Healthcare Real Estate as a Hedge Against Market Risks: A Study of the Investment Opportunities and Obstacles

by

Ran Cao

B. Architecture, 2010

Hefei University of Technology

Master. Architecture, 2012

Ohio State University

Submitted to the Program in Real Estate Development in Conjunction with the Center for Real Estate in Partial Fulfillment of the Requirements for the Degree of Master of Science in Real Estate Development

at the

Massachusetts Institute of Technology

February, 2019

Signature of Author Signature redacted
Center for Real Estate
January 11, 2019

Certified by Signature redacted
Jennifer Cookke
Lecturer, Center for Real Estate
Thesis Supervisor

Accepted by Signature redacted
Professor Dennis Frenchman
Class of 1922 Professor of Urban Design and Planning,
Director, Center for Real Estate
School of Architecture and Planning

[This page is intentionally left blank]

Healthcare Real Estate as a Hedge Against Market Risks:
A Study of the Investment Opportunities and Obstacles

by

Ran Cao

Submitted to the Program in Real Estate Development in Conjunction with the Center for Real Estate on January 11, 2019 in Partial Fulfillment of the Requirements for the Degree of Master of Science in Real Estate Development

ABSTRACT

Healthcare real estate used to be a niche market within the commercial real estate sector, has gradually improved to a core-asset. It proves itself as a high yield and recession-resistive asset class, attracting more investments from both public and private sectors. Still many traditional investors are deterred to enter this market due to its high reliance of special knowledge about healthcare business.

The thesis aims to repeal the specialties of healthcare real estate by reviewing five product types within this sector and studying key factors determining the success of new developments and acquisitions. Followed by interviews with professionals working in this field, the thesis presents an analysis of investment decisions by different types of companies and the implications on future development and investment opportunities.

In the conclusion, recommendations of investment strategies are given based on various risk profile of different developers and investors who are planning to enter this new-core asset market.

Thesis Supervisor: Jennifer Cookke
Title: Lecturer, Center for Real Estate

Acknowledgement

I would like to first thank Jennifer Cookke for her guidance and advice throughout the writing of this thesis. Her own practice in the healthcare real estate sector and her insights are very meaningful and encouraging for me to delve deeper into this once-niche market.

Many people helped me along the way to finish this thesis, including Jim Costello from Real Capital Analytics; MIT alum Robert MacAndrew from Well tower, Elise Slinger from 2life Community and Jud Jacobs from Caddis Healthcare Real Estate; also people who I did not know before but be willing to offer helps, including Alex Bell, Ryan Wagner and so on. Without your help, this thesis would not have been possible.

I owe my parents tremendously for supporting me throughout my previous career and academic life here at MIT. I could not thank more for having such great parents who are always listening, supporting and encouraging me to pursue my interest.

At last, I am thankful for MIT Center for Real Estate, for providing ineradicable education, for all the friends I made here, for all the faculty and staff I got to know during the past one and half year.

Table of Content

[This page is intentionally left blank]

Chapter One: Introduction

1.1 General

Healthcare real estate used to be a niche market within commercial real estate sector. Traditional development firms or institutional investors are deterred to enter the healthcare real estate market due to its special requirements and complexities, primarily coming from the following aspects.

1) special requirements on physical space,
2) expertise and knowledge of operation of healthcare industry.
3) high reliance on partnership between healthcare providers and property owners.
4) longer investment cycle and higher risk profile, which confines capital sources.
5) uncertainty brought by healthcare policies changes.

In spite of the challenges, investing in real estate is increasing and the market is growing. At the time of real estate cycle reaching the peak, capital flows from traditional real estate market into markets with assets types traditionally ignored by main stream developers and investors. One reason comes from the expectation of underperformance of traditional commercial real estate assets (by definition meaning office, retail, multifamily, industrial and hotel properties) during downturn, which could happen sooner than people expect. Another reason is that, due to the fast development in the previous years, there are oversupplies of multiple types of traditional real estate products, causing the prices to plateau or even drop recently according to industrial reports. *(Elizabeth Szep 2018)* Instead of investing in the traditional assets, more and more capitals flow into operating assets, with properties revenues tied up to the operations of industries that are not strongly correlated with macroeconomic movements. Some of such real estate assets are healthcare real estate, student housing, distribution centers, self-storage, data centers etc.

Among all the operating asset types, healthcare real estate presents itself as the one with highest entry barrier. Meanwhile, it is also by far the most stable and highest yield asset type. The basis of demographic growth, the inelastic demand of healthcare services, the upgrading and expansion of healthcare facilities to catch up with technologies innovations, all imply that investments in this market may offer a consistent outlook, making it a good hedge against risk during real estate downturn.

1.2 Research Objectives

The objective of this thesis are to review different healthcare real estate products, and the opportunities and obstacles to invest in each of these products, from the perspectives of different investors and developers. This thesis intends to repeal the mysterious appearance of healthcare real estate by analyzing 1) firstly, healthcare real estate as a general asset type and its performance, in contrasting with other traditional assets;2) the subcategory products within this spectrum; 3) current investment activities in this field from both public and private sectors; 4) investment opportunities and obstacles. In the final, a matrix of assessing risks in investing in each type of healthcare real estate products would be generalized to guide future investments.

1.3 Research Methodology and Thesis Structure

The methodology adopted in this thesis is a qualitative approach, through literature reviews of academic publications and industrial reports, and live interviews with professionals who work in this area. There are 5 major chapters of the thesis.

<u>Chapter 2. General Introduction into Healthcare Real Estate</u>

Chapter 2 presents an introduction of healthcare real estate, with a brief overview of the obstacles and opportunities to enter this market. For obstacles, a review of specialties and complexities of healthcare real estate is given to understand the marginal feature of the market and why traditional real estate investors are deterred to enter. For opportunities, an analysis of uptrend demand and a comparison of risk and return across asset types helps to understand the potentials of healthcare real estate as an asset type.

<u>Chapter 3: Healthcare Real Estate Products</u>

Unlike traditional asset types, different real estate products under the general category of healthcare real estate sector are tremendously different from each other, not only in their financial performance but also in their fundamental operations.

This chapter starts with a definition of five basic healthcare real estate products: senior housing (including age-restricted communities, independent living, assisted living), skilled-nursing facilities, outpatient facilities, hospitals and life science facilities.

Later, an analysis of development types and common deal structures is presented, concluded with a summary of some key special features of each products, for developers and investors to be aware of in order to succeed in new development or acquisition deals. This part is done through literature reviews and live interviews with industry professionals.

Chapter 4: Current Investment Activities in Healthcare Real Estate

In order to take a deeper look into investment potentials, the chapter further analyzes different healthcare real estate products. Since most private investments in this sector are highly segmented, there is a lack of access to data of private investments. Among all investors in this sector, the biggest players are few healthcare REITs, each of which owns a big share of the market and a diversified property portfolio. REITs disclose their financial information quarterly and annually, which provides abundant data to study the underlying assets. As a result, the study method deployed here is to study the portfolio and performance of REITs by tracking each of the subcategory products over time. Even though this study method has some limitation (due to the lack of private investment data and the incompleteness and inconsistency of accountings), this practice provides a snapshot which helps to understand the five healthcare real estate products intuitively. In addition, investments in healthcare real estate from private sectors are also studied, but with a qualitative approach.

Chapter 5: Analysis of live interviews with healthcare real estate professionals

By interviewing people working for companies which have already invested or have made plans to invest in this sector, the chapter collects thoughts from industrial leaders and illustrate investment activities in this sector with realistic studies, with hope that these thoughts will shed light into future investment decisions in this area.

Chapter 6: Conclusions

In conclusion, the thesis generates a matrix for assessing investment risks and opportunities of each healthcare real estate products and also a suggestion of investment strategy based on different investors and their risk tolerance profile.

Chapter Two:
General Introduction Into Healthcare Real Estate

Healthcare real estate or "medical real estate" describes properties or land owned or leased by members or organizations within healthcare community for medical/healthcare or life science research uses. Traditionally, healthcare practitioners, either as members or entity, have the ownership of properties or campus they use. For example, hospital traditionally is the landlord of its own hospital campus and facilities/equipment on the campus; or groups of individual practitioners own shares of a property they occupy to provide medical treatment or care service. Gradually, healthcare practitioners, especially big healthcare systems realized the inefficiency of self-ownership. Few reasons contribute to the inefficiency

1) Strategic Consideration: A healthcare provider's core objective is to deliver healthcare services to its patients and enhance the health of its local population. Properties which support these services are important to the operation of healthcare system. But for healthcare providers, owning real estate is not necessary and not essential for their business model.
2) Operational Consideration: Real estate is naturally not an expertise for healthcare practitioner. Healthcare providers who own real estate properties usually have to hire in-house real estate talents to operate the real estate business *(Becker's Hospital Review 2015)*, which leads to an extra expense on employee recruitment, training and internal management. It is also difficult for hospital to attract talents to perform such duties. It requires a special kind of talents, who understand both real estate market and operation of healthcare industry. And such talents are hard to find. In addition, there is a lack of incentives for in-house real estate professionals to increase the financial performance of real estate investments that healthcare practitioners make, therefor less efficiency is achieved. *(Becker's Hospital Review 2015)*
3) Financial Consideration: Healthcare systems expand and renovate their facilities constantly to accommodate increasing space demand and adapt to new technologies. These real estate projects require large amount of upfront investments. Healthcare systems' limited capital source can barely cover the cost of equipment upgrading. In comparison, real estate developer and investors' access to cheaper and broader capital

source is a big advantage: "This also implies an average cost of capital of 5.3% for real estate versus meaningfully higher average costs of capital of 11.2% and 9.5% for publicly-traded hospitals and surgical / rehabilitation companies, respectively." *(Becker's Hospital Review 2015)*

Therefore, there is a rising trend among hospitals, health care systems, and medical practitioners to embrace third party ownership and management of real estate. By handing over developing and owning properties to third party developers/landlord, healthcare systems can preserve their capital resources for acute care needs and focus their attention on helping people, while passing on responsibility of building regulation and maintenance minutiae. On the other hand, for third party real estate owners, healthcare practitioners are secured long-term tenants, on whom they can charge a premium rent. In addition, there is an increasing demand for healthcare space, which would not likely to be much effected by macroeconomics environment. Therefore, capitalization of healthcare real estate is a win-win strategy for both healthcare providers and their properties owners. The demand for real estate space in different healthcare real estate products would be discussed in next chapters.

2.1 Obstacles to Enter Healthcare Real Estate Market.

However, the development and management of healthcare real estate require a high level of expertise.

Special Space Design Requirements

First, from the physical space perspective, healthcare facilities have additional requirements on space and building engineering beyond those of traditional commercial properties. Different medical use requires different functions and space layout. For example, on the engineering aspect, there are particular requirements of HVAC system and air filter system for inpatient hospitals. Outpatient facilities tenants have different requirements on the space layout depending on their practices. Even independent senior living, the properties mostly similar to traditional residential buildings, have special room layout and space design, such as ADA compliancy and common space amenities to support social activities between residents. It is uncommon for traditional real estate investors to know how these physical differences on space would affect the investment and operational decisions. Take outpatient facilities for example, the tenant improvements of outpatient facilities suits might be more costly than those of traditional office spaces, which means the landlord need to secure long-term tenants and shorten the turnover rate. Also different healthcare practice demand different space features. A dentistry suite is very different from a suit used for mental health consulting. After one tenant moves out, it is less expensive to find a health practitioners providing the same kind of medical services, and the landlord can avoid the cost of converting the spaces to fit for a different use.

Heavy Operational Component

The success of healthcare real estate management depends a lot on the operation. In the healthcare industry, due to the need to reduce cost and increase efficiency, merges and acquisitions are active. The few companies who maintain in this business are large in scale and each of them has a high share of the market. For real estate owners, this means having the wrong tenants in their properties is very risky. If one tenant goes dark, it is not easy to attract another tenant. The real estate owner might face much longer downtime compared to that of traditional commercial real estates. To secure high-quality tenants are essential to the success of healthcare real estate. To conclude, in order to maintain in the business, real estate companies have to establish a good partnership with successful healthcare providers, and have a good knowledge and understanding of the operation of this business.

Different Capital Source

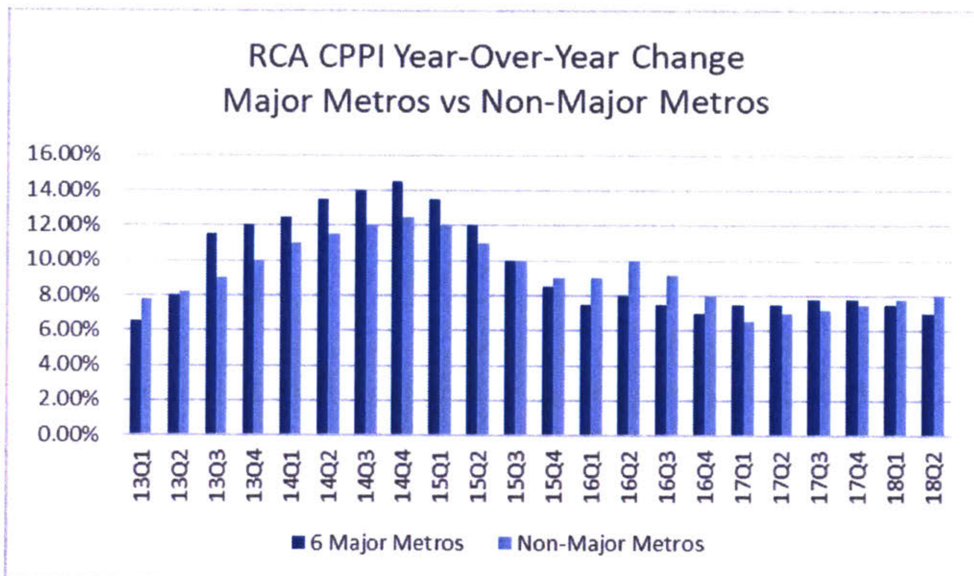
The requirement of funding sources and investment cycle is different from other real estate assets. The upfront investment of healthcare real estate is heavy and investment cycle. In addition, healthcare facilities are mostly big-scale buildings or big portfolio of small buildings. The single deal size puts a barrier for non-institutional investors to enter this market.

Also, from underwriting perspective, it is difficult for investors who used to invest in traditional asset types to quantify the business risk component of healthcare real estate. Not until 1990s, traditional lenders have developed a system to underwrite healthcare real estate deals. Before that, there are specialized loan generator and lender for healthcare real estate projects. *(Gordon 1998)* Still, nowadays, most equity investors are still pondering outside the door.

2.2 Opportunities in Healthcare Real Estate

Albeit the reasons mentioned above deter some traditional real estate investors from entering into this market, investing in healthcare real estate still presents itself as a smart move, especially nowadays. Due to the booming real estate market in previous years, the prices of traditional market are historically high, cap rate reaching the bottom. After the mass developments in the past 10 years, there are oversupplies of various real estate products on the market. The price growth across traditional commercial real estate sectors plateaued. As it is showing in Figure 1 growth rate of commercial property asset price is dropping all the way from year 2015 to now, and would most likely to continue dropping.

Figure 1. RCA Commercial Property Price Indices from year 2013-2018



Source: Real Capital Analytics (Elizabeth Szep 2018)

In this backdrop, the investments in real estate shift from traditional assets types to "job-driven" assets, with tenancy base tied to industries of growth trend, such as healthcare, higher education or government, etc. Some other innovative product types, such as self-storage, data-center, are also gaining favors. All these asset types share one common feature, that is, they are tied up with industries with increasing space demand or with demand that the real estate market has not yet met up with.

Among these asset types, investing in healthcare real estate is promising. The opportunities of investment in this sector are presented from the following aspects.

