PACIFIC RIM PROPERTY RESEARCH JOURNAL
2020, VOL. 26, NO. 3, 187–205
https://doi.org/10.1080/14445921.2021.1897739

Routledge
Taylor & Francis Group

RESEARCH ARTICLE

Owned Australian corporate real estate reporting ahead of *IFRS 16*

Christopher Heywood

Faculty of Architecture, Building and Planning, The University of Melbourne, Melbourne, Australia

ABSTRACT

International Reporting Financial Standard (IFRS) 16 aims to improve transparency in reporting Corporate Real Estate (CRE) commitments. Aimed at leasehold issues, its introduction may affect CRE ownership as leasing's off-balance sheet benefits disappear. Ownership results from a large Australian CREstudy are reported. 2016 Annual Reports were analysed, as this predates the standard's implementation. Results report two owned CRE-related quanta – Property, Plant and Equipment (PP&E) and real estate, in aggregate and by industry sector. Other parameters, like a Corporate Real Estate Ratio (CRER), the real estate to PP&E ratio, and valuation practices are also reported. A total of $5.14 trillion of PP&E was reported ($57.10 billion per firm) and $71.50 billion in real estate ($717.5 million). Financial, Energy, Materials and Consumer Staples sectors had the highest averages. A CRER of 30.4% continued a long-term trend, though individual firms' ratios within sectors varied markedly. The RE to PP&E ratio, expected to change post-*IFRS 16*, was an average of 25.4%, also with wide variance for individual firms. Preferred valuation methods matched previous studies with depreciated acquisition cost dominating (72.3%). This is a pre-*IFRS 16* baseline to evaluate postimplementation ownership changes and updates previous CRE ownership studies.

ARTICLE HISTORY
Received 6 July 2020
Accepted 26 February 2021

KEYWORDS
Assets; balance sheet; corporate Real Estate; international Financial Reporting Standard; *IFRS 16*; ownership

Introduction

International Reporting Financial Standard (IFRS) 16 was introduced in early 2016 to be effective from 1 January 2019. Enacted through various national implementations, for instance AASB 16 in Australia, it aims to improve transparency in reporting leased corporate assets (Magli, Nobolo, & Ogliari, 2018), one of which is leased Corporate Real Estate (CRE). The new Standard requires leasehold values to be reported on balance sheets as both an asset and a liability. While the Standard is for leased assets, it has been thought that consequences may follow for owned CRE and CREM generally by removing previous incentives for leasehold, off-balance sheet CRE tenure (Timm, 2018). Consequently, perhaps a "golden age" of CRE ownership may even emerge. Others are not so sure (Billing, 2018). Transactions, including sale-and leasebacks arrangements and incentives could change (Hazar, 2019; Matho, 2018). With changed reporting requirements there could also be changed interactions with the finance function (Koh & Chua, 2017) and for

CONTACT Christopher Heywood c.heywood@unimelb.edu.au

lease administration (Stillebroer & Jaspers, 2017). To allow future testing of any proposition about the Standard's effects on CRE ownership requires a pre-*IFRS 16* baseline of owned CRE. This paper contributes to the CRE literature by providing that study.

IFRS 16 emerged from a lengthy international process. Originally mooted for introduction with other IFRS in the mid-2000s (Eccles & Holt, 2001) its introduction was delayed while definitions and treatments of different lease forms – operational and financial or capital leases – were resolved. The final agreed standard effectively removes previous distinctions between operational and finance leases (Joubert, Garvie, & Parle, 2017; Magli et al., 2018). Previously, operational leases like those for CRE only required reporting as an expense in the Profit and Loss Statement. The requirement for Balance Sheet reporting as both an in-use asset and an obligation and therefore a liability removes previous off-balance sheet benefits. These included any financial calculation with assets in the dominator, like Return on Total Assets, or in the numerator, as in the debt-to-equity ratio. These ratios have been of concern in the accounting literature (Joubert et al., 2017; Magli et al., 2018). Typically, they overlook CRE as an important business function, as in Magli et al. (2018) and therefore do not consider the CRE consequences, which is why the real estate literature must do this.

In addition, concerns about owned CRE quanta on balance sheets are longstanding in CRE. Studies in the 1980s (Veale, 1989; Zeckhauser & Silverman, 1983) were critical in raising corporate awareness of the extent and value of their CRE holdings. They were also transformative in professionalising CRE Management (CREM). It is, however, about 10 years since these quanta were researched in Australasia as CREM's focus has moved elsewhere. Nevertheless, CRE balance sheet quanta remain a fundamental phenomenon for the field, especially so when the magnitude, running into the billions of dollars, is considered. This study's dataset collection is the most extensive in the history of studying CRE quanta in Australasia, provides a more detailed study than any previously. It is also an opportunity to longitudinally study various previously identified Australian and New Zealand CRE ownership-parameters. The most recent of these studies was in 2010 and others several years prior to that. This is valuable in its own right, and especially so in future testing of claims about ownership changes traceable to the Standard's introduction.

The paper is structured as follows. The next section reviews the literature in relation to financial reporting of owned CRE, and use of financial reporting information in understanding CRE and CREM. The following section reports the methods used while the section after that reports results for two owned CRE-related asset quanta and other parameters from past studies. The discussion section addresses the study's implications and the conclusion shows how the research question has been answered and posits areas of future research.

It should be noted that leasehold results from the study which relate more directly to *IFRS 16* are reported separately (Heywood, in press). Consequently, the papers may have similar content through different written expressions from shared literature reviews and research methods.

Literature review

The issue of CRE and financial statements has been a small but persistent theme in the literature and has not previously been systematically presented. Several sub-themes are evident including:

(1) Quantum of owned CRE on balance sheets;
(2) Information transparency and usefulness;
(3) CREM actions that affect firms' capital valuations, for instance, Rodriguez and Sirmans (1996); and
(4) Economic value contributing to shareholder value, for instance, Louargand (1999).

