

*Does corporate real estate investment matter
for retail companies?
Evidence after the Pandemic*

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Abstract

Corporate real estate (CRE) represents a strategic decision for companies. The retail sector offers a unique opportunity for the evaluation of the CRE strategy due to the relationship between the value of the asset, the location of the site, and the profitability of the firm. The size of the real estate portfolio of retail firms reflects the high frequency of acquisition of existing selling points and the below the average time necessary to sell, even though the advent of technology and the digital transformation of firms is modifying the role and the functions of physical stores.

CRE affects positively the market performance of retail listed firms investing in real estate due to the higher diversification of the assets and the perceived reduced credit risk. Looking at an international sample of listed retail companies, the paper considers the performance of firms and the CRE strategy role in explaining the abnormal return achieved over the time period 2012-2021. Results show that the number of stores is increasing over time, even if the volume of online sales has increased over the last decade. CRE strategy has an impact on the stock market performance for retail companies and during the last decade, showing a better performance for firms that decreased the number of brick-and-mortar stores and increased the volume of sales online. After the pandemic, the overall impact on the performance of the retail companies is found negative, suggesting an even more efficient managing of physical stores.

Keywords: Corporate Real Estate, Location, Online sales, Abnormal performance

EFM codes: 780 – Real estate, 330 – Equities, 310 - Asset Pricing Models and Tests, 380 – Portfolio performance evaluation

1. Introduction

Real estate represents a key strategic asset of the firm's balance sheet for all major corporations worldwide (e.g. Zeckhauser and Silverman, 1983) and today it represents a strategic asset for any type of corporation (Roulac, 2001).

The relevance of the corporate real estate (hereinafter CRE) is significantly affected by the sector of activity (Johnson and Keasler, 1993) and the lower is the standardization of assets used the higher will be impact of an efficient real estate management on the firm's performance (Brounen and Eichholtz, 2005). The value of real estate properties created for a corporation is normally more relevant in the retail sector where revenues are driven by the choice of the selling point location, and the cost of renting/leasing a brick-and-mortar shop is significantly affected by the market trend and the rent perspectives (Ali et al., 2008).

The proper selection of the location allows companies to achieve production capacity and to grant business expansion and better service to customers, increasing the wealth of stockholders, among other things (Mazzarol and Choo, 2003). The retail sector represents a unique opportunity for the evaluation of the CRE strategy because the value of the asset

(appraisal value and market price) is significantly driven by the location and the quality/type of other assets available in the same area (e.g. Ownbey, Dabis, and Sundel, 1994) and, on the opposite side, retail capital can determine the value of real estate assets as shown by the gentrification of the areas (Mermet, 2017). In this perspective, real estate decisions can reflect the need to diversify and develop activity or the pure response to the needs of the core business (Nourse and Roulac, 1993): regardless of the effective motivation, real estate must be managed as a part of the firm's overall portfolio coherently with the firm's strategic plan (Rodriguez and Sirmans, 1996). Retail firms are characterised by a high investment in real estate due to the high frequency of acquisition of existing selling points and the below the average time necessary for selling real estate units in that sector (Liow 1995). As a consequence, firms in the retail sector develop greater opportunities to create shareholder value through their portfolio of real estate assets. Such opportunities refer to the exercise of valuable development options, the exploitation of market information generated within the retail operations, and the utilisation of well-developed retail real estate expertise. Main retail groups have already developed strategies in order to define their real estate investment strategy for supporting the business and maximise the potential benefits related to the investment planning on the long-term horizon (Gibson and Barkham, 2001). Moreover, the retail sector seems to be one of the most relevant sectors on CRE due to the reputation advantages expected by an increase of the presence in the main retail locations (Brounen, Colliander, and Eichholtz, 2005).

Looking at more recent trends, retail real estate is affected by the megatrend of digitalisation that is emerging from the need of satisfying a vast population (Nanda, Xu and Zhang, 2021). E-commerce poses new challenges due to the evolution of the way of shopping and stimulating an intense debate on the potential effects for retail real estate, without never questioning the existence of High Street, but forecasting changes in the types of the retailers represented and the types of the services offered (Dixon and Marston, 2002). Therefore, the value of retail property becomes a combination of physical and virtual consumer space, although it requires new marketing strategies and rental models (Miller, 2000).