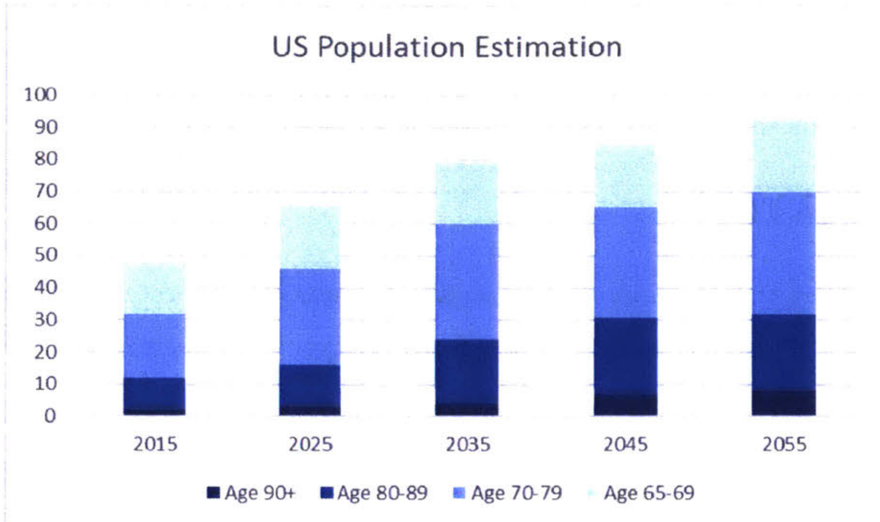
<u>Strong Demographic Trend</u>

One need to look at the fundamental demand in order to understand the future trend of certain asset type. According to the United State Consensus Bureau, in their report: 65+ in the United States: 2010 *(West et al. 2010)*

> "…. Baby Boomers. They started to reach age 65 in 2011, portending rapid population aging over the next 20 years. Between 2010 and 2020, the older population is projected to grow more rapidly than in any other decade since 1900 (3.2 percent average annual growth), while the total population will grow about as slowly as in any other past decade since 1900. People turning age 65 between 1990 and 2000 were born between 1925 and 1935. (0.8 percent), a difference of 2.4 percentage points. This difference will be among the largest in the past century"

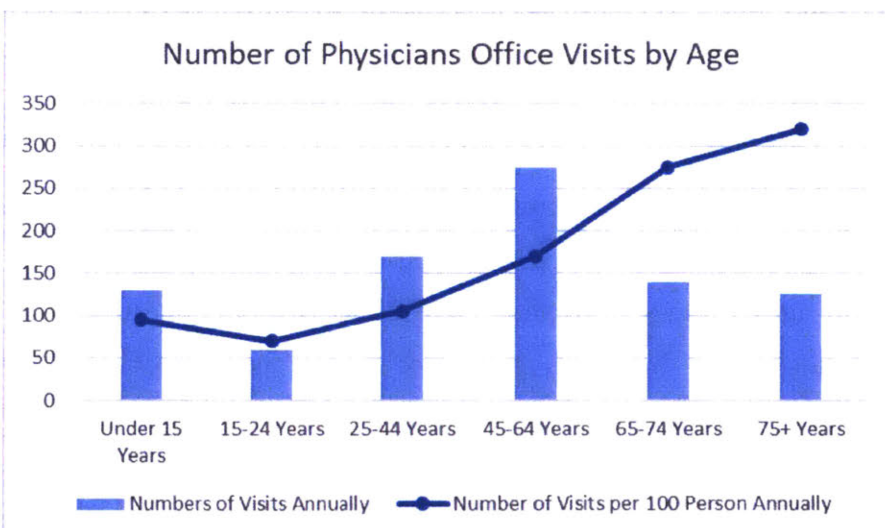
Figure 2 and 3 show how the aging population may affect the demand of healthcare services, accordingly, indicating the demand of healthcare spaces. As Figure 2 shows, The United States' population ages rapidly from year 2015-2065. Not only the numbers of people who need additional healthcare increase, but also, as the population get elder, the whole population would need more intensive healthcare in order to maintain the same level of health. Both reason drive up the demand of healthcare spaces.

Figure 2: US Population Estimation from year 2015-2055



Source: US Consensus Bureau, CBRE Research (CBRE Research 2017)

Figure 3: Number of Physicians Office Visits by Age



Source: CDC National Ambulatory Medical Care Survey, 2014 (CBRE Research 2017)

Policy uncertainty brought new markets

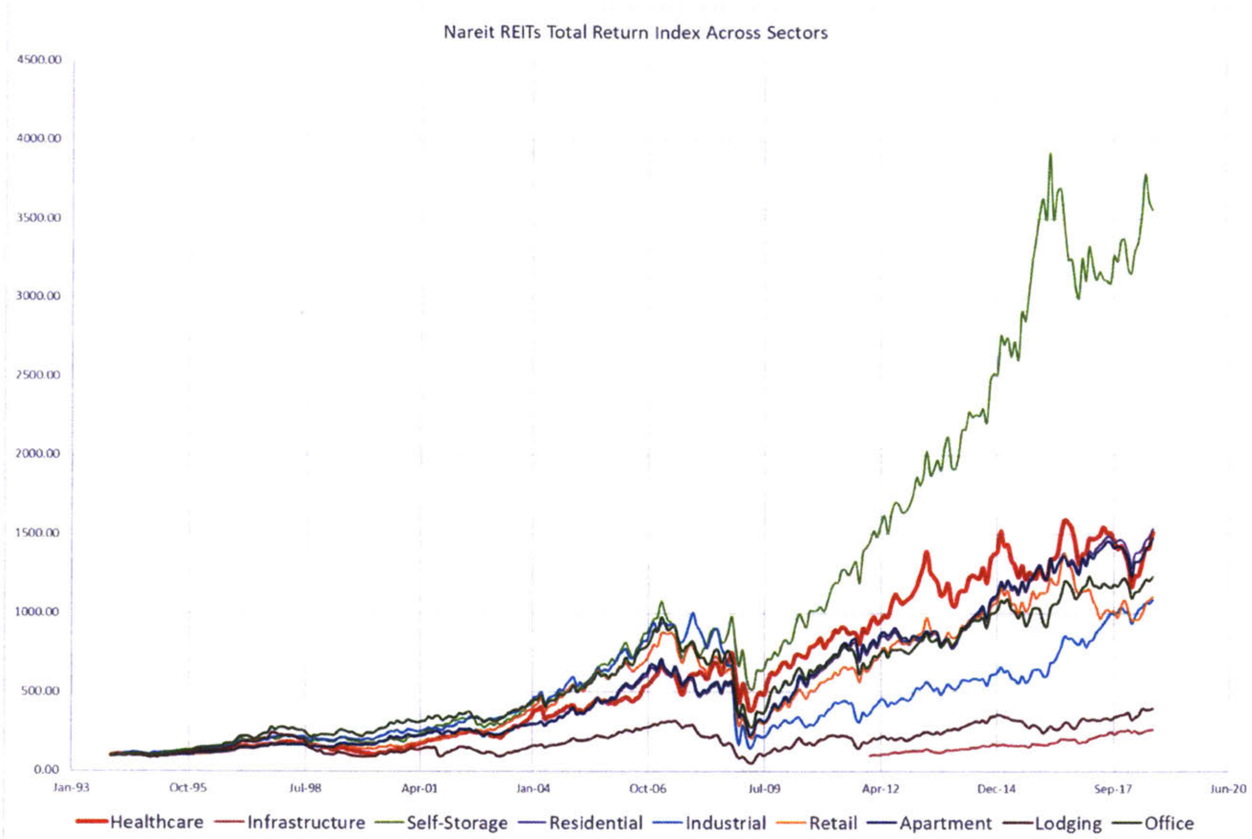
Healthcare reform is a double-edged sword. On one hand, evolving healthcare policy creates uncertainties and risks, making it harder to project future trend. One the other hand, it opens up new window. As the policy shifts toward value-based model, healthcare system is forced to reduce cost, through technology renovation and product segmentation. This generated new healthcare submarkets targeting different purposes, each with new kind of real estate products supporting the functions. What are nowadays common healthcare services and associated real estate products did not exist 10-20 years ago. For instance, the whole senior housing business isolated from nursing homes, which are historically financed and operated by charity and governmental organizations, nowadays grows into $315 Billion market-value real estate business. The life science facilities are an emerging asset type in recent 10 years mostly thanks to the biological science technology breakthroughs. Most complex medical treatments used to be performed in on-campus hospitals. Now this is changing. Motivated by the trend of healthcare systems moving services away from hospitals to the communities, outpatient facilities off-campus are required to accommodate more complex medical procedures. Capital flowing into real estate assets correlated with growth and innovation industry is a general trend. According to Owen Thomas, CEO of Boston Properties, during an interview with REIT Magazine: "Most of the net absorption in our core markets has been due to "creative tenants" in industries such as health care, life sciences, technology and media. The traditional tenant base has not experienced as much net growth." *(Borchersen-Keto 2014)* Looking into the future, the rocketing growing healthcare industry opens unlimited opportunities, which spurs the expansion of healthcare real estate market.

High Risk-Adjusted Return

Historic data also tells features of the risk and return of health care real estate in comparison to other assets. Since generic healthcare real estate data is not accessible due to the difficulty to acquire data from private investors, here REITs index data provided by Nareit is used for comparing pricing changes across different real estate assets.

Below is a comparison of REITs monthly historic total return index across different asset types. *(Nareit 2018a)* Even though this is not a complete presentation of the total return of different assets type from both public and private investment angle, this gives us a conceptual overview of how returns of different assets change over time and what's the general growth trend. The red line represents healthcare REITs total return, which is the sum of price return and income return. It performs just after self-storage, growing steadily from Dec,1993 to August, 2018. During the 2008 financial crisis, it drops less dramatically, compared to other traditional asset types, such as industrial, retail and office.

Figure 4. Nareit REITs Total Return Index across Sectors



Source: Nareit (Nareit 2018a), Author's Calculation

Figure 4. Nareit REITs Yield across Sectors

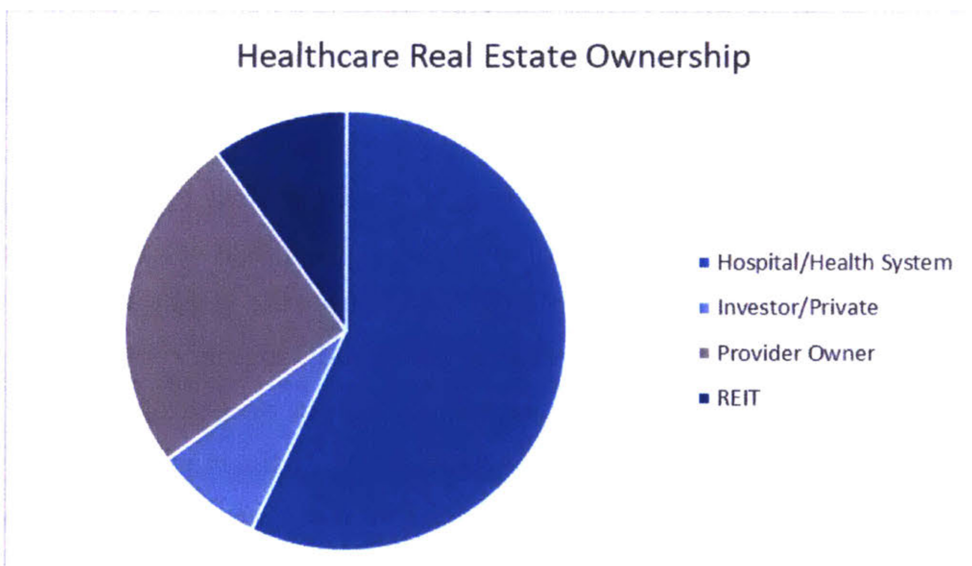
Source: Nareit (Nareit 2018a), Author's Calculation

Another return ratio that long-term investors care about is yield. From the chart above, it shows the yield of healthcare real estate is quite stable and most-of-time above that of other asset types. Noting the spike of yield during 2008 is a result of rapidly dropping REITs' stock price. Since REIT pays out dividend from their operating incomes------mostly rent, and rent tends to be more stable than asset price. During a crisis, the stock price drops dramatically partly due to the increasing cap rate and partly due to the pessimistic market expectation. While dividends tend to maintain and stock price decreases, the yield rate spikes. The fact of health REITs yield increasing less than that of industrial, lodging, retail, office, apartment and residential in real estate downturn means, either its price drops less and it is less vulnerable during market crash compared to other assets, or the market has less pessimistic emotions toward healthcare REITs during real estate downturn. Both of the assumptions indicates that healthcare real estate behaves more stable during market crashes.

Low Market Penetration

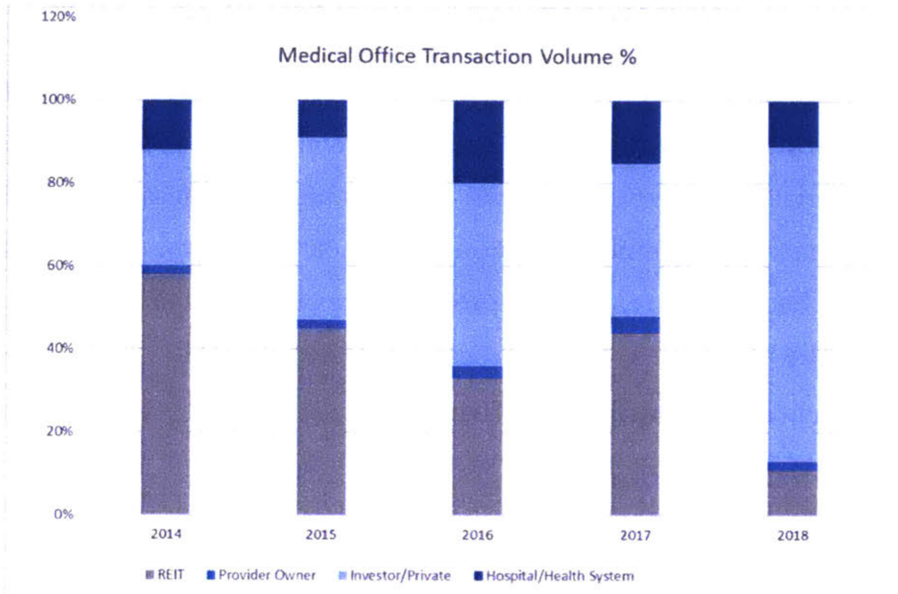
Figure 6 shows the share of ownership of outpatient medical facilities by different investors. Third party ownership only accounts for 18% of the whole outpatient medical facilities market, within that REITs' ownership accounts for the 10% share and other public/private investors' ownership accounts for 8%. *(Revista 2018)* Meanwhile, there is a change of buyers in this sector in year 2018. As Figure 7 shows, after the upsurge of acquisition from 2016 to 2017, while the transaction volume of medical office sales is still high, the buyers are changing. REITs began to sell their assets to harvest price, when private investors become the major buyers. According to Revista *(Revista 2018)*, major buyers in this sector are increasingly coming from international pension funds, or domestic funds who have not been active in this sector but now wish to diversify their portfolio. The investment activity in healthcare real estate would be discussed in later chapters. In general, this transition of buyers and sustaining transition volume shows that the market is not saturated yet and investment opportunities are still open to investors who are seeking defensive assets at the peak of the cycle.

Figure 6. US Outpatient Facilities Ownership



Source: Revista *(Revista 2018)*

Figure 7. US Outpatient Facilities Transaction Volume



Source: Revista *(Revista 2018)*

Chapter Tree:
Healthcare Real Estate Products

This chapter starts with an introduction of different real estate products under the general healthcare real estate category. Their operation model and lease structure would be discussed. After reviewing live interviews with industry professionals working in the healthcare real estate development/investment sector, the development and acquisition process of different healthcare real estate products are summarized and key features to pay attention to given the specialties of each products are highlighted.

3.1 Healthcare Real Estate Products

Product Types Introductions

Nareit defines "Health care REITs' property types include senior living facilities, hospitals, medical office buildings, life science and skilled nursing facilities." *(Nareit 2018b)* In this thesis, we would expand this definition of healthcare property types to the general healthcare real estate investment spectrum. Currently, there is no standard way to define healthcare real estate. A general concept is only to include outpatient and inpatient medical facilities as healthcare real estate. Senior housing is perceived as a totally different "animal". However, this thesis treats the five properties as members under the same family tree. First, the demand of the five properties are driven by the same underlying demographic trend and medical care need. Also, since all five property types are correlated with healthcare systems and subject to the healthcare industry innovation, owning multiple types of healthcare properties creates some synergetic effects and also helps to diversify risks. For instance, REITs historically only invest in one or two healthcare properties, now major healthcare REITs have portfolios composed of all five products. This trend is also followed by investments from private sector, as verified by the writers' interviews with industry leaders. Thus, this thesis would incorporate all five real estate products related to the healthcare industry under the bracket of healthcare real estate and look at the whole industry form a holistic point of view.

As mentioned, there are five major products under the healthcare real estate bracket: **senior housing, skilled nursing facilities, outpatient facilities, life science, and hospitals**. Among them, senior housing and skilled-nursing are both elderly housing, consisting of few products that differentiate themselves by the level of medical care services provided. Table 1 shows the subcategory of healthcare real estate products.

Table 1. Subcategory of healthcare real estate

Senior Housing	Skilled Nursing	Outpatient Facilities	Hospital	Life Science
Senior Apartments	Long-term Care	On-campus Outpatient		Corporate Office
Independent Living	Post-acute Care	Off-campus Outpatient		Manufacturing Facilities
Assited Living				Research Labs
Memory Care				
Continuing Care Retirement Communities				

Elderly Housing

Elderly Housing includes senior housing and skilled-nursing, both with most bed units designed with special space layouts and amenity packages to support daily functions and social activities of people with average age above 65.

Usually, as a person ages, a higher level of care service is required to support increasing need of daily living assistance due to the deteriorating health conditions. Therefore, from 1990s, different products of elderly housing were gradually created to cater toward different demand and age groups. Services provided at elderly housing communities include general services, assistance for Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL). Table 2 presents the care and services provided at different elderly housing properties. Since the divisions between each product type are blurry. It is very common for one community to consist two or more unit types that provide different levels of cares. The standard way to define the type of facilities is identifying the type of units that accounts for majorities of the overall units in one community. For example, in a 300-400-unit elderly living community, if the assisted living units account for 75% of the overall units, then the community is defined as an assisted living community.

Table 2. Senior living Categories and Services.

