for income-producing purposes, of around €144 billion. Within this, the Industrial segment is the largest, at €51bn. Offices and Retail, the two markets most at risk from recent fundamental shocks from work-from-home, e-commerce, and higher interest rates, are valued at €33bn and €25bn, respectively.

1 Introduction

Commercial property is currently at the centre of domestic financial stability considerations in Ireland. The sector, and particularly the Office and Retail segments, has been subject to twin fundamental shocks from pandemic-related changes to demand, and the impact of higher global interest rates. The Central Bank is deepening its understanding the transmission of these shocks to the Irish financial system (*FSR Special Feature 2024: I*). This *Note* provides a contextual backdrop to this analysis by providing an estimate of the total valuation of the stock of commercial properties in Ireland.

Developments in commercial real estate (CRE) markets can have important implications for financial stability, given their large size relative to the economy, and the level of interconnectedness with the financial system. A key development since the global financial crisis has been the widespread recognition of the need to close policy-relevant data gaps and development of timely statistics to aid effective monitoring. This has involved international efforts, such as the G20 Data Gaps Initiative, and in the context of Europe, the European Systemic Risk Board's recommendations on closing real estate data gaps (ESRB, 2019), which calls for the development of statistics on real-estate related data to address vulnerabilities within real estate markets.

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Despite this, however, certain parts of commercial property market remain opaque due to remaining data gaps that impede comprehensive analysis. Previous work by Coates et al. (2019) sought to estimate the size of the *"professionally managed"* income-generating component of commercial property markets, given the wider availability of data from private market research sources, regulatory returns and published financial accounts, and the lack of official figures specifying the size of the entire domestic commercial property market (including the size of the owner-occupied commercial property market). A concern with relying on market research sources is that they may only provide a limited picture of a country's income-generating commercial property market, focussing on professional, "portfolio-managed" investors, and may provide limited coverage on developments of CRE markets in smaller regional sectors (Dwyer-Bond, Casey, & Coates, 2019). In any case, there is a need to turn to administrative data sources to get a wider view of the commercial property market.

Understanding the overall size of the property market helps in understanding the relative importance of key market segments. In particular, it allows us to benchmark the financial exposures of systemic lenders and authorised financial firms to Irish commercial property and advance our understanding of potential wider implications to the real economy. For example, Irish property funds are currently estimated to hold, directly and indirectly, €29bn of property assets (*FSR 2024: I*, Box 1), while the domestic banks' CRE loan book in Ireland is currently at around €12bn, which would equate to an estimated €20bn-€25bn of commercial property assets. By estimating the overall size of the stock of properties in Ireland, I aim to support financial stability assessments of the CRE market in giving a wider context for the overall potential market size in which key sectors are operating.

The aim of this *Note* is to take a more comprehensive approach in understanding the stock of CRE that exists in Ireland, beyond what is considered by most professional real estate agencies. In particular, I use recently available administrative data on property level rental values for Ireland's commercial & industrial stock to map out broad categories of CRE across Ireland and identify particular sub-segments of interest. I present a methodology that takes a *bottom-up* approach to estimating the size of the commercial property market; I use the data on rental values and combine this with available information on the evolution of commercial rental values and market yields, to estimate the approximate capital value of Ireland's property stock across the sectors of Office, Retail, and Industrial sectors as at 2024 Q1. Additionally, we integrate data on asset holdings by institutional investors in the private rental sector, to get an estimate of the market size of Ireland's commercial property stock.

While there are some inherent limitations to the approach taken in this *Note*, I aim to use this as a starting point to deepen our understanding of the overall commercial property market, and provide grounds for future work. I also aim to highlight the benefit of using high-quality administrative data to advance our understanding of the Irish economy.

This *Note* is structured as follows. In Section 2, we outline the microdata used and the method for arriving at the total market value of Ireland's commercial property stock. In Section 3, we present broad results on the total size of Ireland's commercial property market. Section 4 focuses more on analysis of specific sub-segments of the commercial property stock, with a focus on Office, Industrial, and Retail sectors. Section 5 concludes, with potential avenues for further research.

