Who Should Own Senior Housing?

Executive Summary. *The senior housing industry provides housing and care services to elderly people who are in need of social support and medical assistance. For the financing and ownership of rented senior residential property, the two structures most used are integrated healthcare companies and healthcare real estate investment trusts (REITs). This study compares the accounting performance of housing property owned by integrated companies and healthcare REITs. The results of the analysis show that the real estate returns of healthcare REITs are superior when housing is separated from care, as it is in the independent living segment. However, when care is more intense and housing services more intertwined with it, integrated healthcare companies obtain superior returns on real estate.*

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The demographic wave of aged people that is steadily approaching in many parts of the world has led to increased investor interest in the senior housing industry. An aging population is likely to translate into higher demand for privately and publicly funded senior housing real estate. The NIC (2001) predicted additional capital needs of almost $5 billion for the industry in the United States alone by 2005, and almost $25 billion by 2010. In many European countries, the short- to medium-term need for senior housing is likely to be comparable or even more substantial, since the aging of the population is more advanced in Europe than it is in the U.S.

The capital needed in the senior housing industry will be increasingly supplied by institutional investors, as argued by Mueller and Laposa (1997). However, the question whether investments in senior housing should optimally be made through property vehicles or through integrated healthcare companies has not been previously addressed. This subject is important, since efficient financing and ownership of senior housing real estate will be beneficial for the industry as a whole. Integrated healthcare companies might well be better able than healthcare REITs in dealing with the integration of operations and property in certain segments of the senior housing industry. Alternatively, one could argue that specialized real estate operators like real estate investment trusts (REITs) will be better able to manage senior housing efficiently.

There is currently no literature to shed light on this question, which is increasingly relevant given

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the expected increase in demand for senior housing and the comparable need for capital in that sector. This paper will therefore investigate and compare the asset performance of healthcare REITs to the real estate component of integrated healthcare companies, covering the different segments of the senior housing industry. We use a sample that includes the complete listed senior housing industry in the U.S. and covers the years 1996–2005, a period that includes both the expansion and contraction phase in supply. The U.S. market offers a unique opportunity to investigate this issue, as both listed integrated healthcare companies and listed healthcare REITs have been in existence for more than a decade.

Background

The question of who should own senior housing is in essence a corporate real estate issue. Recently, Brounen and Eichholtz (2005) investigated the impact of corporate real estate ownership on stock performance. They found that companies acting in capital intensive industries, like the mining and oil sectors, are better able to benefit from their corporate real estate assets as compared to companies in less capital intensive industries, like the business services sector. They documented a global trend towards declining corporate real estate ownership. The authors state that the sector of operations is crucial in determining whether corporate real estate should be outsourced or not.

This study investigates corporate real estate in the senior housing sector. Senior housing real estate can be segmented based on the extent of services intended for housing and care: (1) senior housing: independent living; (2) senior housing and care: assisted living; and (3) senior care: nursing homes (Fitch/NIC, 2000). This classification illustrates the increasing contribution of business (care) value and the declining real estate (housing) value as one moves further up the continuum of care; managing an independent living property is less labor and service intensive than administrating a skilled nursing facility. Mueller and Laposa (1997) investigate the percentage of revenues that is obtained from services versus housing in the different senior housing segments and find that for independent living, approximately 55% of the revenues can be assigned to real estate, whereas for skilled nursing facilities, only 25% of total revenues can be assigned to real estate. Assisted living is at a mid-position with 35% of revenues coming from real estate ownership.

Although all three segments of the senior housing industry allocate a certain percentage of their capital to real estate investments, there is no clear consensus how the performance of senior housing real estate is affected by the extent to which a company performs care services. This relationship is of importance to investors and lenders, since care services increase business risk, which affects real estate valuation and performance (Mullen, 1999). While medical offices can be compared to office space in terms of volatility of rental income and hospitals are rather special purpose buildings usually owned by the operator, senior housing facilities are characterized by an interaction between real estate and operations.

Moreover, there are two ways to finance rented senior housing. First, it can be funded directly through an integrated healthcare company, which owns, leases, and/or manages seniors housing property; hence their business strategy consists of linking the owning and operating entity. The reasons for integrating real estate and operations are mainly financial and strategic: real estate ownership can, for example, be used to reflect superior brand image to customers or to increase efficiency through economies of scale. Second, senior housing real estate can be funded through specialized property ownership companies, of which healthcare REITs are the most predominant. Healthcare REITs own senior housing property and provide indirect housing care by leasing their property to integrated companies. The rationale of using healthcare REITs as an investment vehicle for senior housing real estate is based on the argument that operators are better off conserving capital for investments in operations rather than investing it in real estate. The segregation of real estate risk between integrated companies and healthcare REITs allows integrated companies to focus on their core business, while REITs can focus on the management of the properties.