Senior Living Categories			
A	B	C	D
$600-$1,200	$1,400-$2,000	$2,400-$3,000	$2,800-$4,000
	% $ for Services 45%	% $ for Services &ADL Cares 65%	% $ for Services &ADL Cares & Medical Care 75%
% $ for Housing 100%	% $ for Housing 55%	% $ for Housing 35%	% $ for Housing 25%
* **Real Estate**	* **Real Estate** * **Services** -Meals -Transportation -Housekeeping	* **Real Estate** * **Services** -Meals -Transportation -Housekeeping * **ADL Care** -Bathing -Dressing -Transferring -Eating -Toilet Use * **IADL Care** -Finances -Phone Use -Shopping -Money Management	* **Real Estate** * **Services** -Meals -Transportation -Housekeeping * **ADL Care** -Bathing -Dressing -Transferring -Eating -Toilet Use * **IADL Care** -Finances -Phone Use -Shopping -Money Management * **Medical Care** -Specific Disease -Non-Ambulatory -Intensive Medical
* **Senior Apartment** * **Active Adult Community** * **Owner Occupied** -Single Family -Mobile Homes	* **Congregate Care Facilities** * **Independent Living Units** in -CCRC Facilities * **Board and Care** -Service Only Provided	* **Assisted Living Facilities** * **Assisted Living Units** in -Congregate Care Facilities -CCRC Facilities * **Board and Care** -Service & Care Provided	* **Skilled-Nursing Homes** * **Skilled-Nursing Units** in -Congregate Care Facilities -CCRC Facilities -Hospitals

Source: NIC *(Anikeeff andMueller 1998)*

Senior Apartments:

Senior Apartments, also named as age-restricted residence, is a product type targeting aged population from 55+ to 62+. The ownership structure can be rental or for-sale. The amenities and service provide are recreational in nature, meant to facilitate the social interactive activities between seniors. These communities are not too much different from traditional apartments or condominiums, but with age restrictions and amenities catering towards aged population with no care services needed. Usually this type of asset is managed by a general property management party and no special senior living operators are engaged.

<u>Independent Living Facilities:</u>

This type of facilities aims to meet the needs of seniors from the age range of 65+ to 82+ who choose to live in an environment surrounded socially by their peers. Services provided in such facilities are similar to those provided in hospitality environment, such as transportation, housekeeping, bedding, meal service, etc. Most of independent living communities are ADA accessible and equipped with emergency buzz system. The appearances of independent living communities are similar to senior apartments, but the difference is the level of service provided. Assistance services can also be purchased in options, as fee by hours, in some of these facilities. Basic assistances could include medical examinations, therapies, etc. Usually special senior living operators are responsible for operations and property management of such facilities.

<u>Assisted Living Facilities:</u>

As The Assisted Living Facilities Association of America (ALFAA) defines, these are facilities "as a special combination of housing, personalized supporting services, and healthcare designed to respond to individuals who need help with daily living activities, but do not need the skilled medial care of a nursing home". These services would include bathing, eating, dressing and medication management, yet requiring limited medical care. Different building design components are considered to provide spaces for these services, for example, common spaces for personal interactions, offices for additional service providers, ADA accessible design to accommodate additional use of wheelchairs. For the living area, these are usually private living units ranging from single rooms to large apartments. Gradually, as the dementia population increases, more and more assisted living facilities are equipped to provide services of memory care. Since the cost of assisted living is lower than that of skilled-nursing, recently, some cares performed at the level of skilled nursing are moved into assisted living facilities, such as services targeting short-term physical disabilities, some non-ambulatory medical situations, and even early stages of specific diseases that intensive medical are is not required. Accordingly, staff in assisted living communities are usually required to have a higher level of training to provide more complex care, without necessity of nursing licenses. Usually special senior living operators are responsible of operations and property management of such facilities.

<u>Memory Care:</u>

As a result of the breakthroughs of healthcare technology, a lot of diseases that cannot be tackled historically can be cured nowadays. However, Alzheimer's diseases are one of the major causes of death, that "can't be prevented, slowed or cured". Every 20 years, the population of Alzheimer patients in the whole world doubles. *(Welltower 2018)* This calls for a new solution of care to support daily living activities of such patients-----memory care facilities are created to meet the unique need of Alzheimer's patients and other aged population with dementia problems. Residents may live in semi-private apartments or private rooms. These facilities offer programs to provide comfort and care in a secured environment. Some memory cares facilities are independent that only provide care to patients with memory impairment, others are assisted living communities incorporated with memory care units as a separate department. Usually special senior living operators are responsible for operations and property management of such facilities.

<u>Continuing Care Retirement Communities:</u>

"CCRCs generally feature a combination of independent living apartments and/or cottages and nursing care, and many offer assisted living, memory support care, and other specialty care arrangements." *(Zarem 2010)* CCRCs usually offers a continuum of housing, services and healthcare on one campus or site, without having the residents relocate as their health situation change. As a result, CCRCs provide a solution to the emerging concept of "age in place". Written agreement or long-term contract are signed up between residents and the communities, based on three types of ownership and contracts method listed as Table 3 shows. All three contracts emphasis a certain amount of fee paid at the entry due to the heavy upfront cost during development phase and long-term commitment nature of the operation. In many conditions, the entry fee is paid before or during the construction period of such facilities and this entry fee model is a popular financing method of CCRC new developments.

Table 3. Three Major Types of CCRC Contracts:

Contract types	Features	Blended Entry Fee	Blended Monthly Fee
Extensive or Life Contracts (Type A)	Priciest, because they generally include unlimited assisted living and health services with little or no extra fee	160,000-600,000	2,500-5,400
Modified Contracts (Type B)	Provide similar services to Type A except that only some health services are included in the initial monthly fee. If a resident's needs exceed those fees then they are charged market rates for services.	80,000-550,000	1,500-2,500
Fee-for-Service Contracts (Type C)	Offers a lower initial enrollment fee, but residents pay market rates for health care services on a "as needed " basis	100,000-500,000	1,300-4,300
Note: All of these fees will depend on a number of factors such as the type of housing (single family home, condo, apartment); whether they rent or buy; size of the facility; kinds of services; type of contract.			

Source: *(My Life Site n.d.)*

Though the concept is appealing, the realistic operation of CCRCs require an economics of scale and higher level of expertise. The cost to run a CCRC is considerably high compared to other more specialized facilities. Accordingly, a longer-term contract and higher entry fee is usually required for credit reason, and this puts a higher barrier to attract residents. Since in most cases, skill-nursing units account for small percentage of all units, CCRC is normally categorized as non-skilled-nursing facilities. Special senior living operators are responsible for operations and property management of such facilities.

Skilled-Nursing Facilities (aka Long-Term/Post –Acute Care Facilities)

Skilled-nursing facilities evolved from nursing homes, where majorities of residents require 24-hour nursing and/or medical care. Services are provided at daily rate or monthly rental rate. These facilities not only provide long-term medical care to aged population who lost majority of independence to preform daily life activities, but also admit patients who stay in such facilities for short-term to recover their daily functions after big injuries or medical treatments (most patients are discharged form hospitals). Generally, Skilled-nursing facilities are mainly licensed for Medicaid and/or Medicare reimbursement in the U.S. Staff at such facilities are licensed nurses who are capable of providing medical care to patients with complex medical conditions and require intensive care, monitoring or emergency support. “All facilities offer some level of rehabilitation services.” Since healthcare systems realize a lot of inpatient care can be performed at skilled-nursing facilities with lower cost. Nowadays, “Some facilities focus on higher acuity patients and offer rehabilitation units specializing in cardiac, orthopedic, dialysis, neurological or pulmonary rehabilitation.” *(Welltower 2018)*

By nature, these facilities tend to take on a more institutional atmosphere and less home-like environment, to allow for efficient cleaning and sterilization. Since most patients in these facilities are discharged from hospital based on referral, traditionally these facilities are located on or near hospital campus. But as hospital systems are transferring form on-campus to off-campus model, location is less important nowadays. *(Anikeeff andMueller 1998)* Usually special senior living operators are responsible for operations and property management of such facilities.

<u>Life Science:</u>

These properties contain laboratory and office space primarily for biotechnology, medical device, pharmaceutical companies and scientific research institutions use. While these properties have characteristics similar to commercial office buildings, they generally contain more electrical, mechanical and HVAC systems, amenity packages for innovative working environment and specialty equipment including emergency generators, fume hoods, lab bench tops, etc. *(Ventas 2017)* In many cases, life science tenants invest significantly in tenant improvements, in addition to landlord improvements, to accommodate their own specific need.

The location of life science facilities is the most important feature when considering new development or acquisition opportunities. This type of properties usually demonstrated a geographic cluster around certain region/cities, such as Boston, San Francisco, Los Angeles and Philadelphia, to be close to high educational and research institutions. Whoever claimed a share in that regional market would have a maintaining dominance. *(JLL 2018)* Few players are active in this sector. Among them, specialized REITs are dominant. Few specialized REITs, such as Alexandria Real Estate Equities, have been active in this area since the asset type was created, their dominance in the regional market puts a high barrier for new entries. In addition, an established partnership with healthcare systems, educational institutions, leading healthcare research institutions is a big advantage. From these two aspects, healthcare REITs, which their long track of record of operating in healthcare industry, abundant capital rouses and established partnership with big healthcare providers, have a comparative advantage in this sector.

Outpatient Medical Facilities

The outpatient medical buildings consist of health care related buildings that generally include physician offices, ambulatory surgery centers, diagnostic facilities, outpatient services and/or labs. Usually tenants of such facilities have strong affiliation with health systems. Typically, one property is leased to one or multiple tenants and project management is provided at various level per contract. *(Ventas 2017)*

There are generally two types of outpatient facilities, one-campus and off-campus. The previous type locates on or next to a big hospital campus, and receive patients who are likely also patients of the hospital. Off-campus outpatient facilities are becoming more common nowadays. They are usually located in central urban area or population concentrated regions to bring convenient outpatient healthcare to people nearby.

Lease Structure

Depending on the operation mode of different products, the lease structure varies, especially with the case of REITs investment. There are two major lease structures:

Senior Housing Operating:

Senior housing operating is under the provision of RIDEA structure, which are permitted by the Housing and Economic Recovery Act of 2007. *(Gottlieb 2015)*

> "Prior to this act, healthcare real estate investments had to be structured as leases (typically triple-net leases) with annual rent payments and escalations. The RIDEA act allowed REITs to participate in the actual net operating income, as long as there was an involved third-party manager. The legal structuring includes creating Taxable REIT Subsidiaries (TRS), with an in-place lease between the landlord and tenant entities (both owned by the REIT). This allow

the REIT to own the risks and rewards of the operations of healthcare facilities in a tax efficient manner."

In return, such a REIT pays a management fee with 4.5-5% base of gross revenues and any incentive management fee to the operator, depending on the financial performance of the facilities. *(Ventas 2017)*

As Scott McCorvie, the founder of Senior Living Growth Advisor, mentions *(McCorvie n.d.)*: "Instead of underwriting a steady rent payment and annual escalation, REITs now could analyze and underwrite larger shifts in operation and income. Most REITs view Senior housing operating sector as a way to increase revenue by add values to existing properties and operations, such as i) transitioning the asset to a new operator that can bring up the scale, operating efficiencies, and/or ancillary services; or ii) investing capital to reposition the asset." By taking these measures, senior housing operating could achieve an average of 5-6% income growth through increased operating, occupancy, operational efficiency, rent increase, etc. This compared to a standard 2-3% rent escalation, is a big shift.

This move essentially transfers the risk of operation from operators to REITs who owns the asset. REITs not only enjoys the uptown of revenue increase, but also take the risk of potential revenue shrink during downturn or due to operational underperformance. Thus, it requires REITs to maintain a solid management platform and build a strong alliance with top operators who keep superior performance.

In general, RIDEA structure can positively enhance the income growth and overall returns of a senior housing portfolio. The biggest beneficiary of this change would be the top healthcare REITs in the sector who are equipped with operational expertise and have a long-term successful partnership with prime operators.

Similar structure can be witnessed in private sector as well. For example, some healthcare real estate developer/owner branded their senior housing facilities, and outsourced the operational business to 3rd party regional operators by paying them fixed-amount fee plus a bonus. In this way, the landlord not only owns the facilities but also the operational business. One advantage would be they can sell the business to REITs as senior operating properties.

Triple-net Lease:

For triple-net lease, the lease structure is not too different from other triple-net leases commonly seen on retail, office or industrial properties. Triple-net properties can include senior housing, skilled nursing facilities, outpatient facilities, life science and hospital. The real estate owners invest primarily through acquisition, development and join venture partnership, but not property management and operation. Landlords charge rent to the facilities operators, and operators would be responsible for their own operational expenses, including utilities, real estate taxes, insurance, building repairs, maintenance costs and all obligations under certain ground leases.

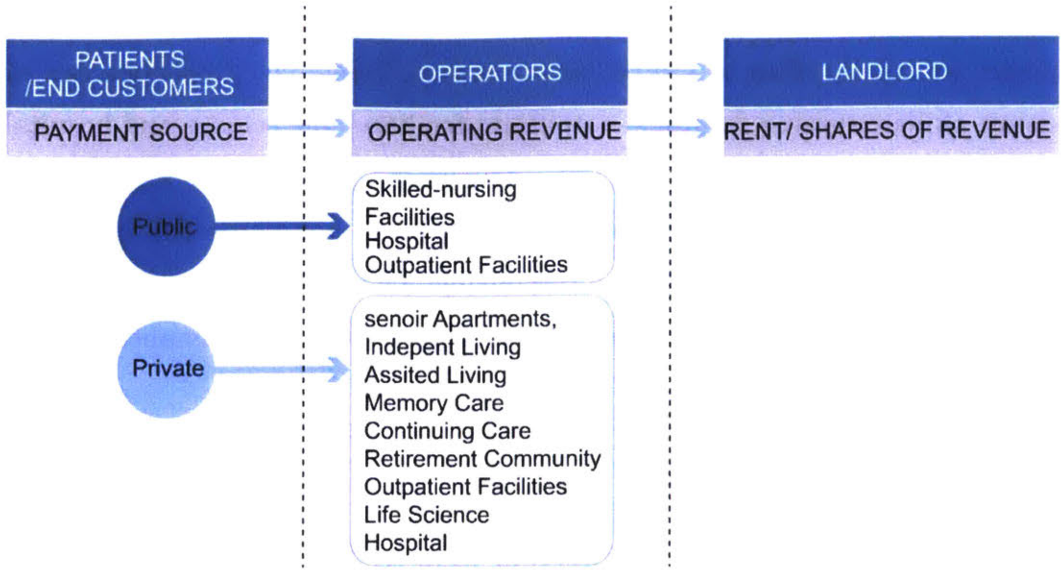
Gross Lease with Reimbursement:

Gross Lease with Reimbursement is not different from traditional commercial real estate lease, with landlord being responsible for operational cost and capital expenditure of the properties and tenants may or may not reimburse part of or all of the operational expense. Due to the fact that operation costs of healthcare real estate consist much more items than that of traditional non-operating assets, it is not common for health real estate owner to sign up this type of lease with tenants. It is a common practice for landlord to choose either an operating structure or triple net structure.

Payment Types

The revenue of healthcare real estate is closely correlated with the operation status of the service provided at such facilities. It is important to understand where the operating revenue of healthcare services comes from and the payment structure. First, unlike other real estate sectors, the operators generate revenues of operation not only from private sectors but also from public medical payments, such as Medicare and Medicaid. A diagram of revenue flow is shown as Figure 8.

Figure 8. Revenue Stream of Healthcare Real Estate



Different payment methods have sequential impact on the real estate income from a landlord perspective. Taking Skilled-nursing facilities for example. Generally, about 75% of full payments are provided by Medicare, while private pay covering the balance over period which can last up to 100 days. *(Centers for Medicare and Mediaid Services n.d.)* In contrast to skilled nursing, senior apartment, independent living, assisted living, memory care and CCRC facilities are usually funded by private pays. "Typically, skilled nursing has lower profit margins due to government regulations, which require a more labor-intensive business model." *(Gottlieb 2015)* Besides that, the healthcare policy changes cast more uncertainty on revenue source of skilled nursing facilities, which exposed operators and landlord to higher risks.

Risk not only comes from public payment method, but also from private insurance payment, since insurance reimbursement policy could change along with public policies. Therefore, doing through due diligence on payment method when underwriting healthcare facilities development or acquisition opportunities will reduce risk exposure.

3.2 Development of Healthcare Real Estate Products

Outpatient Facilities

Outpatient facilities have gone through tremendous change in the past 10 years, stimulated by the healthcare service innovations and technology breakthroughs.

Thirty years ago, a typical outpatient facility is composed of multiple suites rented to physicians, with a standard set up consisting of a waiting area, a discharge area, 8-12 exam rooms, 1-2 treatment rooms and support spaces for doctors and staffs. Nowadays, outpatient facilities are more complex. According to Jud Jacobs, Senior Vice President with Caddis Health Real Estate (Caddis is specialized in developing and investing in healthcare real estate with a national profile): "the whole healthcare industry shifts toward off-campus model, mostly motivated by initiatives from healthcare systems. More and more treatments and procedures are taken away from traditional hospital campus and performed in outpatient facilities near or away from the campus." One reason is that performing medical treatment off-campus is more cost efficient for healthcare systems. The other reason is healthcare service is steering towards value-based system that hospitals are competing against each other for patients. By moving medical care towards customers and delivering care to the best convenience, hospitals can attract more patients. Among these services are urgent cares, same-day surgeries, imaging and lab services, etc.