2 Estimating the Total Value of Ireland's Commercial Properties

2.1 Main Data Sources

Tailte Éireann – Valuation – Commercial Rates:

The main piece of this analysis in this *Note* relies on live administrative data for property-level valuations, available from Tailte Éireann – Valuation (TEV). TEV is a statutory body primarily tasked with providing rental valuations for all commercial & industrial properties that reflect contemporary market conditions, for the purposes of charging commercial property tax ("commercial rates") by local authorities. By law, very few categories of property are exempt from the charging of commercial rates, and as part of the *National Revaluation Programme*, properties are being valued on a systematic basis to reflect local market conditions at a fixed valuation date within each local authority. The tax on these rental values form the basis for the single largest income stream by local authorities. This open dataset[2] provides almost comprehensive coverage on commercial and industrial properties for 29 out of 31 local authorities, reflecting data on 25 out of 26 counties where property has been revalued by Tailte Éireann[3]. The data is updated continuously to include completed developments, as they get valued by Tailte Éireann. We use this data to calculate estimates of Ireland's commercial property market for the *Office*, *Industrial*, and *Retail* sectors. Further details on the dataset, and cleaning of the data are provided in the *Appendix*.

Residential Property Holdings – MSCI Real Capital Analytics:

Residential properties are not in the dataset described above, due to the fact that they are exempt from commercial rates and are charged Local Property Taxes. No open administrative data source exists that captures all residential property stock and associated physical and valuation characteristics that is equivalent to the Tailte Éireann data above.

Additionally, in order to align ourselves with the definition of CRE defined by the ESRB (European Systemic Risk Board, 2019) to include "income-producing real estate", I extend this work to the private rental sector (PRS). This definition also means that "buy-to-let" housing is not included in the definition of CRE[4], so we focus on the stock of the *institutionally-owned* PRS, which has become a significant component of commercial property transaction flows within Ireland in more recent years (Daly, 2023). We use MSCI's Real Capital Analytics (RCA) database to fill this gap. In particular, we use the available information on asset holdings of income-producing residential real estate within Ireland, filtering for holdings of *"professionally-managed"* investor groups. Further details on the data and filters used are provided in the *Appendix*.

2.2 Methodology – Capital Valuations

[2] The data from Tailte Éireann - Valuation is available at: https://www.tailte.ie/en/valuation/open-data/api/

[3] As of June 2024, Cork City Council and Cork County Council are the only local authorities that have yet to undergo a Revaluation, so available data on the stock of Cork's commercial property is very limited by comparison. For the purposes of this *Note*, we 'impute' an estimate of the market value of Cork's commercial property stock using available information from private real estate research firms on commercial property subsectors. For more details, please see the *Appendix*.

[4] The ESRB recommendation refers to "conducting their business, purpose or activity, either existing or under construction, that is not qualified as RRE property". In this way, traditional CRE sectors such as office, retail and industrial/logistics are covered, but so too is the residential rental sector that excludes ownership through *natural persons*, i.e. buy-to-lets. See ESRB/2019/3.

Indexation of Rental Values:

As the TEV data gives us rental values of each property aligned to a fixed valuation date within that local authority, and that "Revaluation" of commercial and industrial property is being done on a phased basis, there is a need to align the rental values to one period. In order to do this, we use the MSCI/SCSI Quarterly Property Index to apply indexation to the rental values to 2024 Q1. Additionally, given the granularity of the microdata, we are able to apply indexation across segments (Retail, Industrial, and Office) as well as across regions (Dublin and ex-Dublin). The limitation to this approach is that there is a paucity of data on the evolution of rental values across a variety of locations outside of Dublin, but this data at least allows us to have rental values to at least more accurately reflect the evolution of rental prices across segments.

Capitalisation of Rental Values to Capital Values

While many approaches can be taken to estimate the appropriate market values for all commercial and industrial properties, here, we take the approach of *directly* capitalising the indexed rental values calculated above, using an appropriate measure of yields to convert the rental values into market values. Given that the rental values from Tailte Éireann are required to be aligned to the concept of *Gross* Rents, we use *equivalent* yields[5] on CRE sectors to convert the indexed rental values to market capital values. Again, to reflect the differing characteristics of each segment and the location in which the properties are located, we source yields across a range of sub-segments. The same limitation applies as above: data on yields tend to not be readily forthcoming for regions outside of Dublin and some smaller urban centres, but the segmentation across sectors at least allows for some better variation. These yields are aligned to 2024 Q1 data on yields. Table A1 in the *Appendix* presents the equivalent yield estimates used.

Residential Property Market Values:

The RCA data suggests that the total number of units completed and currently under development by "professionally-managed" investor groups to be at least around 29,920 units as of June 2024. However, the data does not have information on the market value of the properties, just transaction values. Given that the transactions have taken place across several years (between 2012 and 2024), using transaction values would be inappropriate for getting an estimate of the current market value of the institutionally held PRS. For the purposes of this paper, we take a simple approach and use CSO's estimate of the median property purchase price as at March 2024 of €333,000 as the average market value of the units in question to get an estimate of the aggregate market value of the "residential" portion of the commercial property stock[6].