Hitherto, research on senior housing real estate has mainly focused on supply and demand.[1] In-depth performance comparisons between healthcare REITs and integrated healthcare companies are scarce. Laposa and Singer (1999) compare the senior housing industry with the multifamily and lodging sector and conclude that the beneficial scope and performance of the senior housing industry justifies greater interest from institutional investors. Terris and Myer (1995) try to explain returns on healthcare REITs using healthcare indices and find a significant correlation between them, which indicates that the performance of healthcare REITs is closely linked to the performance of healthcare providers. Finally, Mueller and Anikeeff (2001) study how inclusion of the operating business affects the risk and return characteristics of REITs in different sectors. They conclude that REITs, which add operational income to rental income, become more volatile and thus cease to be a close substitute for a direct property investment.

This paper adds to the existing literature by specifically comparing the accounting performance of healthcare REITs to the performance of the real estate component of integrated healthcare companies. Thereby, the question of how property financing and ownership should be undertaken in the senior housing industry in an optimal way will be answered. Although REITs can release capital for integrated healthcare companies by taking over corporate real estate ownership, we expect that integrated healthcare companies are better able to exploit and manage real estate in the optimal way, especially for the segments in which real estate and operations are crucially entangled (i.e., assisted living and skilled nursing). The analysis uses a sample that includes U.S. healthcare REITs and integrated healthcare companies over a time span from 1996 to 2005, the longest period possible, since REITs had only minor investments in senior housing before 1996.

Data and Methodology

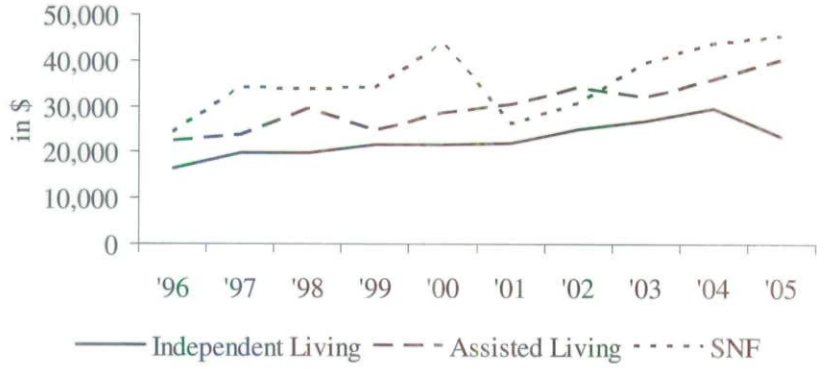
Two sets of data are constructed for the analysis: one covering healthcare REITs and the other covering integrated healthcare companies. The first dataset includes all healthcare REITs over the 1996–2005 period, which are identified using both the *NAREIT Handbook* and SEC 10-K forms of all companies listed under SIC Code 6798. Healthcare REITs whose investment portfolio exists exclusively of medical office buildings (MOBs), or hospitals, are excluded. In addition, all necessary information regarding performance and portfolio characteristics has to be available. Based on these selection criteria, the final sample includes 14 healthcare REITs. The final window of analysis for a particular healthcare REIT is from time to time shorter than provided by the SEC, leading to an unbalanced panel consisting of 97 observations over the sample period. Company names are provided in Appendix A-1.

The second dataset includes all healthcare ICs. Selection is based on SIC Codes 8000, 8050, 8051, 8082, and 8300. A list by Galloro (2001) is used as a robustness check; the list provides an overview and ranking of private and public long-term care providers in terms of revenue and beds/units for the years 1999 and 2000. In order to be included in the sample, senior housing has to be a key market of the company and has to be part of a company's business strategy. Senior housing is considered to be a key market when either separate information about investments in this market is present, or when a company possesses senior housing and only leases or manages other healthcare facilities. All information is retrieved from 10-K forms. The final sample includes 29 healthcare ICs, resulting in an unbalanced panel of 136 observations. Company names and the respective sample periods for each company are provided in Appendix A-2.

As explained earlier, the service and real estate aspects of integrated healthcare companies are intertwined, so total revenue includes both service fees and real estate income. In order to analyze real estate performance, the real estate revenues and investments are separated from the total revenues and investments in integrated healthcare companies. Data supplied by the NIC are used for the separation of the revenues (Exhibit 1a). These data are the yearly average revenues per occupied bed/unit for a sample of approximately 400 senior housing properties (65,000 beds/units) located

Exhibit 1a

Development of Average Revenues per Occupied Bed/Unit per Year (1996–2005)



Note: This graph shows the three senior housing segments (independent living, assisted living, and skilled-nursing facilities) and their respective development in average revenues per occupied bed/unit throughout the 1996–2005 sample period. Source: NIC.