A higher exposure on real estate is normally considered a proxy of higher potential diversification benefits for shareholders (Liow and Nappi-Choulet, 2008) and normally the market accepts to pay a premium for investing in real estate due to the higher expected value of the guarantees provided (Yu and Liow, 2009). Even if it is clear in the literature that the value of real estate ownership is affected by its location (e.g. Roulac, 1995), there is no evidence on the impact of the characteristics of the real estate portfolio owned on the firm's value. The article collects a unique database on the characteristics of the real estate portfolio owned by the retail corporation and evaluates if changes in the real estate portfolio construction strategy affect the market value of the firm. The results obtained show that retail companies are investing in CRE jointly with the development of the online channel and they prefer to invest in the local country. The market recognizes a premium for the shares of companies that are reducing their investment in new store location and are increasing the volume of sales online, and the impact is even stronger after the Covid-19 pandemic.

2. Literature review

CRE refers to the land and buildings owned or rented by companies in order to run their business and maximise the revenues related to operations. Firms that increase real estate ownership are normally characterised by above-the-average growth expectations due to the business opportunities created by real estate that may justify the choice of investing in fixed assets determining costs that are expected to be amortised only in the medium-long term (Gale and Case, 1989). The business opportunities created by real estate ownership are affected by the selection of the location that reflects both the macro- and the micro-environment. The macro environment factors include the globalization of business activities, the evolution of technology, the socio-demographic, cultural-environmental factors and, therefore, the government policy, while the micro environment reflects the type of the estate and of the business activity (Rymarzak and Siemin´ska, 2012). Such evidence are particularly appropriate for the retail sector featured by a closer connection between operating activities and real properties that are used to implement strategies orientated both to promote marketing messages, through the physical advertising in prestigious and high visible areas and the offer of services to the customers, and to increase sales attracting customers through an appropriate selection of the location and the format of the premises (Nourse and Roulac, 1993). More than considering general factors featuring the macro investment, the perceived value of each location is affected by demand-side factors dealing with the location attractiveness based on the number of consumers and their purchasing power, and supply-side factors reflecting the local conditions of the estate allowing the specific business activity (Tuselmann, 1999). Looking specifically at the demand side factors, the population characteristics and the households composition cover a critical role, while supply side factors reflect the real estate characteristics of the local area, like the number, the size, and the growth rate of the real estate outlets, the saturation of the retail in the area, and the proximity of the transportation network and the parking facilities (Vandell and Carter, 1993). Although the importance of location for retail activities is unquestionable, the development of technology and digital transformation are affecting the role and functions of retail spaces. After an initial scientific debate on the alternative versus complementary relationship between brick-and-mortar shops and e-commerce, the online channel has moved forward to a mainstay of the physical store at the base of a multichannel user experience (Verhagen and van Dolen, 2008), allowing retailers to extend the market coverage and drawing attention to physical stores. Under this perspective, the first function is 'showrooming', that is, the store allows the diffusion of information about products and services offered and the ability to try the product during the search, generating synergies due to the boosting effect of the physical store with respect to online revenues (Fornari et al., 2016). Additionally, the function of the store can cover the offer of in person services of the after-sale phase to assist the customer with service appointments, customer complaints, and products repair with the effect of amplifying the sensory experience of the customer (Alexander and Cano, 2020). Besides the effect on the customer experience, the adoption of the multichannel approach to sales impacts positively the profitability of the seller because the on-line channel helps reducing the operating costs (Baen, 2000), boosting the efficiency of the business (Burt and Sparks, 2000), increasing the volume of the sales through increased visibility and transparency (Hendershott and Hendershott, 2000). The adoption of the online channel in the retail sector became very urgent during the Covid-19 pandemic due to the mobility restrictions introduced by governments internationally: both grocery stores and luxury found an increase of the on-line sales due to the shifting of the customers from physical stores to on-line stores and the acquisition on new online customers, even though such shifting is not verified for the

hospitality sector (Abay, Tafere and Woldemichael). More than the effects on shifting consumer demand for on-site and online shopping, the Covid-19 pandemic has accelerated the demand of tenants for the modification of retail spaces that is now more flexible in terms of lease payments and can also be for short periods (Msci and Paribas, 2019).