This trend has a significant effect on outpatient facilities, from their tenant bases, to space layout to operational and management. Nowadays many outpatient facilities support same-day surgeries or special medical care functions, which have high requirements for sanitization and cleanness. The space layouts are also customized for these functions. Also, compared to before when most outpatient facilities only provide simple physician suites, the operation and management of outpatient facilities is becoming more complicated. Although this trend puts a high barrier for traditional developers and investors, it is an opportunity for developer with higher expertise to grab a bigger share in this particular market.

Through interviews with professionals working in healthcare real estate development industry (interview with Jud Jacobs from Caddis Healthcare Real Estate, Ryan Wagner from Irgens, Alex Bell from Catalyst Healthcare Real Estate and Jennifer Cookke from FH

French), it can be generalized there are few deal structures for outpatient facilities development projects:

Ground-Lease Development (On-Campus Development)

According to Ryan Wagner, Manager of Development at Irgens (Irgens is a company with expertise in developing and constructing outpatient facilities and senior housing properties): Ground-lease developments are mostly applied to on-campus projects. The hospital systems historically hold ownership of the campus land, which is often larger than the land they need to build their own hospital structures on it. Once a hospital system determines to relocate its existing service to another building, or expand their service and require additional buildings to accommodate the relocated or expanded service, it would select a developer through RFP process, to develop the vertical structure on its excessive land. Afterwards, the developer has the ownership of the vertical structure, which they might continue to own or sell to an investment company, while the hospital keeps ownership of the land. The landlord of the vertical structure would pay the ground lease of the land as an operational expense out of rent revenue of the property paid by the hospitals. A typical ground lease term ranges from 50 years to 100 years. In this model, the property is usually fully or partially pre-leased to the hospital. The healthcare service providers in these properties are usually affiliates of the hospital. The hospitals preserve some level of controls over the properties.

One obvious advantage of this model is the hospital would pre-lease majority of the space in the facilities, which makes the development less risky. In some case, if the property is not fully pre-leased, the development company will lease the rest of the space, the hospital also promises to fill in the leftover space that development company fails to lease out. Another advantage is since the tenants are affiliated with the hospital, the landlord can expect long lease terms and higher lease renewal possibility.

However, it is very important for developers to do due diligence on affiliated hospital systems. A strong performing hospital is critical to the long-term success of an outpatient facilities. Since on-campus outpatient facilities cannot easily be leased to non-medical tenants, the absorption and occupancy highly reply on the affiliated hospital. If the hospital closes down or is not able to continue their existing lease due to the underperformance of healthcare services provided on the site, unless the lease is structured to protect the landlord from downturn situations, the cash flow will drop dramatically and sequentially the value of the property will decrease. In the extreme case, the property value may be little more than salvage if the hospital closes down.

Build to Suit

In this model, the developer builds a facility to the specifications of the hospital and lease it back to the hospital, and the developer would retain the ownership of the property. This model is a fully pre-lease structure, which means the landlord faces minimum risk before and during the process of development.

Similar to the ground-lease structure, with such a strong tie to the parent hospital system, it is critical for the developer to partner with a strong hospital.

Sale-Lease Back

In this model, the real estate investor acquires an existing outpatient medical facilities from a hospital. Usually, the real estate investor only purchases the vertical structure, since the hospital likes to keep ownership of the land. In return, the hospital system harvests the asset value and pays back the landlord rent. The capitalized value of the property can be used for the hospital's core business. This lease back structure is typically long-term. There would be covenants in the contract to make sure hospital still gain some control of the property.

Off-Campus Outpatient Facilities

Off-campus outpatient facilities are becoming more popular, supported by value-based healthcare reform. Off-campus outpatient facilities can be leased to hospital systems, physician groups or non-profit medical organizations, etc. These facilities are usually located in urban cluster, with convenient access to its patient groups.

Similar to On-Campus outpatient facilities, the quality of tenants is everything important to the success of the development and ownership of the properties. With pre-lease structure, high credit tenants, strong parent company, credit backed by hospital systems, On-Campus outpatient facilities development is less risky. For Off-Campus outpatient facilities development, it is extremely important for developers to develop a strong knowledge system of healthcare industry and do significant researches on the demand of healthcare services, demographic trend, the quality of potential tenants.

Figure 9. Revenue Flow of Ground-Lease On-Campus Outpatient Facilities Development

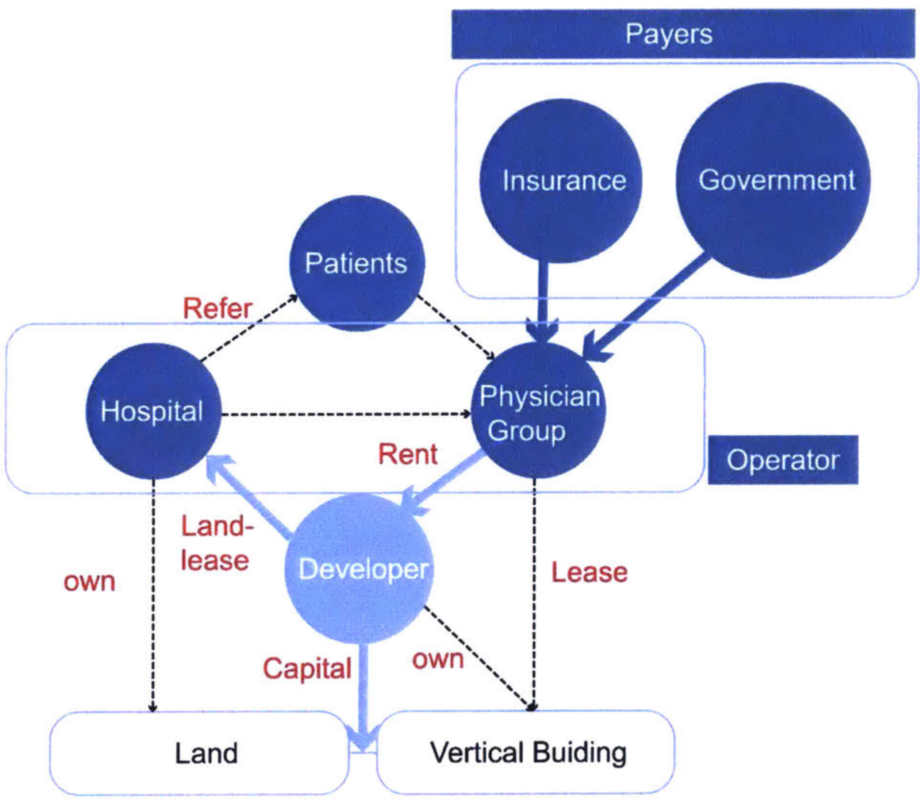


Figure 9 shows a typical deal structure of a ground-lease outpatient facility development. It is noticeable that different from commercial real estate, the cash flow from outpatient facilities comes directly from rent paid by healthcare providers, who get their revenues either from insurance reimbursement or governmental medical funding reimbursement (considering patients who pay medical bills out of their own pocket are very rare). Therefore, the business model and performance of healthcare providers and the reimbursement structures are the most important to the success of outpatient facilities. It is as important for other outpatient facilities developments to have through due diligences before taking on new developments or acquisitions.

Therefore, here is a generalization of key points of outpatient facilities development.

1. Market Analysis and Strategy Making:

   The top thing on the list is to understand the market demand of healthcare service. What kind of services are provided in the proposed facilities? What's the growth trend of such services? Is there a likelihood that such services would be outdated due to rapid technology renovation?

   According to Alex Bell, Senior Vice President of Catalyst Healthcare Real Estate (Catalyst is a specialized healthcare real estate firm with national profile): the standard underwriting process starts with a patient population service. Take ontology service for example, the potential population of cancer disease of certain area are studied through analysis of demographic and healthcare statistics. The area with most healthcare insurance coverage are identified since this area generally has less default risk. Then the number of medical cases are studies of these area to understand the general health quality of local population. Area with highest rating from all studies are identified as the best candidate for new development or acquisition.

   On the real estate level, standard market comps studies are performed to understand real estate market of proposed facilities, except with more focus on tenancy base. What's the inventory of facilities providing the proposed services? What's the volume of similar projects in the pipeline? What's the absorption rate and vacancy rate and rent rate?

2. Finding the Right Entity to Partner with:

   Developing a knowledge system of the tenants, through doing due diligence research on healthcare systems, physician tenants, payment structures, reimbursement procedures and healthcare policy changes. Generally, the top quality healthcare providers are least likely to subject to risk post by insurance or public reimbursement policy change.

3. Building a Strong Relationship with Industry Leaders.

   As it is mentioned, it is not an overemphasis to say that the biggest assets of healthcare real estate companies are their tenants----healthcare providers. Traditionally, this industry is highly segmented. However, partly due to the Obama healthcare Reform, the population group covered by insurance and public funding program was getting larger and the reimbursement per capita had to be cut to include more patients. As a result, the profit margin of healthcare industry decrease, which leads to ongoing mergers and acquisitions of healthcare systems and providers. In the foreseeing future, these merge and acquisition would continue. For a landlord, having tenants who are likely to sustain in the business and keeping occupying space is essential for running real estate business.

4. Hiring Experts to Deliver Design and Engineering Services.

   Not only real estate related to healthcare business is a special market, but also other services related with healthcare industry are highly specialized. There are medical planners, architectural companies and engineering companies, code consultants, environmental experts specialized in this field. Due to the large upfront investment and high tenant improvement cost, it is very important to deliver a project not only practical for the proposed uses but also allow flexibility for future revisions. Hiring a design and engineering team knowing the industry with appropriate knowledge will help in the long-run. Also, there are strict industrial regulations of federal or state level for medical facilities, such as building codes, ADA regulations, parking requirement, and medical waste disposal regulation, etc. Having a team made of experts in different areas would guarantee the smooth execution of the project to the maximum extent.

Senior Housing/Skilled-nursing

Elderly housing (senior housing and skill-nursing) is a package combining different functions: housing, amenities and service provided by hotel or private club, the care provided in a nursing facility, and benefits of insurance coverage. *(Gordon 1998)*

In short, the five components of elderly housing are: **Housing, Hospitality, Healthcare and Assisted Living, Insurance.** The weight of each component in the whole package varies according to different products. Usually a specialized operator would be responsible for providing a lot of these service components. The operational part is essential for the success of elderly housing.

The degree of dependence on operator varies. Aged Apartments and Independent Living facilities depend less on operation; while Assisted Living and Skilled-nursing facilities have the higher degree of dependence. According to the interview with Elise Selinger, the Real Estate Innovation Manager of 2 Life Communities: "independent living is the product has lowest barrier, easiest for new comers to enter this market". So it is not hard to imagine, this product can be very popular among traditional real estate investors who want to benefit from advantage of owning healthcare products, but lack the level of expertise to owning a sophisticated product.

There are few key points to pay attention to for elderly housing developments and acquisitions.

1. <u>Through Market Analysis and Feasibility Study</u>

   There are many things to be blamed for failure of elderly housing communities, but poor feasibility study might be the first wrong step. A thorough feasibility study for elderly housing is more complex and detailed compared to those for other assets. Demographic trend need to be studied, as much detailed as the age sub-cohorts, ethics compositions, willingness to relocate, household status, incomes, illiquid assets (home ownership), health conditions, etc. Statistics sources include consensus, online database, industry associations (American Health Care Association, American elderly Housing Association, Assisted Living Facilities Association of America, National Association of Senior Living Industries, National Council of the Multifamily Housing Industry, National Investment Conference), etc.

   In addition, a comprehensive study should include information about the types of amenities desired by different age group, preferred home ownership forms, payment method, competing facilities in the area, projects in pipelines, available operators in the area, etc. Eventually, it is aimed to understand the potential number of residents for a particular type of facilities in the area, possibility to draw residential from surrounding areas, preferred ownership, payment method, reliable operators for identified facilities.

   As soon as the demand is figured out, the supply of similar facilities is studies through investigating existing facilities and pipelines in the regional market. Within the elderly housing sector, there are regional markets that are oversupplied and undersupplied. David Hegarty, president and COO of Senior Housing Properties Trust mentioned: "It's a local business at the end of the day, so it depends on particular markets."

2. Financial Study Done by Professionals.

   Elderly housing has a big component of operation and care delivery. The underwriting should be done by experienced developers/investors. If there is lack of experience from general partner side, then a reliable operator or consulting firm should be consulted. The study should include revenue calculation, development/acquisition cost estimation, operational cost estimates, future projection, performance of operator partners, profit split calculation, etc. Eventually, according to different proposed deal structure, return should be estimated before the project is undertaken.

3. Legal Consultation is Necessary to Understand Regulations, Legislations and Other Policy Requirements for Proposed Facilities of Certain Region.

   Licenses are required for most Skill-nursing facilities and some Assisted Living facilities. It is important to understand the requirements for license of proposed facilities to avoid future cost. Payment method of elderly housing changes according to states or federal regulations, and insurance policies. With cutting of governmental funding reimbursement, facilities generating revenue from governmental funding, such as skill-nursing facilities, are facing great risks. For some states, it is legible for assisted living facilities to be reimbursed by Medicaid. Those assisted living facilities depending on Medicaid reimbursement would be effected by policy changes as well. *(Anikeeff andMueller 1998)*

4. Management and operation

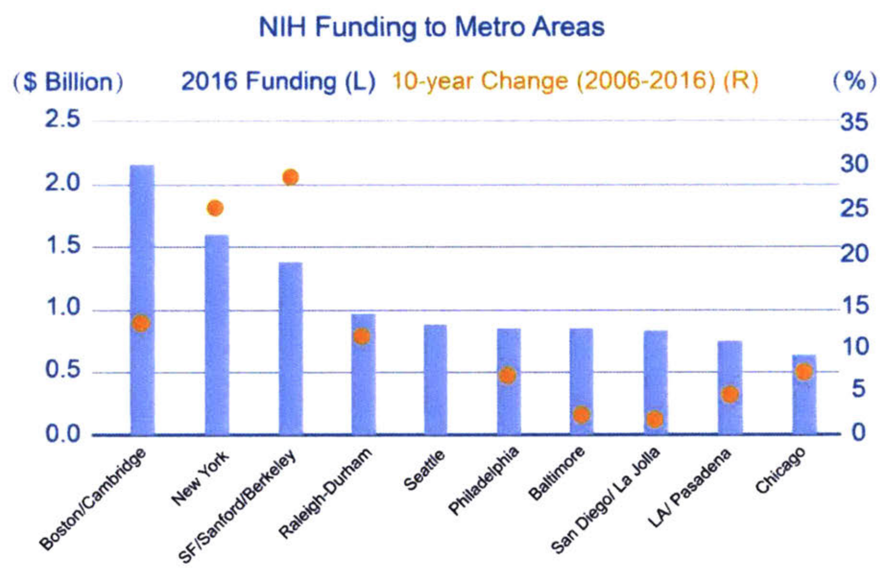
   The management and operation of service provided at elderly communities is the key to the success of such facilities. Elderly housing operation business is a very segmented and volatile business. There are much fewer big companies in this sector compared to multifamily operation/management companies. Few of them are national wide. Reputation is very important for elderly living facilities because of the "dark" history and stereotypes. Elderly housing products are spin-off products of nursing home, which historically has a notorious reputation. People tend to hold stereotypes that sending aged parents to elderly living facilities equals to abandoning them. Thus, a high quality service is crucial to conqueror the stereotypes and attract/maintain residents. Occupancy and absorption rate can only be guaranteed by superior operation of the facilities. A top operator is not only capable of providing high quality service, but also deliver good profit margin. For real estate owner, the cost efficiency indirectly effects the real estate revenue.

5. <u>Marketing helps the project financing.</u>
   Elderly housing projects are rarely build on speculations. Marketing usually happen before or during construction. At least a part of the units are leased out or sold during pre-lease/pre-sale period. Beyond traditional financing method, there is also entry-fee financing. The future residents would pay an entry fee (with rage from \$50,000 to \$ 200,000) before the construction is finished in exchange for the rights to live in one of the units. This entry-fee helps to finance the development cost. After the residents move out or die, part of the entry-fee may or may not be refunded depending on the contract and whether there is any left over.

Life Science Properties

Due to the healthcare reform, the industry is struggling to create solutions that are more cost-effective, one of which is spent on innovation and research of healthcare treatment. Life Science Properties are to support such innovations and researches. Location of life science properties are highly concentrated. Capital investment and innovation usually happen in areas with pools of scientific talents, namely the area next to universities or research institutes. The major source of funding in US comes from National Institute of Health (NIH), with 25% of overall NIH funding went to Boston-Cambridge and California, especially the Boston Kendall Square area and areas in San Francisco next to Stanford/Berkeley campus. This is reflected by the funding poured into different markets across the country, shown in Figure 10.