Developing an awareness of the quanta of owned CRE held and on balance sheets was critically influential in CREM's emergence as a professional property discipline. However, they have not been studied for about a decade which explains the absence of more contemporary studies of this phenomenon. Frequently traced to Veale (1989) and Zeckhauser and Silverman (1983) they identified both the quanta, and the parlousness of management given the significant CRE quantities they revealed. Other early analysis showed US CRE as 19% of total assets, based on historical costs (Johnson & Keasler, 1993). When such values were inflated to represent more current or proxy market values the percentage rose to 40% of total assets (Nelson, Potter, & Wilde, 1999). These percentages also varied between countries (Brounen & Eichholtz, 2005; Holt & Eccles, 2001; Kenley et al., 2000; Laposa & Charlton, 2001) and they diminished over time (Brounen & Eichholtz, 2005). The former was attributed to cultural differences and differences in maturity of service provider and capital markets (Laposa & Charlton, 2001) and the second to changes in tenure practices from ownership to leasehold forms (Brounen & Eichholtz, 2005)

The information and transparency sub-theme is concerned with the CRE balance sheet information assistance to those evaluating company performances. Notionally, the financial statements' record of real estate and real estate-related obligations (its book value) correspond to the business' financial standing (Evans, French, & O'roarty, 2001). CRE reporting practices are thought to indicate CREM's level of rigor with higher reporting levels indicating more rigorous and potentially more evolved CREM (Simpson & Mcdonagh, 2010). Four aspects within this sub-theme are evident:

(1) The amount and quality of information useful to investors and other stakeholders;
(2) Valuation methods for reporting purposes;
(3) Use of off-balance sheet CRE tenure like leases that obscure not only CRE's presence but also firms' liabilities; and
(4) Changes to accounting standards to improve such transparency.

First, several studies questioned whether financial statements' information sufficiently informed interested parties (Parker, 2008; Simpson & Mcdonagh, 2010; Wills, 2008). Overall, these studies found poor information quality and the transparency of firms' CRE-related position could be considered as low. Lack of information consistency, for instance multiple terms used for real estate (Simpson & Mcdonagh, 2010), makes cross-firm comparisons more difficult than necessary though superficially meeting individual reporting requirements. Also, external parties were hampered in using financial statements' information to understand CRE-related corporate performance (Wills, 2008). Of fourteen CREM measures he calculated from financial statements' information half were meaningless due to insufficient information and of the others only some could be calculated for a small sub-sample (two to five out of the study's thirty sampled organisations).

Second, the reported values' calculation methods also potentially obscure firms' true, CRE-related positions (Parker, 2008). Potential upside from under-reporting yielded potential "goldmines" beneficial to investors while potential downside, so-called "landmines", were also possible where values were over-stated. Historically, property assets' values were reported at original acquisition cost with those costs depreciated across an asset's useful life, just like other plant and equipment used in production of goods and services (Adendorff and Nkado, 1996; Johnson & Keasler, 1993; Trundle, 2005). Real estate assets that appreciate across the useful life mean that historic cost-based figures represent neither the current, market value, nor the current, embedded economic performance. Concerns about this led to past revisions to accounting standards, such as accrual accounting in Australia in the 1990s (Robinson, 2002) and the *International Financial Reporting Standards* (*IFRS*) in the early 2000s (Parker, 2008).

A key principle of the *IFRS* is reporting "fair value", which is meant to represent a figure closer to market value (Parker, 2008). However, this change in standard has not necessarily produced more transparency. Many firms (89.5% (Parker, 2008) or 67.7% (Simpson & Mcdonagh, 2010)) continued to use cost-based valuations (as the standard permits) rather than values based on independent valuations, which would produce closer representations of market value. Clearly, in the minds of valuers critiquing the practice this is an information deficiency.

Third, balance sheets' CRE valuation methods (up until *IFRS 16*) only deal with owned CRE, which is diminishing over time (Brounen & Eichholtz, 2005). The use of off-balance sheet CRE tenure benefits firms through improving corporate finance leverage and ratios using assets in the bottom line (Wainwright, 2000) but also obscures total liabilities and leverage because in liquidation, as an extreme case, lease commitments are paid ahead of any returns to equity holders. These commitments are not evident in balance sheets, though can be visible through Profit and Loss statements' recurring expenses (Baltussen et al., 2014; Brounen, 2014). Concern about this is longstanding and was considered ahead of the *IFRS*'s introduction in the mid-2000s (Eccles & Holt, 2001) but it has taken until the promulgation of *IFRS 16* in 2016 to address this issue.

IFRS 16's introduction has potential consequences for CREM – positive and negative (Baltussen et al., 2014; Timm, 2018). These include changed attitudes by organisations to CRE tenure methods as the off-balance sheet benefits disappear. Ownership may become a more preferred tenure method as this provides exposure to property appreciation and development benefits. To identify whether there are changes requires a pre-change baseline from which to evaluate the changes. This paper provides that baseline for owned Australian CRE. As noted above, it has been about a decade since CRE on Australian financial statements was analysed, and relatively small samples were also involved – Top 20 on the Australian Stock Exchange (ASX) (Parker, 2008), and 30 of the *Business Review Weekly (BRW)* Top 200 ASX (Wills, 2008).[1] A larger sample (68) from the New Zealand Stock Exchange (NZSX) occurred in Simpson and Mcdonagh (2010). A large global sample of 4,636 (Australian sample 205) concentrated on the Property, Plant and Equipment (PP&E) quanta – as a proxy for CRE – to calculate a CRE Ratio (CRER) of PP&E to Total Assets (Brounen & Eichholtz, 2005). This suggests that a large-scale study of owned CRE reporting practices ahead of *IFRS 16* introduction is timely.

Two ways of classifying CRE for quantification purposes have previously been used:

- With CRE defined as the physical infrastructure that supports business operations (Materna & Parker, 1998) Property Plant and Equipment (PP&E) represents the greatest extent of a firm's enabling infrastructure – its productive and supportive physical assets; and
- A land and buildings quanta, either individually or conflated as real estate, represent more pure real estate reporting even though most P&E is associated with real estate.

Though standard CRE definitions reference leasehold CRE (CoreNet Global, 2015) it has not in the past been present on balance sheets though owned leasehold improvements (typically things like fitout and such like which support operations) can be but are not usually considered. This may be because they are not considered as sufficiently "real estate" which focuses on interests in land rather than the totality of property as land and improvements used for productive purposes, of which the latter is a CRE view.

Methods

This study used content analysis to extract data from the sampled organisations' Annual Reports (Carney, 1972) to compile the data set. Analysis used summation and descriptive statistical analysis – overall and by sector – to answer the questions below. These methods are standard when dealing with CRE quanta, as they are also in the accounting literature dealing with similar problems, for example Magli et al. (2018) and Tóth (2019).