Exhibit 1b

Development of Average Acquisition Prices per Bed/Unit per Year (1996–2005)

Note: This graph shows the three senior housing segments (independent living, assisted living, and skilled nursing facilities) and their respective development in average acquisition prices per bed/unit throughout the 1996–2005 sample period. Source: Irving Levin Associates.

throughout the U.S. The average revenues of the three different segments of senior housing clearly show the increase in operational risk when going up in the continuum of care: revenues of independent living facilities are mainly based on real estate income and therefore relatively stable, whereas revenues of skilled nursing facilities are mainly based on service fees rather than real estate income, making revenues less predictable and more volatile.

Data provided by Irving Levin Associates is used for the separation of the real investments from investments in services. These data are the average annual acquisition prices per bed/unit for the 1996 through 2005 period (Exhibit 1b). Contrary to observations for revenues per bed, the graph in Exhibit 1b shows that the volatility of acquisition prices per bed decreases when going up in the continuum of care. This might be explained by the sensitivity of capital intensive senior housing

segments to the behavior of the real estate capital market. Due to oversupply in the late 1990s, demand for senior housing real estate collapsed and prices fell, followed by more positive market conditions in recent years, leading to rising prices.

Methodology

The real estate performance of integrated healthcare companies and healthcare REITs can be measured for each of the three senior housing segments k by calculating the return on real estate investment (RRE):

$$RRE_{k,t} = \frac{R_{k,t}}{I_{k,t}}, \tag{1}$$

where:

$R_{k,t}$ = Rental income attributable to real estate for each senior housing segment k in year t; and
$I_{k,t}$ = The total amount of capital invested in senior housing segment k in year t.

First, rental income is retrieved from annual reports. For almost the entire sample of healthcare REITs, rental income is provided for each senior housing segment. If rental revenue is not provided for each segment separately, it can be further differentiated as follows:

$$R_{k,t} = R_t * \frac{d_{k,t}}{\sum_{k=1}^{3} d_{k,t}}, \tag{2}$$

where:

$R_{k,t}$ = Rental income in senior housing segment k in year t;
R_t = Total rental income in year t; and
$d_{k,t}$ = Debit position in senior housing segment k in year t.

Data on the average revenues per bed/unit for each segment, provided by the National Investment Center for the Senior Housing and Care Industry (NIC), were combined with the framework for the distribution of revenues proposed by Laposa and Mueller (1997) in order to calculate the debit position for each particular senior housing segment:

$$d_{k,t} = n_{k,t} * p_k * b_{k_o,t}, \tag{3}$$

where:

$d_{k,t}$ = Debit position in senior housing segment k in year t;
$n_{k,t}$ = Average revenues per bed/unit in senior housing segment k in year t;
p_k = Percentage of revenues attributable to real estate in senior housing segment k; and
$b_{k_o,t}$ = Owned beds/units in senior housing segment k in year t.

By multiplying the average revenues per occupied bed/unit per year by the percentage attributable to real estate and the owned beds, a debit position, or indicative total, can be calculated. Combining Equations 2 and 3, the total rental income of a healthcare REIT can be differentiated to each senior housing segment.

Regarding the rental income of ICs, a distinction must be made between facilities under operation, including owned and leased beds/units, and facilities under management, including owned, leased, and managed beds/units. Therefore, operating revenues of ICs include resident and management fees next to rental income. To calculate rental income for ICs, indicative total revenues for each company are constructed using NIC data:

$$d_{k,t} = n_{k,t} * B_{k,t}, \tag{4}$$

where:

$d_{k,t}$ = Debit position in senior housing segment k in year t;
$n_{k,t}$ = Average revenues per year in senior housing segment k in year t; and
$B_{k,t}$ = Total of beds/units owned, leased, and managed in senior housing segment k in year t.

The calculated indicative revenues are compared with the real revenues as provided in the annual reports to check the robustness of this methodology. Appendix B-1 shows that real revenues are not significantly different from the indicative totals, so this methodology to allocate revenues to the different segments seems to be appropriate.

Revenues that can be attributed to owned beds only are retrieved as follows:

$$R_{k_o,t} = R_t * \frac{d_{k,t}}{\sum_{k=1}^{3} d_{k,t}} * \frac{b_{k_o,t}}{B_{k,t}}, \quad (5)$$

where:

$R_{k_o,t}$ = Revenue attributable to ownership in senior housing segment x in year t
R_t = Total revenue in year t;
$d_{k,t}$ = Debit position in senior housing segment k in year t;
$b_{k_o,t}$ = Beds owned in senior housing segment k in year t; and
$B_{k,t}$ = Total of beds/units owned, leased, and managed in senior housing segment k in year t.

Finally, rental income of owned beds/units for an integrated healthcare company, excluding service fees, can be calculated:

$$R_{k,t} = R_{k_o,t} * p_k, \quad (6)$$

where:

$R_{k_o,t}$ = Revenue attributable to ownership in senior housing segment x in year t;
$R_{k,t}$ = Rental income in senior housing segment k in year t; and
p_k = Percentage of revenues attributable to real estate in senior housing segment k.

