

Value-Added Real Estate Case Study

Yi Ti Capital Partners

45 Milk Street

Boston Metro

OVERVIEW

45 Milk Street, a Class B office complex with 114,668 rentable square feet in the downtown Boston area, is being offered for sale with an asking price of **\$18 million USD**.

Although the commercial real estate market has performed well in Boston over the past several years, some properties, such as the one at 45 Milk Street, have been left behind due to mismanagement and a failure to keep pace with competitive offices.

Your firm, Yi Ti Capital Partners, is the leading real estate investment firm in the Jade Sea region. It specializes in value-added and opportunistic equity investments in commercial real estate.

The Partners believe they can boost the occupancy rate of 45 Milk Street, currently at 74%, up to 85%, with a \$2 million USD renovation project. They also believe they can raise rental rates substantially to match the average market rate in the area.

You must decide whether or not it makes sense to do the deal, based on the financial and market analysis you will perform.

Please assume that your firm is targeting a **15% leveraged 5-year IRR**, or a **2.0x multiple of invested capital**, on all its value-added real estate investments. In a downside scenario, your firm aims for at least a **1.5x multiple of invested capital**.

Your company is expecting a 20-slide proposal from you that includes both a **recommendation and assessment** regarding the potential acquisition of 45 Milk Street.

Your 20-slide proposal should answer the following questions:

- Would you recommend acquiring the property for \$18 million? Why or why not?
- What would change your mind about the deal and make it more feasible (if you're against the deal) or less feasible (if you're for the deal)?
- Will the debt investors will support this deal? Why or why not? What metrics and ratios are most relevant for them?
- What are the key risk factors in this deal, and how could you mitigate them? What additional data or analysis might you be able to use to reduce these risks?
- What additional information would you request from the current property owners to better inform your investment decision?

You should submit your Excel file and your 20-slide proposal with responses to the questions above within **two weeks** of receiving this case study.

PROPERTY SUMMARY

45 Milk Street (“the Property”) is an 8-story building with 114,668 rentable square feet in the Downtown / Financial District of Boston. It has 21 separate suites, and is currently 74% occupied with AAA tenants such as Google, Athenahealth, Cubist Pharmaceuticals, and Suffolk Construction.

It was built in 1893, renovated throughout the years, and most recently went through a renovation of the lobby and select interior spaces in 2012.

Property amenities include two elevators, concierge services, 24/7 security and access, sprinklers, HVAC systems, new finishes, and a newly renovated lobby and downstairs area. There is no on-site parking or property management, but there is plentiful parking on the side streets surrounding the Property.

PROPERTY LOCATION

The Property is located in the Downtown / Financial District of Boston, which is one of the most densely populated and fastest-growing areas of the Boston metropolitan area.

The location provides convenient access to transportation, including the I-90, I-93, MBTA bus routes, the blue and orange subway lines, and the train lines at Boston South Station.

It also provides easy access to some of the most popular residential areas, including Mission Hill, South Boston, and Cambridge. The Boston Logan International Airport is 15 minutes to the north.

MARKET DESCRIPTION

The New England region of the United States has seen steady population growth in the past year, with over 40,000 new residents.

The vast majority of this growth has been in Massachusetts, as shown to the right.

POPULATION

	2014	PERCENTAGE OF REGION	2013	ANNUAL GROWTH RATE
U.S.	318,857,056	N/A	316,497,531	0.7%
New England	14,680,722	4.6%	14,639,742	0.3%
Connecticut	3,596,677	24.5%	3,599,341	-0.1%
Maine	1,330,089	9.1%	1,328,702	0.1%
Massachusetts	6,745,408	45.9%	6,708,874	0.5%
New Hampshire	1,326,813	9.0%	1,322,616	0.3%
Rhode Island	1,055,173	7.2%	1,053,354	0.2%
Vermont	626,562	4.3%	626,855	0.0%

Source Data: U.S. Census Bureau

Boston itself is home to numerous financial, legal, and other professional services companies, as well as a rapidly growing number of technology, biotechnology, and pharmaceutical firms.

The population in Massachusetts tends to be highly educated, with a median per-capita income of \$54,242 compared with a national per-capita income of \$42,679. The unemployment rate is on par with national averages.