> What was the baseline state of Australian owned CRE reporting on financial statements ahead of *IFRS16*? Also, how have parameters that used these quanta changed from previous studies?

The data collection captured both ownership and leasehold data on CRE but only the former is reported here with the latter reported elsewhere (Heywood, in press).

Sample population

The Australian Stock Exchange (ASX) listed firms were sampled to represent the pinnacle of Australian corporate performance. This was on the basis that these firms would, most likely, have the most developed CRE management. The Top 100 firms by market capitalisation were targeted with the intention of selecting as many CRE firms as possible within those 100 firms. A CRE firm is one that occupies and uses real estate incidental to a non-real estate core business (CoreNet Global, 2015). This selection identified eleven real estate firms (GICS code 60) and these were excluded. To provide a neat final sample of 90 CRE firms the total sample was extended to 101 firms (just >100), with the exclusions noted below. This total sample of 101 firms captured approximately 90% (by calculation 89.98%) of the ASX's market capitalisation as of 30/06/2016 and for the 90 CRE firms this was 81.7% (Table 1). This means that the sample represents the pinnacle of Australian, for-profit CREM.

The final 90 CRE firms were classified by GICS industry sector codes based on the latest GICS codes (after September 2016), and ASX information. A Financial CRE group

Table 1. CRE quanta (PP&E) on Australian balance sheets, by sector (millions).

	No. of firms	Firms' % of market cap	PP&E	Ave. PP&E per firm	PP&E Rank per firm	% of PP&E total
Financials	19	33.46%	$ 4,267,658.70	$ 224,613.62	1	83.04%
Materials	19	12.41%	$ 415,375.42	$ 21,861.86	2	8.08%
Consumer Discretionary	10	3.43%	$ 37,267.24	$ 3,726.72	9	0.73%
Industrials	9	6.40%	$ 87,927.94	$ 9,769.77	7	1.71%
Health Care	8	6.97%	$ 35,866.71	$ 4,483.34	8	0.70%
Utilities	6	2.96%	$ 85,404.96	$ 14,234.16	5	1.66%
Consumer Staples	5	5.90%	$ 78,217.42	$ 15,643.48	4	1.52%
Information Technology	5	0.77%	$ 5,501.54	$ 1,100.31	11	0.11%
Energy	4	3.30%	$ 70,002.92	$ 17,500.73	3	1.36%
Telecommunication Services	4	5.75%	$ 52,870.82	$ 13,217.70	6	1.03%
Professional Services	1	0.37%	$ 3,278.40	$ 3,278.40	10	0.06%
Total	**90**	**81.72%**	**$5,139,372.06**	**$57,104.13**		**100.00%**

Source: Author

of nineteen firms (GICS Code 40) was further separated for analysis on the basis that they were special reporting cases – all assets are treated as current. However, as these firms are CREM leaders in Australia, it was important to include them in the overall CRE firm sample.

The following firms were excluded from the sample even though they fell within the original Top 100 sampling criteria:

- Asciano Limited (AIO), because it split into three distinct businesses during the sampling period; and
- CYBG PLC Cdi 1:1 (CYB) was listed in 2016 and did not provide a consolidated annual report by the research date.

The final sample was intended to be the largest sample for a detailed Australasian study. As discussed above, previous detailed studies had sampled between 20 and 68 CRE organisations, though Brounen and Eichholtz's (2005) sample was larger (205) their study was not as detailed in terms of quanta.

"CRE-ness" was tested by examining real estate-based income. Generally, this was <5% which satisfies the non-real estate core business requirement. Seven firms reported real estate income >5%, like Sydney Airport's 37.8%, as an outlier firm. Their business has both operationally required corporate real estate for flight operations and a substantial landlord element mimicking investment real estate in terminal leases to airlines and retailers which generates substantial real estate-based income.

Data collection

Annual Reports were downloaded from the ASX website (www.asx.com.au) for the 2016 reporting period which spanned from 30/06/2015 to 03/07/2016. This was the most recent period at the time of data collection and is earlier than transitional arrangements in place for the new standard (reporting periods two years prior to the implementation from 01/01/2019). This eliminated any possible effect from increased awareness of *IFRS*

16 which may have modified CRE's reporting. The period lasting (just) more than twelve-months may have affected reported values, like those containing depreciation values, but this is unavoidable as the data is reliant on the firms' reporting dates.

The Annual Reports were content analysed (Carney, 1972) to extract property-related data in the accounts (numeric data) and associated notes and explanations (textual data). Data was collected from the following broad categories:

- Firm characteristics;
- Revenue;
- Expenses;
- Total assets;
- Non-current assets; and
- Property, Plant and Equipment details.

Reported values were converted to Australian dollars at the reporting date where the reporting currency was not Australian dollars.

Analysis

The entire data set was compiled into a master Excel spreadsheet with separate work-sheets for:

11 Investment real estate firms (not analysed here);

- All 90 CRE firms which were subsequently disaggregated into worksheets for:

19 Financial CRE firms; and

- 71 "conventional" CRE firms – as a whole, and further disaggregated in sectors.

Analysis consisted, in the first instance, summation of values reported for PP&E and real estate (Land and Buildings) – overall and by sector – as these correspond to established methods in CREM research for this task. Descriptive statistical methods included the calculation of averages – overall and by sector, calculation of ratios of PP&E to Total assets (CRER) and RE to PP&E as these were previously studied parameters. Averages, maxima and minima for these ratios were also calculated as detailed below.

Results

Results from the analysis are presented as follows:

- Industry sectors in the sample;
  - CRE as Property, Plant and Equipment quanta which also allows the calculation of a Corporate Real Estate Ratio (CRER) (Brounen & Eichholtz, 2005) to identify whether changes have occurred since their study. This was done here in aggregate & by sector;

- CRE as the owned real estate (land and buildings) by aggregate and sector. This will allow the identification of potential changes in ownership post-*IFRS 16*;
- The ratio of real estate to PP&E to show the real estate intensity in the firms' enabling physical infrastructure as a pointer towards approaches to physical asset management because CREM and general physical asset management are potentially different; and
- Valuation methods as a past study parameter for comparison.

Industries in the data set

These 90 sampled CRE firms represent the pinnacle of Australian, for-profit CREM, certainly by the size of the management task. Here, 81.72% of the capitalisation of the ASX is represented.