3 Broad Results

Using the methodology above, we estimate the total market value of the commercial property stock to be currently valued, as of the first quarter of 2024, at approximately €144bn. Figure 1 gives a

[5] Broadly speaking, equivalent yields are the principal yield measure used in analysis of Ireland/UK real estate markets, and considers costs for managing and owning the property, as well as implicitly accounting for potential increases in future rental income due to rent-reviews and expiration of rent-free / reduced rent periods (*reversions*).

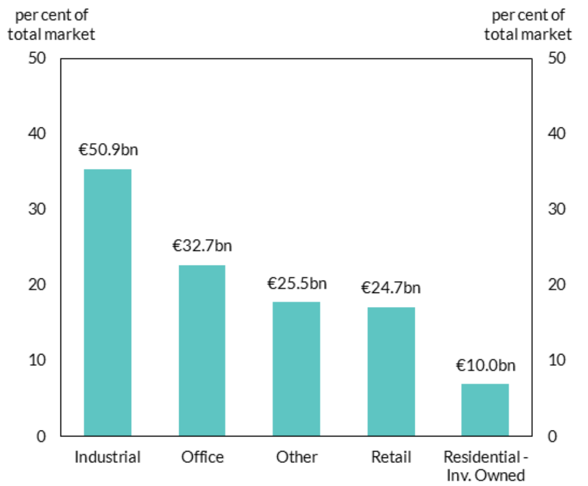
[6] How institutional investors' value income-generating residential property is significantly more complex than providing an estimate of the total commercial property market in general, and producing better *hedonic* market value estimates would principally require information on the underlying rental cash flows of the residential properties, which we do not have in this data. As a result, any estimation of the value of residential property in this *Note* should take this consideration into account before comparing with other estimates on the value of holdings of residential property.

breakdown of these across segments. Industrial properties are estimated to comprise the largest proportion of the total market, at €50.9bn, while Office properties, at €32.7bn, and Retail, at €24.7bn, accounts for 22 and 17 per cent of the market values, respectively. The remaining 24 per cent comprises of the Investor-owned residential stock of €10bn, and Other, at €25.5bn, predominantly comprising of licensed premises and hotels.

The method allows an assessment of the geographic distribution of commercial property. It reveals that CRE is particularly unevenly distributed geographically. While Dublin accounts for 30%[7] of total employment in Ireland, it accounts for 52% of the commercial property stock according to the methodology used in this *Note*. The concentration of Dublin is particularly acute in the office market, with the Dublin office market having a valuation of €25.6bn, and only €7bn of offices located throughout the rest of the country. As we will see in *Section 4*, most of this office stock is particularly concentrated within the Central Business District of Dublin. This analysis allows greater context to be put on the importance of Irish property funds. Central Bank data indicate that PFs hold €9.2bn of office stock as at end-2022. On the assumption that this is almost uniquely in Dublin, this form of entity would then account for approximately more than one third of the office stock in the city.

Figure 1: Within the stock of commercial property, Industrial is particularly large

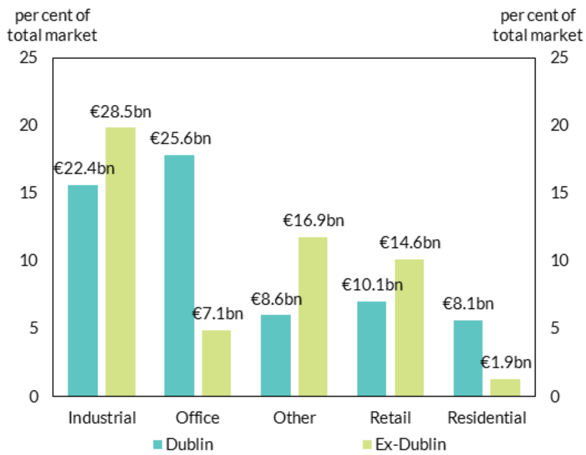
Estimates of market valuation of key commercial property sectors, as a per cent of the total market



Source: Tailte Éireann, MSCI Real Capital Analytics, Authors' estimates
Notes: *Other* includes properties such as hotels, and licensed premises such as Cinemas, Pubs, and other premises that are valued according the trading value of the business.

Figure 2: Geographically, Both Office and Residential are concentrated heavily towards Dublin

Market valuation of commercial property: Sector and Dublin/Non-Dublin split



Source: Tailte Éireann, MSCI Real Capital Analytics, Authors' estimates

4 Analysis of Commercial Subsectors

4.1 Office

To begin with, Figure 3 breaks down the distribution of Ireland's office space across Ireland into more granular locations and sub-segments of office space. Given the importance of Dublin for the office sector, we further break down offices located in Dublin into the Central Business District ('CBD' - the Dublin postcodes of Dublin 1, 2 and 4), and the rest of Dublin. These three postcodes alone account for approximately €18.3bn of the total market value, accounting for about 71% of all of Dublin's office space by market value, or more than half of Ireland's office sector (56%). In

[7] Based on CSO Labour Force Survey data at 2024Q1 (Table code: QLF07)

contrast, the other four cities – Limerick, Galway, Waterford and Cork, account for just under 15% (€4.5bn) of the total market value of the Office sector in Ireland.