UNEMPLOYMENT

	NOVEMBER 2014	NOVEMBER 2013
U.S.	5.8%	7.0%
New England	5.8%	7.0%
Connecticut	6.5%	7.5%
Maine	5.7%	6.4%
Massachusetts	5.8%	7.1%
New Hampshire	4.1%	5.2%
Rhode Island	7.1%	9.4%
Vermont	4.3%	4.3%

Source Data: U.S. Bureau of Labor Statistics

PER CAPITA INCOME

	2014 (\$)	2013 (\$)	ANNUAL GROWTH RATE
U.S.	42,679	41,741	2.2%
New England	52,017	50,962	2.1%
Connecticut	57,818	56,620	2.1%
Maine	38,846	38,305	1.4%
Massachusetts	54,242	53,134	2.1%
New Hampshire	48,098	46,839	2.7%
Rhode Island	44,325	43,874	1.0%
Vermont	43,922	42,729	2.8%

Source Data: The New England Economic Partnership

HOUSING

	2015 MED. PRICE PROJECTION (\$)	2014 MED. PRICE ACTUAL (\$)	ANNUAL GROWTH RATE
U.S.	N/A	N/A	N/A
New England	288,900	279,100	3.5%
Connecticut	272,700	258,600	5.5%
Maine	179,500	178,500	0.6%
Massachusetts	347,300	338,600	2.6%
New Hampshire	208,700	199,800	4.5%
Rhode Island	241,900	228,100	6.0%
Vermont	256,300	246,200	4.1%

Source Data: The New England Economic Partnership

Additionally, the labor force in Massachusetts has grown by 80,000 in the past year (2.3% growth), representing the second-highest growth rate in New England:

LABOR FORCE

	2014	2013	ANNUAL GROWTH RATE
U.S.	321,000,000	274,000,000	14.6%
New England	7,812,200	7,682,100	1.7%
Connecticut	1,898,800	1,847,900	2.7%
Maine	702,400	708,600	-0.9%
Massachusetts	3,563,600	3,483,300	2.3%
New Hampshire	742,200	741,000	0.2%
Rhode Island	553,400	551,000	0.4%
Vermont	351,800	350,300	0.4%

Source Data: The New England Economic Partnership

The Boston metro area has seen strong performance in both the residential and office real estate markets over the past several years, which was driven by diversified hiring across the technology, life sciences, healthcare, and education sectors, among others.

From 2003 through 2013, jobs in the financial and legal sectors both declined by 4-6%, but the 10% growth in high-tech jobs and 34% growth in life-sciences jobs have more than offset those reductions.

As of the end of 2013, Boston had already recovered all the jobs it lost in the 2008-2009 recession, and was nearly back to its peak just before the dot-com bubble burst in 2001.

Many Cambridge-based firms have been expanding into the Downtown area of Boston recently, as office rents in Cambridge have risen over twice as quickly as those in other regions.

Significant recent lease transactions in the Downtown area include:

- Acquia’s move from Burlington into 75,000 square feet at 53 State Street;
- Harmonix’s relocation from Cambridge into 25,000 square feet at 40 Broad Street; and
- Attend.com’s move from the Fenway area to 9,700 square feet at 10 Post Office Square.

Organic growth, such as Santander Bank’s new 34,000 square feet of space on the 16th and 17th floors at 28 State Street, has also driven rents up and vacancy rates down.

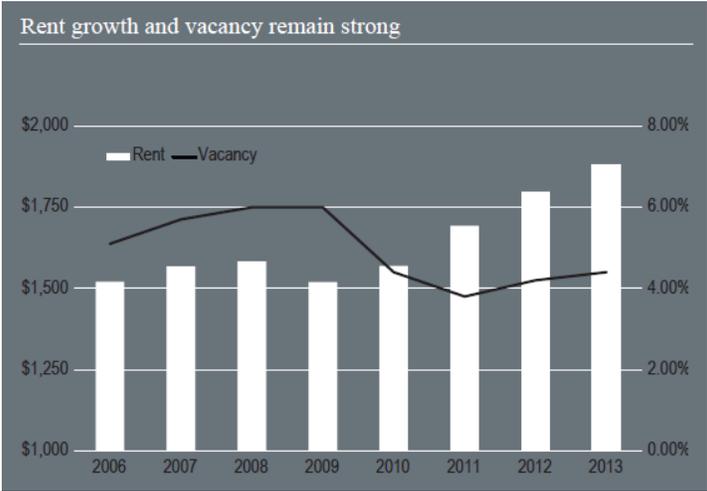
The vacancy rate in the Downtown area across all office classes is currently 11.6%, down from nearly 17.0% in 2011. The average asking rent is currently \$53.86 per square foot, up from approximately \$40.00 in 2010.