By number Financials and Materials sectors contain the most firms – 19 each. Together with the Consumer Discretionary sector (10 firms) these three sectors contain the majority of firms (53.33%) (Figure 1).

Take in Figure 1 about here

The Financials group comprises banks (so-called "4-pillars" and regional banks), and insurance, superannuation and financial asset management firms. The Materials sector is composed of mining companies and manufacturers of building products, packaging and chemicals. The Consumer Discretionary group has casino operators together with fast food, household furniture and goods, and travel services. In the Industrial sector transport businesses pre-dominated. Other firms in this sector also have transport connections – an airline and a civil engineering contractor building transport infrastructure. In Healthcare there are three sub-types of firms – manufacturers, private hospital operators, and service providers. Utilities firms' own energy distribution infrastructure assets. The Consumer Staples sector consists of retailers and manufacturers of "everyday" consumption goods. The Information Technology firms are document and information management firms or online sales and information firms. The Energy sector's energy exploration

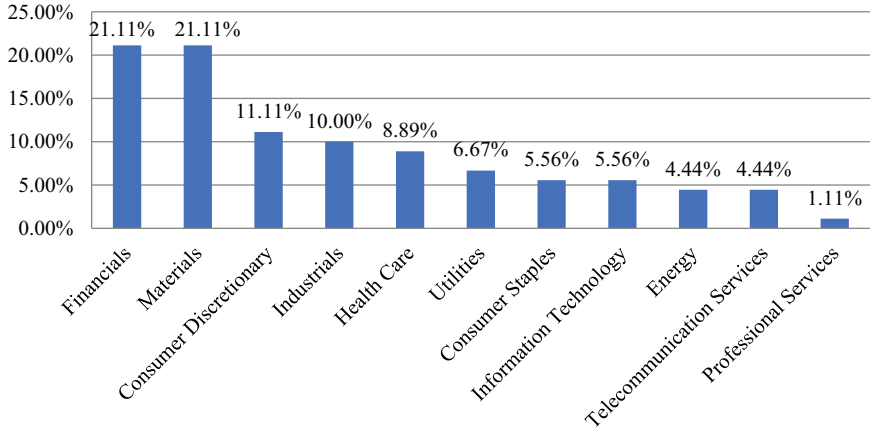

Figure 1. Industry sector types in the sample (n = 90). Source: Author

and extraction companies are not unlike the Materials sector's miners, or are petroleum refiner-retailers. Telecommunication Services firms include one firm that is, arguably, Australia's largest CRE firm by site count – in excess of 10,000 sites. The sole Professional Services firm is an online employment technology company.

Though grouped according to the standard industry classifications, when examined individually there is considerable diversity of CRE and consequential CREM requirements within sectors. This paper does not have the scope to examine this in detail though some of the diversity appears in various ratios examined below.

CRE quanta (PP&E)

The Top 90 CRE firms reported a total of 5.14 USD trillion dollars of Property Plant and Equipment (PP&E) on their balance sheets in 2015–16, an average of 57.10 USD billion each (Table 1). The vast majority of this total (83.04%) was held by Financial firms, but, as financial institutions, they are special cases holding assets as capital and security. Every other sector reported averages greater than 3.00 USD billion each.

Take in Table 1 about here.

If the Financials are excluded as a special case, the PP&E total of the remaining 71 firms is 871.71 USD billion, an average of 12.28 USD billion each with three bands of averages detectable. PP&E "heavy" sectors with averages greater than 10.00 USD billion are firms whose businesses require capital-intensive improvements or operational plant and equipment, for example, Materials and Energy sectors (the highest averages after Financials) have large investments in operational extractive facilities (mines and oil platforms). Other sectors, such as Utilities, and Telecommunication Services have comparable high capital operational assets, such as transmission and telecommunication infrastructure. Industrial sector firms can be classified as "near-heavy" PP&E firms (average just less than 10.00 USD billion) which have similar high capital operational assets such as, depending on the firm, motorways, airport terminals and aircraft maintenance and servicing assets.[2] PP&E "moderate" firms are those with less than 5.00 USD billion each, though all sectors reported averages greater than 3.00 USD billion.

Corporate Real Estate Ratio (CRER)

The proportion of owned CRE to total assets is a long-standing indicator of CRE's importance to the business (Veale, 1989; Zeckhauser & Silverman, 1983). Various methods to calculate the CRE value are evident including forms or proxies of market value (Nelson et al., 1999; Veale, 1989); or book value which, historically, was based on original purchase cost (Johnson & Keasler, 1993). This paper reported PP&E book values, which include depreciation, to calculate a Corporate Real Estate Ratio (CRER) to compare with Brounen and Eichholtz (2005) study (Table 2). While this CRER ratio indicates relative real estate ownership (Brounen & Eichholtz, 2005) it also shows the degree of physical asset management within firms.

Take in Table 2 about here.

The average CRER of the sectors in this sample is 30.4% which compares with 35% in 2000 (Brounen & Eichholtz, 2005). This suggests that the downward trend they detected

Table 2. CRERs on Australian balance sheets, by sector.

	Ave	Max	Min
Financials	1.8%	17.7%	0.1%
Materials	44.0%	87.2%	0.0%
Consumer Discretionary	42.2%	57.1%	3.3%
Industrials	35.8%	89.4%	0.0%
Health Care	26.4%	50.8%	9.1%
Utilities	44.5%	82.2%	0.0%
Consumer Staples	26.6%	39.7%	16.1%
Information Technology	10.0%	39.3%	1.1%
Energy	70.0%	81.0%	51.0%
Telecommunication Services	32.2%	47.5%	11.1%
Professional Services	0.9%	0.9%	0.9%
All sector average	**30.4%**		
Range		**89.4%**	**0.0%**

Source: Author

has continued over the intervening 16 years. The sectors' CRER range from a maximum of 89.4% (Industrials) to a minimum of 0.0% (several sectors).

There is marked variation in averages between sectors from a high of 70% (Energy) to a low of 0.9% (Professional Services) which suggests that generalisations applicable to all sectors would be difficult. Indeed, the intra-sector variation suggests that it is difficult to generalise any given sector given the heterogeneity identified. Energy appears to be an outlier given the gap to the next set of three sectors in the 40–50% band. Review of the Energy sector's four firms shows three oil exploration and extraction firms and a petroleum refiner-retailer. The oil companies have high plant and equipment requirements in their production infrastructure while the petrol company has a multi-site retail network which, where owned, contributes to a higher property component through the multiplicity of properties, in addition to their capital-intensive refinery.