Despite the role of retail spaces that has been evolving over time, physical location is still a key element of the sales strategy along the consumer experience, although locational choices of retail spaces tend to be managed more efficiently at the portfolio level (Nanda, Xu and Zhang, 2021). Besides the implications for the consumer shopping experience, the management of existing properties and the choices to increase or decrease the real estate portfolio impacts also the performance of the firm in financial markets, As a matter of fact, the opening of new stores affects CRE strategy that is associated with an increase of the demand of shares in the stock market due to the lower risk perceived by investors and the better performance expectation (Ling, Naranjio and Ryngaert, 2012). The positive effect of increasing real estate exposure is clearer in an increasing market trend with respect to a crisis market scenario (Hwa, 2007).

The existence of real estate assets owned directly by the firm attracts the attention of a corporate raider that wants to invest in the firm through an M&A. The simple analysis of the size of the exposure shows that the probability of a takeover increases but does not show any abnormal profit that may derive from the transaction in an efficient financial market (Ambrose, 1990) and normally the impact on the takeover probability is higher for inter-industry M&A (Brounen, Van Dijk, and Eichholtz, 2008). At the same time, the analysis of such type of extraordinary events shows that an excessive exposure to real estate may also cause a decrease of possible synergies and the effect is even stronger for small firms (Graham and Stiles, 2014).

An increase in the value of real estate assets implies a different ability to raise new capital due to the higher value of the collateral provided. Lower financing constraints may have a direct impact on the firm's growth perspective, and a higher exposure to real estate assets that experience an above average value increases the expectation of growth and the market share of the company (Alimov, 2016).

CRE is normally considered a source of diversification for the firm that allows stabilise the income over time and reduces the risk assumed by shareholders. Empirical evidence on the impact of the amount of exposure on the risk assumed is still limited and there is no clear evidence of the potential advantages related to reducing the risk assumed by shareholders (Seiler, Chatrath, and Webb, 2001).

The impact of real estate exposure on the value of the firm is affected by the trend and the causes of the increase / decrease in average prices. In the event of a price bubble, the negative effect on the company value is at the maximum, while if the change of the price is driven by a productivity change, the impact is limited (Cheong and Kim, 1997).

A change in the real estate exposure usually has an impact on the firm's market evaluation in the current year and in the following years. Empirical evidence demonstrated that the market response is different on the basis of the sector analysis, and the more significant reaction is related to the retail sector in which a real estate sale has a positive effect on the current stock prices (Nappi-Choulet, Missioner-Piera, and Cancel, 2009).

Firm fundamentals affect the size of the real estate exposure at corporate level and normally some business features will represent an incentive for investing in real estate assets as an alternative of renting or leasing solution. The literature shows that firms more interested in

owning real estate assets have a lower level of risk profile and, normally, riskier firms are those that avoid investing in the real estate market (Zhao and Sing, 2016).