Residential performance has also been strong, with over 8,000 new apartment units under construction in the city.

Of the 72 new properties (14.6 million square feet) currently under construction in Boston, 68% are residential, including five 60-story towers.

Multifamily vacancy rates in Boston declined from 6.0% in 2009 to 4.0% in 2011, after which they have risen slightly in the past few years. On the other hand, average rents have increased from \$1,500 to \$1,900 in that same period.

Multifamily rental and vacancy rate data from 2006 through 2013 is shown below:



The projected multifamily vacancy rate for 2015 is 4.1%, with rental growth of 3.7% expected.

There are currently over 700,000 renter households in Boston, and over 7,000 new renter households per year are expected over the next five years.

However, through the end of 2016, only 4,000 units per year are scheduled for delivery. This supply and demand imbalance will continue to drive vacancy rates down and rents up.

While population growth in the area is relatively flat at 0.5%, household formation is expected to grow at 1.0%, driven by retiring baby boomers and millennials who value *access* over ownership.

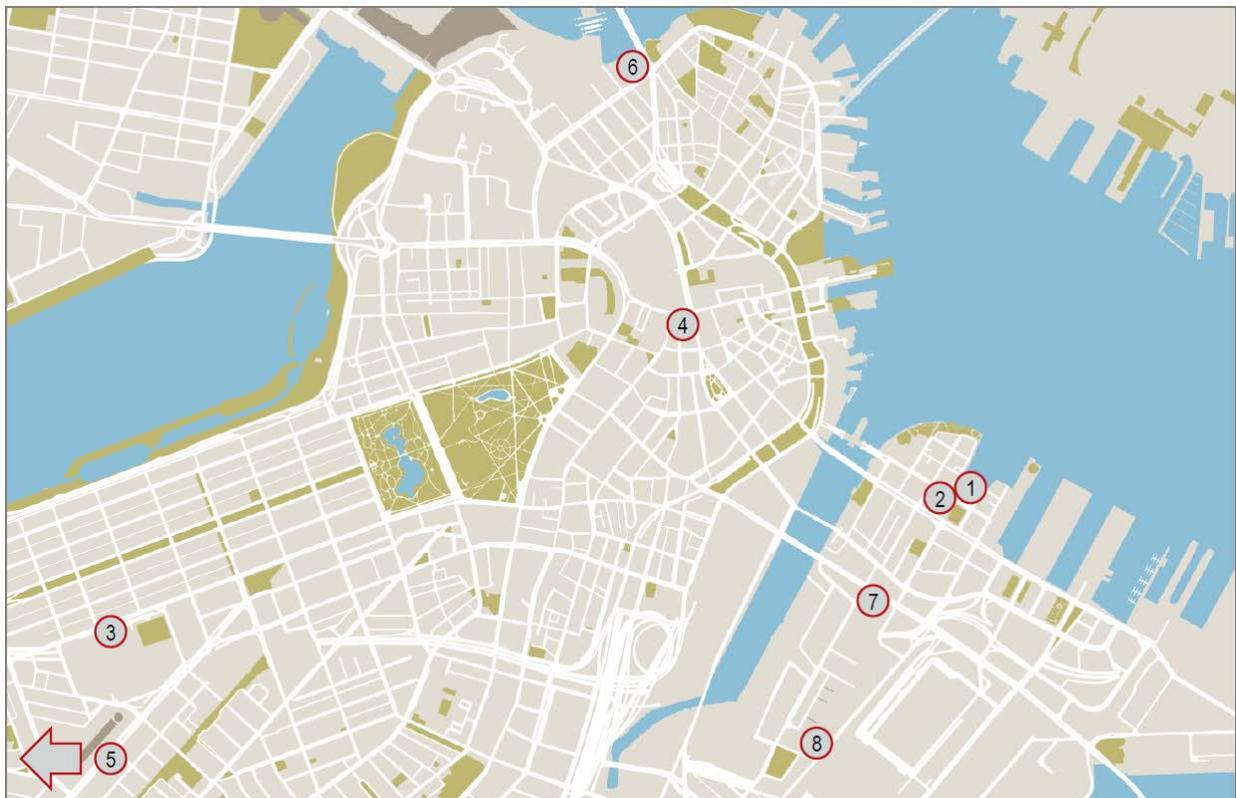
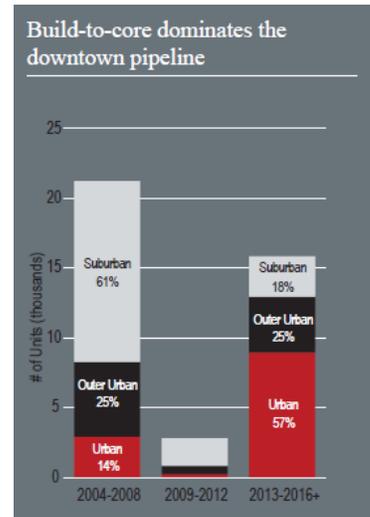
As a result of these trends, the pace of new multifamily and office construction has been rapid.