Figure 10. NIH Funding to Metro Areas



Life science property is a new asset type compared to the rest of the healthcare real estate products. Its rapid growth attracted specialized and traditional developer and investors to enter this area. However, there are some key points crucial to the success of developing and acquiring life science facilities:

1. <u>Keeping tracking the capital flow to identify market demand.</u>

On one hand, the Boston/SF area have gone through rapid development and rent growth of life science facilities. Average asking laboratory rents in Boston-Cambridge have risen by more than 50% since 2013. *(JLL 2018)* One the other hand, the venture capital has plateaued and therefore send an alarming signal. For new development projects, it is important to ask how long this fad can last before the market is saturated? For acquisition projects, checking the pipeline and market demand helps to identify whether the market is self-regulated to avoid bubble.

Meanwhile, for other secondary market that is traditionally known as the base for pharmaceutical manufacturing industry, such as New Jersey, Philadelphia and Chicago, consolidation oversized facilities are down the line. Risk and opportunities coexist during consolidation period.

2. Understanding of the industry is essential

A developed knowledge system of the life science industry and relationship with life science companies is essential for anyone who wants to sustain or enter this market. First, knowing the industry helps to identify the market trend and avoid risks. Similar to conventional office buildings, the performance of tenants in their own business effects the revenue for the landlord. A company that is probably going out of business is a high risk for landlord; conversely, a growth company is an opportunity for developers to provide more space. Second, the understanding of high technological spaces and changes of lab/research space is the basis for developers to deliver space catering towards the need of such a highly evolving industry. Most new comers breaking into this industry have to outsource management and operation business to a 3rd party life science specialized property management company. Few companies that are highly specialized in this sector provide full-integrated real estate service. Among them, Alexandria Real Estate Equities is the first and largest company specialized in this sector. Looking into the history of the company, the co-founder, chairman and CEO of the company Joel Marcus has experience in real estate and life science investment. He also brought professionals with understanding of the industry into the company. Beyond that, the company also has venture capital platform to invest in life science and constant promote the research of space design and industry studies. In this way, Alexandria creates an ecosystem to deepen the understandings of the industry and promote partnership with companies.

Chapter Four:
Current Investment Activities in Healthcare Real Estate

4.1 Major Investors in This Sector

This chapter discusses current investment activities in healthcare real estate sector from public REITs and private investors. Due to the difference of capital cost, risk tolerance, capital size, deal structure, the investment behavior, deal structure and investment portfolio varies much among REITs and private investors.

As it is mentioned before, major shares of healthcare properties are self-owned by healthcare systems. For the non-self-owned properties, public REITs accounts for the major portion of the ownership, while private investors own the rest.

Among public REITs and private investor, their preferences of investment in term of product types and deal structures are different. In the common sense, REITs are specialized in one or two asset types. But the largest healthcare REITs hold diversified portfolios composed of all five products mentioned before with a high concentration on investing in senior housing; while private investors tend to prefer outpatient facilities or hospitals. The following part of this chapter discusses the investment behaviors and performances from public and private sector in detail by analyzing the portfolio different companies hold.

4.2 Healthcare REITs, Their Portfolio and Performance

Healthcare REITs provide integrated service specialized in healthcare real estate sector. Since REITs, compared to other private investors, are large in scale and have access to cheaper capital, they own more diversified portfolios and generate revenue from multiple streams. Healthcare REITs are mainly focused on acquisition and owning healthcare properties. While in order to keep good partnership with healthcare systems and senior housing operators and other related tenants, they also develop healthcare facilities mostly for their established partners. These development properties are usually fully pre-leased.

According to Table 4, among Healthcare REITs, the top three Companies-Ventas, Welltower, HCP- account for 55% of the transaction volume in previous from year 2011 to 2018, while the top six companies accounts for over 70% of the transition. This means the healthcare

REITs market is an oligarchy one with high barrier for new comers for enter and small companies to surpass the large companies.

Table 4. Transaction Records of Healthcare Properties form Jan 1st 2011-August 2nd, 2018

	Row Labels	Sum of Est Val ($)	% of Market Value
1	Ventas	28621079942	23.38%
2	Welltower	23968515092	19.58%
3	HCP Inc	14416628828	11.78%
4	Omega Healthcare	8772796082	7.17%
5	HTA (REIT)	6849106998	5.60%
6	Senior Housing Properties Trust	6177832778	5.05%
7	Sabra Health Care REIT	5535928678	4.52%
8	Physicians Realty Trust	4259718610	3.48%
9	New Senior Investment Group	3855020435	3.15%
10	National Health Invstrs	3071944079	2.51%

Source: Real Capital Analytics

Taking a close look into the portfolio hold by REITs, the topic three REITs are holding a very diversified portfolio, composed of senior housing, outpatient facilities, life science, skilled nursing and little percentage of hospital. A study of the three leading healthcare REITs was conducted in order to understand healthcare REITs' portfolio and investment performance. All research data are from SEC (U.S. Securities and Exchange Commission) filings by REITs.

Ventas

Company history: The company was founded in 1998 as a spin-off of Vencor, the nation's largest healthcare service company catering towards the needs of the elderly, with services including "long-term intensive hospital care, long-term nursing care, contract respiratory therapy services, acute cardiopulmonary care, subacute and post-operative care, inpatient and outpatient rehabilitation therapy, memory care, hospice care, pharmacy services and retirement and assisted living". Since 1998, Ventas became a dedicated healthcare real estate owner and Vencor, later changed its name to Kindred Health is specialized in operating hospital, nursing center and ancillary services business.

Figure 11 is a diagram of NOI (property level) of different healthcare real estate products on Ventas Income Statement of 3rd Quester 2018.

Figure 11. Ventas NOI from Different Product Types of 2018 Q3

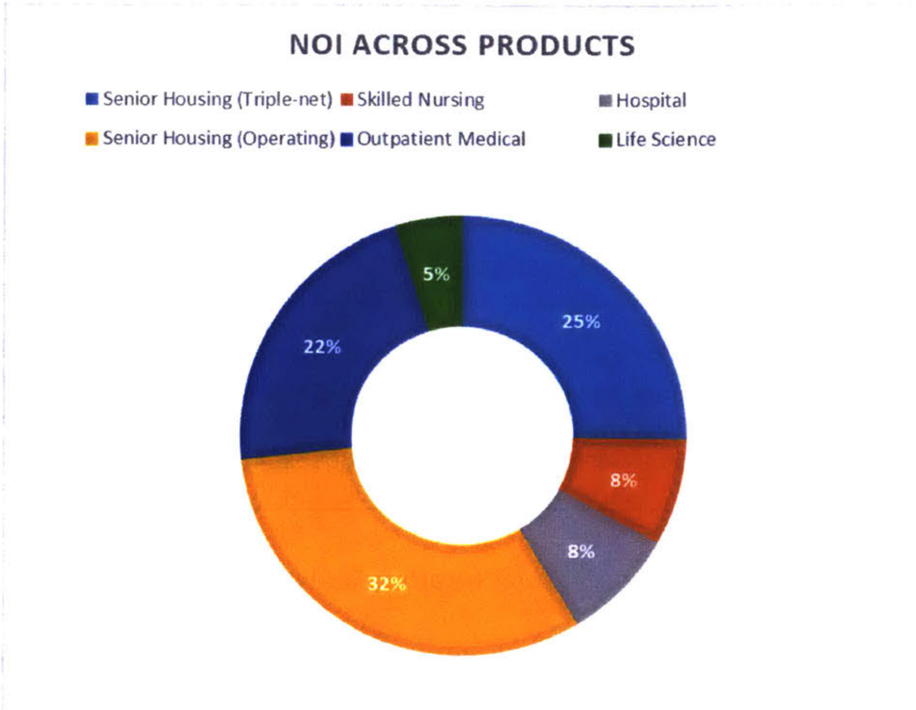


Figure 12. Annualized NOI across Products from Year 2000 to Year 2017

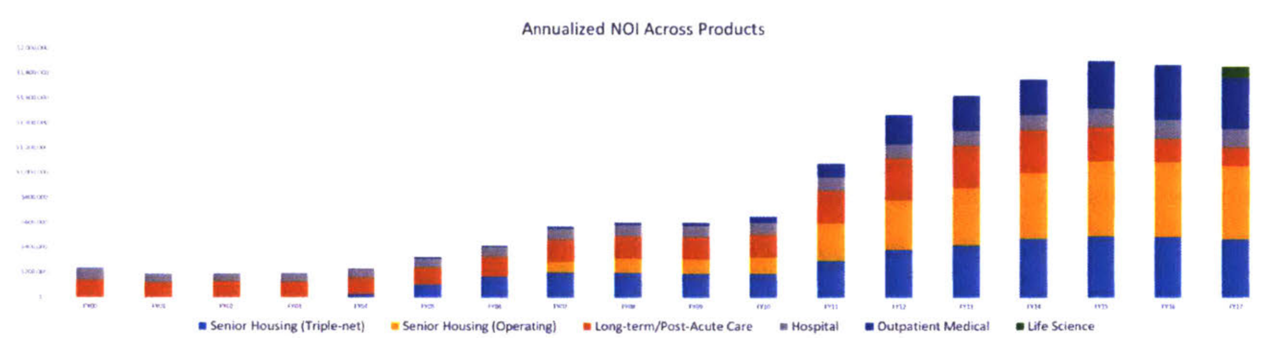


Figure 13. Annualized NOI Percentage across Products from Year 2000 to Year 2017

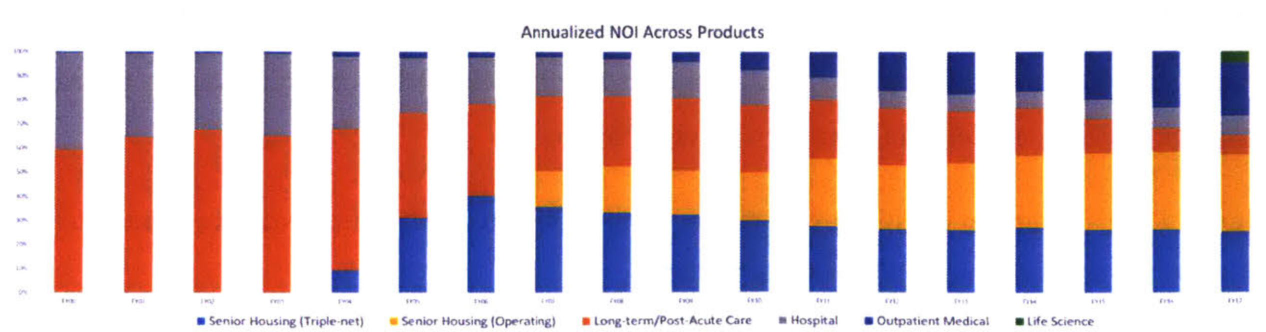


Figure 14. Same-Store NOI Growth of Different Product Types Over Time

From these graphs we can generate few points of investment behavior of Ventas:

1) The company, traditionally rooted in owning and operating skilled nursing facilities and hospitals (including international, general, rehab, post-acute, acute hospitals) gradually geared towards investments in senior housing, outpatient facilities and life science. These three product types require less healthcare operation expertise and are subject less to governmental regulations and funding.
2) While the company keeps acquiring more outpatient facilities, life science and senior housing properties, it did not dispose much of its existing portfolio of skilled-nursing facilities and hospitals. Looking at the crisis period from 2007-2008, the NOI from skilled-nursing facilities and hospitals are constant, partially due to the capability of hospital and skilled nursing facilities to bring in stable cash flow even in downturn.
3) Observing the same-store NOI growth rate of different products, during the 2007-2008 financial crisis, outpatient facilities and senior housing (operating) and life science crashed more than other products, which is not hard to understand. Outpatient facilities and life science resembles traditional commercial real estate assets, has more correlation with real estate market movements. Senior housing operating has less correlation with general real estate market. However, REITs also harvest revenue from the operation of senior housing operating properties. The revenue and profitability of senior housing operation is highly correlated with big environmental economy, that leads to the shrinking of NOI of senior housing operating portfolio. While this product let REITs to maximize their revenue through RIDEA structure, it also expose REITs to larger risk associated with operation of the business, instead of real estate only.

HCP

HCP, became a public company in 1985, historically invested in skilled nursing and hospital properties. The company gradually diversified its portfolio through acquiring large skilled nursing, senior housing and outpatient properties portfolios and through merge with smaller specialized healthcare REITs. Since 2007, HCP expanded into life science market through acquiring Slough Estates with properties in San Diego and San Francisco area.

In 2016, HCP spins off Quality Care Portfolio, which is mostly composed of skilled nursing properties. From then on, the company will focus on private-paid healthcare facilities. The spined off QCP, with mostly properties lease to HCR Manorcare, was acquired by Welltower in 2018, after QCP bought Manorcare out of bankruptcy earlier 2018.

Below is a diagram of NOI of different healthcare real estate products on HCP Book's of 3rd Quester 2018.

Figure 15. HCP NOI from Different Product Types of 2018 Q3

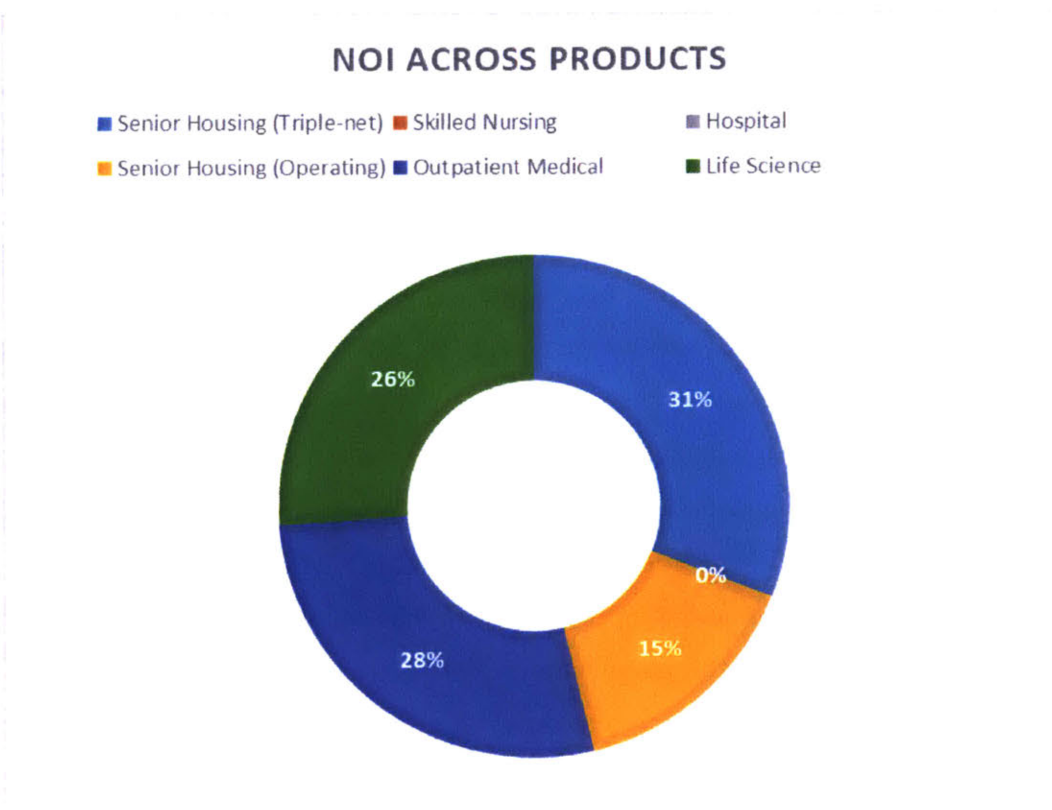


Figure 16. Annualized NOI across Products from Year 2000 to Year 2017

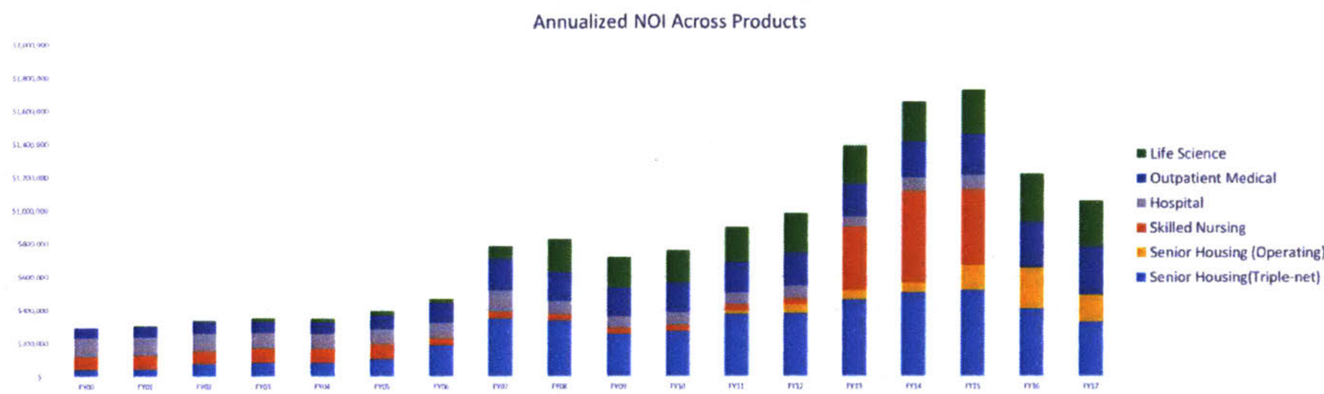


Figure 17. Annualized NOI Percentage across Products from Year 2000 to Year 2017

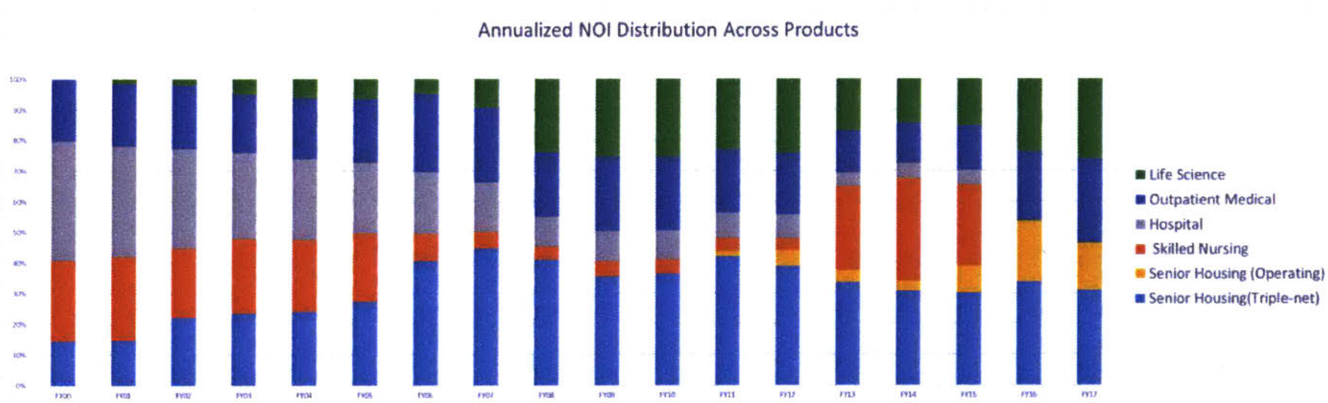


Figure 18. Same-Store NOI Growth of Different Product Types Over Time

From these graphs we can generate few points of investment behavior of HCP:

