Developing data sources for a Commercial Property Statistical System (CPSS) in Ireland

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Erin Dwyer-Bond (Central Statistics Office, Ireland), Barra Casey (Central Statistics Office, Ireland) and Dermot Coates (Central Bank of Ireland)[1]

Executive Summary

Previous financial crises have demonstrated how unsustainable activity in commercial property markets can give rise to severe losses in the financial system and have a damaging impact on economic activity. The Irish case is a clear example of how the risks related to commercial real estate (CRE) lending and boom/bust price movements can manifest themselves. The recent property crash also served to highlight the paucity of readily-available, objective and independent commercial property data, complicating risk assessment and making it difficult to accurately describe and compare the risks in and across national markets.

In this joint paper between the Central Statistics Office (CSO) Ireland and the Central Bank of Ireland (CBI), we systemically work our way through the myriad of data sources that could be used for commercial property statistics in Ireland. The structure we use for this exercise was taken from the recommendations published by the European Systemic Risk Board on closing real estate data gaps (ESRB/2016/14). Therefore, for each statistical indicator that the ESRB recommend for effective monitoring of risks in the domestic commercial property sector, we look at what data sources are available in Ireland. We have added building permits and completions to the ESRB indicators. We have also grouped indicators together where it was appropriate to do so.

The five headings we look at are as follows:

- Price index
- Rental index and rental yield index
- Building permits, starts and completions
- Vacancy rates
- Credit exposure and lending standards

The paper publishes new information on commercial property for the first time, namely on commercial property sales and leases. This provides us with new insights into the commercial property market in Ireland.

However, the main usefulness of the paper relates to the centralisation of the analysis on available data sources and the documentation of the substantial challenges ahead. As commercial property statistics are still in their infancy in many countries and the development requirements are spread across institutions (and across divisions within institutions), the paper allows for a better assessment of the strategic approach Ireland should take to filling the data gaps and bringing transparency to this crucial area.

[1] Erin Dwyer-Bond is on the graduate programme in the Central Statistics Office (CSO), Barra Casey is the Senior Statistician for Price Statistics in the Central Statistics Office (CSO) and Dermot Coates is a Senior Economist-Statistician in the Central Bank of Ireland.

Structure of the paper

As explained in the Executive Summary, the paper is structured into five sections. Each section relates to a statistical indicator or group of indicators for commercial property. Where possible, descriptive statistics are presented to provide new information on the sector.

The following table summarises the datasets that are analysed in each section.

Table 1: Summary of data sources

Statistical indicator(s)	Data Source(s)
1. Price index	Stamp duty information from the Office of the Revenue Commissioners
2. Rental index and rental yield index	Commercial Property Lease Register from the Property Services Regulatory Authority (PSRA)
3. Building permits, starts and completions	i) Building Control Management System (BCMS) from the Local Government Management System (LGMA), ii) National Planning Applications Database (NPAD) from Department of Housing, Planning and Local Government and iii) Construction Information Services (CIS) who are a private provider of construction information in Ireland
4. Vacancy rates	Geodirectory from An Post and Ordnance Survey Ireland (OSI)
5. Credit exposure and lending standards	Quarterly Business Credit and Deposits information from the Central Bank of Ireland (CBI)

1. Price index

1.1. Introduction

The principal data source for a Commercial Property Price Index (CPPI) in Ireland is stamp duty data provided to the CSO by the Revenue Commissioners. Under the Stamp Duties Consolidation Act (SDCA) 1999, all buyers of commercial property have a legal obligation to notify the Revenue Commissioners so that the transaction can be assessed for stamp duty. Since 2010, this notification takes place on-line, via Revenue's e-Stamping system and is typically carried out by the buyers' solicitors as part of the conveyancing process. Buyers mostly submit the transaction details to Revenue within 44 days of the transaction execution date. The stamp duty data was also used as the primary source of information for the CSO's recently relaunched Residential Property Price Index (RPPI).

The stamp duty data is a very rich data source in terms of providing characteristics of the buyers and sellers of property. However, it is much more limited in terms of describing properties transacted, only providing the address of the properties, whether they are new or existing and the transaction price for stamp duty assessment purposes. In terms of dates, the execution date for the transaction is recorded as well as the date that the stamp duty return is filed with the Revenue Commissioners.

When the RPPI was relaunched in 2016, the solution to the lack of characteristic information on the properties was to link the stamp duty information to other data sources e.g. Building Energy Regulation (BER) data. As detailed in a paper presented at the Ottawa Group in 2017[2], this solution could not be replicated for commercial property. There was a multitude of problems found with

[2] https://bit.ly/2H15hpU

linking different data sources that contain information on commercial property transactions (sales and leases); namely a lack of unique identifiers in the datasets, fundamentally different units of measurement, a lack of detail in postal addresses and uncertainty on whether we are matching like-for-like.

A solution to this problem is currently being sought by the relevant authorities in Ireland – including the CSO, the Department of Finance and the Central Bank of Ireland. Whatever approach is chosen, this will need to result in the collection of new administrative or statistical data and a conversation is ongoing about the most efficient method to achieve this.

In the meantime, the stamp duty data is analysed to discover the extent of information that can be revealed using this source alone.

1.2 Identifying commercial property transactions on the stamp duty returns:

On the stamp duty forms, there is a question asking the buyer to identify the property as residential, non-residential or mixed-use i.e. part residential and part non-residential. For non-residential and mixed-use properties, there is another question asking buyers to categorise the property into the following types:

- New commercial / industrial premises
- Second-hand commercial /industrial premises
- Site only
- Agricultural land
- Non-agricultural land
- Intangible property
- Other

The first two categories are relevant for commercial property statistics while the other five categories are excluded from the analysis. The problem with relying on this question to categorise non-residential properties and the non-residential component of mixed-use properties is that the question is not relevant in terms of the assessment of stamp duty and the answer provided does not impact on the amount of tax owed. Therefore, this raises a question about the quality of the responses. Unfortunately, there is no further detail asking respondents to classify the properties into, for example, retail, office and industrial. This issue will be pursued with the Revenue Commissioners to ensure we are isolating the correct transactions relevant for a commercial property price index.

Helpfully, for mixed-use properties the stamp duty return requests the consideration amount (i.e. price) to be broken down between the residential and non-residential components. This allows for a practical implementation of the definition of commercial property provided as part of the European System Risk Board (ESRB) recommendation. The ESRB definition says, “if a property has a mixed use, it should be considered as different properties (based for example on the surface areas dedicated to each use) whenever it is feasible to make such breakdown; otherwise, the property can be classified according to its dominant use”.

For a CPPI (similar to the RPPI) only open-market transactions are relevant. The criteria for identifying open-market transactions used in this paper is as follows:

- No relationship between the buyer and seller e.g. transactions between associated companies.
- No relief or exemption from stamp duty was received.
- The consideration for stamp duty is greater than €10,000.

- The consideration for stamp duty was greater than or equal to the market value recorded on the stamp duty form.

1.3 Analysis of the stamp duty returns:

The surprising aspect of the analysis of the stamp duty returns is the significant quantity of non-market transactions i.e. 33% by volume and 36% by value over the period 2010 to 2018. Of the €58.2 billion in commercial property transactions, €21.0 billion can be classified as non-market transactions, see Table 2. The main driver of this figure were transactions between associated companies e.g. parent company and a subsidiary. These transactions invariably happen during group restructuring activities.

Table 2: Volume and value of commercial property transactions in Ireland, Jan 2010 to Nov 2018

Type of relationship between buyer and seller	Volume (number)	Value (€millions)
Open-market transactions	30,437	37,184
Some relationship between buyer & seller	9,143	15,408
of which:		
Associated Companies	2,053	12,889
Co-Shareholders	33	29
Director/ Company	2,309	1,688
Joint Owners	60	12
Lineal Relation / Consanguinity Relief	1,965	151
Partner/ Partnership	75	13
Related by Marriage	62	3
Spouse / Civil Partner / Cohabitant	1,828	96
Tenants-in-Common	219	46
Other	539	480
Other non-market transactions e.g. relief or exemption from stamp duty received	5,753	5,593
All transactions	**45,333**	**58,185**

Source: CSO calculations using stamp duty returns from the Revenue Commissioners

Figure 1, 2 and 3 below provide a picture of the monthly volume (number of properties transacted) and value (€millions of properties transacted) numbers for commercial property transactions. Figure 3 also includes residential property for comparison purposes. Figure 1 and 2 display transactions with and without the non-market transactions.

There are several features of these charts that are worth noting.

- The volume of open-market transactions was very low when the commercial property market was depressed in Ireland in 2010 and 2011 (Figure 1). The average monthly number of transactions during 2010/2011 was 66 and only increased to an average of 468 during 2015/2016 when the market was relatively buoyant. The respective numbers for residential property are 1,504 and 3,357 (not included in the charts below). It should be noted that these numbers include all types of commercial property e.g. retail, office, industry etc. Given that it is advised to compile a separate index for each of these categories, it shows the difficulty with compiling a commercial property price index even if all characteristic information can be successfully collected. **This would lead us to conclude that the frequency of a future CPPI for Ireland would be quarterly at best and very likely annual.**

- The proportion of non-market transactions is significantly higher in the downturn (64% in 2010/2011) compared to the period when the market recovered (24% in 2015/2016). This exacerbates the problem of compiling price indices during a downturn in the economy when transaction volumes are already low. As noted earlier, the average figure for the full period from 2010 to 2018 was 33%.

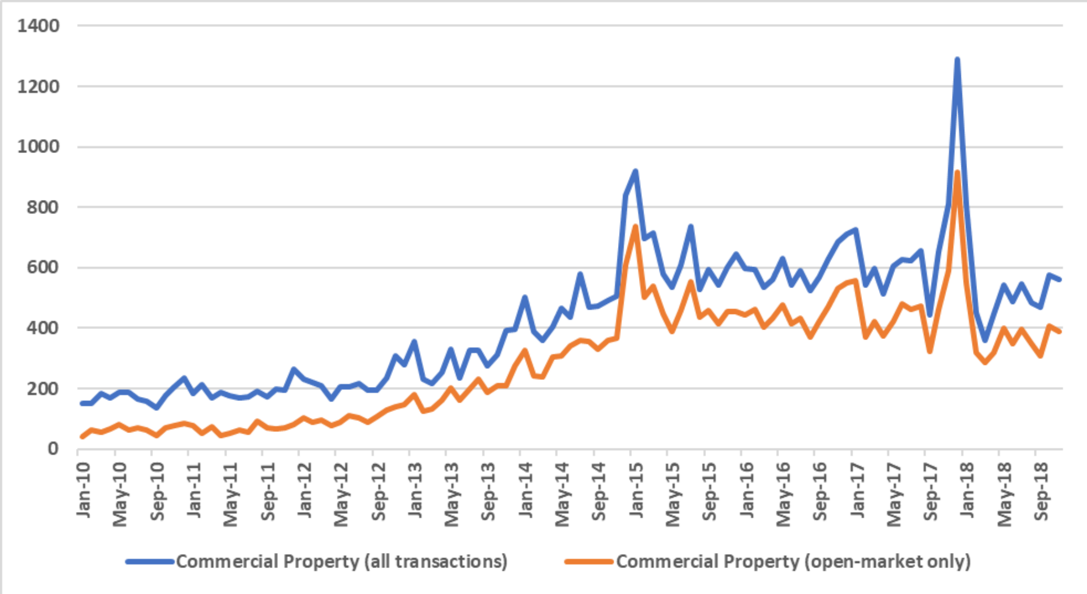
- The monthly value of commercial property transactions is very volatile (Figure 2). Interestingly, this volatility is reduced when the non-market transactions are removed from the data. It seems that the corporate restructuring activity, which is deemed non-market, is happening in a seasonal pattern with a peak during July and then again in December/January.

- The low value of commercial property transactions (open-market) during the downtown in 2010/2011 was a monthly average of just €55 million (Figure 2). This compares to a monthly average of €657 million during the recovery in 2015/2016. The equivalent figures for residential property are €369 million and €792 million (Figure 3).

- Over the full period 2010 to 2018, the volume of commercial property transactions was 30,437 (Figure 1) compared to 275,636 in residential property (not shown in graph). In terms of the value of transactions over the same period, commercial property (open-market) accounted for €37.2 billion while residential property (open-market) involved €66.9 billion (Figure 3).