Additionally, while there is no explicit field that notes the year of construction of any particular property, for purpose-built office properties in particular, data on the 'generation' or *vintage* in which the office was built is available. As a result, we further segment the office stock into newer generation 'Prime' purpose-built office stock, and treat older generation (as well as "over-the-shop" and "own-door" units) as 'Non-Prime' categories. This allows us to get broad summaries of the type of stock that would attract more interest from prospective occupiers, and a better approximation of the stock of office property that might be of particular interest to investors, especially due to newer considerations of Environmental, Social & Governance (ESG) frameworks in commercial property investment.

In splitting this out, we find a very strong variation across-regions: within the CBD, there is a much higher proportion (in market value terms) of office buildings that are prime vs. those that are non-prime. Outside of the CBD, the 'Rest of Dublin' has slightly more office space classified as Prime and Non-Prime office space, in terms of market value. Interestingly, the estimated value of older non-prime stock alone in Dublin (ex-CBD) is equal to the value of non-prime stock in the next four cities combined. Within the secondary cities, as well as in the rest of the country, the aggregate value of non-prime office is much higher than that of prime offices, reflective of the geographic concentration of newer commercial property investment close to the centre of Dublin since the global financial crisis.

Figure 3: Mapping Ireland's Office Space

Notes: Based on indexed rental values that have been capitalised using appropriate yields. Dublin CBD is defined as any office property within the postal codes of Dublin 1, 2 and 4. Secondary Cities are defined as including Cork (estimated), Limerick City, Galway City, and Waterford City.

Figure 4 confirms similar findings in terms of the floor space and the overall aggregate shares of market values across these identified regions. Dublin CBD has the largest amount of prime office space in the whole country, at just under 1.5 million square metres, or 20% of the total office market. Additionally, the share of prime office space in Dublin excluding the CBD is larger than the total prime office space in any part of the country outside Dublin combined, at around 1.2 million square metres (13%) of office space. Dublin is estimated to have total floor space of approximately 4.65 million square metres, which aligns closely estimates of floor space from private market research (CBRE, 2024a), and accounts for 56% of the total office sector. In contrast, both secondary cities, and ex-urban areas are dominated by older, "Non-Prime" office stock.

Figure 4: Estimates of floor space and approximate shares, split by Prime/Non-Prime

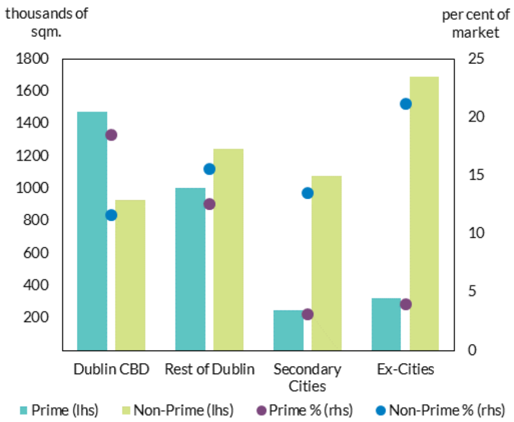
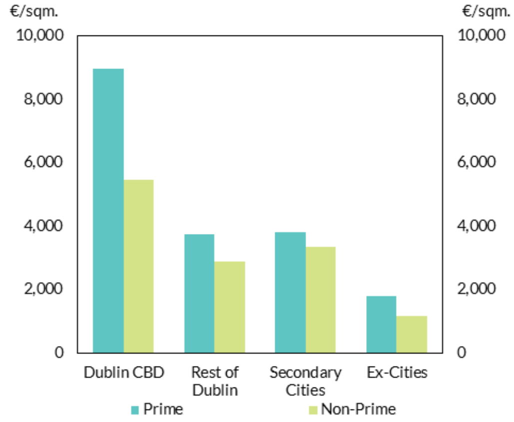
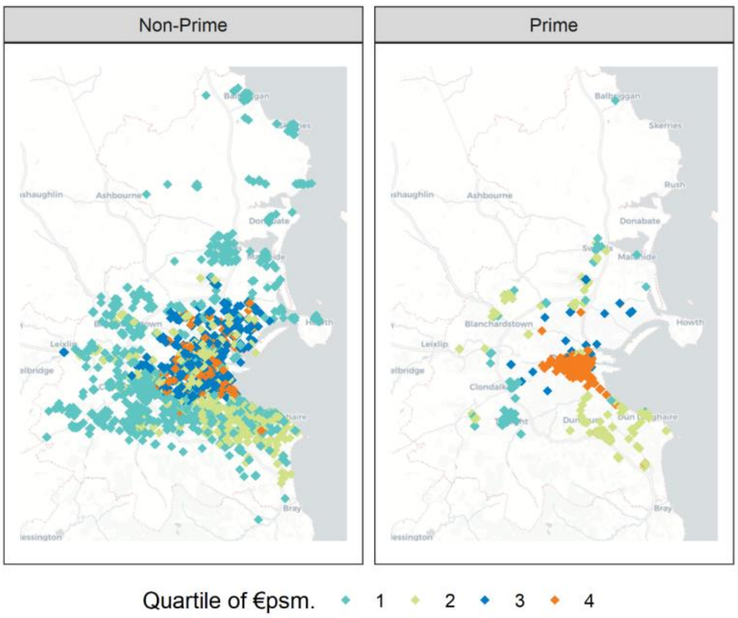