Of particular interest is the trend away from the suburbs and Cambridge into the Downtown / Financial District.

In the 2004 – 2008 period, 61% of the multifamily pipeline was in the suburban areas outside of Boston, with only 14% in urban areas.

But by the 2013 – 2016 period, those figures had nearly reversed, with 57% of the pipeline in urban areas and 18% in the suburbs.

There are currently eight major competitive office properties under development in the Downtown / Financial District area, which together represent a total of 2.4 million rentable square feet:

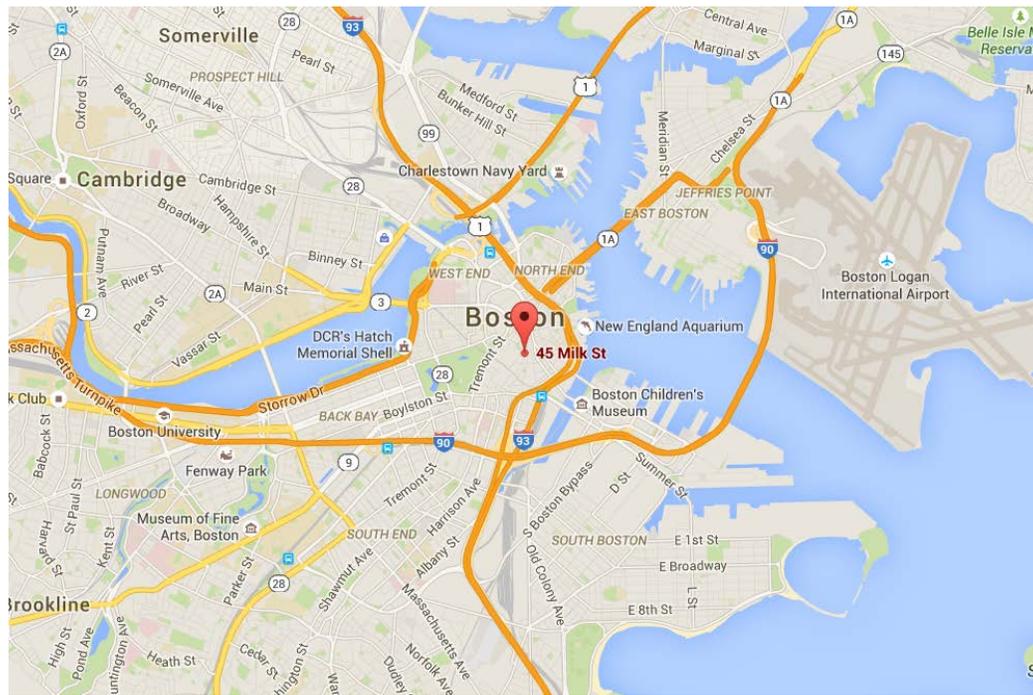
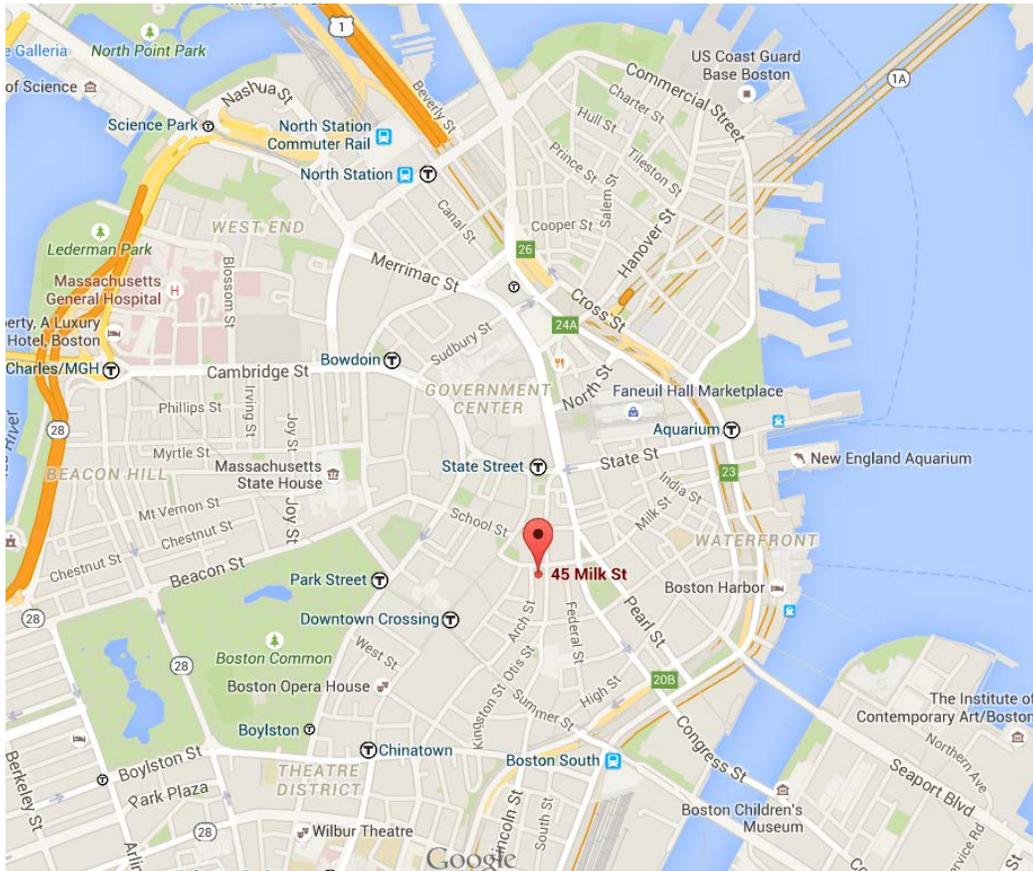


	Address	Class	Type of project	Completion Year	RBA (s.f.)	% preleased	Developer	Major prelease tenant commitments
1	100 Northern Avenue	A	BTS	2016	500,000	72.0%	The Fallon Company	Goodwin Procter
2	101 Seaport Boulevard	A	BTS	2015	440,000	80.3%	Skanska USA	PwC
3	888 Boylston Street	A	BTS	2016	425,000	62.4%	Boston Properties	Natixis Global Asset Management
4	40 Water Street	B	Speculative	2017	311,583	0.0%	Related Beal	N/A
5	1325 Boylston Street	A	Speculative	2015	237,379	0.0%	Samuels & Associates	N/A
6	160 N Washington Street	B	BTS	2015	230,000	100.0%	The Beal Companies	Converse
7	333 Summer Street	B	BTS	2015	117,801	100.0%	DivoWest / Synergy	LogMeIn
8	9 Channel Center	B	Speculative	2015	94,956	0.0%	Berkeley Investments	N/A

While these developments represent a significant amount of new space, only two of them are in the same area as 45 Milk Street (#4 and #6 above), and of those, one is speculative and not scheduled for completion until 2017.

Despite this supply growth, average Class B rents have risen from ~\$33.00 per square foot in 2010 to nearly \$40.00 in 2014, and 20.5% growth is expected from 2014 through 2019.