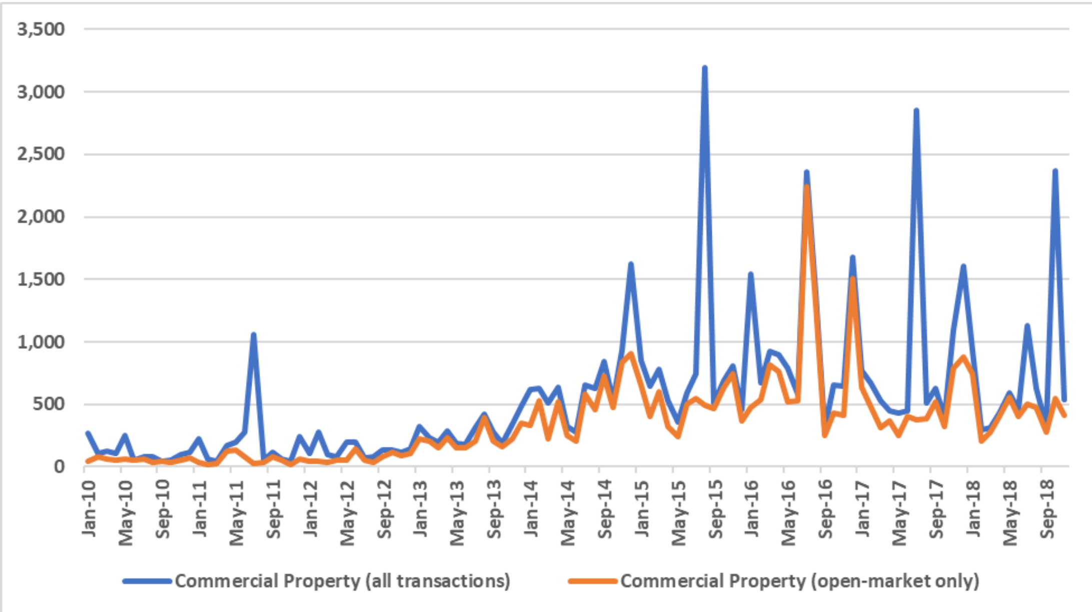
Figure 4 displays the median prices for both commerical and residential property between January 2010 and November 2018. While the relatively homogenous residential property market shows a trend of decline and recovery which closely tracks the quality-adjusted RPPI, there is no discernible trend for the more heterogenous commercial property market (nor would we expect there to be). The reason to include this graph is to show the importance of having the additional characteristic information for commercial property transactions. The aim would be to collect the characteristic information so that this graph is able to display median prices per square metre for different types of commercial property in specific locations.

Figure 1: Volume of commercial property transactions, January 2010 to November 2018



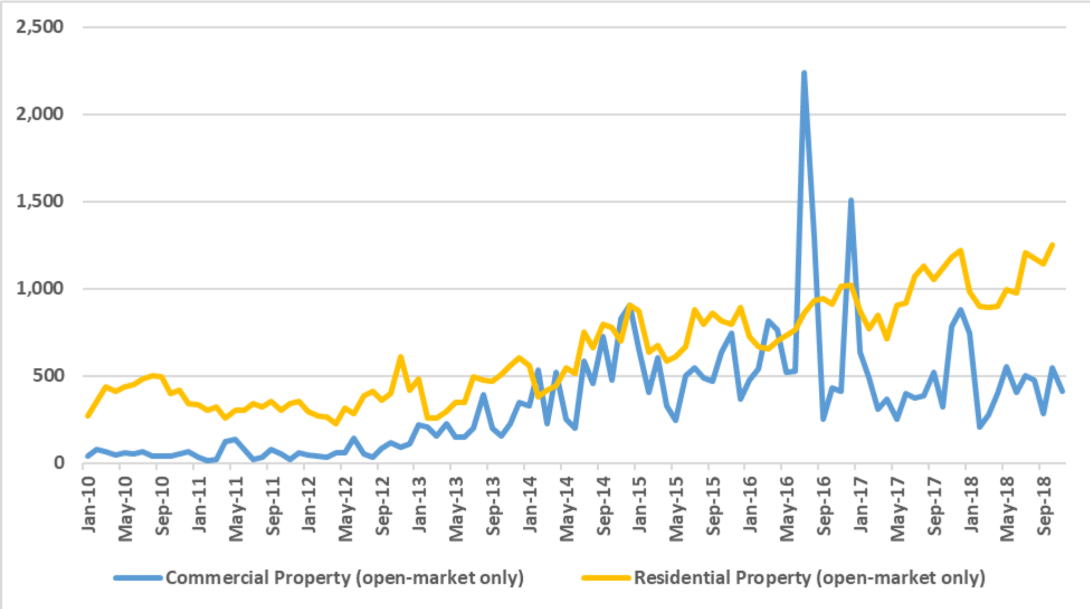
Source: CSO calculations using stamp duty returns from the Revenue Commissioners

Figure 2: Value (€millions) of commercial property transactions, January 2010 to November 2018



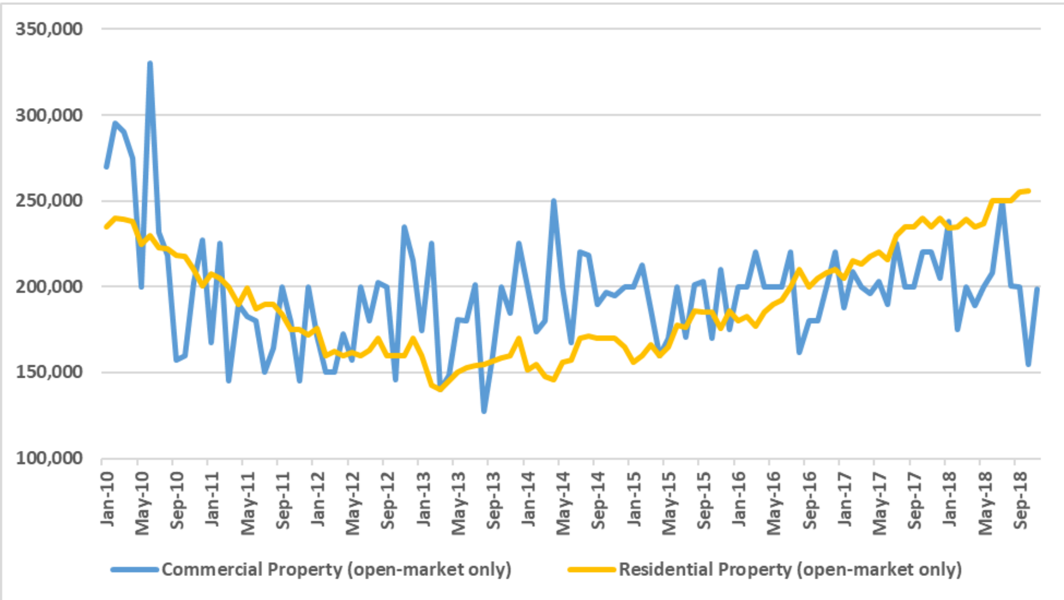
Source: CSO calculations using stamp duty returns from the Revenue Commissioners

Figure 3: Value (€millions) of commercial & residential property transactions, January 2010 to November 2018



Source: CSO calculations using stamp duty returns from the Revenue Commissioners

Figure 4: Median prices (€s) of commercial & residential property transactions, January 2010 to November 2018



Source: CSO calculations using stamp duty returns from the Revenue Commissioners

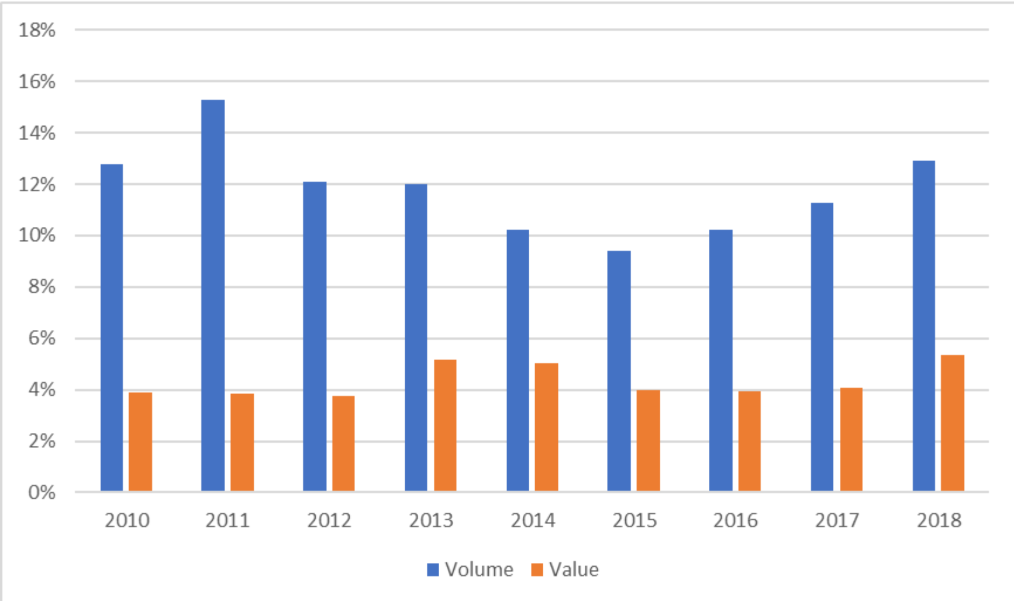
Figures 5, 6 and 7 look at three other aspects of the asset market for commercial property namely mixed-use properties, new commercial properties and the dominance of the Dublin region.

- Figure 5 - as noted previously, the stamp duty returns conveniently split the transaction value for mixed-use properties between residential and non-residenital. Mixed-use properties are significant in terms of volume (range of 9.4% to 15.3% of total volume) but the commercial component of mixed-use properties is less significant in terms of the overall value of commercial property transactions (range of 3.8% to 5.3% of total value). This is reassuring in the sense that it would be quite challenging to accurately attach characteristic information to the commercial component of mixed-use properties.

- Figure 6 - the volume and value numbers for transactions in new commercial property transactions became almost neglible in the 2013 to 2017 period. This is likely due to the collapse of investment in and construction of commercial property post-downturn and the lengthy lead-in time required to subsequently increase the supply of new commercial properties.

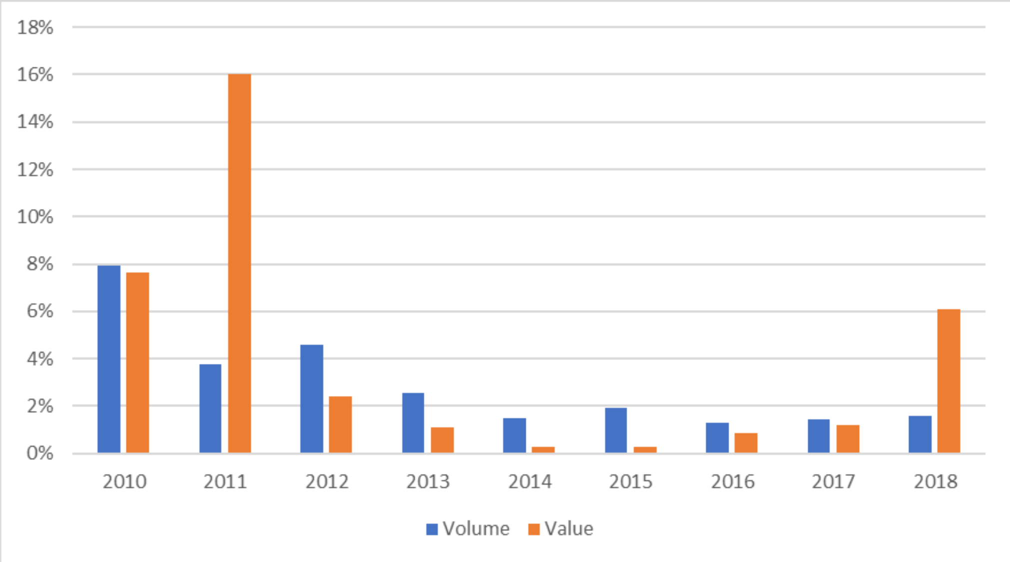
- Figure 7 - the Dublin region dominates in terms of the value of commerical property transactions (range of 64% to 78% of the total value excluding 2010). When we analyse the Dublin region further, it appears the majority of large transactions occur in a couple of small areas near the centre of the city (not shown in graph).