Second, the capital invested in senior housing real estate is calculated. Contrary to integrated healthcare companies, healthcare REITs state the gross amount of real estate carried at the close of a period, including land, buildings, and improvements for each facility. Therefore, all necessary information can be retrieved directly from the annual reports.

For integrated healthcare companies, the calculation of invested capital is more complicated, as aggregate information is provided only. For the companies in the sample, ownership in senior housing, land, buildings, and improvements are retrieved from annual reports, including depreciation. The following formula is used for the allocation to the different senior housing segments:

$$I_{k,t} = I_t * \frac{r_{k,t}}{\sum_{k=1}^{3} r_{k,t}}, \quad (7)$$

where:

$I_{k,t}$ = Invested capital in senior housing segment k in year t;
I_t = Total invested capital (land, buildings, and improvements); and
$r_{k,t}$ = Debit position in senior housing segment k in year t.

The debit position for investments for each particular senior housing segment is calculated using:

$$r_{k,t} = I_{k,t} * b_{k_o,t}, \quad (8)$$

where:

$r_{k,t}$ = Debit position in senior housing segment k in year t;
$l_{k,t}$ = Average acquisition prices per bed/unit in senior housing segment k in year t; and
$b_{k_o,t}$ = Owned beds/units in senior housing segment k in year t.

The indicative investments (debit positions) are calculated (for each company) to control for the robustness of the methodology differentiating total investments to each senior housing segment, with real investments as provided in the annual reports. The results in Appendix B-2 show that there

is no significant difference between calculated investments and real investments.

Results

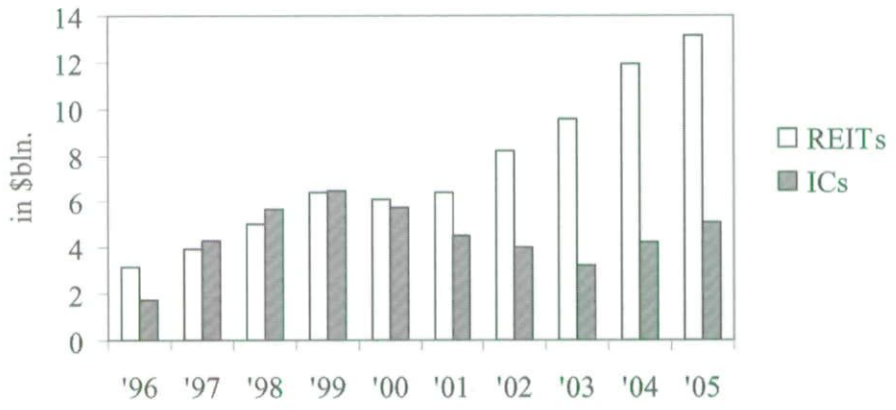
To get a first insight into the scope of investments in senior housing real estate by integrated healthcare companies and healthcare REITs, Exhibit 2a provides an overview of the *total* amount of capital invested in senior housing real estate per year. Until the year 2000, integrated healthcare companies and healthcare REITs exhibit the same investment pattern, but after this point, REITs invested more capital in senior housing real estate compared to integrated healthcare companies. The observed trend can be interpreted as a general shift in the strategy of integrated healthcare companies. Instead of tying up capital in traditional bricks and mortar investments, they seem to develop into more flexible management companies concentrating on the business side of senior housing (i.e., care services). The strategy to withdraw partially from real estate ownership needs to be seen in relation to the market downturn of the late 1990s, when overly optimistic assumptions about senior housing demand led to overbuilding, causing many companies to file for bankruptcy. By selling their real estate assets, integrated healthcare companies were able to reduce high debt ratios and to look more attractive to the capital market.

Exhibit 2b shows the annual invested capital in senior housing real estate of integrated healthcare companies and healthcare REITs for each of the different segments. First, observe that the total investments in independent living property (2005: $2.6 billion) are relatively small compared to investments in assisted living ($9.2 billion) and skilled nursing property ($6.4 billion). Second, the first panel of Exhibit 2b shows that REIT investments in independent living real estate was virtually zero before 2000, but has grown strongly since then, and is now outpacing investment in that category by integrated healthcare companies. Third, the exhibit shows that investments in senior housing property by healthcare REITs have been outpacing investments of integrated healthcare companies over the past few years. However, there is no clear indication that integrated healthcare companies are terminating their real estate investments, as a consistently downward trend cannot be observed for any of the segments.

Exhibits 3 and 4 present the results of the analysis described in the previous section, with the panels reporting results per segment of senior housing, respectively. As a robustness check and to gain more insight into the time-variation of the results, the analysis is repeated for two sub-periods.