At the other end, the Professional Services sector arguably has little need for owned corporate infrastructure being able to lease its premises and as a service organisation its value is based on intangible assets rather than tangible, physical ones. Financials, with a not dissimilar low ratio, are affected by the volume of other assets on balance sheets, because, as noted above, the PP&E quantum is, comparably, very high.

Most sectors (8) report average CRERs between 20% and 50%. This is quite comparable with Brounen and Eichholtz (2005) study though direct sector-to-sector comparisons are difficult because different sector classifications were used – GICS here and SIC previously.

Though there is support here for previous findings on CRER averages by industry, this study shows that within sectors there are marked differences between firms' CRERs. The largest gaps between highest (max.) and lowest (min.) CRERs in a sector are over 80% for three sectors – Industrials, Materials and Utilities. Examination of the sectors shows at least one firm in each sector with a CRER of 0.0%, that is no reported PP&E. If these are treated as outliers the next lowest CRER in these sectors is approximately 20% which can be considered more "normal". Also, those firms that report no PP&E require further investigation as individual firms to see whether this might be attributable to the characteristics of the core business, the reporting method adopted, or some other explanation.

For sectors with the lowest gaps, Financials have the lowest gap but here the outlier firm has a CRER of 17.7%. Most firms (16 of 19) are much more tightly bunched having CRERs ≤ 1.0%. The next lowest gap – Consumer Staples – may not have the highest average (being below the overall average), nor the highest minimum (Energy does) but all firms have solid requirements for owned physical assets for operational purposes. Though different core businesses occur within the sector, on this measure, they are more alike than many other sectors.

The diversity of CRERs within sectors suggests that there is not a "typical" or "correct" ratio for a business within a sector. Further research is warranted into these relationships and which could support the, otherwise quite logical, suggestions about the closeness between business types and real estate requirements (Edwards & Ellison, 2003).

CRE quanta (land and buildings)

These Top 90 CRE firms reported a total of 71.49 USD billion in Land and Building assets (conflated as (corporate) real estate here) (Table 3) with an average of 717.5 USD million each. CRE was reported separately in 62 of the Top 90 firms (68.9%). Of this total amount, 41.8% was held by the Materials sector. This high proportion can largely be accounted for by the sector's number of firms – 19 – though this sector's second highest average shows that there are still substantial real estate quantities in these firms.

This total amount is 1.4% of the PP&E amount and compares with (Parker, 2008) 0.7% from a Top 20 firms study. Notwithstanding that the Top 20 firms differ somewhat between the two studies, this suggests that real estate increases as a percentage of PP&E the further one progresses down the list of firms, though that was not specifically studied here. Some of this small percentage can be attributed to the carrying values frequently being on a depreciated historical cost basis. Adoption of this method in preference to market-based values is discussed in the literature, and this study (below) shows little change.

Take in Table 3 about here.

Table 3. CRE quanta (Land & Buildings) on Australian balance sheets, by sector (millions).

	No. of firms	Firms' % of market cap	RE assets (2016 carrying value)	Ave/firm	RE% PPE Max	RE% PPE Min	RE% PPE Ave
Financials	19	33.46%	$6,735.60	$354.51	96.1%	0.0%	19.2%
Materials	19	12.41%	$29,903.13	$1,573.85	64.0%	0.0%	19.7%
Consumer Discretionary	10	3.43%	$7,464.31	$746.43	92.2%	0.0%	37.3%
Industrials	9	6.40%	$3,314.50	$368.28	47.4%	0.8%	19.4%
Health Care	8	6.97%	$4,640.67	$580.08	73.9%	0.0%	30.3%
Utilities	6	2.96%	$2,879.11	$479.85	19.1%	0.0%	5.7%
Consumer Staples	5	5.90%	$6,970.93	$1,394.19	64.7%	24.3%	40.4%
Information Technology	5	0.77%	$73.93	$14.79	45.9%	0.0%	9.2%
Energy	4	3.30%	$8,532.74	$2,133.18	98.2%	0.0%	32.2%
Telecommunication Services	4	5.75%	$988.90	$247.23	27.8%	0.0%	8.1%
Professional Services	1	0.37%	$ -	$-	0.0%	0.0%	0.0%
Total	**90**	**81.72%**	**$71,503.81**	**$717.49**			**25.4%**

Source: Author

Analysis by averages shows four bands. Three sectors are characterised by averages per firm greater than 1.00 USD billion (Energy, Materials and Consumer Staples – CRE "heavy"), two sectors between 500 USD million and 1.00 USD billion (Consumer Discretionary and Health Care – CRE "near heavy"), four between 240 USD million and 500 USD million (Financials, Industrials, Utilities and Telecommunication Services – CRE "moderate"). There is then a distinct gap to the two sectors (Information Technology and Professional Services – CRE "light") reporting less than 50 USD million per firm, of which one sector (of a single firm) reports no owned CRE at all.

The real estate "heavy" firms have high requirements for CRE typically as extractive mineral leases or manufacturing and mineral processing sites. The real estate "near heavy" firms have CRE assets like casinos or health facilities where control from ownership is of considerable strategic importance. They can also be characterised by capital-intensive improvements (buildings). The CRE "moderate" firms are typically characterised by land associated with infrastructure of some form where the real estate is subsumed into the infrastructure asset. The CRE "light" firms, typically have little strategic need for control and therefore ownership of operational land and buildings.

RE to PP&E ratio

The maximum and minimum percentage figures of real estate to PP&E present a contrasting picture. Most sectors reported a minimum of 0.0% real estate in their PP&E, that is, at least one firm in the sector reported no separate real estate figure. Only two sectors (Industrials (0.8%) and Consumer Staples (24.3%)) reported minima other than 0.0%. Maximum percentages are quite different with three sectors reporting maxima ≥90% of their PP&E being real estate, two of which reported ≥95%. When considered as quartile distributions, two sectors were in the first quartile and three firms were in each of the other quartiles.