Figure 5: Proportion of transactions (volume & value) categorised as mixed-use commercial property, 2010 to 2018



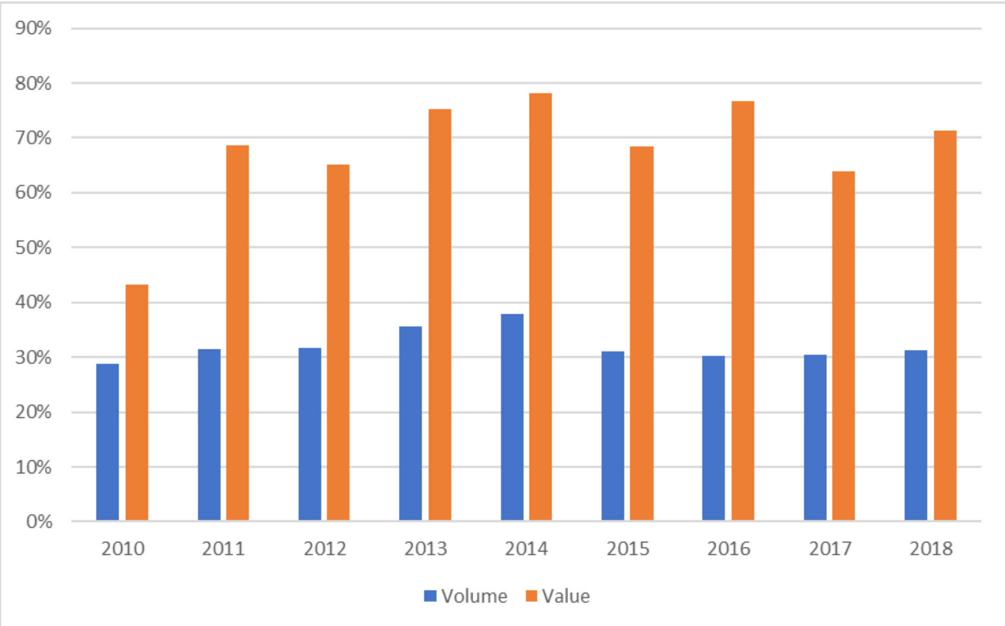
Source: CSO calculations using stamp duty returns from the Revenue Commissioners

Figure 6: Proportion of transactions (volume & value) categorised as new commercial property, 2010 to 2018



Source: CSO calculations using stamp duty returns from the Revenue Commissioners

Figure 7: Proportion of commercial property transactions (volume & value) located in the Dublin region, 2010 to 2018



Source: CSO calculations using stamp duty returns from the Revenue Commissioners

2. Rental index and rental yield index

2.1 Introduction

The most likely source of information for a rental index (and likewise a rental yield index) in Ireland is the register of commercial leases (the Register). It is produced by the Property Services Regulatory

Authority (PSRA) under the terms of the Property Services (Regulation) Act, 2011. It covers all commercial lease types – office, retail, industrial alongside agricultural (and land leases) plus those classified as other usage – and the filing requirements are applicable to any holder (i.e. the tenant) entering into a commercial lease[3], including any person, body, company, organisation or public institution. For all commercial leases entered into since January 2010, the Register contains the following information:

i. The address of the commercial property subject to the lease;
ii. The date of the lease on the property;
iii. The term of the lease (in years); and
iv. The rent payable under the lease.

In the case of those commercial leases entered into after March 2012[4], further characteristic information on the commercial leases is collected by the PSRA. Note that this is in contrast to the situation examined in Section 1 of this paper where no additional collection of the important characteristic information on commercial property sales is carried out. The 2011 Act imposes an obligation on the tenant to provide the following information also:

i. The commencement date of the terms of the lease;
ii. Any capital contribution paid in respect of the property;
iii. The frequency of rent reviews;
iv. Liability for rates, insurance, service charges and repairs;
v. Particulars relating to rent-free periods; fitting-out time; fit-out allowances and capital considerations; and
vi. Particulars relating to any break clause in the lease.

At the time of writing, the Register contained records covering approximately 32,000 commercial leases[5]. Given that the legislation requires that the register provide details on all commercial leases entered into from 2010, this figure will also include expired (or inactive) leases.

2.2 Analysis of lease register

From 3rd April 2012, it is a legal requirement for tenants of commercial leases to furnish a return directly to the PSRA. An analysis by the authors indicates that approximately 98 per cent of all commercial leases currently held on the Register relate to the seven-year period spanning 2012 through 2018 (Figure 8). Some 36 per cent of all commercial leases to date relate to agricultural (or land) usage with office and retail accounting for more than 41 per cent of all leases. Leases undertaken for 'other' purposes – such as public houses and hotels – accounted for 17 per cent (Figure 9).

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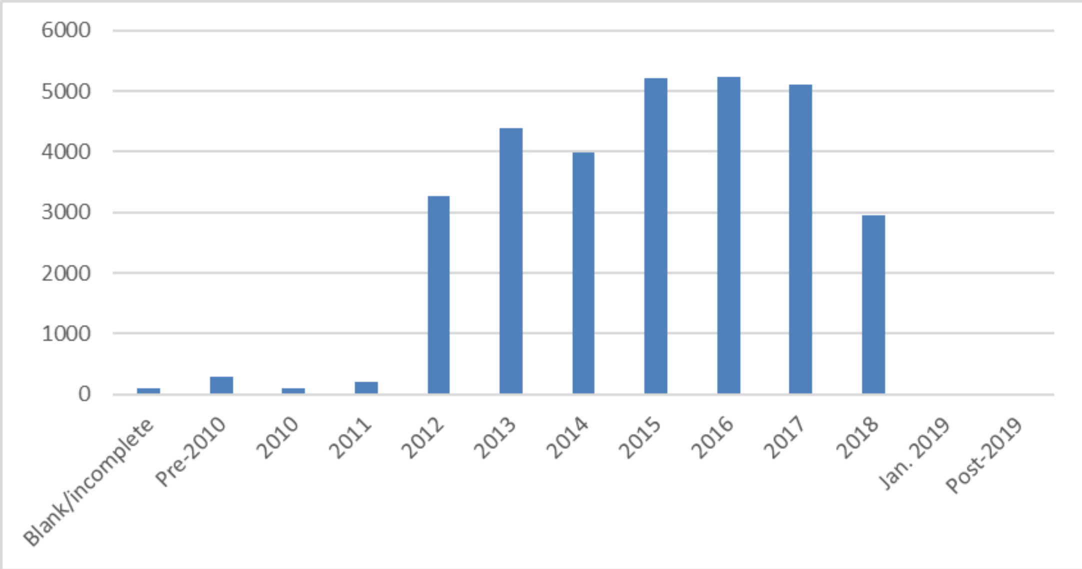
[3] Where said lease requires Stamp Duty to be paid to the Office of the Revenue Commissioners.

[4] In the case of those commercial leases entered into pre-April 2012, the Register is compiled using administrative data provided by the Office of the Revenue Commissioners.

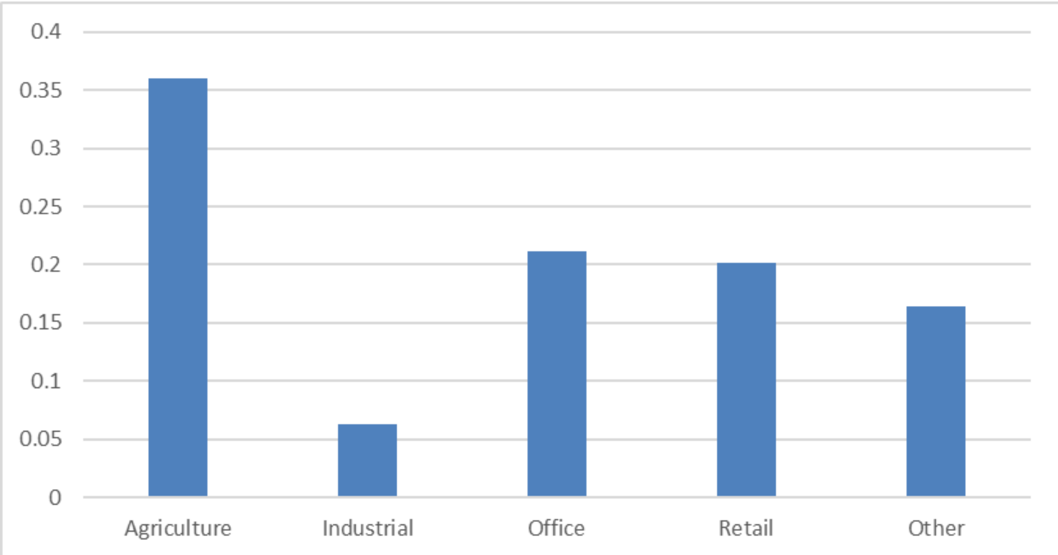
[5] The authors understand that closer to 71,000 commercial leases had been notified to the Office of the Revenue Commissioners via Stamp Duty returns (or SDRs) submitted over this period. The target rate for compliance is 75 per cent whereas the actual compliance was currently closer to 59 per cent in 2018. The compliance rate is calculated by means of a comparison of the volume of commercial leases published on the Register at present versus the volume of SDRs submitted to the Office of the Revenue Commissioners.

Figure 8: Distribution of commercial lease returns submitted (by year)



Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed such that n=30,898

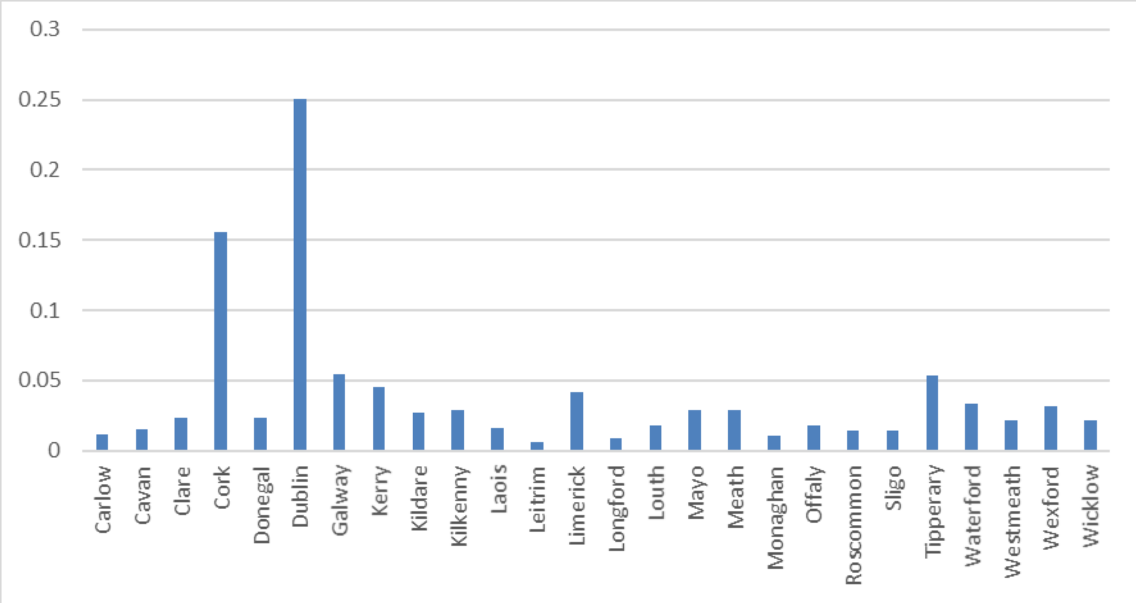
Figure 9: Distribution of commercial lease returns submitted (by property description)



Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed such that n=30,898

Commercial leases were furnished by enterprises in each county through the State. Approximately 25 per cent of all leases relate to enterprises based in Dublin with Cork and Galway accounting for 16 per cent and 5 per cent, respectively. Interestingly, Dublin accounted for 59 per cent of all office leases. The comparable figure for industrial and retail operations was 36 per cent and 32 per cent, respectively. By contrast, less than one per cent of all agriculture-related leases were in Dublin. This rises to 10 per cent in the case of Tipperary and 22 per cent in Cork (Figure 10 and Table 3).