Exhibit 2a
Total Capital Invested In Senior Housing Real Estate (1996–2005)

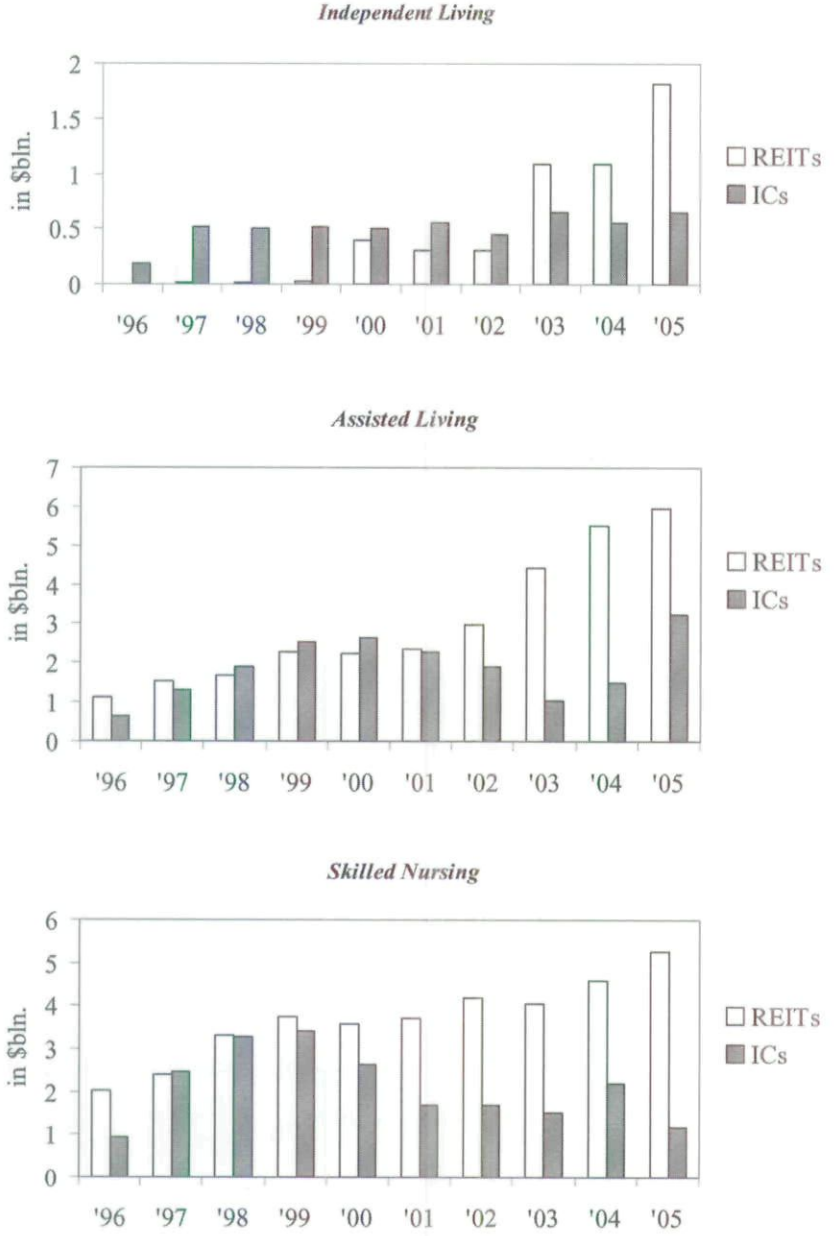
All Segments



Note: Exhibit 2a shows the total amount of capital invested in senior housing real estate for healthcare REITs and integrated healthcare companies over the sample period.

Exhibit 2b

Total Capital Invested in Senior Housing Real Estate by Segment (1996–2005)



Note: Exhibit 2b shows the total amount of capital invested in senior housing real estate for healthcare REITs and integrated healthcare companies during the sample period, where the graphs represent the independent living, assisted living, and skilled nursing segment, respectively.

Exhibit 3 shows the *per company average* amount of capital invested in senior housing real estate. The results are mainly in line with the observations in Exhibit 2, which showed the *total* annual investments in senior housing real estate. For the senior housing sector in general, Panel A of Exhibit 3 shows that healthcare REITs invest significantly more capital in senior housing property as compared to integrated healthcare companies. However, the sub-period analysis reveals that the average level of investment increases with the same factor over time for both vehicles, which confirms the previous finding that integrated healthcare companies continue to invest in real estate rather