1) Among the three companies, HCP holds the most evenly distributed portfolio composed of five product types, with senior housing operating weighting slightly less than others. Since the HCP's spined off its skilled nursing properties, the company is now focusing on senior housing operating. It can be imagined that products would compose bigger portion in the company's portfolio later.
2) The company owns bigger share of life science and outpatient facilities products on their portfolio compared to other healthcare REITs. One reason is the company's strategic acquisition of Slough Estates' life science properties in San Diego and San Francisco area gave them dominancy to compete in this country's most popular life science hub. For outpatient facilities, HCP began to build their outpatient facilities platform long before their competitors. By acquiring smaller specialized companies, the company gained early entry into these markets, which posts a barrier for new companies to enter the market. In addition, it is noticed that both outpatient facilities and Life Science are operated through the company's office platform and this might provide some synergy.
3) Looking at the same-store NOI growth rate of different products HCP owns, the top three growing products are life science, senior housing operating and outpatient facilities. This supports the company's decision in expanding their profile in senior housing operating and keeping their heavy weight on outpatient facilities and life science portfolio.

Welltower

Welltower was founded in 1971, and later was converted into REIT in 1985. It was the first REIT to invest in healthcare real estate. The company started with acquiring skilled nursing properties, now owns a diversified portfolio of senior housing, skilled nursing, outpatient facilities, hospitals, life science.

The company was also one of the first companies of its kind to invest in senior housing, which composes the biggest percentage of the company's portfolio. Besides its footprint throughout US, the company also made its major expansion into Canada by purchasing a portfolio of senior housing and care communities through a almost $1 Billion transaction. Today Welltower is second largest healthcare REITs in the United States, with its CEO Jeff Miller saying the company is "looking to find the highest-quality real estate in the best, most dynamic markets and operated by the best operators in health care".

Figure 19. Welltower NOI from Different Product Types of 2018 Q3

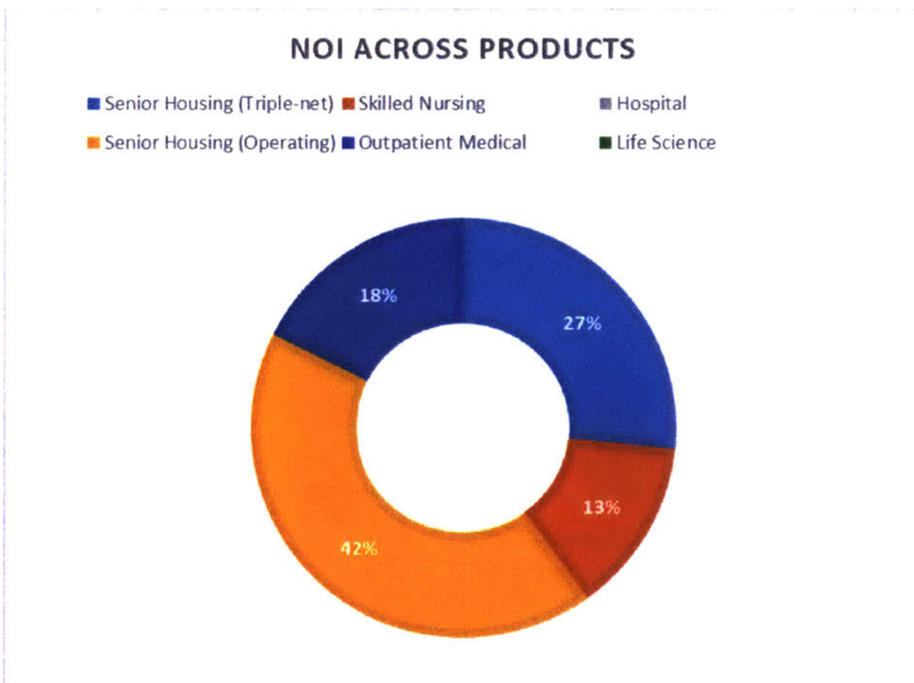


Figure 20. Annualized NOI across Products from Year 2004 to Year 2017

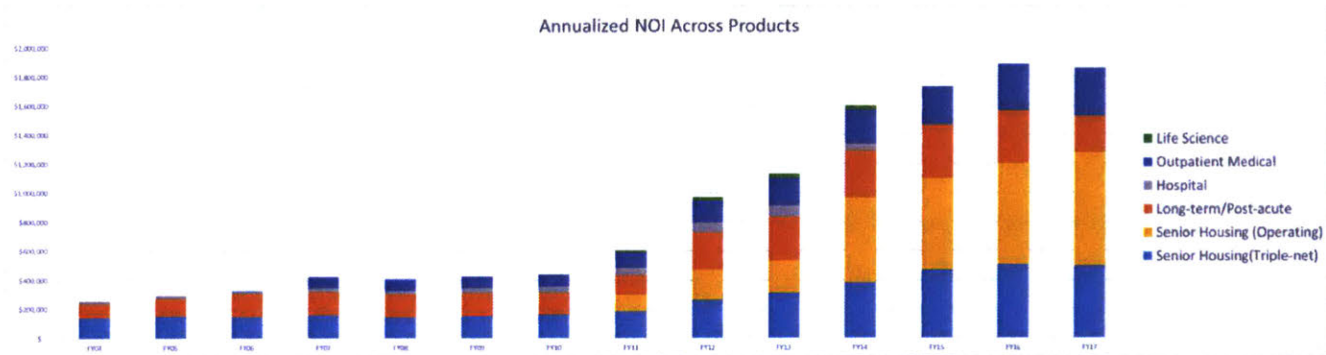


Figure 17. Annualized NOI Percentage across Products from Year 2004 to Year 2017

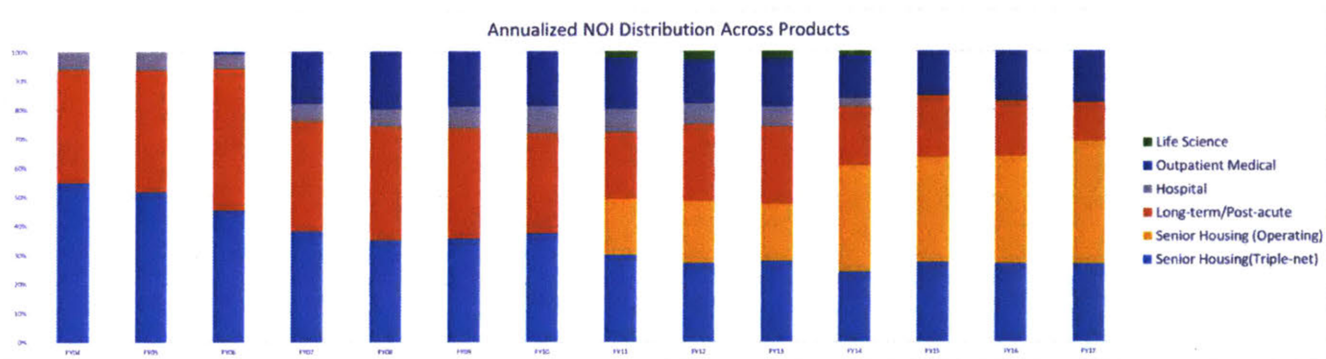


Figure 18. Same-Store NOI Growth of Different Product Types Over Time

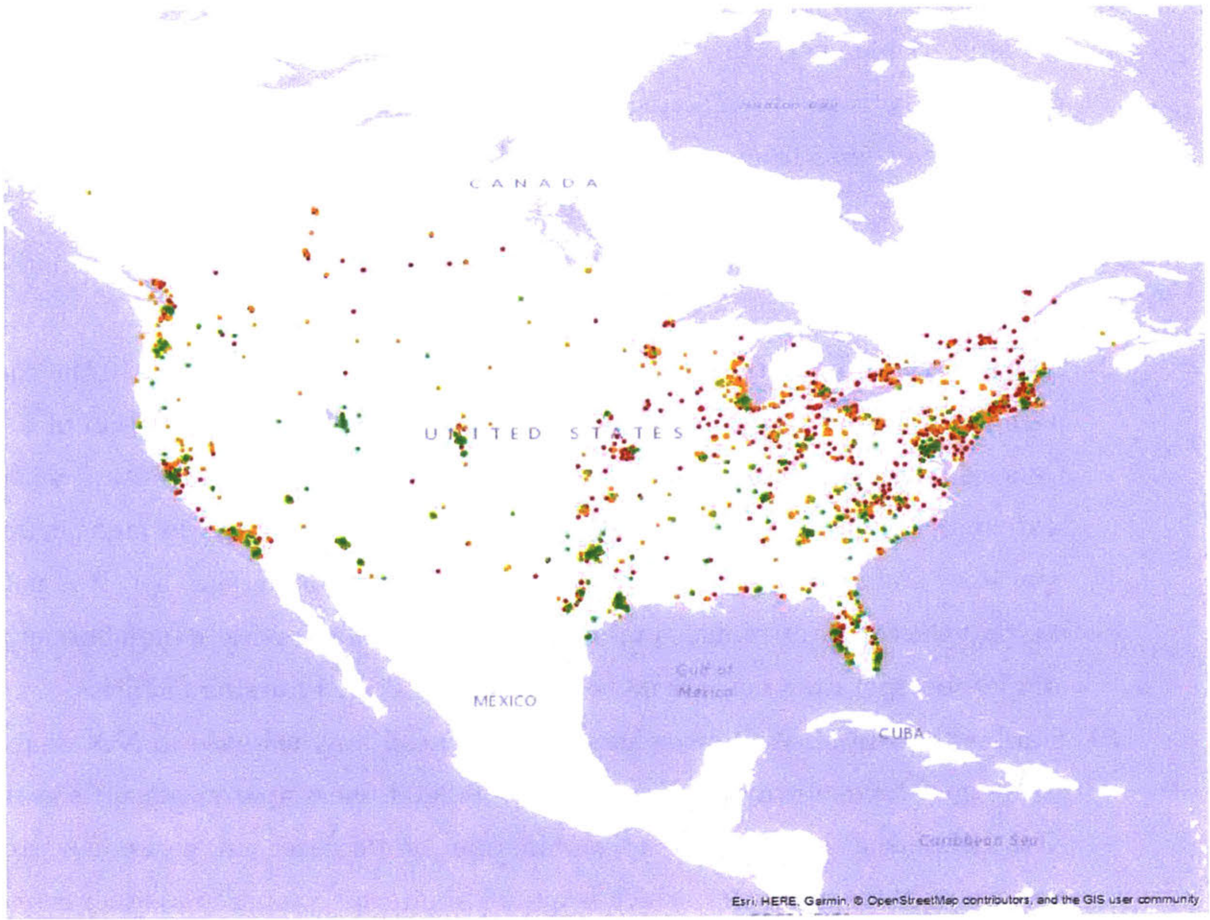
From these graphs we can generate few point of investment behavior of Ventas:

1) Welltower has a long history investing in senior housing and skilled nursing properties. Gradually, the company is shrinking the percentage investing in skilled nursing but put more capital into senior housing products. Among senior housing products, senior housing operating is realized as a the most profitable product by most healthcare REITs. While Welltower still keep 27% of its portfolio income from senior housing triple net, the shares from senior housing operating has increased dramatically from 0 to 42% since RIDEA structure was available in 2007. Some of this transaction comes from converting its triple-net assets into operating structure. The profit growth potential of senior housing operating is supported by the rocketing same-store NOI growth rate from senior housing operating sector, shown in the Figure 18.
2) A study of acquisition and disposition of Welltower shows, from 2010 the companies purchased several large property portfolios. Among them, acquisition of almost all Genesis portfolio, Sunrise portfolio, Benchmark portfolio, joint venture with Revera were major acquisition deals. Welltower also acquired underperformed portfolio from operators and switch to other top operators on their partnership list. It is not hard to see that the company aims to purchase best quality properties in high barrier markets and let top operators operate its senior housing/skilled nursing facilities.
3) Similar to Ventas, Welltower barely experienced any decrease of NOI from its real estate porfolio in downturn. From year 2008-2009, the outpatient facilities same-store NOI decreased by 2% (as a combination of decrease in occupancy and rent) continuously for two years, which is quite immaterial compared to other conventional commercial real estate sectors. As REITs are long term holders, they care cash flow more than asset price. Even though during crisis, the asset price might decrease more than rent due to increasing cap rate, REITs' return is not quite effected.
4) Looking at the growth rate across product types, generally saying, the NOI growth is very stable, which might be related to the company's strategy to invest in prime properties operated by top operators in high-barrier markets.
5) One thing worth noticing is that, Welltower used to own a portfolio of life science properties in Kendall Square adjacent to MIT campus, one of the most popular life science research hubs in the country with most value-increasing potential. In year

2015, it disposed all its life science mixed-use campus portfolio to Forest City, who used to be in the same joint venture investment in these properties. The closure of the deal delivered a 15% unlevered return.

Portfolio Distribution for Diversified REITs

Figure 19. Portfolio Distribution of Three Largest Healthcare REITs



Welltower portfolio | Ventas portfolio | HCP portfolio

Looking at the portfolio distribution of the three largest and most diversified healthcare REITs, it can be concluded:

1) Welltower's portfolio is mostly concentrated in prime market with high entry barrier. HCP's portfolio is concentrated in high entry-barrier markets as well, but of smaller scale. Ventas, has the largest and most geographically spread portfolio.
2) In prime markets, the foot prints of the top three REITs are overlapping, however, in secondary markets, three companies' foot prints are less overlapped with each other, which means healthcare real estate is generally high barrier market, with one company dominating each local market and other companies having difficulty to enter the same market.
3) Even though the portfolio is geographically spread over United States, it is clear that most of the properties hold by REITs are concentrated in prime/sub-prime markets.
4) Recent years, as the US senior housing market, especially assisted living facilities, are gradually saturated or even oversupplied, major REITs began to expand into US's neighbor Canada and UK, to copy the same revenue harvesting mechanism oversea to occupy market share, as well as to diversify the risk exposed to domestic market.