Figure 10: Distribution of commercial lease returns submitted (by county)



Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed such that n=30,898

Table 3: Cross-tabulation of property description and county

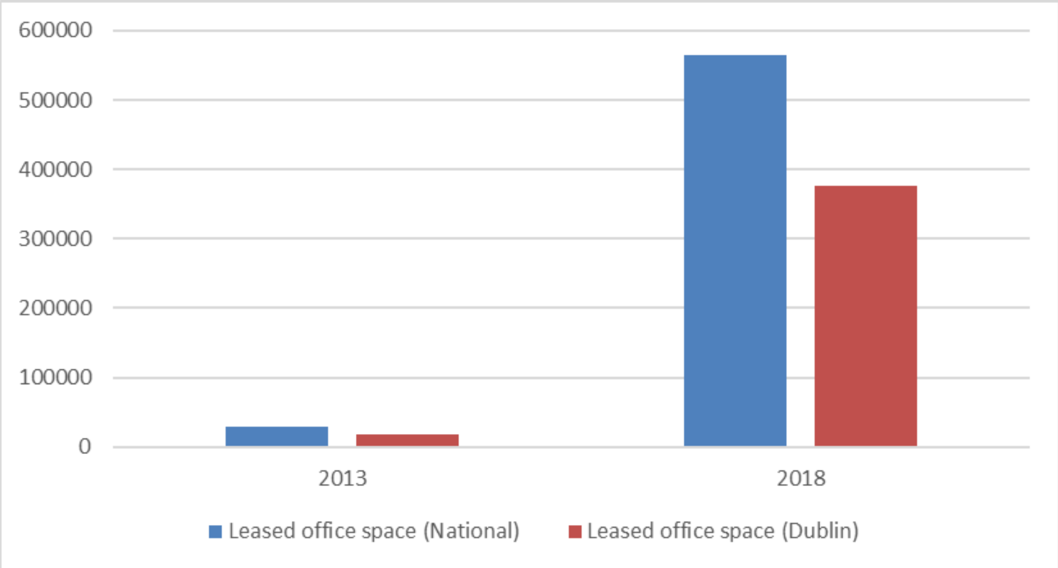
	Agriculture	Industrial	Office	Retail	Other
Carlow	2%	1%	0%	1%	1%
Cavan	2%	1%	1%	2%	2%
Clare	2%	4%	2%	2%	4%
Cork	22%	15%	10%	11%	13%
Donegal	2%	2%	1%	2%	3%
Dublin	1%	36%	59%	32%	23%
Galway	5%	4%	4%	6%	6%
Kerry	5%	3%	3%	5%	6%
Kildare	2%	4%	2%	3%	3%
Kilkenny	5%	1%	1%	2%	2%
Laois	3%	1%	0%	1%	1%
Leitrim	1%	1%	0%	0%	1%
Limerick	5%	5%	3%	4%	4%
Longford	1%	0%	0%	1%	1%
Louth	1%	2%	1%	3%	3%
Mayo	4%	2%	1%	3%	3%
Meath	4%	3%	1%	2%	3%
Monaghan	1%	1%	0%	1%	1%
Offaly	3%	1%	1%	1%	2%
Roscommon	2%	1%	0%	1%	1%
Sligo	2%	2%	1%	2%	1%
Tipperary	10%	2%	1%	3%	4%
Waterford	5%	3%	2%	3%	3%
Westmeath	3%	2%	1%	2%	2%
Wexford	4%	2%	1%	3%	3%
Wicklow	2%	4%	2%	3%	3%
Total	100%	100%	100%	100%	100%

Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed.

2.3 Developments in the supply of leases space

In the case of all new commercial leases registered in 2013, the aggregate volume of leased office space was 29,000 sq. m. Office space let in Dublin accounted for 65 per cent of this total. Over time, however, the demand for additional office space within a recovering economy is reflected in these figures with approximately 565, 000 sq. m. of office space let under new leases registered in 2018[6]. The Dublin office market also underwent a significant expansion over the same period with an additional 377, 000 sq. m. let in 2018 (Figure 11a).

Figure 11a: Trend in leased office space, 2013 and 2018

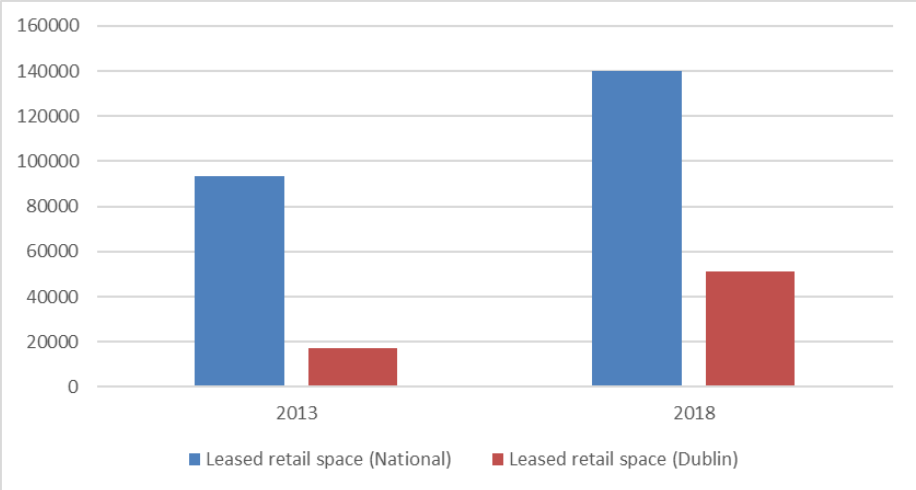


Source: Register of commercial leases (PSRA) and analysis by authors
Note: (i) Excludes those cases where property location (county) and /or property description (usage) were not completed. Also, only includes those cases where an annual market rent and the total area of the leased property was reported.
(ii). Figures relate to the aggregate volume of space for commercial leases registered in 2013 and 2018.

With regard to retail and industrial operations, a similar pattern of expansion can be seen in the data presented here (Figures 11b and 11c). For instance, new letting of retail space nationwide was 50 per cent higher in 2018 when compared to 2013. In the Dublin retail market, however, the equivalent was 194 per cent as it rose from 17,000 sq. m. to 51,000 sq. m. In the case of industrial operations, the volume of space let nationwide expanded at a faster rate than in Dublin alone. As a result, the proportion of the total new space let that was attributable to the Dublin market was 41 per cent in 2018 (compared to 60 per cent in 2013).

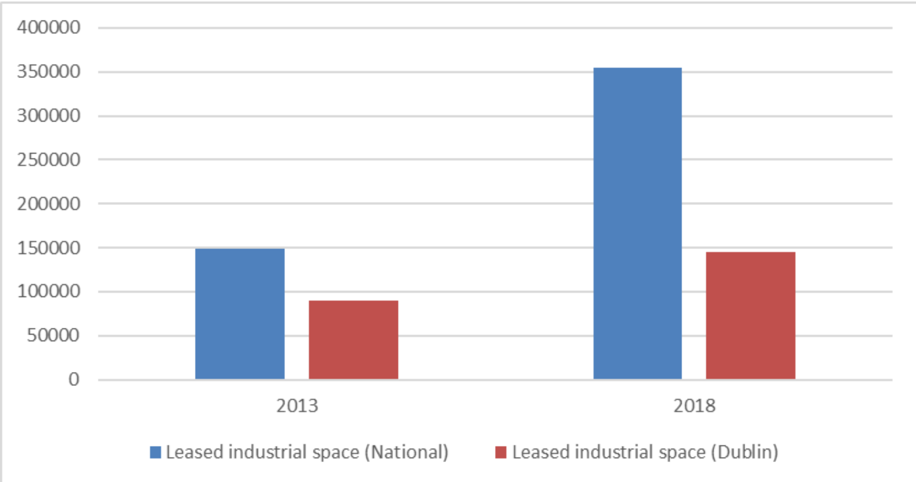
[6] This refers specifically to 'new' leases registered with the PSRA in 2018 only. This does not take cognisance of all office space let in 2018 (i.e. the total market). It should also be borne in mind that the PSRA Register does not have complete coverage of all commercial leases.

Figure 11b: Trend in leased retail space, 2013 and 2018



Source: Register of commercial leases (PSRA) and analysis by authors
Note: (i) Excludes those cases where property location (county) and /or property description (usage) were not completed. Also, only includes those cases where an annual market rent and the total area of the leased property was reported.
(ii). Figures relate to the aggregate volume of space for commercial leases registered in 2013 and 2018.

Figure 11c: Trend in leased industrial space, 2013 and 2018



Source: Register of commercial leases (PSRA) and analysis by authors
Note: (i) Excludes those cases where property location (county) and /or property description (usage) were not completed. Also, only includes those cases where an annual market rent and the total area of the leased property was reported.
(ii). Figures relate to the aggregate volume of space for commercial leases registered in 2013 and 2018.

2.4 Preliminary analysis of the average cost per sq. m.

In the first instance, any analysis of the cost of commercial lettings needs to take cognisance of properties leased between affiliated parties at a low (or non-market) rent and/or the incidence of peppercorn rents[7] (Figure 12). To this end, the authors amended the database to remove some 4,000 leases (or 12 per cent) where no rent – or a very low rent – was reported. This was done in order to optimise the probability that the results that follow relate solely to market rents.

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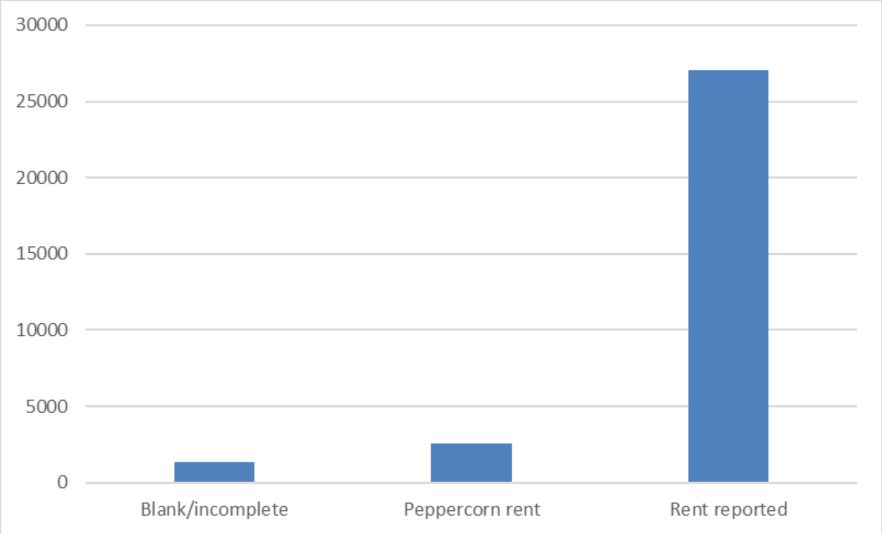
[7] The Register contains no specific flag to denote affiliated party transactions. A peppercorn rent refers to a rent at a small (or nominal) rent used to satisfy the requirements for the creation of a legal contract. The authors have designated a peppercorn rent as all those cases where the annual amount payable was less than €1,000.

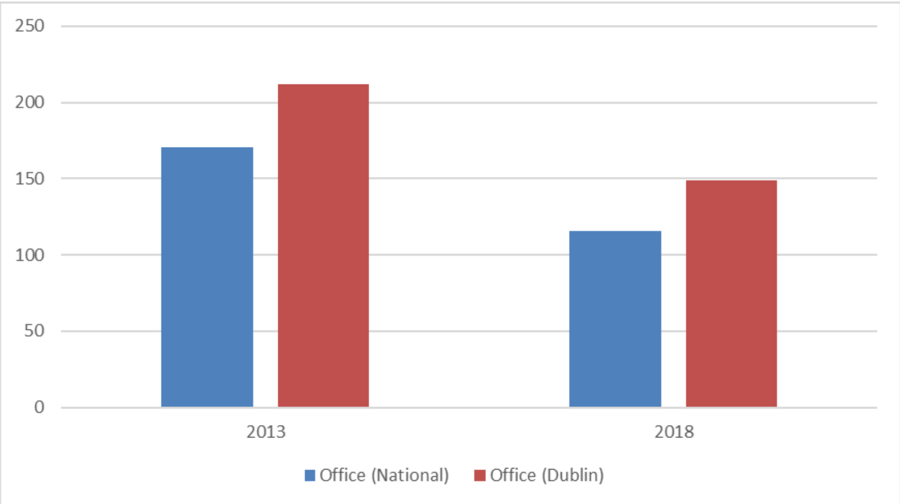
Figure 12: Profile of reported rents



Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed. Also, only includes those cases where an annual market rent and the total area of the leased property was reported.