MAPS



PHOTOS



TENANT MIX AND RENT ROLL

As mentioned above, the Property is currently 74% occupied with the following mix of tenants:

Rent Roll Assumptions:

Tenant:	Suite:	Rentable Sq. Ft:	Lease Start:	Lease End:	In-Place Annual Rent per sq. ft:	Annual Market Rent per sq. ft:
Rockland Trust	A - 110	3,500.5	2015-01-31	2019-06-30	\$ 36.20	\$ 38.00
Athenahealth	A - 115	4,637.9	2015-01-31	2020-06-30	37.00	38.00
Eaton Vance	A - 120	8,507.9	2011-03-31	2017-03-31	35.50	38.00
Vistaprint	B - 105	7,859.7	2009-12-31	2016-06-30	35.50	38.00
Keurig Business Unit	B - 120	8,869.0	2010-09-30	2018-06-30	37.50	38.00
Suffolk Construction	B - 135	9,197.4	2011-10-31	2017-10-31	37.50	38.00
HarborOne Credit Union	C - 110	8,173.8	2011-09-30	2017-09-30	37.00	38.00
Consigli Construction	C - 120	3,474.4	2013-01-31	2016-02-29	37.80	38.00
HubSpot	C - 130	4,257.3	2013-05-31	2019-07-31	39.00	38.00
Hill Holiday	D - 110	5,467.9	2014-10-31	2020-11-30	34.00	38.00
Cubist Pharmaceuticals	D - 120	5,815.8	2015-02-28	2022-12-31	35.30	38.00
Massachusetts Medical Society	D - 130	6,462.3	2014-03-31	2020-03-31	38.00	38.00
Google	E - 110	8,291.8	2014-04-30	2021-03-31	37.40	38.00
Vacant	E - 125	584.1				38.00
Vacant	F - 105	3,701.6				38.00
Vacant	F - 120	6,827.1				38.00
Vacant	G - 110	7,546.0				38.00
Vacant	G - 125	2,450.4				38.00
Vacant	G - 135	2,122.6				38.00
Vacant	H - 110	5,647.3				38.00
Vacant	H - 120	1,273.3				38.00
Total Rentable Square Feet (RSF):		114,668.0				

Most of these leases are at below-market rates due to poor property management and the lack of much-needed renovations.

Given the credit quality of these companies, an average lease term of nearly 6 years, and the planned \$2 million renovation project, your firm believes that it is plausible to charge new tenants a rate of \$38.00 per rentable square foot and to increase the rate to \$38.00 per RSF on renewal leases.

COMPARABLES – COMPETITIVE PROPERTIES

Similar office properties in Boston are shown below.

To be included in the list, buildings had to match the following characteristics:

- Must have **some amount** of vacant space;
- Must be between **50,000 and 200,000 rentable square feet**; and
- Must be in the same **submarket** (Downtown) as 45 Milk Street.

Comparable Properties for 45 Milk Street

Property / Address:	Neighborhood:	Building Class:	# Rentable Square Feet:	# Square Feet Available:	Year Built:	Asking Rent per SF per Year:		Occupancy Rate:	Comments:
						Low:	High:		
50 Franklin Street	Downtown	B	51,260	5,415	N/A	\$ 38.00	\$ 57.39	89.4%	Open with high ceilings and three sides of windows; 2-5 year leases; near Downtown Crossing.
44 School Street	Downtown	B	63,240	1,288	1915	34.50	36.00	98.0%	Open mezzanine area; imminent renovation from new owner; near Downtown Crossing.
1 Winthrop Square	Downtown	A	114,343	8,712	1873	41.00	41.00	92.4%	Mahogany-paneled lobby; close to Commons, Retail, and Financial districts.
200 High Street	Downtown	B	95,000	7,000	N/A	31.50	31.50	92.6%	Below-market sublease; near Greenway in the Financial District.
55 Court Street	Downtown	B	62,651	710	1967	36.00	36.00	98.9%	Close to Court House and nearby buildings.
184 High Street	Downtown	B	55,000	989	1872	38.00	38.00	98.2%	Brick & beam building; across from Two International Place.
141 Tremont Street	Downtown	B	60,000	8,712	1972	38.00	45.00	85.5%	Upgraded interior design; panoramic views of Boston Common and Charles River.
109-115 Broad Street	Downtown	B	52,133	4,200	1888	40.00	40.00	91.9%	Two blocks from the waterfront; 3-building setup in fast-growing neighborhood.
100 Franklin Street	Downtown	B	117,630	4,811	1908	25.00	35.00	95.9%	Marble structure and lobby; close to Downtown Crossing.
21 Custom House	Downtown	B	91,500	12,913	1988	41.00	46.00	85.9%	10-story building with retail ground floor.
10-24 School Street	Downtown	B	112,739	9,081	1925	42.00	42.00	91.9%	8-story building near Downtown Crossing.
1 Liberty Square	Downtown	B	157,585	3,576	1926	43.00	43.00	97.7%	13-story building.
133 Federal Street	Downtown	B	111,000	9,730	1960	40.00	40.00	91.2%	12-story building; center of Financial District.
45 School Street	Downtown	B	106,508	3,600	N/A	35.00	35.00	96.6%	Open space with abundant light; close to public transportation.
Total or Average:			1,250,589	80,737	1927	\$ 38.27	\$ 41.75	93.5%	
Median:			93,250	5,113	1925	\$ 38.00	\$ 40.00	92.5%	