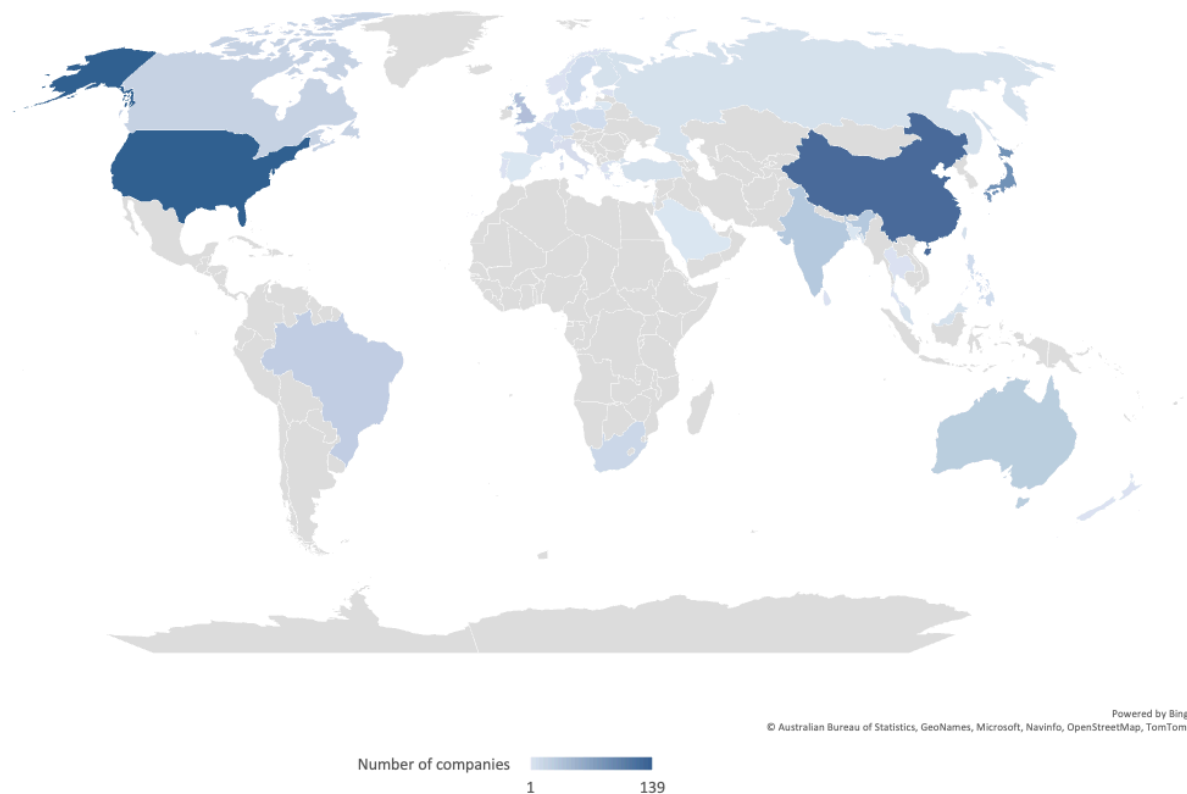
Empirical evidence shows that higher exposure on real estate implies lower average returns and greater sensitivity to systematic risk (Deng and Gyouko, 1999). The detailed analysis of real estate assets owned shows that if the attention is focused only on instrumental real estate assets, the unexpected performance of firms with higher exposures is higher than other firms (Tuzel, 2010). The impact of the real estate ownership on the stock market performance is significantly different on the basis of the overall market condition, and normally in a crisis scenario the lower performance of high CRE firms is more significant (Liow, 2004).

3. Empirical analysis

3.1 Sample

The sample considers all companies listed at the end of 2022 that are operating in the retail sector (consumer cyclical and not cyclical) and for which the Refinitiv database collects operating metrics (Figure 1).

Figure 1. Sample



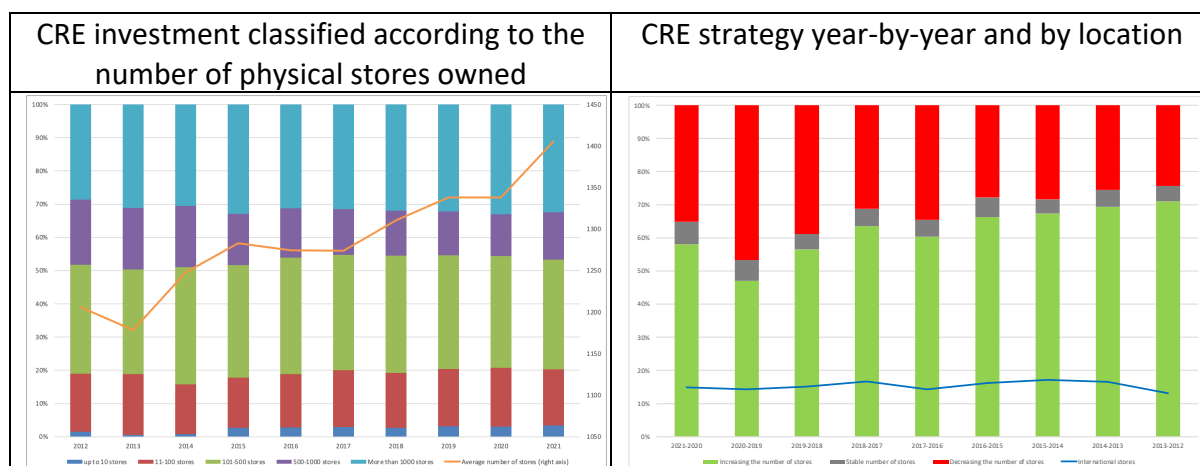
Source: Refinitiv data processed by the authors.