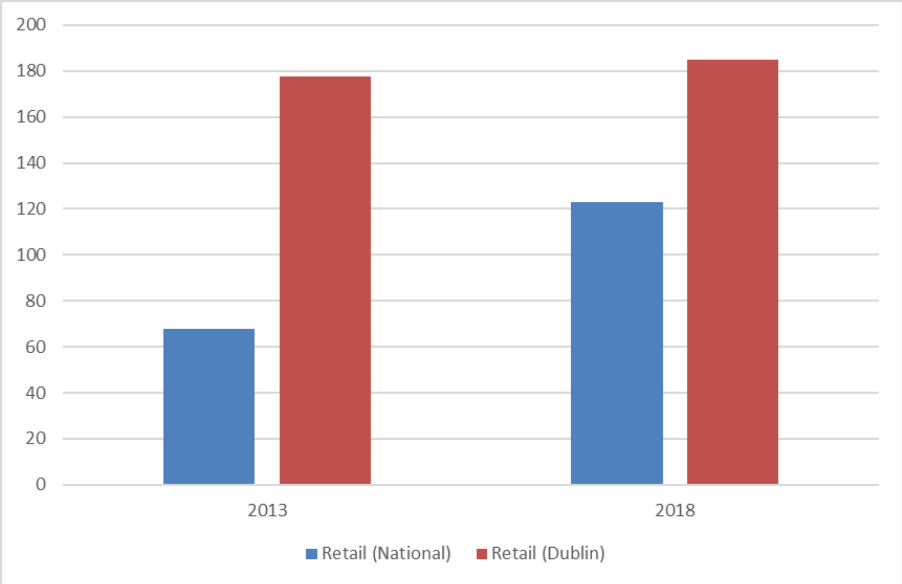
Our preliminary analysis of the data indicates that the average cost per sq. m. in 2013 of office space nationally and in Dublin was €170 and €211, respectively. Over the same period as the supply of newly let office had expended, the cost of office space eased back (Figure 13a). In the case of retail lettings, the cost actually increased over the same five-year period. This stood at €122 for lettings nationwide and €184 in Dublin. The cost of letting industrial space also increased (Figures 13b and 13c).

Figure 13a: Average market rent per sq. m. in the office market, 2013 and 2018



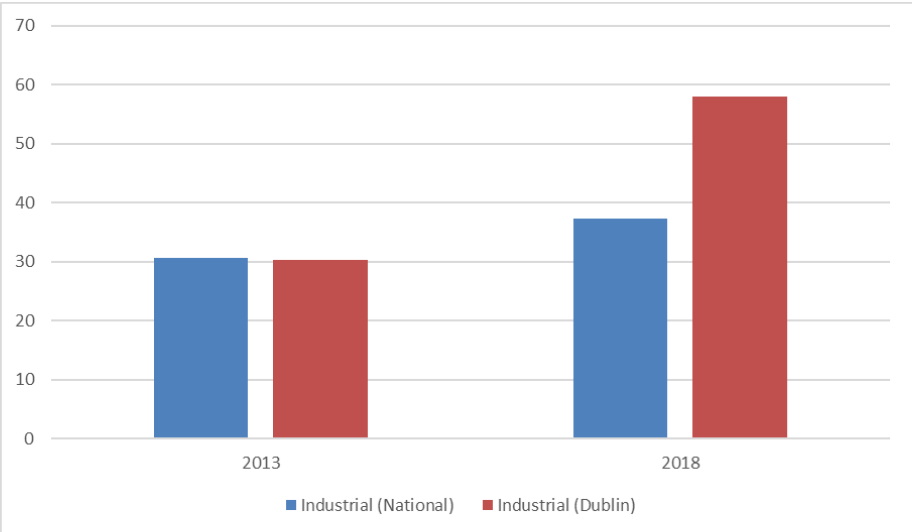
Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed. Also, only includes those cases where an annual market rent and the total area of the leased property was reported.

Figure 13b: Average market rent per sq. m. in the retail market, 2013 and 2018



Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed. Also, only includes those cases where an annual market rent and the total area of the leased property was reported.

Figure 13c: Average market rent per sq. m. in the industrial market, 2013 and 2018



Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed. Also, only includes those cases where an annual market rent and the total area of the leased property was reported.

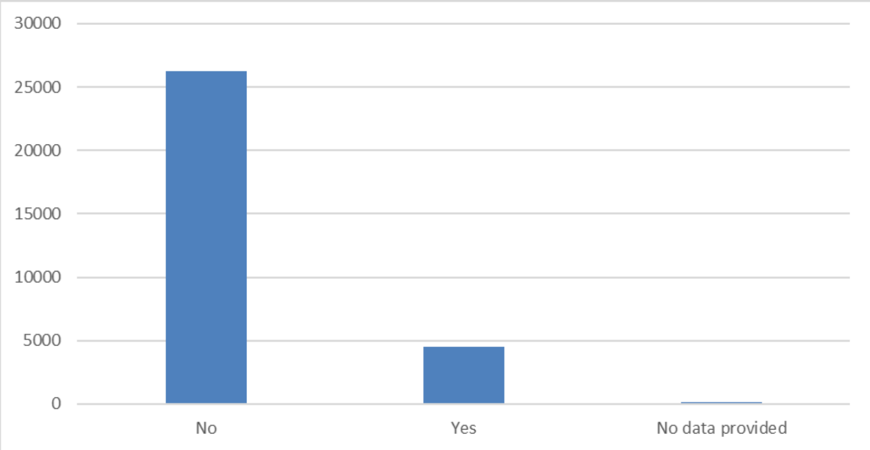
2.5 Additional cost considerations

Beyond considerations relating to the average cost per sq. m., there are a range of other factors that will influence the cost of operating a let premises over the duration of the lease. These will include the availability of rent-free periods and the allocation of responsibility for the costs of initial fit-out and repairs. Furthermore, the cost of capital considerations and capital contributions are also important. The former relates to a payment to a landlord to acquire a property in a premium location (or a payment to a tenant to incentive the taking of a property in a less popular location).

The latter relates to a payment by a tenant to the landlord (or from a landlord to a tenant) as a contribution to service connections and structural alterations.

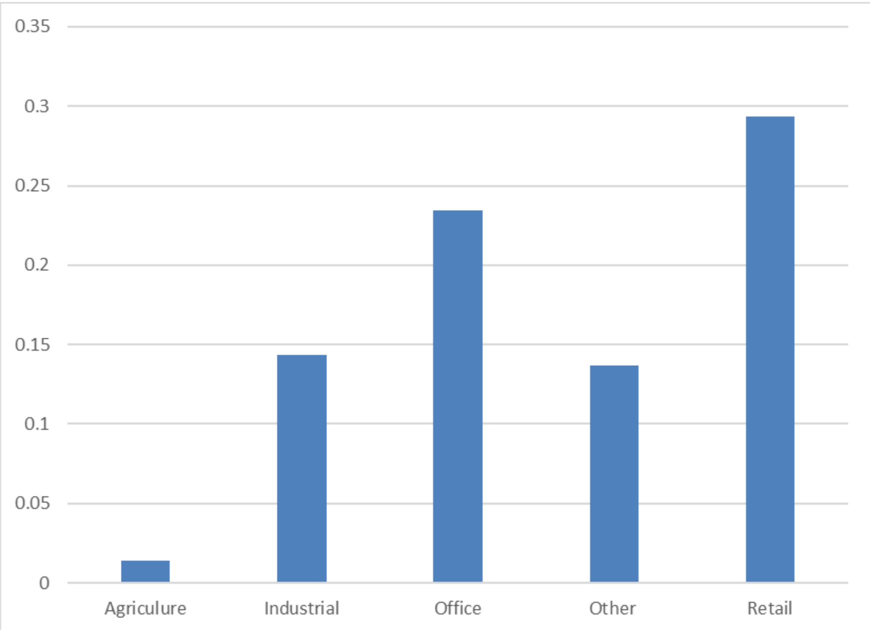
In 15 per cent of all commercial leases examined, a rent-free period was stipulated. The prevalence of such provisions was markedly higher for retail and office lettings than for other types of commercial usage (Figures 14a and 14b).

Figure 14a: Incidence of rent-free periods agreed



Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed.

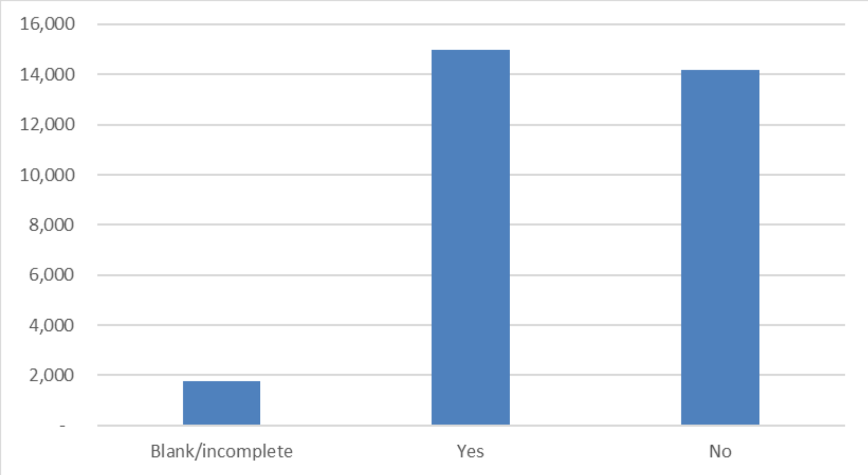
Figure 14b: Incidence of rent-free periods agreed (by property description)



Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed.

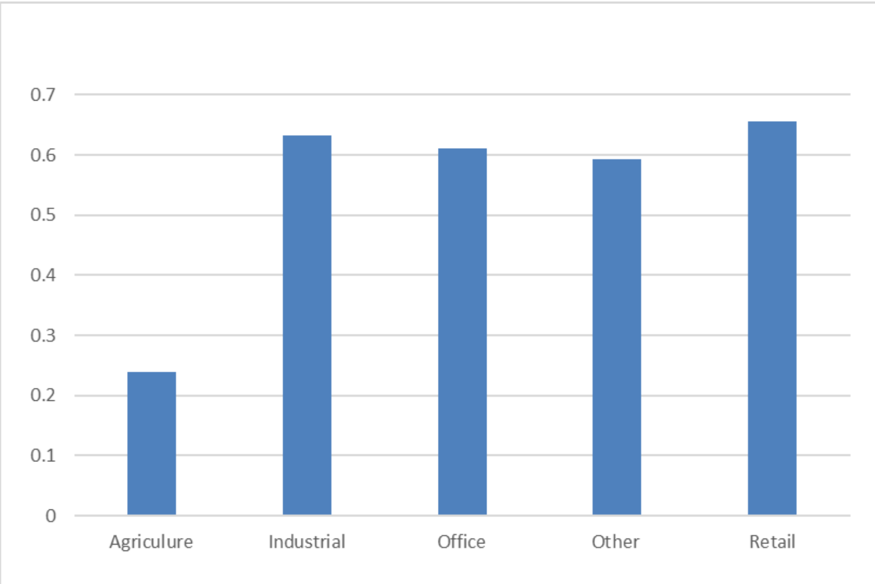
In almost half of all cases examined, the tenant reported that he/she was responsible for repairs. The data indicates that this distribution of responsibility was most common where property was let for industrial, office, retail or other purposes. (Figures 15a and 15b).

Figure 15a: Incidence of tenant responsibility for repairs



Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed.

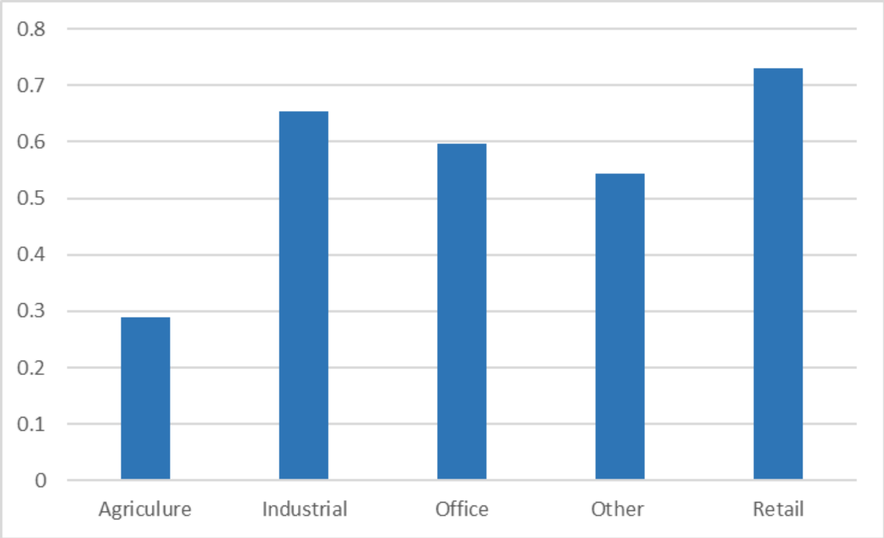
Figure 15b: Incidence of tenant responsibility for repairs (by property description)



Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed.