Exhibit 3
Per Company Average Amounts of Capital Invested in Senior Housing

	Healthcare REITs			Healthcare Companies			
	Mean	Std. Dev.	*n*	Mean	Std. Dev.	*n*	*t*-Stat.
Panel A: Full Sample							
Invested capital in '000s	$760,831	$557,972	97	$330,849	$341,463	136	7.28**
1996–2000	$534,513	$319,001	46	$271,590	$323,930	88	4.48**
2001–2005	$964,961	$645,406	51	$439,490	$349,349	48	4.99*
Panel B: Independent Living							
Invested capital in '000s	$206,070	$352,830	34	$169,550	$125,517	30	0.53
1996–2000	$57,725	$119,121	13	$116,636	$98,707	19	−1.52
2001–2005	$297,903	$416,814	21	$260,948	$116,800	11	0.28
Panel C: Assisted Living							
Invested capital in '000s	$336,660	$374,613	89	$164,688	$218,355	115	4.10***
1996–2000	$204,133	$193,686	43	$129,871	$170,350	69	2.12**
2001–2005	$460,545	$454,916	46	$216,914	$268,865	46	3.12***
Panel D: Skilled Nursing							
Invested capital in '000s	$396,037	$277,188	93	$303,910	$404,476	69	1.71*
1996–2000	$327,379	$233,810	46	$295,878	$410,284	43	0.44
2001–2005	$463,233	$301,431	47	$317,194	$402,368	26	1.75*

Note: This exhibit reports the results of the accounting analysis on healthcare REITs and ICs. Columns two and three show mean and standard deviation of invested capital for the full sample period and for two sub-periods, n represents the number of observations. The last column reports the t-statistic for the independent sample t-test between the REIT and IC means.

* Significant at the 10% level or more.

** Significant at the 5% level or more.

*** Significant at the 1% level or more.

than just relying on leased property and the outsourcing of real estate. In Panel B of Exhibit 3, it can be observed that there is no significant difference in newly invested capital in independent living property for healthcare REITs and integrated healthcare companies. Only in the past few years have REITs started investing in this senior housing segment, as the investment focus used to be on assisted living and skilled nursing property. With demand lagging supply in the late 1990s, healthcare REITs started to invest in other senior housing segments. In line with this argument, Panel C of Exhibit 3 shows for both the full sample and the two sub-periods that investments in assisted living property have been significantly larger for REITs as compared to integrated healthcare companies, notwithstanding the intuition that healthcare REITs might be less apt to add value to assisted living property. Finally, the results of Panel D in Exhibit 3 indicate that healthcare REITs have been investing more capital in skilled nursing property as compared to integrated healthcare companies, which is mainly driven by the second half of the sample period.

Panel A of Exhibit 4 shows the return on real estate investments for the full sample period. Integrated healthcare companies have a significantly higher return on real estate investments, combined with a higher volatility. This result also holds for both sub-periods. The findings are in line with the hypothesis that the integration of operations and property in integrated healthcare companies enables management to add more value to their real estate assets compared to the management of healthcare REITs. Moreover, the performance of integrated healthcare companies improved significantly in the second half of the sample,[2] whereas healthcare REITs were not able to profit from the positive prevailing market conditions.

Exhibit 4
Returns on Real Estate Investments in Senior Housing

	Healthcare REITs			Healthcare Companies			
	Mean	Std. Dev.	*n*	Mean	Std. Dev.	*n*	*t*-Stat.
Panel A: Full Sample							
Return on investment (RRE)	10.59%	2.82%	97	14.78%	10.72%	136	−3.76***
1996–2000	10.91%	3.12%	46	13.41%	10.12%	88	−2.13**
2001–2005	10.30%	2.51%	51	17.30%	11.41%	48	−4.27***
Panel B: Independent Living 9.28%							
Return on investment (RRE)	11.96%	5.36%	34	9.28%	3.82%	30	2.26**
1996–2000	14.36%	6.60%	13	10.53%	4.22%	19	2.00*
2001–2005	10.47%	3.90%	21	7.13%	1.54%	11	2.71**
Panel C: Assisted Living							
Return on investment (RRE)	8.14%	1.93%	89	11.55%	8.36%	115	−3.76***
1996–2000	7.89%	2.22%	43	9.92%	7.82%	69	−1.66*
2001–2005	8.39%	1.60%	46	14.00%	8.62%	46	−4.34***
Panel D: Skilled Nursing							
Return on investment (RRE)	11.92%	3.86%	93	21.91%	10.44%	69	−8.48***
1996–2000	12.49%	4.68%	46	20.12%	8.81%	43	−5.14***
2001–2005	11.36%	2.78%	47	24.86%	12.31%	26	−7.23***

Note: This exhibit reports the results of the accounting analysis on healthcare REITs and ICs. Columns two and three show mean and standard deviation of return on investment for the full sample period and for two sub-periods, *n* represents the number of observations. The last column reports the *t*-Statistic for the independent sample *t*-test between the REIT and IC means.
* Significant at the 10% level or more.
** Significant at the 5% level or more.
*** Significant at the 1% level or more.

This might be due to the integration of operations and assets in the former, which allows for quick adaptation to changing market conditions, whereas healthcare REITs were bound to fixed rent contracts.