As shown above, the assumed market rate of \$38.00 per RSF in the Rent Roll above is very much in-line with rates charged at comparable Class B office properties in the area.

While some of these buildings are newer than 45 Milk Street, many of them have not had a recent renovation and do not have any upgrades planned for the foreseeable future.

COMPARABLE OFFICE SALES

There have not been many sales of poorly managed Class B office properties in the Downtown / Financial District in the past several years, but you have been able to find a set of comparable Class B office sales.

To be included in the list, the building had to be in the Downtown, Seaport, or Back Bay districts and had to sell for between \$10 million and \$50 million:

Comparable Property Sales for 45 Milk Street

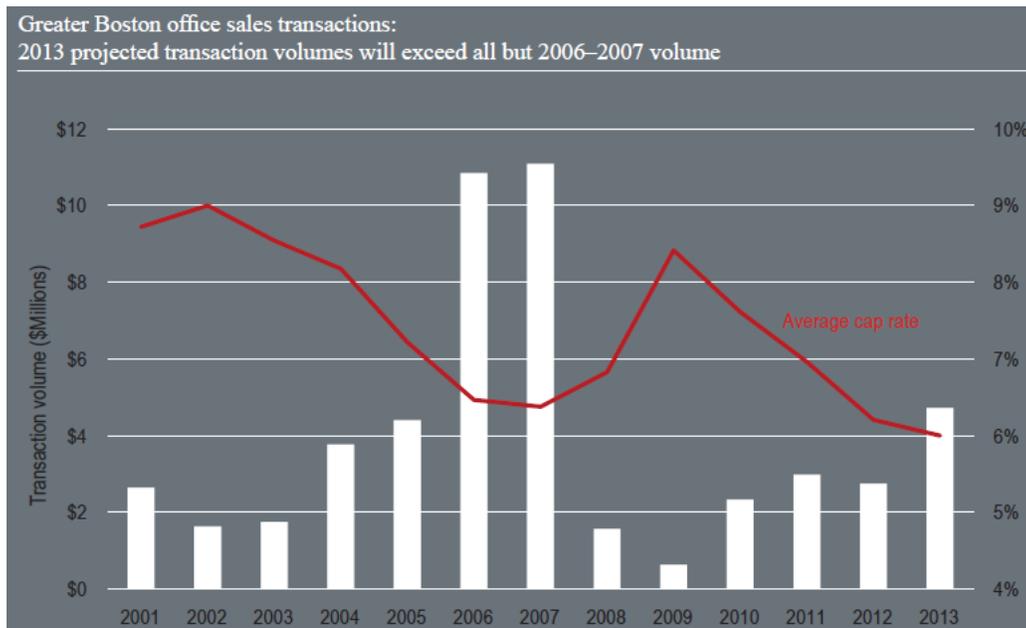
Property / Address:	Neighborhood:	Building Class:	# Rentable Square Feet:	Year Built:	Year Last Renovated:	Sale Date:	Sale Price:	Price per RSF:
141 Tremont Street	Downtown	B	70,291	1965	2003	2015-01-29	\$ 27,000,000	\$ 384.12
313 Congress Street	Seaport	B	75,794	1910	2006	2015-01-14	33,550,000	442.65
326 330 Congress Street	Seaport	B	39,000	1899	2010	2015-01-14	17,475,000	448.08
59 63 Franklin Street	Downtown	B	35,628	1899	2001	2015-01-12	27,650,000	776.07
24 32 Farnsworth Street	Seaport	B	92,000	1915	2005	2015-01-09	25,496,185	277.13
24 Federal Street	Downtown	B	75,600	1910	2009	2014-11-04	47,100,000	623.02
22 40 Chauncy Street	Downtown	B	152,958	1899	2007	2014-07-29	39,524,500	258.40
171 Tremont Street	Back Bay	B	22,190	1907	2000	2014-07-01	16,400,000	739.07
321 325 Summer Street	Seaport	B	110,000	1911	2011	2014-03-10	34,922,440	317.48
Median:			75,600	1910	2006	2015-01-09	\$27,650,000	\$ 442.65