In more than half of all cases examined, the tenant reported that he/she had sole responsibility for fit-out costs. Similar to the rent-free period, the distribution of responsibility was most common where property was let for industrial, office, retail or other purposes (Figures 16).

Figure 16: Incidence of tenant responsibility for fit-out costs



Source: Register of commercial leases (PSRA) and analysis by authors
Note: Excludes those cases where property location (county) and /or property description (usage) were not completed.

3. Building permits, starts and completions

3.1 Background

The Short-Term Statistics Commercial Real Estate Indicators are comprised of building permits, construction starts, works completions and vacancy rates. This section is concerned with building permits, construction starts and work completions while vacancy rates will be dealt with separately in Section 4. The following will assess the current data sources available in Ireland with the view to creating a pipeline of commercial construction projects from planning permission to commencement to completion.

The datasets analysed in this section are as follows:

- The Building Control Management System (BCMS) from the Local Government Management System (LGMA),
- The National Planning Applications Database (NPAD) from Department of Housing, Planning and Local Government and
- Construction Information Services (CIS) which is a private provider of construction information in Ireland

Unlike the previous two sections, at the time of writing the authors had not yet received access to the datasets (apart from the open-source NPAD). Therefore, this section is a descriptive analysis of the datasets rather than a statistical analysis.

3.2 Starts and Completions - Building Control Legislation in Ireland

The Building Control Acts 1990 to 2014 are the basis of building control, it allows for the establishment of Building Regulations and Building Control Regulations and establishes a statutory duty to design and construct buildings according to the regulations. 31 Local Authorities are designated as Building Control Authorities under these Acts. The Building Control Authorities have the right to request information and inspect works to which the regulations apply. They also have powers in relation to enforcement and prosecution where there is non-compliance with the regulations. These rights are discretionary rather than obligatory and the responsibility for compliance rests with the designers, builders and building owners. If a person is found guilty of an offence in contravention of building control regulations, they are liable to a fine of up to €50,000 and/or imprisonment of up to two years.

On 1 March 2014 new regulations (S.I. 9 of 2014), relating to the commencement and certification of construction works, came into effect.

A commencement notice is notice of the intention to carry out any works (defined in the regulations as "any act or operation in connection with the construction, extension, alteration, repair or renewal of a building") to be uploaded to the Building Control Management System (BCMS) or supplied to the relevant Building Control Authority not less than fourteen days and not more than twenty-eight days before the commencement of the works. This time frame starts from the date upon which the notification is received by the Building Control Authority and no building works can commence on site prior to the date that is given on the form. A valid Fire Safety Cert is required before a commencement notice can be lodged in the case of commercial construction. Where a Fire Safety Cert has not yet been granted an alternative 'fast-track' notice of commencement of work, a 7 day Notice, is required. The 7 day Notice application must be accompanied by a statutory declaration form which declares that the works will comply with the Building Regulations and that any modifications required by the fire safety certificate will be completed within the specified time. Works must commence not less than 7 days after the submission of the application.

A Certificate of Compliance on Completion must be filed and registered by the relevant building control authority before a building to which the regulations apply may be opened, occupied or used. Where a valid Certificate of Compliance on Completion has been administered, the building is listed on the National Statutory Building Control Register. There is currently no definition in the regulations concerning when construction is deemed to be completed.

The National Statutory Building register lists all new buildings with a valid Certificate of Compliance on Completion since 1 March 2014 and includes information such as property address, owner, submission date and planning permission number.

3.3 BCMS – administrative data source for starts and completions

The BCMS is an electronic building control management system operated across the Local Authority Sector, hosted by the Local Government Management Agency and facilitated through the Building Control Regulations outlined above. It is a shared services project established by a number of different stakeholders: The Local Government Management Agency, An Bord Pleanála, the 31 Local Authorities, industry and the Department of Housing, Planning Community and Local Government. The BCMS was developed to be used by individuals and Building Control Authorities as the preferred means of building control administration. The administration process has been streamlined and a culture of compliance promoted through a central system to manage, oversee and enforce building control regulations in Ireland.

Before 1 March 2014, building control administration was completed by the 34 Building Control Authorities in operation at the time, a number of amalgamations took place in mid-2015 resulting in the 31 Building Control Authorities currently in operation. The previous method of administration was both resource and time consuming, the process was paper based, and the Building Control Authorities had differing mechanisms.

The online system requires individuals to register in order fill out the required forms, upload documentation and pay the relevant fees. Users include owners, builders, assigned certifiers and designers. Once uploaded, documents are processed by the relevant Building Control Authority for validation. Users can also still carry out the process manually by going to their relevant Building Control Authority however the online method is encouraged through additional fees associated with completing the process this way. When the process is done manually, the documentation is uploaded to the BCMS by Building Control Authority personnel.

The design of the BCMS facilitates the possible use of the data to create a pipeline of construction in Ireland. The hope is to facilitate an index whereby construction of commercial property can be tracked from commencement to completion.

3.4 Usefulness of the BCMS

The CSO are currently awaiting access to the BCMS to identify the potential use of the data in the production of a pipeline of construction. However, some information is available within the CSO on the BCMS dataset due to its previous use for residential property. A limited data dictionary was also provided by the Local Government Management Agency (LGMA).

International organisations recommend different breakdowns for starts and completions. While the ECB (in response to draft legislation on business statistics in Europe) have recommended a breakdown by floor area and type of property for starts and completions, the ESRB in its 2016 report recommended a breakdown by location and type of property (specifically for construction starts). In any case, these three variables (floor area, location and type of property) are important characteristic information for starts and completions.

The BCMS contains data that can be used for each of these breakdowns as well as information surrounding planning permission reference numbers, builders, certifiers, detailed descriptions of works being carried out and phases of works.

In relation to property type there are two variables which may be of use. The first is “purpose group” (i.e. the intended purpose of the building) which is a mandatory field in the BCMS and must be selected from a list already provided. The second is “building name” where the user fills out a free-text box identifying the type of building.

County, Local Authority and floor area are all mandatory fields within the BCMS which will facilitate the breakdown by location and floor area.

Timeliness is not an issue in the BCMS as the data is uploaded intravenously as builders, owners etc. upload the documents themselves online. Users also have the option to bring the required documentation into the relevant Local Authority who then have the responsibility for uploading the information onto the system which may result in a delay.

The BCMS is conducted for administrative purposes and as a result, data is available for the entire population of commercial properties constructed since its inception. Works can be followed through the system from planning permission to commencement to completion and inclusion on the building register. Where works require planning permission, the relevant reference number is required for a Commencement Notice and where a Certificate of Compliance on Completion is being completed, the relevant Commencement Notice reference number is required. Therefore, from a technical point of view (not yet proven), the BCMS could potentially be utilised in constructing a pipeline of commercial construction.

3.5 Building permits – National Planning Application Dataset, possible use of private data (CIS)

Building permit (or planning permission) statistics are released on a quarterly basis by the CSO using monthly data sent by the Local Authorities. Each permission granted details the planning registration number, the local authority it pertains to, a description of the permission granted, the number of units included and the floor area.

The National Planning Application Dataset (NPAD) is an open-data source published by the Department of Housing, Planning and Local Government containing the merged Planning Registers of participating Irish Local Authorities and includes Planning Applications received since 2010. It has been developed as a method to drive change and encourage conformity in the approaches taken by Local Planning Authorities processing planning applications. Due to the varied nature of processing applications, there are some issues with consistency and validity. The system wasn't developed for statistical purposes, and was in fact designed to be read-only, resulting in a number of issues found within the data which need to be addressed if it is to be used in the construction of a pipeline of commercial construction.

Construction Information Services are a private provider of construction information in Ireland. CIS online is a construction database which contains real time information on construction projects. Their system contains planning registration numbers for each project which could be matched to the NPAD and the BCMS to aid completeness, validity and accuracy checks.

3.6 Problems and Data Quality

While the NPAD and BCMS contain information useful for the construction of a pipeline of commercial construction projects in Ireland, they were not designed for statistical purposes and as a result there are a number of underlying problems with the data. The design of the BCMS was driven by the needs of 31 different Local Authorities who each have differing procedures and practices. Consistency in the data is one problem due to this disparity. Similarly, the NPAD was developed to drive change and encourage consistency in planning permission application processing.

Planning permissions, Commencement Notices (or 7-day notices) and Certificate of Compliance on Completion notices are mandatory for commercial property construction and so completeness of the data shouldn't be of concern. However, one issue that has been identified is that the Commencement Notice and Certificate of Compliance on Completion reference numbers don't always match one for one. One Commencement Notice may have multiple Certificates of Compliance on Completion and vice versa. Also, while Commencement Notices require a Planning Permission reference number, it has been noted that in some cases there is no reference number quoted or the Planning Permission details do not match those of the Commencement Notice. These are key issues that will be addressed when access to the data is obtained.

Another problem with the BCMS and NPAD data relates to validity. As stated before, the 31 Building Control Authorities are separate entities with their own methods. In addition, the BCMS system is used by many different stakeholders and the formats used by all are not the same. Similarly, different systems are used by the Building Control Authorities for the Planning Permissions data displayed in the NPAD. The BCMS contains a number of dropdown boxes so observations for these variables will be uniform but others are free-text which results in a mix of formats. Likewise, various formats are observed in the NPAD for a number of variables.

In the BCMS, accuracy of the data is another data quality issue which needs to be addressed, problems surrounding quantity values have been identified where there are cases of units and buildings not matching and so further analysis into the accuracy of the data is needed.

Record level data analysis may be required to identify specific problems and find solutions. This analysis is currently employed by the Department of Housing, Planning and Local Government for housing commencements and similar methods could be utilised in analysing commercial commencements and completions.

Classification issues also arise in both the NPAD and the BCMS. In the published version of the NPAD there is no information regarding whether a property is commercial or not with the exception of the free text "Description" field. There is a further unpublished variable flagging commercial properties and further analysis is needed to assess the categorisation used. The classification system utilised in the BCMS consists of 35 sub-headings falling under the main headings of Residential (Institutional), Residential (Other), Office, Shop, Shopping Centre, Assembly and Recreation, Industrial, Storage, Agriculture and Other (Non-Residential).

While completeness, validity and accuracy of the data need to be measured it is clear from preliminary inspection that the NPAD and BCMS are viable sources for the creation of a pipeline of commercial construction in Ireland. Data quality problems will be addressed in full when access to the data is acquired while infrastructure issues will be addressed through communicating statistical needs over time. More standardised approaches to BCMS use and Planning Permissions application processes are needed across the 31 Building Control Authorities in order for the data to be effectively used. The aim of both the BCMS and the NPAD is to encourage coordination and it is envisaged that with time the processes will become more consistent as the individual Building Control Authority methods become more harmonised. In addition, research such as that undertaken for the purpose of this paper and future research will highlight the areas where the largest disparities are apparent and emphasize the areas where the most work is needed to achieve this harmonisation.

Moving forward, the challenge will be to compile a register of starts and completions using the BCMS and, if possible, to match the BCMS data and the NPAD data using the planning registration number. It remains a possibility to include private data sources such as Construction Information Services to provide supplementary information in the construction of such a register.

4. Vacancy rates

4.1 Potential use of the Geodirectory

Vacancy rates are a physical indicator of the balance of supply and demand in the space market. This section will outline the current publication of vacancy rates in Ireland and assess the viability of the production of official vacancy rates given existing data sources. Vacancy rates in Ireland are produced by private data providers EY-DKM Economic Advisory Services and published on a bi-annual basis in the GeoView report.