The selected firms are 646 from 42 different countries. The countries most represented are the United States (140), China (125), and Japan (86), and the geographical area that is less represented is Africa (only 15 corporations based in South Africa).

Operating metrics collected in Refinitiv allow one to evaluate the location strategy (n° of domestic and international stores) and the role of the online channel for the sales strategy for the period 2012-2021.

Following Hernandez and Biasotto (2001) illustrating that most location decisions involve managing the existing location asset as opposed to increasing or decreasing the size of the portfolio, the CRE strategy of retail companies could be summarised by analysing the trend on the number of selling points owned or leased by corporations and the change of the strategy over time (Figure 2).

Figure 2. CRE investment of retail companies

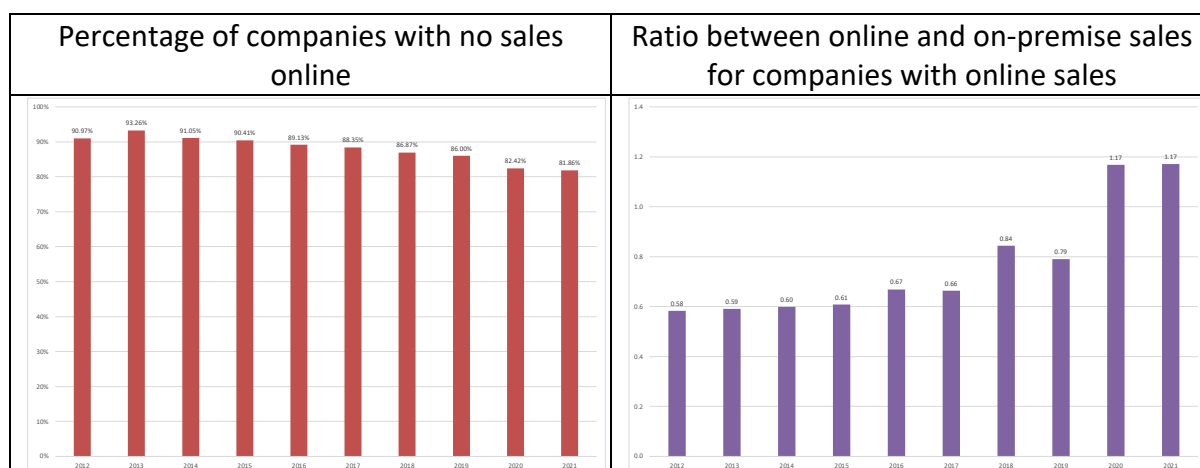


Source: Refinitiv data processed by the authors.

Over the ten years, the number of average stores used by the companies has increased from 1206 in 2012 to 1406 in 2021 and less than 20% of the firms have less than 100 selling points. Year-by-year corporations increase the number of stores owned more frequently and decrease them independently with respect to the year period selected. More than 10% of the firms have invested in brick-and-mortar stores out of the country of origin, and the role of international investment is increasing from 13% in 2012 to 14.8% in 2021.

The analysis of the sales classified based on the selling channel allows identifying some interesting trends in increasing online revenues for companies operating in the retail sector (Figure 3).

Figure 3. Revenue breakdown by selling channel



Source: Refinitiv data processed by the authors.