Figure 5: Total shares of market value and floor area by region



Looking closely at the average market value of office space per square metre of office space, Figures 5 and 6 show us that location matters quite a lot more, relatively speaking, than the quality of the office space, except in the case of Dublin CBD. While Prime Dublin CBD is valued at just under €8,970 per square metre of office space, non-prime office is significantly lower valued, at about €5,500 per square metre. However, in the other three regions identified, there is not as significant variation across quality segments. This could be due to the fact that the CBD has an extremely wide variety of office stock, including a large amount of "over-the-shop" and "own-door" units within heritage buildings that may be in less demand, while also indicative of the concentration of particularly large, profitable global companies in the city centre of Dublin, reflecting a story of urban agglomeration.

Figure 6: Mapping the distribution of Dublin's office: from least to most valuable



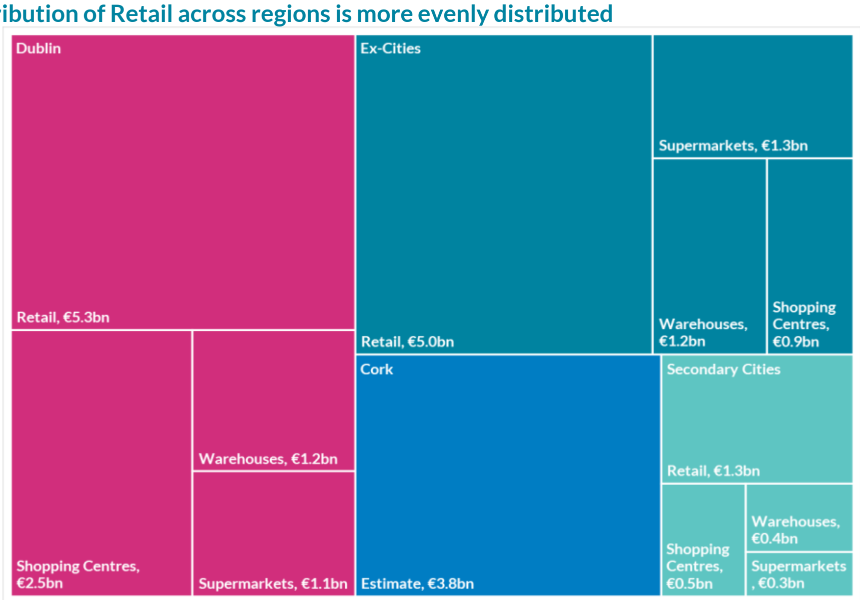
Notes: Quartile 1 corresponds to the bottom 25% of Dublin office space when ranked by €/sqm of office space, while Quartile 4 corresponds to the top 25%.

Figure 6 maps the stock of Dublin office properties, split across Prime and Non-Prime categories. In order to investigate the relationship across space and quality, we also group properties in the dataset by quartiles of market value per square metre of office space. Keeping the floor space constant accounts for the fact that newly built offices are likely to be very large in terms of size, whereas the stock of non-prime offices has a large amount of smaller sized "own-door" and "over-the-shop" office properties. While newer stock is much more heavily concentrated in the CBD, the mapping shows that for both quality segments, the top 25% of office properties in market value terms are much more likely to be located close to the city centre. Finally, in Table B1 of the *Appendix*, we present a more granular breakdown of the top 10 location of office property across Eircode routing areas, showing that Dublin 2 alone accounts for an estimated €10.6 billion, or 32% of the office market alone.