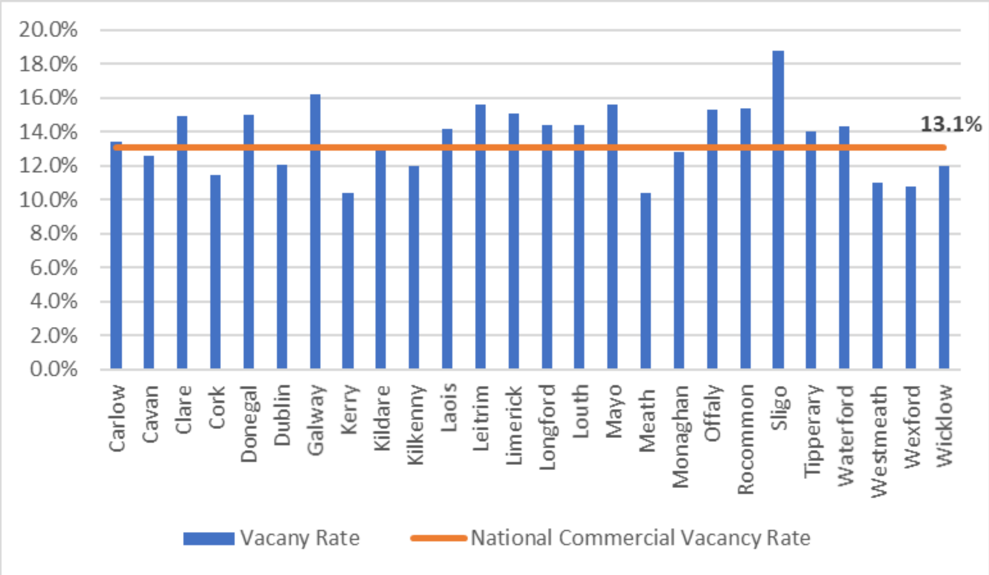
The GeoDirectory is the sole source used for the production of vacancy rates in the GeoView report, the database is a jointly established service by An Post and Ordnance Survey Ireland, a national mapping body. The GeoDirectory contains 210,000 commercial building records and includes a range of variables on commercial address points such as:

- Address Point for each unit
- Postcodes
- XY Coordinates
- Vacancy / Derelict
- Under Construction
- Address Points by Town and County
- Type of business operating in unit, according to NACE code classifications.

Commercial properties are defined as all non-residential address points for the purpose of the report. Also excluded are units classified as Agriculture, Forestry and Fishing and Extraterritorial

Organisations and Bodies (e.g. Embassies). Commercial address points are coded by economic activity (i.e. NACE Codes) and address points are defined as units rather than buildings which may be comprised of more than one unit.

Figure 17: Commercial Vacancy Rates by County Q2 2018[8]



The most recent GeoView report identified the national commercial vacancy rate as 13.1% (Figure 17). However, this is in terms of address points where 27,833 out of 212, 243 commercial address points were classified as being vacant. In the report an address point is defined as "a unit as opposed to a 'building' which can comprise one or more units". While the GeoDirectory is a the most comprehensive and up-to-date source of information on commercial stock, it does not contain information on the floor area of buildings or direct information on the type of commercial properties. For example, it does not categorise commercial property into office, retail, industrial and other uses. Another source of building stock data which does contain this information is the Valuations Office database.

Previous research in the CSO looked at matching the GeoDirectory with the Valuations Office in an effort to gauge the housing stock by floor area. While it was found that overall there was an 85% match for the test file a number of methods were employed to achieve this match rate. Approximately 30% were matched easily with either an address or an XY coordinate matching exactly. 45% were identified using the Jaro-Winkler fuzzy matching algorithm in SAS (Statistical Analysis Software) with manual acceptance/non-acceptance required for the suggested matches. The remaining 10%+ were matched using a manual search including some internet research which was a very resource intensive process.

While data matching was possible in 85% of cases, in terms of practicalities, the process is manual, time consuming and very resource intensive. There are also a number of key quality issues such as uncertainty regarding matching like for like, for example possible discrepancies in matching the correct floor area with the correct address points. Solutions to these problems need to be addressed and while possible, matching these two databases on a continuing basis isn't feasible due to the resource intensive nature of the work.

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[8] GeoView https://www.ey.com/Publication/vwLUAssets/EY-geoview-Q2-2018-commercial-vacancy-rates-report/$FILE/EY-geoview-Q2-2018-commercial-vacancy-rates-report.pdf

The key issue with calculating a vacancy rate in Ireland is that there is no full commercial building stock expressed in terms of floor area, which is needed to calculate the vacancy rate. The formula for the vacancy rate is vacant space divided by total amount of space, both expressed in square meters. Without the total commercial building stock broken down by floor area it isn't currently possible to produce an accurate vacancy rate.

5. Credit exposure and lending standards

5.1 Introduction

The Central Bank of Ireland publishes Business Credit and Deposits data on a quarterly basis. These are based upon a survey where the reporting population are all credit institutions resident in Ireland[9]. These cover the main asset and liability categories of within-the-State offices of credit institutions, where the counterparty of the credit institution is a private-sector enterprise, irrespective of its legal form (corporation, partnership, sole trader etc.). Credit institutions are undertakings whose business is to receive deposits or other repayable funds from the public and to grant credits for their own account and/or issue means of payment in the form of electronic money.

The sector breakdown provided in Business Credit and Deposits is defined by the functional sector classification based on NACE Rev. 2[10]. In so doing, the Central Bank of Ireland provides data on loans to Non-Financial Corporations (NFCs) at a lower level of disaggregation than stipulated under the ECB's Guideline ECB/2014/15 on monetary and financial statistics.

5.2 CRE lending: stocks and flows

Since 2010, the total stock of lending to the construction and real estate[11] sub-sectors have decreased from €58.6 billion to €14 billion. Both of these sub-sectors consist of activities related to commercial real estate, residential real estate and other developments (including civil engineering, etc.). Lending designated as 'construction' is the smaller component of the aggregate total, accounting for just 5 per cent of the loans outstanding by q3 2018 (or €711 million). This represented a fall of 79 per cent when compared to the loans outstanding in q4 2010 (or €3.5 billion).

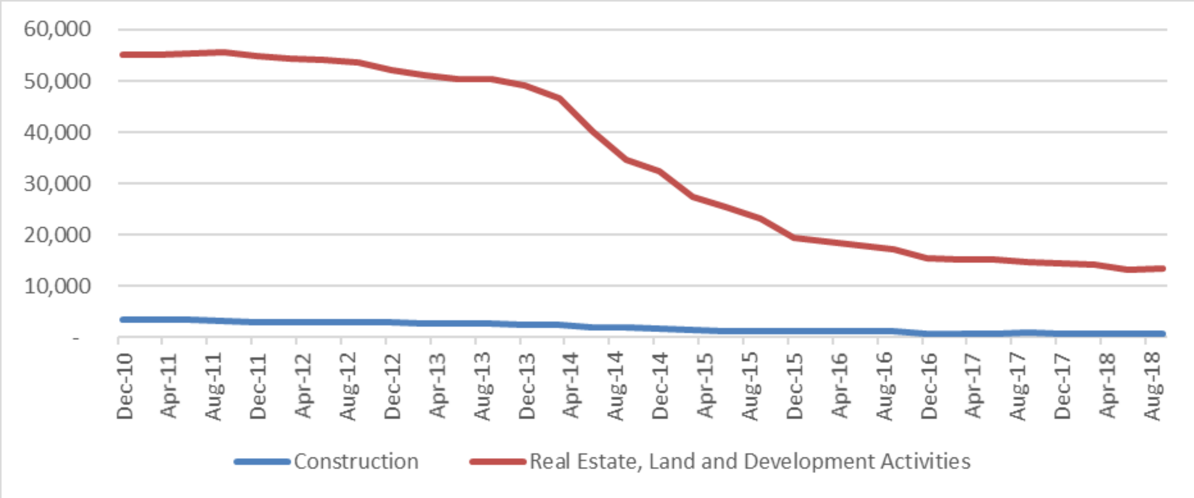
Lending designated as 'real estate, land and development activities' accounted for 95 per cent of the aggregate total of the loans outstanding by q3 2018 (or €13.3 billion). This represented a fall of 76 per cent when compared to the loans outstanding in q4 2010 (or €55.2 billion) (Figure 18). This category of lending can be further disaggregated into a series of five sub-components, including residential real estate (RRE) development and commercial real estate development (CRE).

[9] A resident office means an office or branch of the reporting institution is located in the State (the Republic of Ireland). The residency classification for counterparties conforms to international balance of payments convention.

[10] NACE Rev. 2 is the official statistical classification of economic activities in the European Community.

[11] Refers to real estate, land and development activities

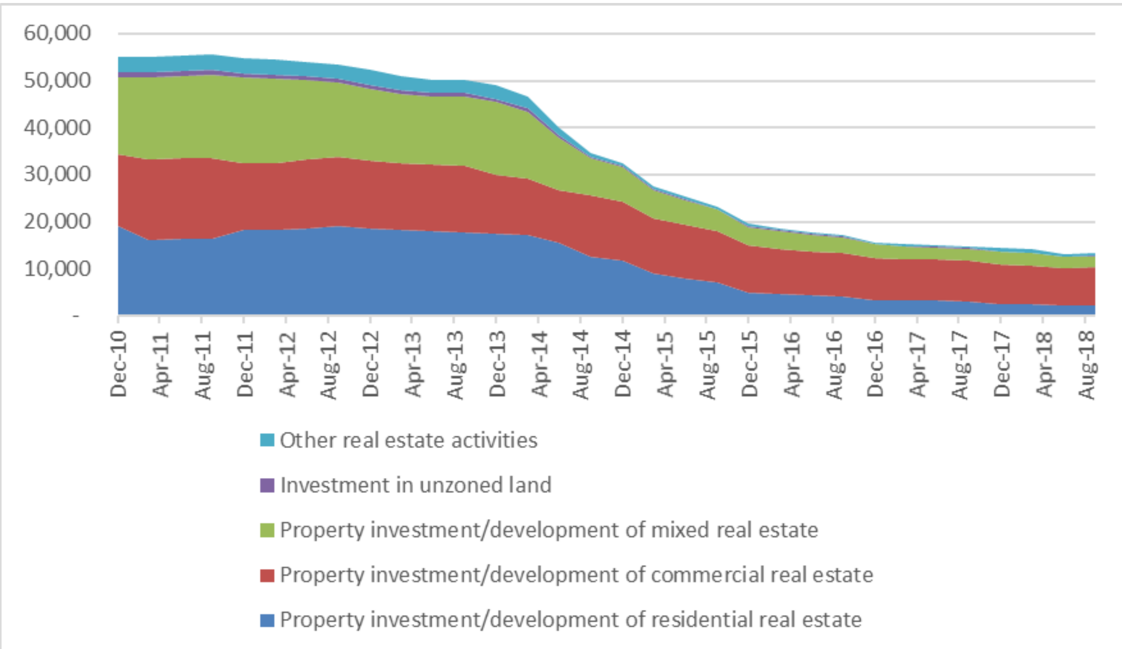
Figure 18: Stock of lending to the construction and real estate sub-sectors, Dec. 2010 to Sept. 2018



Source: Central Bank of Ireland (SME and Large Enterprises Credit and Deposits (Table A.14))
Note: Rev. 2 classifications – construction (5) and real estate, land and development activities (11)

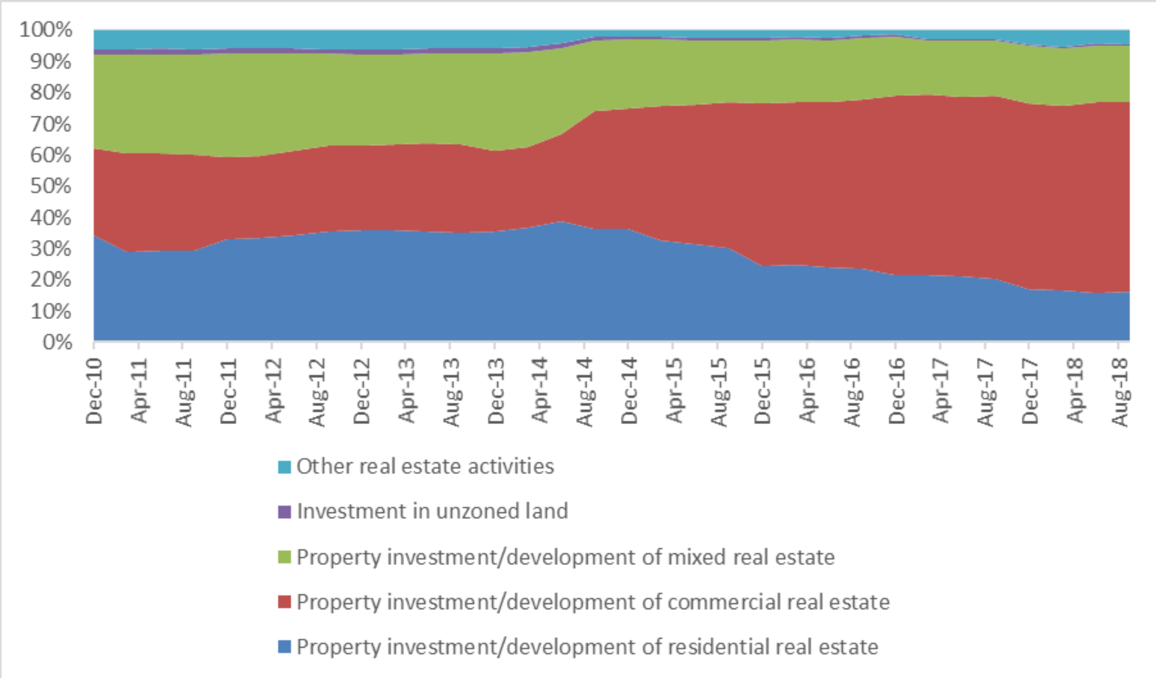
In terms of CRE investment and development specifically, the stock of loans outstanding stood at €8.1 billion by q3 2018 (Figure 19). The stock of these loans has fallen by almost half over the past eight years. The rate of decrease for this sub-component, however, is notably lower than for other investment and development activities. For instance, the stock of loans for RRE and unzoned land fell by 89 per cent and 94 per cent, respectively, over the same period. Consequently, the CRE-related lending now accounts for 61 per cent of the total loans outstanding (compared to just 28 per cent in 2010) (Figure 20).