Data show that the number of companies that do not have a proprietary online selling channel is decreasing over time moving from 91% in 2012 to 82% in 2021 and the trend was only speed-up by the pandemic because in 2020 the percentage decreased by more than 3% in only one year. In 2012 companies that were both selling channels used to sell around the double of the values of items from physical stores with respect to online, while since 2020 the online sales value more than those related to the other stores.

3.2 Methodology

The analysis will consider the performance of firms and the role of the real estate portfolio in explaining the abnormal return achieved. The methodology adopted is a two-stage least squares approach constructed based on the following formulas (Park and Glascock, 2010):

$$R_{it} = \ln \left(\frac{P_{t+1}}{P_t} \right) \quad (1)$$

$$\alpha_{it} = R_{it} - E(R_{it}) = R_{it} - R_{ft} - \beta_{it}^e (R_{mt} - R_{ft}) \quad (2)$$

$$\alpha_{it} = \gamma_0 + \gamma_1 PPE_{it} + \gamma_2 LEV_{it} + \gamma_3 \ln MV_{it} + \varepsilon_{it} \quad (3)$$

where:

R_{it} is the yearly return of the firm i at year t computed as the ratio of the closing price at the end of the year $t+1$ (P_{t+1}) with respect to same price at the end of the year t (P_t);

R_{ft} is the yearly return of the risk-free rate proxied by the US treasury bill 3 months;

R_{mt} is the yearly return of a customized equally weighted index that considers all companies in the sample;

β_{it}^e is the beta of the share i that measures share price sensitivity to the market benchmark computed over the last two years based on weekly data.

PPE_{it} is the amount of Property, Plant, and Equipment scaled for Total assets;

LEV_{it} is the leverage policy proxied by the ratio of total debt with respect to Equity;

$\ln MV_{it}$ is a proxy of the size of the firm constructed as the natural logarithm of the market value;

The model is augmented to test the following hypothesis related to the geographical diversification of corporate real estate portfolio:

Hyp 1. Does the market pay a premium for retail companies based on their CRE policy?

Hyp 2. Did Covid-19 change the role of the CRE strategy in the retail sector?

The new formulas tested are the following:

$$\alpha_{it} = \gamma_0 + \gamma_1 PPE_{it} + \gamma_2 LEV_{it} + \gamma_3 \ln MV_{it} + \gamma_4 IntCRE_{it} + \gamma_5 \ln Stores_{it-1} + \gamma_6 \Delta Stores_{it} + \gamma_7 OnlineSales_{it} + \varepsilon_{it} \quad (4)$$

$$\alpha_{it} = \gamma_0 + \gamma_1 PPE_{it} + \gamma_2 LEV_{it} + \gamma_3 \ln MV_{it} + \gamma_4 IntCRE_{it} + \gamma_5 \ln Stores_{it-1} + \gamma_6 \Delta Stores_{it} + \gamma_7 OnlineSales_{it} + \gamma_8 Covid_{it} + \varepsilon_{it} \quad (5)$$

$$\alpha_{it} = \gamma_0 + \gamma_1 PPE_{it} + \gamma_2 LEV_{it} + \gamma_3 \ln MV_{it} + \gamma_4 Covid_{it} \times IntCRE_{it} + \gamma_5 Covid_{it} \times \ln Stores_{it-1} + \gamma_6 Covid_{it} \times \Delta Stores_{it} + \gamma_7 Covid_{it} \times OnlineSales_{it} + \gamma_8 (1 - Covid_{it}) \times IntCRE_{it} + \gamma_9 (1 - Covid_{it}) \times \ln Stores_{it-1} + \gamma_{10} (1 - Covid_{it}) \times \Delta Stores_{it} + \gamma_{11} (1 - Covid_{it}) \times OnlineSales_{it} + \varepsilon_{it} \quad (6)$$

where the new variables added in formula (4) with respect to formula (3) consider the impact of CRE policy on the extra-performance achieved by measuring the percentage of international retail shops ($IntCRE_{it}$), the natural logarithm of the number of selling points at the beginning of the year ($lnStores_{it-1}$), the percentage of stores opened or closed during the year ($\Delta Stores_{it}$), and the ratio between the online and on store sales ($OnlineSales_{it}$). The new formula allows us to test whether the CRE strategy matters in predicting the abnormal performance of a company operating in the retail sector.