As a robustness check, observations of integrated healthcare companies that have an ownership of senior housing real estate below 25% of total asset value were excluded, but this does not significantly change the results. Therefore, it can be concluded that, with respect to the performance of the senior housing industry in general, integrated healthcare companies successfully manage to outperform healthcare REITs over the sample period and the two sub-periods. However, the question is whether this outperformance holds for all senior housing segments.

Panel B of Exhibit 4 shows the real estate performance of the independent living segment. Contrary to the results for the full sample, healthcare REITs significantly outperform integrated healthcare companies in this segment. This is in line with intuition: income in the independent living segment is merely based on real estate revenues, hence specific market knowledge is of less importance, which diminishes the competitive advantage of integrated healthcare companies over healthcare REITs in the management of real estate. Moreover, integrated healthcare companies may be more vulnerable to changing property market conditions; in periods when the supply of independent living real estate is high and occupancy rates decrease, rental income of integrated healthcare companies decreases, whereas the income of REITs is contractually fixed and the occupancy risk is therefore partly shifted to healthcare companies that lease independent living property.

Panel C of Exhibit 4 presents the results for the assisted living segment. Integrated healthcare companies significantly outperform healthcare REITs in returns on real estate investments.

Clearly, operating in the assisted living segment offers management of an integrated healthcare company the scope to add value, as they can meet the needs of seniors seeking housing with supportive care and services. Here, real estate and services are complimentary and more entangled as compared to the independent living segment. Two possible explanations for the large increase in performance in the second half of the sample period are the slowdown in construction after the overbuilding in the late 1990s and the possible learning effects in the management of senior housing. The former led to a reduction in the supply of new units. At the same time, growing demand for senior housing services led to an increase of occupancy rates and resident fees in existing facilities. Moreover, the impact of management skills on real estate revenues might increase over time due to a learning effect. It has to be noted that the positive market conditions led to an increase of RRE for healthcare REITs as well.

Finally, Panel D of Exhibit 4 shows the performance of integrated healthcare companies and healthcare REITs in the skilled nursing segment. The results are in line with expectations: integrated healthcare companies significantly outperform healthcare REITs with RREs that are twice as high. The scope of this outperformance is far higher than is the case for the assisted living segment and may possibly be explained by the extent of the integration of operations and property in the segment. Property is inextricably connected to the provision of services and therefore, the management of integrated healthcare companies is likely to have a competitive advantage in adding value to property, compared to the management of healthcare REITs, which has expertise in real estate and not in healthcare services.

Conclusion

This paper aims to fill a gap in the empirical literature regarding senior housing property. By comparing the performance of healthcare REITs to the performance of the real estate component of integrated healthcare companies, the research investigates the optimal ownership of senior housing property in the different care segments of the industry.

First, the findings reveal that the growth of capital investments in senior housing real estate by healthcare REITs is larger than investments by integrated healthcare companies. Nevertheless, although integrated healthcare companies have engaged in the outsourcing of real estate operations over the past few years, the complete termination of real estate investments is not observed, as integrated healthcare companies continue to invest capital in all segments of senior housing property.

Second, the findings also indicate that healthcare REITs have higher returns on independent living property investments than integrated healthcare companies. This is caused by the fact that real estate and care services are unrelated components of revenue in the independent living segment, so managerial added value is limited. Moreover, brand identity plays a minor role in this segment, as care services can only be provided by means of housekeeping and social activities. This suggests that healthcare REITs are efficient owners of senior housing in the independent living segment.

Third, the real estate performance of integrated healthcare companies is found to beat the performance of healthcare REITs in the assisted living and especially the skilled nursing segment, suggesting that the former should not only be the operators, but also the owners of real estate in these segments. In both segments, care services are essential and the management skills required imply that the management of integrated healthcare companies can provide added value; property and service are strongly entangled here and therefore complementary to each other. Moreover, these segments of senior housing property offer integrated healthcare companies the possibility to establish a consistent and high-quality brand image. In case real estate is outsourced to a healthcare REIT, this consistency could potentially be lost, as the property owner might not be able to meet the needs of the integrated healthcare company. As the senior population becomes wealthier, they will increasingly require high-quality care, and therefore, the quality aspect will play a more important role in the business strategy of an integrated company. To summarize: the more one moves up in the continuum of care, the less attractive REIT financing of senior housing appears to be.

This paper is a first step in assessing the most efficient approach to funding real estate in the senior housing industry. However, it provides by no means a complete answer to this question. Although the general trend observed in this study is to finance senior housing through healthcare REITs, REIT ownership of senior housing property is obviously not optimal in all circumstances.