Figure 19: Stock of lending for real estate, land and development activities (by NACE Rev.2 classification), Dec. 2010 to Sept. 2018



Source: Central Bank of Ireland (SME and Large Enterprises Credit and Deposits (Table A.14))

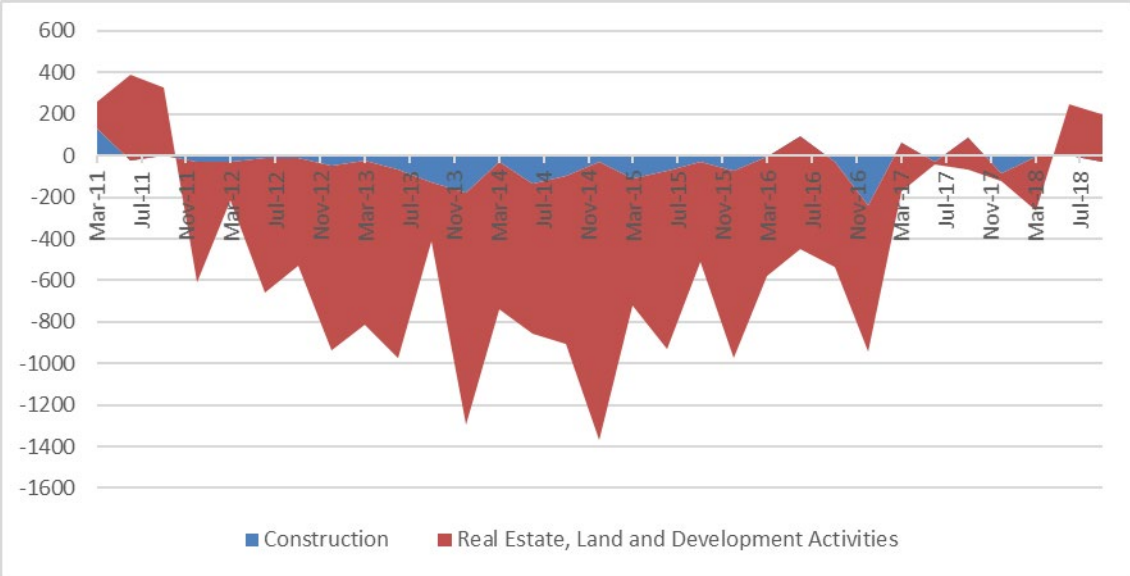
Figure 20: Distribution of the stock of lending for real estate, land and development activities (by NACE Rev.2 classification), Dec. 2010 to Sept. 2018



Source: Central Bank of Ireland (SME and Large Enterprises Credit and Deposits (Table A.14))

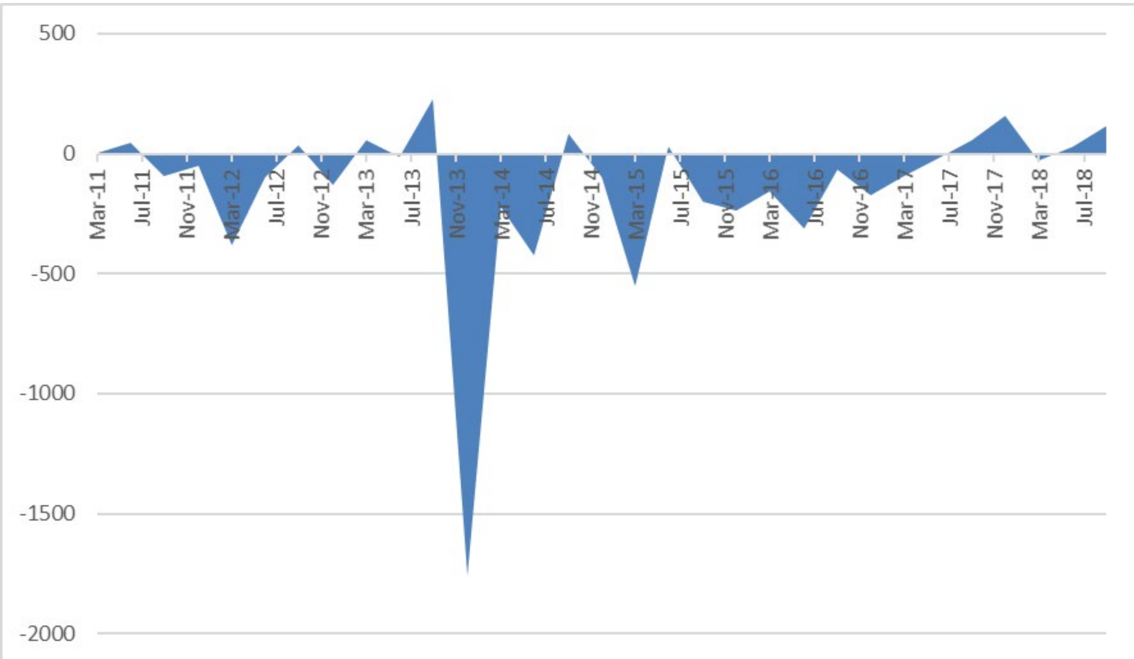
The fall in the stock of lending is reflected in the available data for net transactions (or lending flows). For instance, the real estate sub-sector recorded negative net transactions in virtually every quarter from 2011 until the trend began to reverse in late-2018. This same pattern was reflected in lending for CRE investment and development (Figures 21 and 22). With regard to the latter, the growth rate has been consistently negative for a four-year period between late-2013 until late-2017and peaked at -16 per cent in q3 2014 but this has shown signs of ameliorating in more recent quarters (Figure 23).

Figure 21: Lending flows (transactions) to the construction and real estate sub-sectors, Mar. 2011 to Sept. 2018



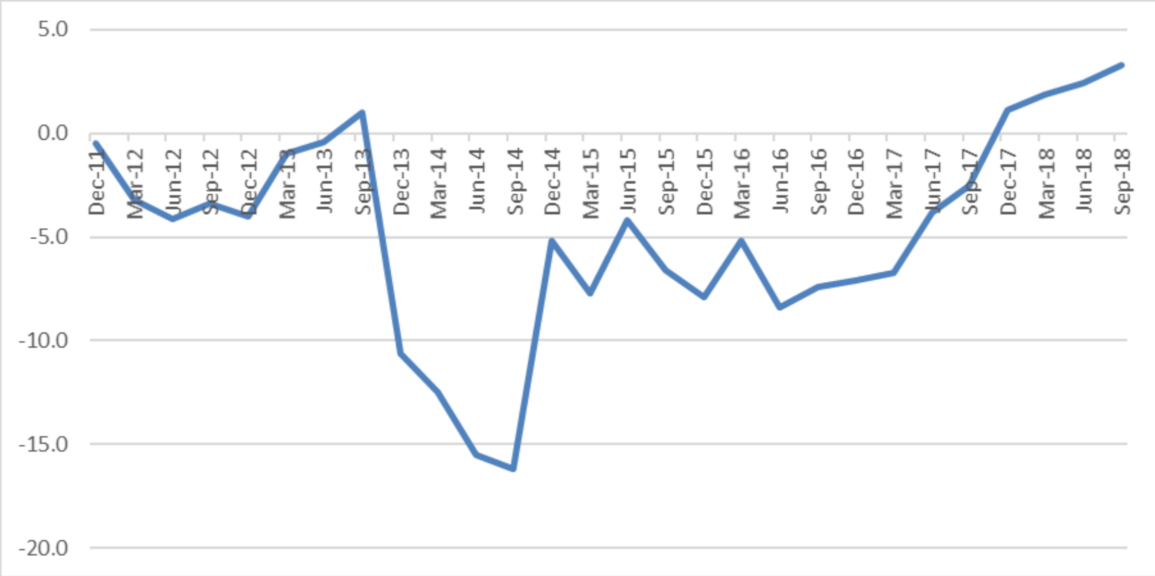
Source: Central Bank of Ireland (SME and Large Enterprises Credit and Deposits (Table A.14))
Note: Transactions are calculated from quarterly differences in outstanding amounts adjusted for reclassifications, other revaluations, exchange rate variations and any other changes which do not arise from transactions.

Figure 22: Lending flows (transactions) for CRE investment and development, Mar. 2011 to Sept. 2018



Source: Central Bank of Ireland (SME and Large Enterprises Credit and Deposits (Table A.14))
Note: Transactions are calculated from quarterly differences in outstanding amounts adjusted for reclassifications, other revaluations, exchange rate variations and any other changes which do not arise from transactions.

Figure 23: Growth rates in lending for CRE investment and development, Dec. 2011 to Sept. 2018



Source: Central Bank of Ireland (SME and Large Enterprises Credit and Deposits (Table A.14))
Note: Annual rates of change, at, for each period, i.e. the change in the four quarters ending in period t, are calculated using the transactions defined above

Key takeaways

This paper has shown that data sources do exist in Ireland that can be used to begin closing the data gaps that were exposed post financial crisis. These data sources can provide users with new information not previously put into the public domain.

However, significant challenges remain across each of the five areas examined in the paper if the required statistical indicators recommended internationally can be compiled. Table 4 highlights the specific actions required for each indicator or group of indicators. Significant time and resources will be needed needed to overcome these challenges.

Table 4: Key challenges for a Commercial Property Statistical System (CPSS) in Ireland

Statistical indicator(s)	Data Source(s) and Challenge(s)
1. Price index	Data Source: Stamp duty information from the Office of the Revenue Commissioners Challenges: i) Working with the relevant authorities to decide the collection mechanism for the characteristic information on commercial property sales that can be linked to the price information on the stamp duty return and ii) devising a hedonic model for commercial property sales with low transaction numbers (especially when the market is depressed).
2. Rental index and rental yield index	Data Source: Commercial Property Lease Register from the Property Services Regulatory Authority (PSRA) Challenges: i) Working with the PSRA to ensure high compliance in relation to the collection of the additional characteristics information for the commercial property leases and ii) devising a hedonic model for commercial property leases with low transaction numbers.
3. Building permits, starts and completions	Data Sources: i) Building Control Management System (BCMS) from the Local Government Management System (LGMA), ii) National Planning Applications Database (NPAD) from Department of Housing, Planning and Local Government and iii) Construction Information Services (CIS) are a private provider of construction information in Ireland Challenges: i) Securing access to the relevant datasets ii) assessing the datasets in terms of their statistical quality ii) devising solutions to statistical quality problems iv) working with the relevant authorities to ensure the administrative systems also enable the production of useful statistics.
4. Vacancy rates	Data Source: Geodirectory from An Post and Ordnance Survey Ireland (OSI) Challenges: i) Look at solutions to supplementing the Geodirectory (register of address points) with characteristic information such as floor area and type of property.
5. Credit exposure and lending standards	Data Source: Quarterly Business Credit and Deposits information from the Central Bank of Ireland (CBI) Challenges: To be completed