From this analysis it can be concluded, at the industry sector level, that there is no "right" ratio for that sector as there are disparate levels of real estate intensity in the PP&E figures. A part of the challenge in concluding that, despite the classification to the same sector, is that they have quite different types of business with quite different CRE requirements. For instance, the Consumer Staples sector reported the third highest average quantum ($1.39 billion), the highest minimum percentage of CRE in PP&E (by a considerable margin) (24.3%), the highest average (40.4%), though not the highest real estate in PP&E maximum being only in the third quartile for this figure. The five firms in this sector comprise:

- Australia's two big retail business with multi-site portfolios of, largely, retail outlets (some owned and many leased);
- A wine business with a multi-site portfolio of, largely owned, vineyards and wineries;
- A beverage manufacturer with a multi-site portfolio of manufacturing facilities and associated warehousing; and
- A complementary medicine manufacturer, distributor, and retailer.

Based on the individual firms in this sector it is difficult to make sector-wide generalisations on the owned real estate levels on balance sheets. Rather, the nature of the firms' core businesses, their histories, management preferences, and possibly economic cycles may account for the differences. For example, the retailers have a history of preferring leasehold CRE. However, when economic conditions constrain developers' access to finance, such as the Global Financial Crisis and more recent bank lending restrictions, these firms used their balance sheet strength to finance store development. Typically, these were held for a time and then sold and leased back, with the finance recycled back into the business. For the wine business, the criticality of vineyard sites to wine quality and branding means that the real estate's strategic value and control requirements predicates ownership as the tenure method. Similar arguments could be advanced for the other two firms in this sector classification.

This variability suggests that more work is required to fully investigate why these industry groups exhibit the characteristics shown here and above for their CRER. Rather, this analysis gives a picture of the quantum of owned real estate deployed in the industries. Numbers of these industries are characterised by high rates of leasehold CRE, particularly those with a retail component like Financials, and Consumer Staples. Other sectors characterised by leasing of office space which are not currently reported on balance sheets are also likely to see substantial changes in the CRE assets reported post-*IFRS 16*.

Valuation methods

Methods for establishing CRE's balance sheet value have been a thread in the literature on CRE in financial statements. Often this was based on concerns about the sufficiency and accuracy of that information about a firm's real estate position. Up until *IFRS 16* these concerns were for owned assets but in future could be extended to leasehold assets, which is discussed in (Heywood, in press).

In these Top 90 firms several things are evident (Table 4). First, multiple valuation methods may be used by the one firm as 105 methods of valuing PP&E were evident. Typically, this was for different asset classes that are not necessarily operational CRE, for instance, investment property at fair value, or development property at realisable value (arguably another form of fair value). Second, was that there was a very strong preference for cost-based valuations (72.3%), similar to previous findings (Parker, 2008; Simpson & Mcdonagh, 2010). Here, the cost was usually adjusted for loss of value – depreciation, impairment, or depletion (an oil and gas firm). Fair value was much less preferred (11.4%) and only a single, explicit reference to owner-occupied fair value was found. When fair value was used, it was often for investment property or was unspecified, but which might be CRE. Third, a reasonably high percentage (11.4%) thought that reporting a valuation method was, in some way, not applicable.

Take in Table 4 about here.

Various reasons have been proposed for these choices in valuation methods including: the cost of revaluations; perceived subjectivity of the valuation; and flow-through to higher returns-on-assets from lower, historical cost-based asset values (Parker, 2008; Simpson & Mcdonagh, 2010). This work does not suggest any new explanations because this work, following that previous work, shows that this is a stable, long-term

Table 4. Reported valuation methods in the Top 90 CRE firms, by sector.

	At cost less depreciation and impairment*	Other (PP&E) at cost	Land (and buildings) at fair value	Owner-occupied land and buildings at fair value	Investment properties (including freehold and leasehold) at fair value	, Mining, explora-tion and evaluation is capitalised	Development properties at net realisable value	PPE not disclosed	N/A	Total
Financials (n = 19)**	6	5	5	-	3	-	1	1	7	27
Materials (n = 19)	18	-	-	–		4	-	-	1	22
Consumer Discretionary (n = 10)	9	1	-	1	1	-	-	-	-	12
Industrials (n = 9)	6	-	-	-	1	-	-	-	2	9
Health Care (n = 8)	7	1	1	-		-	-	-	-	9
Utilities (n = 6)	4	-	-	-	-	-	-	-	2	6
Consumer Staples (n = 5)	5	-	-	-	-	-	-	-	-	5
Information Technology (n = 5)	5	-	-	-	-	-	-	-	-	5
Energy (n = 4)	4	1	-	-	-	-	-	-	-	5
Telecommunication Services (n = 4)	4	-	-	-	-	-	-	-	-	4
Professional Services (n = 1)	-	-	-	-	-	-	-	-	1	1
Total	**68**	**8**	**6**	**1**	**5**	**4**	**1**	**1**	**13**	**105**
Totals/valuation method#	**76 (72.3%)**			**12 (11.4%)**		**4 (3.8%)**	**1 (0.95%)**	**1 (0.95%)**	**13 (11.4%)**	

Notes
*An Energy company reported a depletion-based adjustment
**reported a Capitalisation rate 7.9% and discount rate 9%
#There is a rounding error in the percentage total
Source: Author

phenomenon having persisted for over a decade. However, as a pre-*IFRS 16* baseline study, this work allows, in due course, to establish whether the suggested heightened awareness of CRE after *IFRS 16*'s introduction flows through to changes in owned CRE valuation methods.

Discussion

This paper is from the largest and most detailed study of Australian balance sheet CRE to date. As such, it provides both a baseline ahead of the introduction of *IFRS 16* and a longitudinal study updating several parameters from previous studies. Baseline studies are important before significant changes, like *IFRS 16*, to allow future studies to show the effects of the change, and to allow subsequent testing of assertions and hypotheses about those effects. Longitudinal studies are also important by showing a phenomenon's persistence. Single studies are useful in establishing a phenomenon's existence with their analysis and interpretation identifying whether it is problematic and the degree to which this might be the case. Establishing a phenomenon's durability, strengthens the basis for action to address the issue, should it be problematic. Here, the study re-examined CRERs, which are not considered problematic, and information transparency, such as valuation methods and asset descriptions, which are more problematic.

While the accounting standard's change is directed at lease reporting it is thought that there may be consequences for owned CRE with a shift away from leasehold towards ownership tenure, increased attention from corporate management, and a flow-through to reporting transparency for things like valuation methods.