4.2 Retail

Turning to the Retail sector, Figure 7 maps out the distribution of Ireland's retail stock. As one would expect, the market value of the retail sector is much more evenly distributed across the country. The data allows us to split retail units into more granular segments, and of particular interest for financial stability purposes are assets such as shopping centres, which attract a large amount of investment within the retail sector and tend to be owned as income generating property and could be funded by large debt exposures, as well as retail units in prime high street locations. As we'd expect, the majority of the shopping centre stock, in capital value terms, is to be found near cities, with Dublin, at approximately €2.5bn, accounting for about 64% of the shopping centre stock, and ex-urban towns accounting for €1.3bn. In contrast, we have a more relatively even split in the share of retail warehouses across the country, at €1.2bn in Dublin, €400mn in Secondary cities, and €1.2bn in the rest of the country. Finally, generic "retail" units in this data are collectively valued at around €11.6bn for the entire country, with a disproportionate amount towards Dublin at €5.3bn, or 46%, the secondary cities comprising of €1.3bn (11%), and the rest, outside of these more urbanised areas.

Figure 7: The Distribution of Retail across regions is more evenly distributed



Notes: The "Retail" subsector within the treemap above refers to any generic shop unit to be used to provide retail services, and cannot be categorised into the categories of "Warehouses", "Supermarkets" and "Shopping Centres". Retail Warehouses are larger retail units found in retail parks. Additionally, licensed premises (e.g., pubs, nightclubs) are not treated as retail units, so are not included in the above treemap.

When we dig deeper into shopping centres, as noted in Figure 8, they seem very strongly distributed towards the Dublin suburbs more than anywhere else in the country, accounting for 60% of the total market value of all Irish shopping centres at €2.3bn, even if only accounting for 40% of the floor space (approx. 413,000 sqm). In contrast, while not charted below, Dublin City comprises of 19% of the standard 'retail' category in floor area terms (1 million sqm), slightly more than twice that of the suburbs (approx. 516,000 sqm). This difference in spatial distribution more than likely reflects the underlying urban economics – the value of land closest to the centre would be highest, so a high density of valuable, smaller size retail where footfall is highest would be located there. Whereas, shopping centres are likely to not only locate themselves on cheaper land, where they can use that to operate a large amount of bigger retail units, but are also likely to locate themselves near main roads and have large car parks.

In Figure 9, we look at the variation in market values for retail units in prime, high street locations, versus those in the rest of the city. While market commentary tends to focus on Dublin high street given the high levels investor activity, the microdata allows us to look at capital values for areas where information would not be otherwise available but investor appetite might be increasing. For both Dublin and Galway city, the market value of retail units within prime high street locations are significantly more valuable than those outside of them, at €12,870 and €8,880 per square metre of retail real estate, respectively, representing 3 and 2.1 times the value within their respective city centre, while Limerick prime retail is only 42% higher than the rest of the city centre (at €2,627 per square metre)[8].

Figure 8: Shopping Centre floor space and market values are concentrated in the Dublin Suburbs…

Notes: Shares are per cent of shopping centre floor space and capital values.

Figure 9: Split of Market values per square metre of high street across cities.

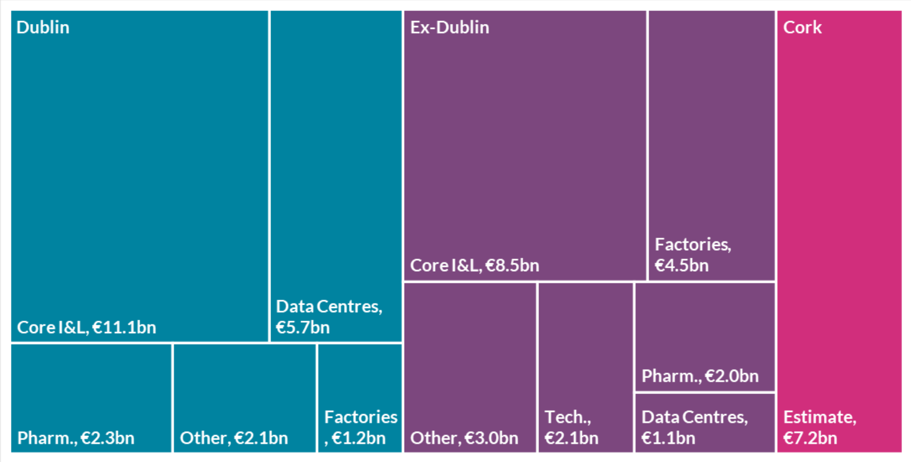
Notes: 'High Streets' are defined retail units located on Shop Street, Grafton Street, and O'Connell Street for Galway, Dublin and Limerick respectively. Data for Cork city retail units is not available. Values reported are the average of market value per square metre across units within that area