Figure 20. HCP Portfolio Distribution

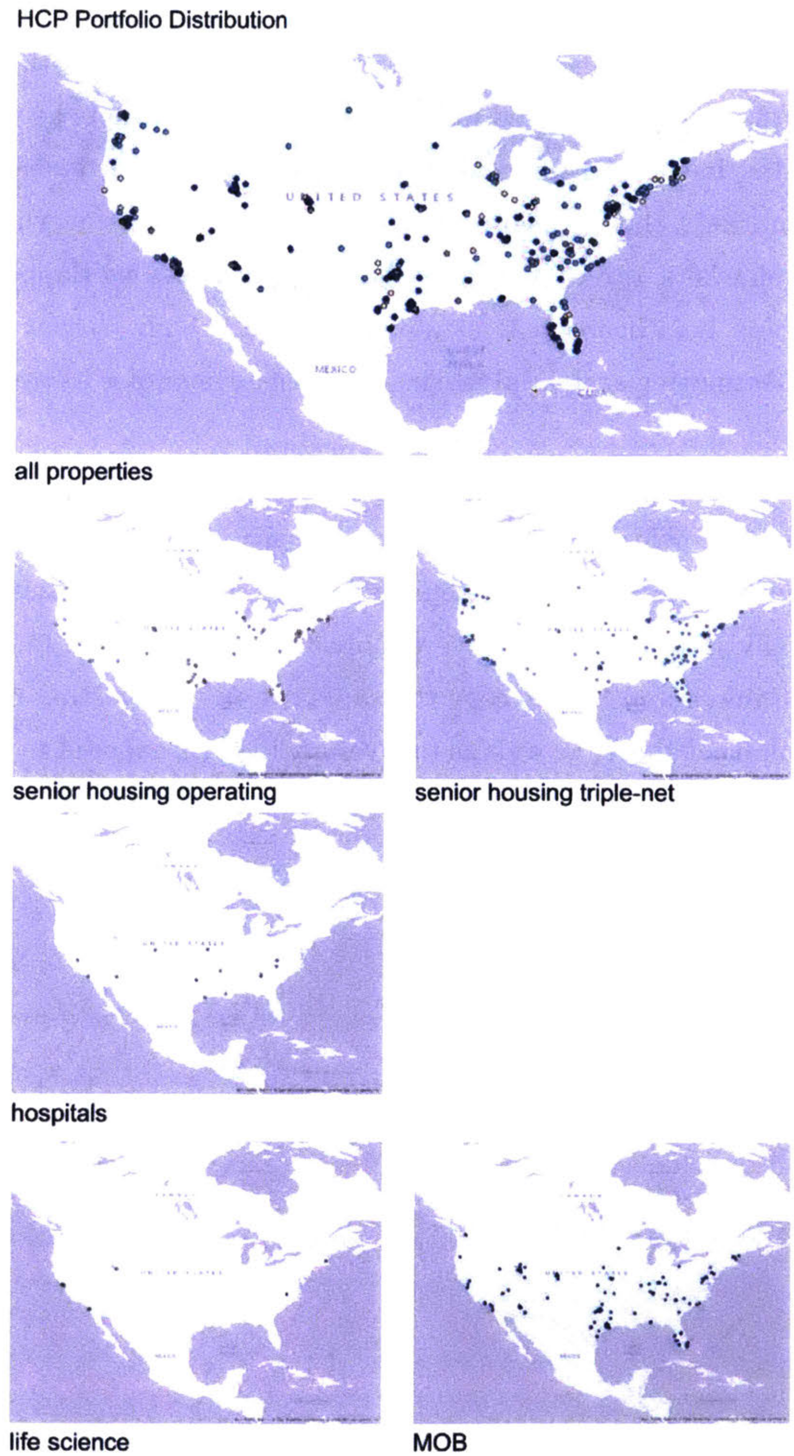


Figure 21. Ventas Portfolio Distribution

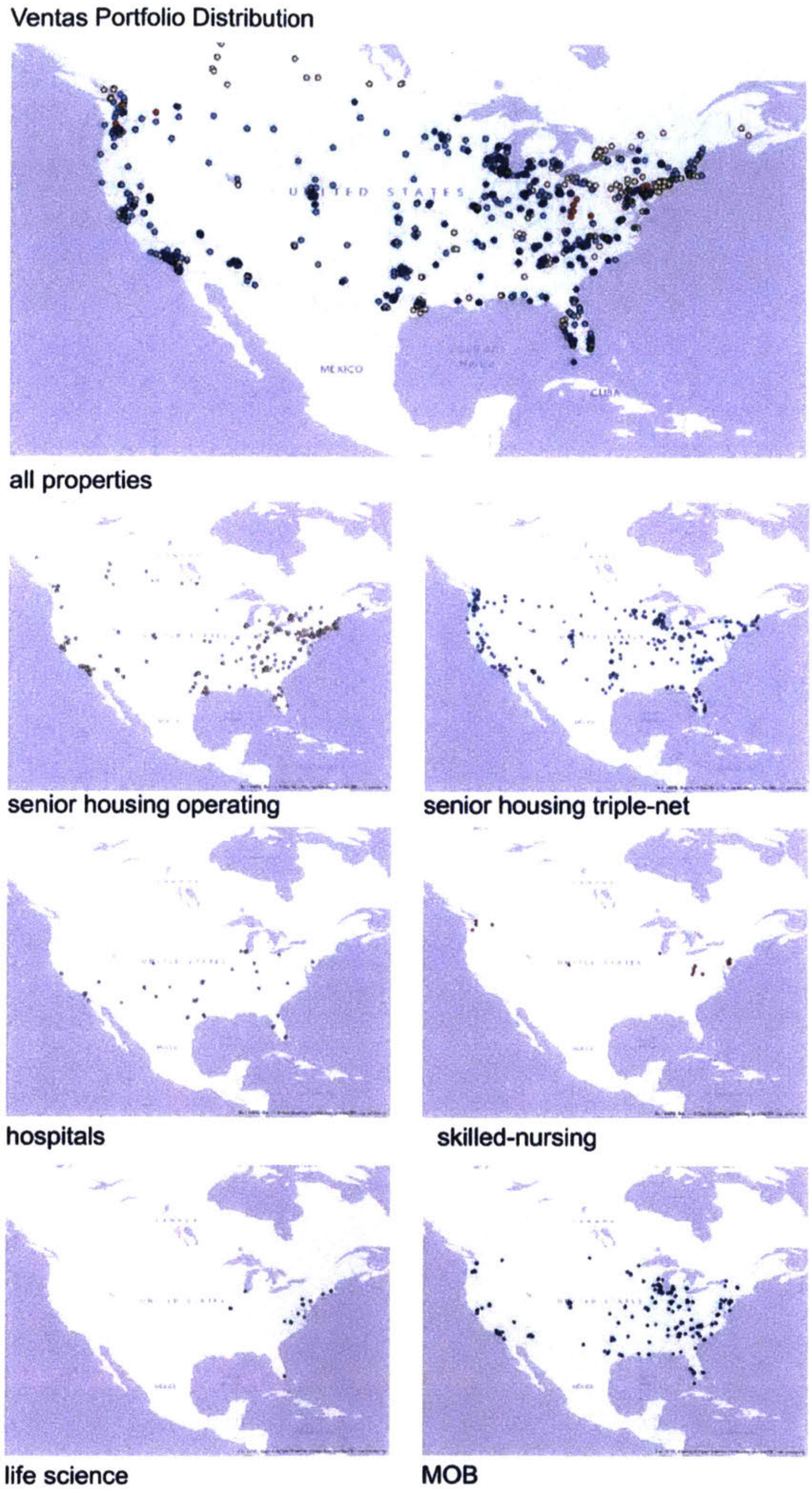
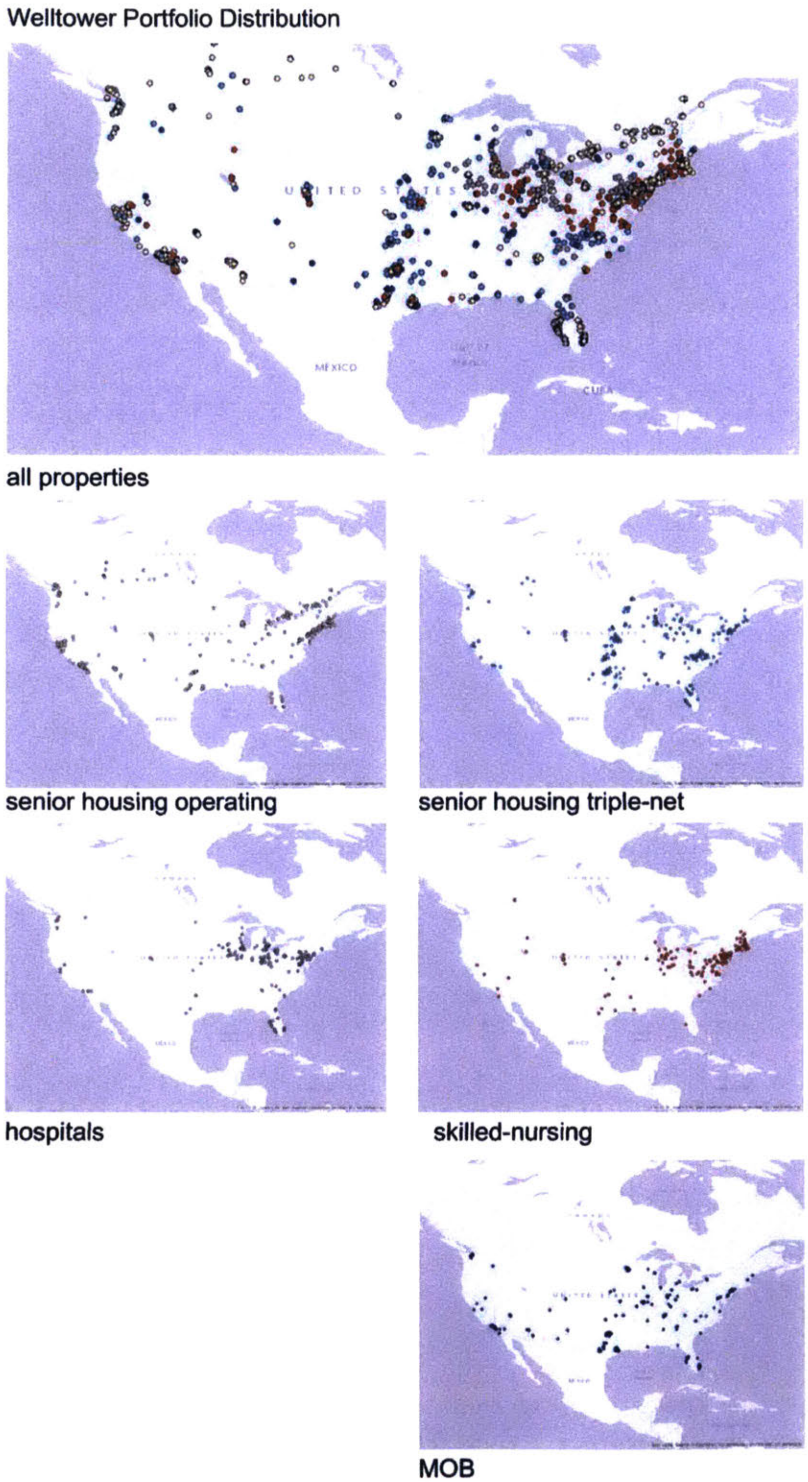


Figure 22 Welltower Portfolio Distribution



Observing the distribution of different type of portfolio owned by these three companies, there are few points worth noticing

1) The senior housing operating portfolio of the three companies are all concentrated in prime markets, while senior housing triple-net portfolio are more spread out. This could be related to the different risk profile of these two products. Senior housing operating, with REITs harvesting revenue and responsible for operational expense, is associated with higher risk and higher return. For these products, REITs tend to own facilities located in high-barrier markets to reduce its risk from downturn performance and competition from new entries. While with senior housing triple-net, if there is an economic downturn, operators would take the first hit instead of landlord. In addition, most healthcare real estate leases are secured with tenants' personal guarantee or companies' credit, as a result, it is rare for landlord to loss their rent revenue, if they are cooperated with credit tenants and top operators.
2) There is a high correlation of the distribution of properties that one company holds. For example, looking at the portfolio distribution, the correlation between outpatient and senior housing facilities or between hospitals and skilled nursing products are very high. It means, companies usually operate within a certain market, investing across products in this market. By investing in different products within the same market, the healthcare system or senior housing operation partnership these REITs companies build up with can create some synergy. For example, most skilled nursing facilities admit patients who are just released form hospitals but still need short-term/long-term care. In this case, by owning a hospital and a skilled-nursing facility at the same area, the skilled-nursing facility admits patients released from the hospital. If the healthcare system running the hospital performs well, the skilled-nursing facility has smaller chance to loss occupancy. On the other hand, skilled-nursing facilities have less cost of caring the patients compared to that in an inpatient environment. By discharging patients into nearby skilled-nursing facility, the hospital can treat patients in a more efficient way.
3) The outpatient facilities portfolio of all three REITs are quite spread out. As the healthcare trends towards outpatient from inpatient model, more and more medical procedures can be done in outpatient environments. Healthcare system is also adopting value-based system, with intentions to attract patients as consumers. Also with the recent merger and acquisition of hospitals, owning a concentrated on-campus outpatient facilities portfolio can post some risk for landlord due to the uncertainty of performance of associated healthcare systems. Owning off-campus outpatient

facilities, especially those located in dense urban area, provide a higher reposition flexibility if there are medical tenants moving out. Therefore, it is observable that outpatient facilities are moving away from concentrated hospital campuses, towards patients' neighborhoods, with diffused locations.

Other Healthcare REITs

Figure 23. Trading Volumes by REITs Across Asset Types

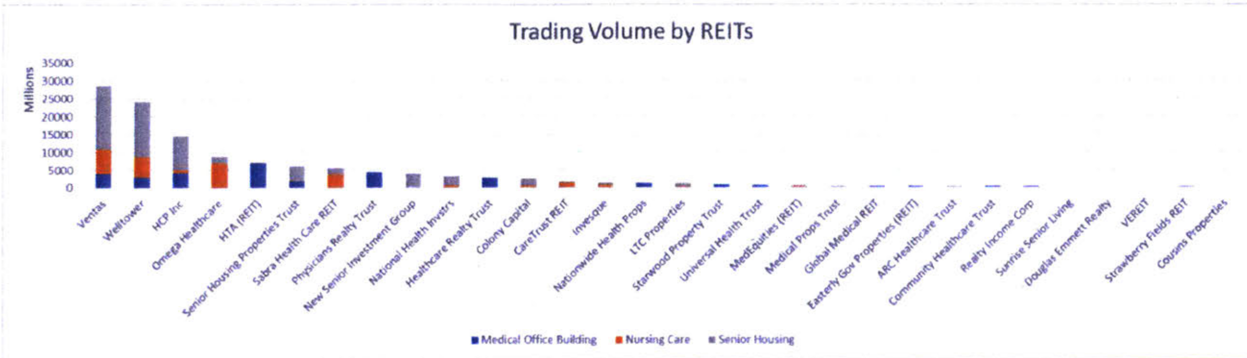


Figure 24. Trading Volumes Percentage by REITs Across Asset Types

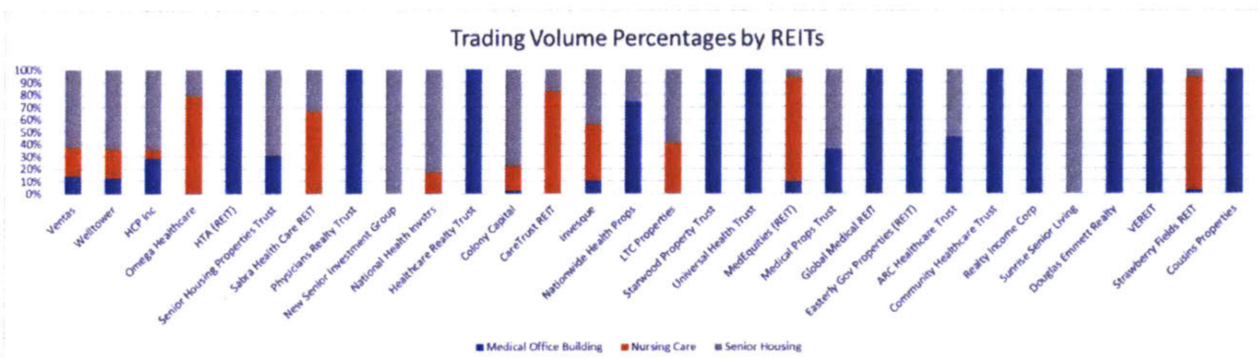


Figure 23 and 24 show the top 30 healthcare REITs transactions of different products in past 10 years. Healthcare real estate is relatively a new asset type. This transaction value record of previous 10 years pretty much presents a bulk of assets owned by each company.

Some interesting observations are as below:

1) This market is not a high competitive market; few companies own a big market share.
2) Among the three asset types, senior housing accounts for 51% of the transaction volume, outpatient facilities accounting for 26% and skilled-nursing accounting for 23%.
3) Except the top three healthcare REITs, most healthcare REITs are specialized in one or two products. Companies who invest in skilled-nursing usually has a small share of senior living as well. Other companies are quite specialized in outpatient facilities.

4) According to industry reports, companies specialized in skilled-nursing are restructuring their portfolio by converting some skilled-nursing facilities into senior housing or switching operators.

4.3 Investment in Healthcare Real Estate from Non-REITs Sector

As mentioned before, as public REITs turned into selling mode, private investors are picking up on the transaction volume by purchasing more healthcare properties. Healthcare REITs are specialized in healthcare, so they are selling less valuable properties and accumulate capital to reinvest in superior properties. Now it is the best time to harvest the price. For private investors and developers, a lot of them have a mixed-up portfolio made from both healthcare properties and other traditional asset types. Given the potential downturn view, some of them began to sell traditional assets and buying in healthcare properties as a hedge against downturn.