As a baseline ahead of *IFRS 16*, this study shows substantial quantities of owned CRE for these Top 90 Australian firms. This is whether the CRE measure is PP&E, or real estate (land and buildings). Both classifications of physical assets are useful when considering CRE as enabling infrastructure and CREM as managing that infrastructure to support business operations (Materna & Parker, 1998). Notwithstanding that the P&E is almost always associated with property it is likely that the management ethos differs whether the focus is P&E or the real estate. This occurs because of their treatment as separable assets, notwithstanding the connectivity noted above. For P&E their asset management deals with a depreciating physical asset and efficiency in productive use. For the real estate asset management these two aspects are augmented by real estate's placement within a dynamic real estate market where value appreciation can occur. This dynamism can be used to advantage to realise monetary value from the operational real estate assets.

Real estate was shown in this study to be a very small percentage of total assets (1.4% here compared with 0.7% (Parker, 2008)). On that basis it is reasonable to ask whether these firms are actually in real estate management, which was the basis of this study calling them CRE firms. This question still gets asked after more than 20 years of CREM development in Australia. On the quantity measure alone the answer to the question must be "Yes", and that is before considering CRE's role as a strategic organisational resource (Joroff, Louargand, & Lambert, 1993). For individual sectors and firms within sectors the answer may be more qualified where they have lower quantities and ratios for CRER and RE to PP&E. The answer is more emphatically "Yes" for those with large quantities and high proportions in these two ratios.

It is apparent here that an awareness of having a real estate component to their business was not universal in Australian firms. This can be seen in 100% that reported something, even 0.0%, for PP&E but just more than two-thirds (68.9%) separately reported real estate-based CRE. This suggests that despite the past 20 years of CREM development in Australia there is still work to do before an awareness of (strategic) management of CRE becomes universal. Perhaps this study of the CRE quanta could assist in raising this awareness. Also, the presence of 0.0% figures in both PP&E and real estate quanta for some firms needs further investigation. It is plausible that a firm could have no owned real estate (the focus here) because they have leased CRE, but having no PP&E is scarcely credible and needs further investigation. This could be attributable to the nature of the business, or it could be the way these assets are reported in the financial statements, or some other explanation.

Two information transparency issues were studied here as part of the longitudinal aspect updating previously studied parameters such as valuation methods or terminology used to describe real estate. This study showed that cost-based values, previously seen as problematic (Parker, 2008; Simpson & Mcdonagh, 2010), endure as a phenomenon. Ten years since the general *IFRS'* introduction appears to have reduced this percentage from 89.5% (Parker, 2008) to this study's 72.3%, though Simpson and Mcdonagh (2010) reported a lower figure (67.7%) in their New Zealand study. However, this study revealed a substantial "Not Applicable" category (11.4%) which is considerably higher than Simpson and McDonagh's (2010) reported 1.5%. This confirms previous assertions that the transparency of CRE exposure is poor.

The terminology to describe CRE is still fragmented, though here, the study's pre-defined coding system of land and buildings (real estate) reduced this diversity when compared with previous work (Simpson & Mcdonagh, 2010).

The persistence of these phenomena since the general *IFRS* and ahead of *IRFS 16* suggests that consistency of valuation methods and definitions across firms would be a small step in improving transparency and assisting cross-firm comparisons. To address this, perhaps as a first step, could be something like a Best Practice Guideline, or eventually inclusion into an international standard like has been seen recently with a standardised method of measuring property, for example (INTERNATIONAL PROPERTY MEASUREMENT STANDARDS (IPMS), 2014). Given their expertise in CRE, or rather the expertise of their membership, this could be an initiative for CoreNet Global to lead.

Conclusion

This study sought to establish a baseline state for owned Australian CRE ahead of *IFRS 16*. While this is useful in its own right, it is designed as the basis for future research. It evaluated whether several CRE ownership-based parameters have changed over time. There are limitations in this study as a snapshot of current quanta, as it is not testing relationships between the reported quanta and other variables, like firm financial performance.

This study showed that whether CRE is defined as the entire physical infrastructure that enables operational activities (on balance sheets most usually called PP&E) or more narrowly as just real estate (as land and/or buildings) there are substantial CRE quanta in these

Australian CRE firms that are the pinnacle of the equities market. These high values occur despite value being calculated on depreciated historical cost bases which depress reported values. These substantial amounts are also despite long-term decline in values confirmed in the lower CRER average. Both this CRER and the RE to PP&E ratios provide baseline figures on which to evaluate whether changed approaches to tenure occur post-*IFRS 16*.

The analysis of ranges of CRERs and RE to PP&Es within sectors showed considerable variation from sector averages and the overall sample average. This warrants further investigation to understand why, beyond generalisations made here about the capital intensity of physical assets used for operational purposes. There may be operational reasons, historical reasons, or strategic reasons that are peculiar to individual firms within sectors and which may change post-*IFRS 16*. In addition to this future research, with a baseline study like this one, re-examining the phenomenon after the change is necessary to establish what effect the change has actually had.

Notes

1. While 30 firms were sampled only 25 were actually analysed due to the author's requirement for having 5 years of available information to analyse.
2. Given many aircraft are leased these would not currently appear on the balance sheet unless they are capital or finance leases.

Acknowledgments

The author acknowledges the following contributions to this research: Zhixuan Jenny Yang for the idea of again studying CRE on balance sheets, Xiaoxi Cecelia Xu for taking up my suggestion for a minor thesis project and later working as a research assistant, Georgia Warren-Myers for a helpful discussion on discount rates, and the University of Melbourne for its research support.

Disclosure statement

No conflicts of interest to report.

ORCID

Christopher Heywood http://orcid.org/0000-0002-3697-6000

References

Adendorff, M. J., & Nkado, R. N. (1996). Increasing corporate value through strategic real estate management. *Real Estate Review*, *26*, 69–72.

Baltussen, S., Schelle, T., Appel-Meulenbroek, R., Van Egmond, B., Hesselink, M., & Van Leersum, L. (2014). Lease accounting trouble looms for corporate real estate management. *Journal of Corporate Real Estate*, *16*(3), 182–202.

Billing, M. (2018). New rules, new strategies: How the changes to lease accounting rules impact leasing decisions. *Corporate Real Estate Journal*, *7*, 304–318.