4.3 Industrial & Logistics

Finally, we briefly discuss the Industrial & Logistics sector. In terms of investment into this market, this has only been a recently "*investable*" asset in the Irish CRE market, reflecting an increased underlying demand for more warehousing, logistics centres, and distribution facilities in the country (CBRE, 2024) due to structural shocks induced by Brexit and the pandemic. These are part of what I have labelled "Core I&L" in Figure 10, and is closer to the stock of Industrial assets that would be income-generating and more important for financial stability assessments as it relates to the commercial property market.

[8] Of note, the estimate for *Grafton Street* and *Dublin City Centre* retail units under this methodology closely aligns with the respective values reported in MSCI/SCSI Quarterly index, at *approximately* €12,400 and €4,500 per square metre, respectively. Equivalent data for ex-Dublin retail is not available.

Figure 10: Beyond Core Industrial & Logistics, Technology & Pharmaceutical production sectors form an active part of Ireland's industrial space.



Notes: Warehouses, Distribution Centres, Logistics parks, storage facilities are included in the 'Core I&L' subsegment. All other segments relate to production.

This represents €19.6bn, or 38% of the total. Additionally, unlike the total industrial sector, Core I&L is more valuable in Dublin than in the rest of the country, even if the total floor space at approximately 8.75 million sqm is half that of the rest of the country. Again, this reflects a story of urban agglomeration – location is important for distribution of goods and being closer to dense locations allows for lower costs on delivering to large parts of the country, and will be reflected in the underlying market values. The remaining 62% of the €50.9bn, while more likely to reflect assets predominantly owned by owner-occupiers, is quite informative: save for factories, Ireland's industrial sector is predominantly tied to technology, pharmaceutical production, and – more recently, Data Centres.

5 Conclusion

In conclusion, the analysis presented in this *Note* presents a methodology for a more bottom-up approach in providing comprehensive valuation of all commercial property, and presents a recently available administrative data source that deepens our understanding of the overall commercial property sector.

However, as discussed earlier, one chief limitation in this analysis is the lack of readily available data that allows for better estimates across regions. This is mainly due to reliance on market data sources to be able to estimate the evolution of rents, which tends to mainly focus on Dublin, as well as current limitations of the commercial rates data, i.e. a revaluation of the property in Cork has yet to take place. However, this data does form as a useful basis for further investment into analytical work on understanding developments within the commercial property sector, and could be benefitted from combining with further data sources to advance policy work and understanding Ireland's CRE market. This *Note* also demonstrates the increasingly recognised benefit of having access to administrative data sources to advance analytical work in areas where persistent data gaps exist that are important for policy analysis.

Currently, no data source exists to distinguish the two parts of the owner-occupied and the broader income-generating commercial property market, at least without significant further analytical investment. The former is of more relevance for financial stability purposes, given that institutional and domestic investment occurs only within this segment. Distinguishing the owner-occupied from invested parts of the CRE market remains a key topic for future research.

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Appendix

A Notes on Methodology

A1 Tailte Éireann Commercial Rates Dataset

The data contains detailed information on the physical and spatial characteristics for the property, such as the address, county, geographical co-ordinates, floor area (in square metres), and the broad property "use", which we align to standard segments of *Office*, *Industrial*, and *Retail*, respectively (we define anything that doesn't neatly fit into this segment to be *Other*, the majority of which are hotel assets, and licensed premises which are valued using the amount of trading undertaken (pubs, cinemas, guesthouses)). The data also includes very granular detail that allows further sectoral analysis, e.g. *generation* of the Office stock, which we use as a proxy for quality.

Given the statutory nature of commercial rates, there are properties within the dataset that, while subject to commercial rates and are defined as "non-domestic property" for the purposes of valuation, would be more likely to be defined as *Public Infrastructure/Utilities* in this analysis, so we exclude them from the analysis within this paper. The following list is non-exhaustive but includes:

- Power Generating stations, incinerators, fire stations, ports, toll roads, bus stations, antennae/masts, Airports (& Airport terminals), hangars, reservoirs, transmission stations, any form of network infrastructure.
- Items relating to legally defined Public Utilities being subject to Rates ('Central Valuation List').

A2 MSCI Real Capital Analytics Dataset – Asset Holdings

The data on asset holdings from the RCA includes residential holdings across a range of company types established through a variety of legal structures, such as REITs, Property Funds (both Irish and foreign-domiciled), High-Net-Worth Individuals, Pension and Equity Funds, and other corporate structures, and include units currently being developed. I do not include holdings of land, as there is no information available on whether the land is held for *residential* development or otherwise.