Formulas (5) and (6) allow testing if the role of CRE strategy for the financial markets is changed after the pandemic by using a dummy variable ($Covid_{it}$) that assumes values 0 before 2020 and 1 otherwise. The dummy is used to test whether the event impacted the market (formula 4) and/or if the role of CRE strategy variables has changed after the pandemic (formula 5).

3.3 Results

A preliminary analysis of the performance achieved by the companies does not show a clear pattern over time (Figure 4).

Figure 4. Performance and Jensen’s alpha for retail companies



Source: Refinitiv data processed by the authors.

The best years in the period considered are 2012, 2015, and 2019 for which retail companies on average outperform the expected return and achieved a positive Jensen Alpha. The expected return is increasing from 2016, but the maximum reached before the pandemic (2018) was significantly higher than in the last years of the period analysed.

Table 1. Jensen's Alpha for retail companies classified based on the CRE investment features

Companies classified for CRE International investment											
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average
With International exposure	-1.50%	-16.46%	-21.84%	4.29%	4.77%	-0.96%	-34.41%	26.20%	-7.13%	-4.58%	-5.16%
Without International exposure	4.48%	-15.53%	-12.08%	0.95%	2.68%	-1.79%	-20.72%	25.07%	-7.02%	-4.86%	-2.88%
Companies classified for the role of online revenues											
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average
With online revenues	-0.83%	-18.28%	-17.72%	-0.49%	11.81%	1.70%	-22.20%	24.32%	-4.33%	-7.35%	-3.34%
With no online revenues	6.13%	-15.06%	-14.83%	1.01%	6.70%	-3.75%	-22.02%	24.50%	-8.46%	-4.18%	-3.00%
Companies classified by number of stores											
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average
With more than 100 stores	3.26%	-14.70%	-16.34%	-0.85%	1.13%	-1.70%	-22.70%	22.60%	-7.96%	-3.05%	-4.03%
With less than 100 stores	4.48%	-16.12%	-12.23%	2.67%	3.87%	-1.65%	-23.03%	26.56%	-6.56%	-5.69%	-2.77%
Companies classified for the yearly change in the number of stores											
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Average
Growing number of stores	-	-17.95%	-14.74%	1.59%	0.38%	-3.16%	-26.56%	23.05%	-12.06%	-10.47%	-6.66%
Stable number of stores	-	-2.73%	-18.31%	-0.37%	-3.05%	0.16%	-29.19%	31.87%	-5.95%	-1.73%	-3.26%
Decreasing number of stores	-	-9.02%	-9.03%	5.65%	14.42%	-0.58%	-17.50%	26.15%	-2.61%	3.64%	1.24%

Source: Refinitiv data processed by the authors.

The performance analysis of the companies classified by the CRE strategy allows one to identify some interesting differences among them (Table 1).

The choice of developing an international network of stores for a retail company is no longer rewarded by the market. Typically, companies with fewer stores that rationalize their investment into CRE may be characterized by higher returns concerning the others. The market no longer rewards the simple existence of an on-line channel because the number of companies that use blended selling channel is increased significantly.

A panel regression model allows one to identify the main drivers of abnormal performance for retail companies (Table 2)