Table 5 shows the investment activities of private developers and investors who are already in the healthcare real estate market. As it is shown, outpatient and inpatient facilities are the most popular asset types. Out of 23 private developers, there are 19 developing outpatient facilities and 12 developing inpatient hospitals. Out of the private investors, there are 9 investing in outpatient facilities and 4 investing in hospitals. Senior living and Skill-nursing facilities are less popular, especially for investors. Most private investors or developers who are in the healthcare real estate sector also own or develop other traditional asset types. This is particular common for national largest developers.

One might think healthcare real estate development is such a niche market and require high expertise that large traditional real estate developers or investors would not get into. Even though it is quite the case a lot of times, the story is changing now when most investors and developers realized the advantage of getting into this business. Table 6 shows the largest national real estate developers and their activities in development and investment of healthcare real estate products.

Table 5. Private Development Company in Healthcare Real Estate Market

	PrivateDevelopers	Outpatient	Senior Housing	Inpatient	Skilled-nursing	Life Science	Office	Retail	Residential	Industrial	Hospitality	Mixed-use	Educational	Multifamily
1	Astoria Property Company	Yes	Yes	Yes										
2	Atkins Companies	Yes												
3	Catalyst HRE	Yes												
4	Davis Moore Capital	Yes		Yes		Yes	Yes							
5	Davis Real Estate	Yes		Yes										
6	Embree Capital Markets Group, Inc.	Yes	Yes	Yes	Yes		Yes	Yes		Yes				
7	Irgens	Yes	Yes				Yes	Yes						
8	Landmark	Yes		Yes										
9	Kenneth Weston Healthcare Real Estate	Yes												
10	LifeCenters Development Group		Yes								Yes			
11	Makena Medical Buildings, LLC													
12	MedCraft	Yes		Yes										
13	Medical Real Estate Inc.	Yes		Yes	Yes				Yes		Yes	Yes		
14	MEDISTAR CORPORATION													
15	Mitch Cox Companies	Yes					Yes	Yes	Yes	Yes	Yes	Yes		
16	NexCore Group	Yes	Yes	Yes										
17	Pacific Medical Buildings	Yes		Yes									Yes	
18	Page Healthcare Group	Yes												
19	Pisula Development Company	Yes			Yes		Yes	Yes		Yes				
20	Rendina Healthcare Real Estate	Yes		Yes										
21	The Boldt Company													
22	Transwestern	Yes		Yes			Yes			Yes	Yes	Yes		Yes
23	Woodstown Development Group LLC	Yes		Yes										
	Total	19	5	12	3	1	6	4	2	4	4	3	1	1
	Private Investors	Outpatient	Senior Housing	Inpatient	Skilled-nursing	Life Science	Office	Retail	Residential	Industrial	Hospitality	Mixed-use	Educational	Multifamily
1	Hammes Partners	Yes												
2	Anchor Health	Yes		Yes										
3	MB Real Estate Services	Yes		Yes										
4	Montecito Medical Real Estate	Yes												
5	Norvin Healthcare Properties	Yes		Yes										
6	Seavest Investment Group	Yes		Yes										
7	Ridgeline Capital Partners	Yes												
8	Turner Impact Capital	Yes							Yes				Yes	
9	Virtus Real Estate Capital	Yes	Yes						Yes	Yes			Yes	Yes
	Total	9	1	4					2	1			2	1

Table 6. National Largest Real Estate Developers' Involvement in Healthcare Real Estate

	healthcare real estate products
Trammell Crow Company	developing outpatient, hospitals, life science facilities
Hines	JV with Welltower to develop NYC senior housing JV with health care investment company Sentio to form an investment platform for senior living and healthcare real estate
The related	JV with operator Atria Senior Living to develop, own and operate $3 billion worth of senior living communities in major, urban markets across the U.S
Greystar Real Estate Partners LLC	Greystar manages several apartment communities that offer independent living for seniors (55 years or older) in stylish surroundings, in the most desirable markets

Chapter Five:
Analysis of Interviews with Healthcare Real Estate Professionals

According to the analysis of interviews with industry professionals form 9 companies developing or investing in healthcare properties, shown in Table 7. There are few conclusions can be made.

Table 7. Interview subjects and companies' profiles.

Company	Interviewee	Scale	Whether specialized in HRE	Service Provided	Note
Private Developers					
Irgens	**Ryan Wagner** Manager Development	National	No	office, Industrail, outpatient facilities, senior housing	
Caddis	**Jud Jacobs** Executive Vice President Development & Partner	National	Yes	outpatient facilities, Senior Housing	
Catalyst	**Alex Bell** Senior Vice President	Regional	Yes	Outpatient facilities	
FH French	**Jen Cookke** CEO & Founder	Regional	No	outpatient facilities, office	
2Life Community	**Elise Selinger** Real Estate Innovation Manager	Regional	No	Multifamily, Independent Living	non-profit developer /operator
Private Investors					
Company A (a China-based Conglomerate)	**Interviewee A** Managing Director, NY	International	Yes	Acquiring Senior Housing in US, using China Capital	
Public REITs					
Welltower	**Rob MacAndrew** Investment Associate	International	Yes	outpatient facilities, Senior Housing, skilled-nursing, hospital, life science	
HCP		National	Yes	outpatient facilities, Senior Housing, skilled-nursing, hospital, life science	

- **National developers have the capability to diversify healthcare products they develop, while regional developers are inclined to develop outpatient facilities with other traditional assets.**
  Most national health real estate developers focus on senior housing and outpatient facilities. In this case, the senior housings mostly are assisted living and skilled-nursing, which contains heavy operational component. As the scale of business grows, the developers are not only satisfied with revenue only generated by real estate business. Some developer has the full ownership of senior housing facilities and operation. For example, Caddis Healthcare Real Estate has their senior housings branded under "HEARTIS". They outsourced the operational business to local operators by paying operational fee. In this way, Caddis have the revenue of operations, in addition to real estate revenue. At the same time, the company maintains the flexibility to switch to other operators if current one fill the expectation.

- **Private investors are usually specialized in acquiring either outpatient or senior housing properties in an exclusive portfolio.**

According to Jud Jacobs, a common exit strategy would be selling whole portfolio of healthcare properties to REITs. Since REITs are specialized in certain asset types. The composition of the portfolio is single one asset type. That could be the reason why private investors are specialized in acquiring single asset type.

- **Synergy created by holding diversified portfolio of healthcare properties**
  As mentioned before, largest healthcare REITs diversify their portfolio with different healthcare properties, spanning from senior housing to skilled-nursing, from outpatient facilities to hospitals. According to the interview with Rob MacAndrew, Investment Associate of Welltower, the potential synergy exists if REITs "can track down patients moving from one facility to another". From the healthcare industry point of view, this continuous treatment and care improve healthcare outputs. From the landlord's perspective, this maximizes the consumer base, therefore increase revenue streams. Take senior housing for example, REITs are able to increases market penetration rates by admitting more residents in their senior housing facilities based on the references from the hospitals they own. In the long-term, this positive relationship is strengthened as REITs develop a better knowledge of healthcare industry and the residents or patients living in their facilities, leveraging real estate expertise to deliver better cares for the patients.
- **Biggest challenge for new investors to get into the market is to know the business model.**
  When interviewing with companies, it is agreed on by all companies that the intricacy of the business model is the biggest barrier and the essential key for new comer to succeed in this market. As Rob MacAndrew explained, the payment method of healthcare industry is complicated and future public policy would impact revenue generating capability of certain healthcare services but not the others. To understand the nuances in between requires specialized human capital. Or else, partnering with a dependable general partner will prove to a better idea, said Jud Jacobs.
- **International Capitals are flowing into healthcare real estate market.**
  Investing in US healthcare real estate is a smart move for international investors who seek to diversify their portfolio by regional expansion. Everest Healthcare Properties, a money manager focused on health-care investments, was acquired by a China-based conglomerate with a international business profile in 2017. Welltower Completes Sale of 28 Long-term/Post-acute Care Facilities to Cindat/Union Life Joint Venture in December, 2016. In December, 2018, Qatar Investment Authority (QIA) has made a $300 million investment in Welltower's common stock and has an option to acquire an interest in a development pipeline of urban senior living communities. The healthcare real estate market has been seeing more and more investments from oversea.

Chapter Six: Conclusion

This thesis introduces five major healthcare real estate products and generalizes key features of investment and development of these five products. By reviewing investment activities and performance of healthcare real estate from both public and private sector, the thesis intends to understand the opportunities and risks of investing in each of the products. Figure 27 generalizes the risk and opportunities from different aspects. Market Demand is an indication of the opportunities, while risks come from aspects of operation, regional targeting, reimbursement method and future capital investments.

In general, given by the ratings, demand of outpatient and life science facilities are the greatest, providing best opportunities to enter the markets.

- Senior housing shows a high risk mainly coming from operators' quality.
- With life science, it is essentially important to track venture capital and funding outflow and invest in the right region.
- With hospitals and outpatient facilities, long-term ownership is subject to risk coming from big capital investment to keep the facilities up to date.

Figure 27. Risk and Opportunities Factors in Investing in Healthcare Real Estate

	Market Demand	Operational Risk	Regional Risk	Reimbursement Risk	Future Capital Investment
Outpatient Facilities/MOB	**Strong** driven by both demographic and off-campus trend	**Moderate** partner with strong performing healthcare system	**Low** mostly designated by hospital, moving from campus to urban area	**Moderate** depending on the cares provided, reimbursement risk varies	**High** reposition cost is high if medical care change, have to allow flexibility in building design
Hospitals	**Week** demographic growth offset by off-campus trend	**Moderate** partner with strong performing healthcare system	**Low** success depending on performance of healthcare system	**Moderate** undergoing reimbursement cut, cost efficiency pressure will drive many healthcare systems out of business	**High** continuous expansion and renovation cost, have to allow flexibility in building design
Senior Housing	**Steady Growing** driven by demographic trend, but be careful of oversupply	**High** success mostly depending on operators	**High** secondary market is oversupplied, prime markets are undersupplied	**Low** mostly private pay	**Low** large upfront investment, minor capital investment in the future
Post-acute facilities	**Steady** more post-acute care can be performed in assisted living facilities	**High** success mostly depending on operators	Moderate better be next to hospital campus to accept discharged patients	**High** mostly paid by governmental reimbursement	**Moderate** many skilled-nursing are converted into senior living facilities
Life Science/Biotech	**Strong** driven by venture capital investment and government funding	**Moderate** partner with growing pharmaceutical or biotech companies	**High** pricing in Boston/SF plateaued, considering secondary markets	**Low** Revenue generate in the way similar to office buildings	**Moderate** tenant improvement cost is high

Given by the risk profiles of different healthcare real estate products, it is proposed that for traditional investors and developers who are trying to enter this market to harvest the growth opportunities and "recession-proof" stability, different products and deal structures should be considered.

Figure 28. Recommendations for newly-entered developers with different risk profile.

	Investors			
	Core	Value-Add	Opportunistic	Recommendations
Outpatient Facilities/MOB	Acquiring Existing Properties, generating stable cash flow	Acquiring undervalued assets, deploy capitals to increase value	Form JV with experienced developers and hospital systems, doing new developing Acquiring existing properties, reposition into Outpatient facilities	Yes least barrier to enter for investors without previous experiences in regional level. For national level, has to develop relationship with hospitals
Hospitals	Acquiring Existing Properties belonged to hospital systems, lease back to hospital	-	-	difficult to enter the market unless have established partnership with health systems.
Senior Housing	Acquiring Existing Properties operated by top operators,generating stable cash flow	Acquiring undervalued assets, forming JV with operators, deploy capitals to increase value, or switching operators to increase operational revenue	Form JV with top operators and developers, develop new senior housing properties	Independent facilities are easist for new-entry investors; otherwise, has to depend on top operators.
Post-acute facilities	Acquiring Existing Properties operated by top operators,generating stable cash flow	Acquiring undervalued assets, forming JV with operators, deploy capitals to increase value, or switching operators to increase operational revenue	Form JV with top operators and developers, develop new skilled-nursing facilities; converting existing skilled-nursing to senior housing	risky for new enters, given the uncertainty of pocilies

Figure 28. Recommendations for newly-entered developers with different sale.

Developers			
	Regional	Nationwide	Recommendations
Outpatient Facilities/MOB	patner with local healthcare systems	usually has to be developers with experience in delivering healthcare buildings	can start with small-sale development, partner with local hospitals
Hospitals	-	usually has to be developers with experience in delivering healthcare buildings	Not for developers without previous experience
Senior Housing	partner with local senior housing operators	either partner with national operator, or healthcare REITs	need a lot of expertise, need to form JV with experienced operators or REITs
Post-acute facilities	-	-	this sector is threatened by funding cut, risky for new development
Life Science/Biotech	market is segemented, regional market in Bosotn and SF is becoming saturated, secondary-tier market is a potential	-	regional development is feasible, nationwide development requires a mature paltform with deep understanding of life science industry

As for investors, the biggest opportunities exist in senior housing, outpatient facilities and life science sector.

- For senior housing, partnership with top operator is the priority. In national level, there are few high-quality operators, who might only be willing to partner with big investor or developers. In regional level, the US market is very segmented, with countless local senior housing operators, to identify a reputational one is the key to success.
- For outpatient and life science facilities, in order to acquire the right ones, a developed knowledge system of the tenants is critical.

- For investors without hired in-house healthcare real estate specialist, the most efficient way to enter the market would be acquiring established healthcare real estate investment platform or being limited partner of experienced companies.

For developers, regional level development opportunities are abundant in outpatient, life science and senior housing sector. With a local knowledge, willingness to develop relationships with healthcare systems and senor housing operators is important but not infeasible. However, for nationwide developers who newly enter this market, to gain the trust from healthcare systems and operators is not easy. The largest developer may win the trust by providing favorable JV terms or cheap capital onto the table. Since development is not expertise of most healthcare REITs, who are more focused on acquiring existing properties, this opens up space for national largest developers to enter the area, with products that they see a synergy with their existing asset platform. For example, The Related Company integrates high-end senior housing business into their existing luxury multifamily business in prime markets. Boston properties are developing life science properties in Boston area, to supplement their existing office tenant base.

In general, by all the evidences elaborated before, healthcare real estate is proved to be a high potential and sustainable business for traditional investors and developers to enter. Given the high risk and required expertise, to study the fundamentals of healthcare industry and understand the business model is important. With the strong demographic trend, growing demand and available JV partners to depend on, the writer is confident this sector is growing into a core asset type in near future.

Bibliography

Anikeeff, Michael, andGlenn RMueller. 1998. *Seniors Housing.* Dordrecht ; Boston : Kluwer Academic Publishers, c1998. https://search.ebscohost.com/login.aspx?direct=true&db=cat00916a&AN=mit.000835033&site=eds-live&scope=site.

Becker's Hospital Review. 2015. "Why Leverage Third Party Capital in Healthcare Real Estate?" *Becker's Hospital Review.* https://www.beckershospitalreview.com/finance/why-leverage-third-party-capital-in-healthcare-real-estate.html.

Borchersen-Keto, Sarah. 2014. "Boston Properties Seeking New Heights in Development." *REIT magazine.* https://www.reit.com/news/reit-magazine/september-october-2014/boston-properties-seeking-new-heights-development.

CBRE Research. 2017. "U.S. Medical Office Building-a Cure for Market Volatility." *2017 U.S. Medical Office and Health Care Report.*

Centers for Medicare and Mediaid Services. *Medicare Coverage of Skilled Nursing Facility Care.* https://www.medicare.gov/Pubs/pdf/10153.pdf.

Elizabeth Szep. 2018. "US Price Growth Picks Up in August, Report Shows." *RCA Insights.* https://www.rcanalytics.com/us-prices-aug-2018-rcacppi/.

Gordon, Paul A. 1998. *Seniors' Housing and Care Facilities : Development, Business, and Operations.* Washington, D.C. : Urban Land Institute, 1998. https://search.ebscohost.com/login.aspx?direct=true&db=cat00916a&AN=mit.000885456&site=eds-live&scope=site.

Gottlieb, Matt. 2015. "Healthcare REITs and Their Operator Partnerships." *Cornell Real Estate Review* 13(6): 112–24.

JLL. 2018. *JLL Research Report -Life Sciences Outlook.*

McCorvie, Scott. "What Is the RIDEA Structure?" *Senior Living Growth Advisors.* https://www.srgrowth.com/news/2017/5/3/what-is-the-ridea-structure-2.

My Life Site. "Explanation of CCRC Contracts." https://www.mylifesite.net/resources/explanation-of-ccrc-contracts/.

Nareit. 2018a. "Monthly Property Index Values & Returns." *Nareit Index.* https://www.reit.com/data-research/reit-indexes/monthly-property-index-values-returns.

———. 2018b. "REIT Sectors." *Nareit.* https://www.reit.com/what-reit/reit-sectors/health-care-reits.

Revista. 2018. "Revista." https://www.revistamed.com/.

Ventas. 2017. *Ventas 2017 10K.*

Welltower. 2018. *Driving the Future of Health Care Real Estate-Corporate Presentation.*

West, L, SCole, DGoodkind, andWanHe. 2010. *US Census Bureau. 65+ in the United States: 2010.*

Zarem, Jane E. 2010. "CCRC TASK FORCE." http://www.retirement.org/wp-content/uploads/2012/01/CCRCcharacteristics_7_2011.pdf.