Additionally, we exclude RCA data on units currently under development from Irish developers and homebuilders, for example, Cairn, Glenveagh, and Quintain, amongst others. Although previous research from Daly (Ibid.) and market commentary (Hooke & MacDonald, 2023) have highlighted the interlinkages between Irish homebuilders and institutional investors in financing supply of apartment units for the PRS through explicit (providing upfront capital in exchange for ownership – 'forward funding') and implicit ('forward purchasing' of units that are under development) mechanisms, in many cases, the nature of these arrangements, and the quality of the data provided mean that the final owner can only be ascertained once the developments are complete. As a result, the data only includes holdings of the residential sector where it is clear that the ultimate asset holder includes professionally-managed investor groups, and we exclude currently developed properties by homebuilders to avoid overstating the level of institutionally-owned PRS[9].

Table A1: List of Equivalent Yields used:

Segment	Equivalent Yield	Source for Yield
Other - Ex-Dublin	6.71	MSCI/SCSI
Other - Dublin	6.62	MSCI/SCSI
Industrial - Ex-Dublin	5.92	MSCI/SCSI
Industrial - Dublin	4.75	CBRE
Office - Ex-Dublin	6.84	MSCI/SCSI
Retail - Ex-Dublin	6.9	MSCI/SCSI
Retail - Rest of Dublin	6.75	CBRE
Office - Central Dublin	5	CBRE
Office - Rest of Dublin	9	CBRE
Retail - Grafton Street	5.25	CBRE
Retail - Henry/Mary Street	5.25	CBRE
Retail - Other Dublin City Centre	6.75	CBRE
Retail Warehouse - Ex-Dublin	6.5	CBRE
Retail Warehouse - Dublin	6.5	CBRE

Notes: The data from MSCI is aligned to the 'Standing Investments' segmentation used for the MSCI/SCSI Quarterly Property Index for Ireland, as at 2024Q1. The "Other" category is aligned to the "All" segment. The data from CBRE aligns with data available on Ireland Property Investment Yields as at March 2024.

[9] In particular – given that recent developments have seen a shift towards apartment developments from homebuilders being forward-funded by the public sector, overstating the stock of institutionally held PRS by assuming current apartment developments from large Irish homebuilders will be held by institutional investors in the future is a principal concern.

A3 Cork Estimates

Given that the main dataset used for the analysis does not have granular information for Cork as of yet, we impute estimates of Cork's commercial property stock. Our approach is to scale the aggregated indexed rental value estimates for Dublin in proportion to the available data on the size of specific market segments of Cork from private market research, where possible. If data is not available, we use the ratio of Cork's population to the population of Dublin across sectors, according to the latest Census 2022 data. We then apply equivalent yields for Ex-Dublin sectors across those segments.

To estimate the market size of Cork's *Office* segment, according to Savills (2023a), the size of Cork's Office stock is estimated to be approximately 660,000 square metres at 2023 H1, and using equivalent information for Dublin in Savills (2023b), this suggests that the size of Cork's office space to be around 15% of that in Dublin. Unfortunately, relevant information on the size of Cork's *Industrial* and *Retail* sectors is sparse, so we take the population-based approach. This gives us a total approximate value of Cork's commercial property stock (across *Office*, *Industrial*, *Retail*, and *Other*) to be €17.7bn.

B Additional Figures

Table B1: Top 10 locations of Office Commercial Property, Ranked by Value

Rank	Eircode - Town	Capital Value	Floor Area (sqm.)	% Capital Value	% Floor Area
1	D02 - Dublin 2	€10.6bn	1347.60k	32%	17%
2	D04 - Dublin 4	€4.2bn	560.88k	13%	7%
3	D01 - Dublin 1	€3.5bn	494.60k	11%	6%
4	D18 - Dublin 18	€1.4bn	422.78k	4%	5%
5	D08 - Dublin 8	€1.0bn	172.90k	3%	2%
6	D03 - Dublin 3	€0.8bn	164.14k	2%	2%
7	D07 - Dublin 7	€0.6bn	97.23k	2%	1%
8	V94 - Limerick City	€0.6bn	261.70k	2%	3%
9	D24 - Dublin 24	€0.5bn	246.68k	2%	3%
10	H91 - Galway City	€0.5bn	244.34k	1%	3%

Notes: Estimates for Cork are only available at the aggregate level (and split between Prime and Non-Prime), therefore it is not possible to include an estimate of market value and floor area within Cork eircodes. However, Cork is included in the denominator when calculating the proportion of the total capital value and floor area.

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