Table 1. Jensen's Alpha and company characteristics

	(3)	(4)	(5)	(6)
<i>Intercept</i>	0.107**	-0.087**	0.110**	-0.039*
<i>PPE_{it}</i>	-0.014*	-0.0132*	-0.013*	-0.014*
<i>LEV_{it}</i>	-0.005	-0.003	-0.003	-0.004
<i>lnMV_{it}</i>	-0.004*	-0.004**	-0.005**	-0.005*
<i>IntCRE_{it}</i>	-	0.030	0.030	-
<i>lnStores_{it-1}</i>	-	-0.007	-0.007	-
<i>ΔStores_{it}</i>	-	-0.002**	-0.003**	-
<i>OnlineSales_{it}</i>	-	0.074**	0.002	-
<i>Covid_{it}</i>	-	-	-0.122**	-
<i>Covid_{it} × IntCRE_{it}</i>	-	-	-	0.038
<i>Covid_{it} × lnStores_{it-1}</i>	-	-	-	0.004
<i>Covid_{it} × ΔStores_{it}</i>	-	-	-	-0.005**
<i>Covid_{it} × OnlineSales_{it}</i>	-	-	-	0.002*
<i>(1 - Covid_{it}) × IntCRE_{it}</i>	-	-	-	0.001
<i>(1 - Covid_{it}) × lnStores_{it-1}</i>	-	-	-	0.001
<i>(1 - Covid_{it}) × ΔStores_{it}</i>	-	-	-	-0.002
<i>(1 - Covid_{it}) × OnlineSales_{it}</i>	-	-	-	0.001
Years FE	☑	☑	☑	☑
Company FE	☑	☑	☑	☑
Companies	646	646	646	646
Observations	6460	6460	6460	6460
Adjusted R ²	0.167	0.169	0.169	0.167

Notes: The table presents the results of a panel linear regression model (fixed effects). Independent variable is the Jensen's Alpha and independent variables are: *PPE_{it}* is the amount of Property, Plant, and Equipment scaled for Total assets; *LEV_{it}* is the leverage policy proxied by the ratio of total debt with respect to Equity; *lnMV_{it}* is a proxy of the size of the firm constructed as the natural logarithm of the market value; *IntCRE_{it}* is the percentage of international retail shops; *lnStores_{it-1}* is the natural logarithm of the number of selling points at the beginning of the year, *ΔStores_{it}* is the percentage of stores opened or closed during the year, (*OnlineSales_{it}* is the ratio between the online and on store sales (*OnlineSales_{it}*); *Covid_{it}* is a dummy variable that assumes values 0 before 2020 and 1 otherwise.

Source: Refinitiv data processed by the authors.

Retail companies that outperform the expected return invest less in property and plants and are characterized by lower market capitalization. Data do not support the hypothesis that the ownership of real estate assets for corporate real estate is recognised by the market as a value

added, so retail companies that rent buildings instead of owning them must be preferred from the investors' point of view. The results are in line with previous evidence provided in literature on international retail companies (e.g. Yu and Liow, 2009)

Looking at the CRE strategy, the choice to invest in developing an international network of stores does not create value for shareholders. Companies that reduce the number of physical stores and increase the volume of online sales perform best in the stock market.

Covid-19 had a negative impact on the average performance of retail companies due to the worsening economic condition in all countries worldwide and the reduction of sales from physical stores during the lockdown periods. The most relevant impact related to Covid must be ascribed to the lower profitability of developing new stores and the greater benefits associated with increasing online sales after the pandemic.

4. Conclusion

Retail companies must plan their CRE strategy to maximise the benefits related to owning stores worldwide and the opportunities offered by online channels. Empirical analysis indicated that the number of stores is increasing over time, even if the volume of online sales has increased over the last decade. The international CRE strategy does not change significantly over time, and less than 15% of the selling points are based in a foreign country. CRE strategy has an impact on the stock market performance for retail companies and during the last decade, better performance was achieved by firms that decreased the number of brick-and-mortar stores and increased the volume of sales online.

After the pandemic, the overall impact on the performance of the retail companies was negative, and nowadays companies that want to outperform the market have to reduce the number of shops used even more and increase the role of sales online. The lower role of physical stores is supported by the literature that pointed out that for some customers, the online option will be preferred even after the end of the pandemic period (e.g. Szasz et al., 2022).

More empirical analysis is needed to identify whether the supply chain characteristics of retail companies may affect the CRE policy. In fact, during the pandemic, companies have experienced issues related to having a global supply chain and the impact of supply chain disruptions on companies' risk (Gibilario and Mattarocci, 2022). The CRE investment strategy usually has to prefer to select brick-and-mortar near the main customers or suppliers instead of trying to create new selling points in areas characterised by higher uncertainty for the sales or the procurement strategy.

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