Appendix A-1

Sample of Healthcare REITs

Company Name	Sample	Years
American Health Properties	1996–1998	3
CNL Retirement Properties Inc.	2002–2005	4
ElderTrust	1998–2002	5
Health Care Property Investors	1996–2005	10
Health Care Reit Inc.	1997–2005	9
HRPT Properties Trust	1996–1997	2
LTC Properties	1996–2005	10
MediTrust	1996–1996	1
National Health Investors Inc.	1996–2005	10
National Health Realty Inc.	1998–2005	8
Nationwide Health Properties Inc.	1996–2005	10
Omega Healthcare Investors Inc.	1996–2005	10
Senior Housing Properties Trust	1999–2005	7
Ventas Inc.	1998–2005	8

Note: Final sample of healthcare REITs. Companies not included in sample for reasons of traceability: Capstone Capital Corporation, G&L Realty Corp., Healthcare Realty Trust Inc., and CNL Retirement Properties Inc. (before 2002). Companies not included in the sample for reasons of business focus: Cogdell Spencer Inc., ILM Senior Living, Medical Properties Trust, Universal Health Realty Income Trust, Windrose Medical Properties Trust, and HRPT Properties Trust (after the spin-off of Senior Housing Properties Trust in 1998).

Appendix A-2

Sample of Integrated Healthcare Companies

Company Name	Sample	Years
Advocat Inc.	1996–2005	10
Alterra Healthcare Corp.	1996–2002	7
American Retirement Corp.	1997–2005	9
ARV Assisted Living	1996–2002	7
Assisted Living Concepts	1996–2003	8
Atria Communities	1996–1997	2
Beverly Enterprises Inc.	1997–2004	8
Brookdale Living Communities	1997–1999	3
Brookdale Senior Living	2005–2005	1
Capital Senior Living Corp.	1997–2005	9
Carematrix Corp.	1996–1999	4
Centennial Healthcare Corp.	1997–1999	3
CLC Healthcare	1998–2000	3
Emeritus Corp.	1996–2005	10
Extendicare Health Services	1999–2005	7
Genesis Healthcare Corp.	2004–2005	2
Greenbriar Corp.	1999–2003	5
Integrated Living Communities	1996–1996	1
Kapson Senior Quarters	1996–1997	2
Karrington Health	1996–1998	3
Mariner Health Care Inc.	1996–1999	4
Multicare Companies Inc.	1996–2000	5
Newcare Health Corp.	1997–1998	2
Regent Assisted Living Inc.	1999–2001	3
Retirement Care Associates	1996–1997	2
Skilled Healthcare Group Inc.	1998–2000	3
Sterling House Corp.	1996–1996	1
Summit Care Corp.	1996–1997	2
Sunrise Senior Living	1996–2005	10

Note: Final list of selected ICs. Companies not included in sample for reason of traceability: Manor Care, Marriott Int., Kindred Healthcare, CLC (before 1998) as well as Mariner Health Care Inc. (after 1999). Companies not included in the sample for reasons of business orientation: East Peoria, Five Star Quality, National Healthcare Corp, and Sun Healthcare.

Appendix B-1

Robustness Check Real vs. Indicative Revenues ICs

Year	Indicative Revenues in $1000	Real Revenues in $1000
1996	2,218,814	2,022,811
1997	6,744,197	6,303,443
1998	7,526,282	7,029,962
1999	8,411,892	8,286,467
2000	7,333,931	6,233,718
2001	4,662,050	5,401,179
2002	5,250,561	5,162,890
2003	5,606,669	5,341,341
2004	6,542,750	6,785,988

Appendix B-1

Robustness Check Real vs. Indicative Revenues ICs (continued)

Year	Indicative Revenues in $1000	Real Revenues in $1000
2005	5,753,059	5,660,330
Mean	6,005,020	5,822,813

Note: Appendix B-1 shows the results of the robustness check comparing total annual reported revenues for the sample of integrated healthcare companies to the total annual indicative revenues calculated for the purpose of allocation of revenues to the different senior housing segments. The *t*-Stat comparing the means of the two samples is 0.24.

Appendix B-2

Robustness Check Real vs. Indicative Invested Capital ICs

Year	Indicative Revenues in $1000	Real Revenues in $1000
1996	2,150,636	1,736,270
1997	5,423,048	4,278,873
1998	5,943,557	5,588,992
1999	7,360,643	6,412,791
2000	5,758,185	5,738,554
2001	4,841,166	4,532,847
2002	3,596,930	4,040,501
2003	3,047,337	3,396,669
2004	3,338,678	4,248,268
2005	3,778,299	3,719,562
Mean	4,523,848	4,369,333

Note: Appendix B-2 shows the results of the robustness check comparing total reported annual real investments for the sample of integrated healthcare companies to the total annual investments calculated for the purpose of allocation of senior housing investments to the different senior housing segments. The *t*-Stat comparing the means of the two samples is 0.23.

Endnotes

1. See, for example, Anikeeff (1999), Doctrow, Mueller, and Craig (1999), and Tessier and Mueller (1999).
2. Results for *t*-tests are not reported in exhibit. Available upon request.

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