Brounen, D. 2014. Corporate real estate acceptance. Brussels, Belgium: European Public Real Estate Association (EPRA), http://www.epra.com/media/Corporate_real_estate_acceptance_-_EPRA_report_1391768142218.pdf .

Brounen, D., & Eichholtz, P. M. A. (2005). corporate real estate ownership implications: International performance evidence. *The Journal of Real Estate Finance and Economics*, *30*(4), 429–445.
Carney, T. F. (1972). *Content analysis: A technique for systematic inference from communications*. London: B.T. Batsford.
CoreNet Global, (2015). *The essential guide to corporate real estate*. Atlanta, GA: CoreNet Global.
Eccles, T., & Holt, A. (2001). International accounting standards: A paradigm shift for corporate real estate? *Journal of Corporate Real Estate*, *4*(1), 66–82.
Edwards, V., & Ellison, L. (2003). *Corporate property management: Aligning real estate and business strategy*. Malden, MA: Blackwell Science.
Evans, M., French, N., & O'Roarty, B. (2001). Accountancy and corporate property management: A briefing on current and proposed provisions relating to UK corporate real estate. *Journal of Property Investment and Finance*, *19*(2), 211–233.
Hazar, A. (2019). *The impact of the new lease accounting standards -IFRS 16- on corporate real estate decisions: Especially on real estate transactions*. Master of Advanced Studies in Real Estate thesis, Faculty of Business, Economics and Informatics, Center for Urban & Real Estate Management, University of Zurich, Zurich, https://www.uzh.ch/cmsssl/curem/dam/jcr:adfda69e-a942-439f-af9b-1dcb4fd3ff93/ Allami_Hazar_AbAr_Lg18-19.pdf .
Heywood, C. (in press). Australian corporate real estate lease reporting ahead of *IFRS 16*. *Pacific Rim Property Research Journal*. doi:10.1080/14445921.2021.1883835
Holt, A., & Eccles, T. (2001). Accounting for leasehold property in the UK: A triumph of substance over form? *Journal of Corporate Real Estate*, *3*(3), 232–247.
INTERNATIONAL PROPERTY MEASUREMENT STANDARDS (IPMS) 2014. IPMS for office buildings. IPMS coalition, https://fastedit.files.wordpress.com/2014/11/ipms-office-buildings-november-20141.pdf .
Johnson, L. L., & Keasler, T. (1993). An industry profile of corporate real estate. *The Journal of Real Estate Research*, *8*, 455–473.
Joroff, M., Louargand, M., & Lambert, S. (1993). *Strategic management of the fifth resource: Corporate real estate*. Atlanta: IDRC.
Joubert, M., Garvie, L., & Parle, G. (2017). Implications of the new accounting standard for leases AASB 16 (IFRS 16) with the inclusion of operating leases in the balance sheet. *The Journal of New Business Ideas & Trends*, *15*, 1–11.
Kenley, R., Brackertz, N., Fox, S., Heywood, C., Pham, N., & Pontikis, J. (2000). *Unleashing corporate property: Getting ahead of the pack*. Melbourne: Property Council of Australia and Victorian Department of Infrastructure.
Koh, S., & Chua, M. L. (2017). CRE and finance roles in the impact of lease accounting changes: whose baby is it? *Corporate Real Estate Journal*, *7*, 161–169.
Laposa, S., & Charlton, M. (2001). European versus US corporations: A comparison of property holdings. *Journal of Corporate Real Estate*, *4*(1), 34–47.
Louargand, M. (1999). Real estate's influence on enterprise value. *Journal of Corporate Real Estate*, *1*(3), 254–261.
Magli, F., Nobolo, A., & Ogliari, M. (2018). The effects on financial leverage and performance: The IFRS 16. *International Business Research*, *11*(8), 76–89.
Materna, R., & Parker, J. R. (1998). *Corporate infrastructure resource management: An emerging source of competitive advantage*. Atlanta: IDRC.
Matho, S. C. 2018. *Sale and leaseback arrangements – a comparison of IAS 17 and IFRS 16*. Masters Thesis, Hochschule für Wirtschaft und Recht Berlin (Berlin School of Economics and Law).
Nelson, T. R., Potter, T., & Wilde, H. H. (1999). Real estate assets on corporate balance sheets. *Journal of Corporate Real Estate*, *2*(1), 29–40.
Parker, D. (2008). Accounting for owner-occupied property: Goldmine or landmine? *JASSA: The FINSIA Journal of Applied Finance*, *2*: 2008 34–38.
Robinson, M. (2002). Accrual accounting and australian fiscal policy. *Fiscal Studies*, *23*(2), 287–300.

Rodriguez, M., & Sirmans, C. F. (1996). Managing corporate real estate: Evidence from the capital markets. *Journal of Real Estate Literature*, *4*, 13–33.

Simpson, J. H., & McDonagh, J. 2010. Financial reporting on corporate real estate: A study of the annual reports of non-investment companies listed on the New Zealand Stock Exchange (NZSE). *16th Pacific Rim Real Estate Society Conference*. Wellington, New Zealand: Pacific Rim Real Estate Society, www.prres.net .

Stillebroer, D., & Jaspers, E. (2017). Lease accounting compliance: An opportunity at work. *Corporate Real Estate Journal*, *6*, 205–219.

Timm, R. (2018). *Are you ready for lease reporting? Facility Management*. Melbourne: Niche Media.

Tóth, Á. (2019). Measuring the capitalisation impact of off-balance sheet items under the new IFRS 16-based lease accounting in Hungary. *Hungarian Statistical Review*, *1*, 91–108.

Trundle, M. (2005). Capturing hidden value for your shareholders. *Journal of Corporate Real Estate*, *7*(1), 55–71.

Veale, P. R. (1989). Managing corporate real estate assets: Current executive attitudes and prospects for an emergent management discipline. *The Journal of Real Estate Research*, *4*, 1–22.

Wainwright, S. (2000). Off balance sheet property ownership structures: Releasing capital from operational portfolios through divestment. *Journal of Corporate Real Estate*, *2*(4), 330–342.

Wills, P. C. (2008). Corporate real estate practice in Australia. *Journal of Corporate Real Estate*, *10* (1), 40–53.

Zeckhauser, S., & Silverman, R. (1983). Rediscover your company's real estate. *Harvard Business Review*, *61*, 111–117.