The Occupancy Rates and Cap Rates are missing, but you can assume that most of these properties had occupancy rates in the 85% – 90% range.

MARKET & SUBMARKET STATISTICS – HISTORICAL

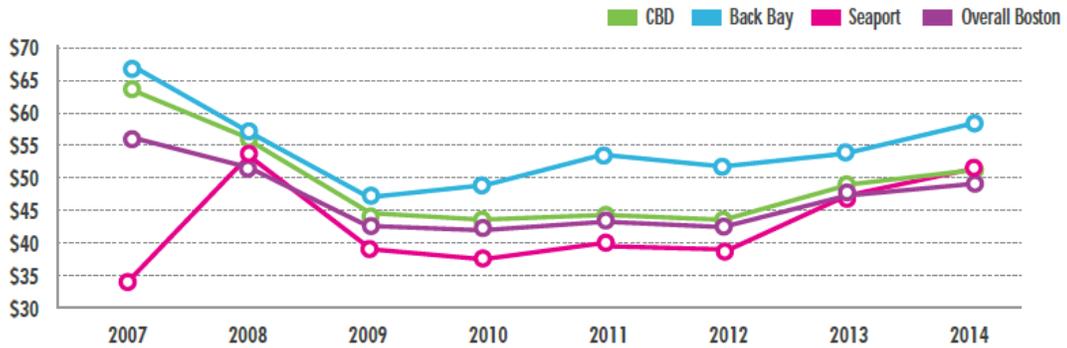
As shown below, the highest Cap Rate in the greater Boston area in the last two downturns was approximately 8.5% – 9.0%, which declined to 6.0% – 6.5% in peak markets.

Sales volumes of office properties in Boston have increased substantially in the last several years, but still represent less than 50% of the peak sales volumes in 2006-2007:



Historical rents by submarket are shown below (note that these figures include both Class A and Class B properties):

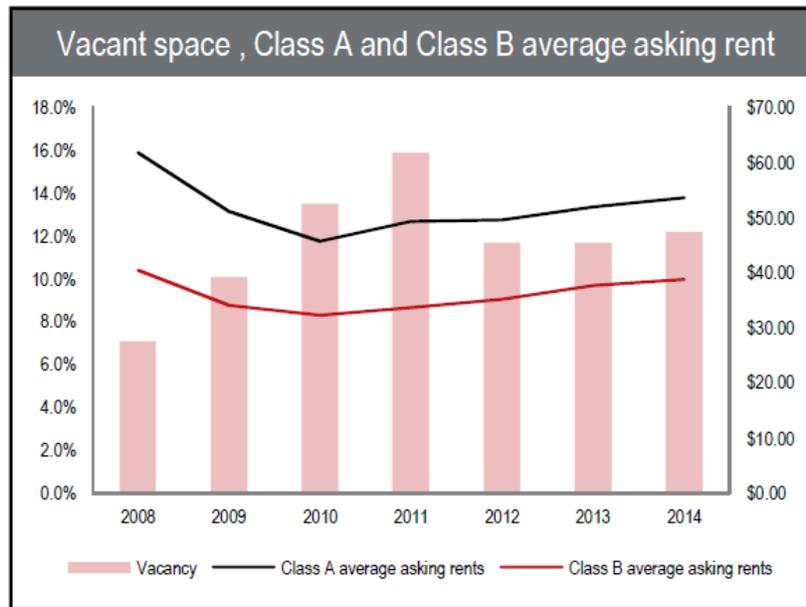
HISTORIC BOSTON RENTS BY SUBMARKET



Source: CBRE Research

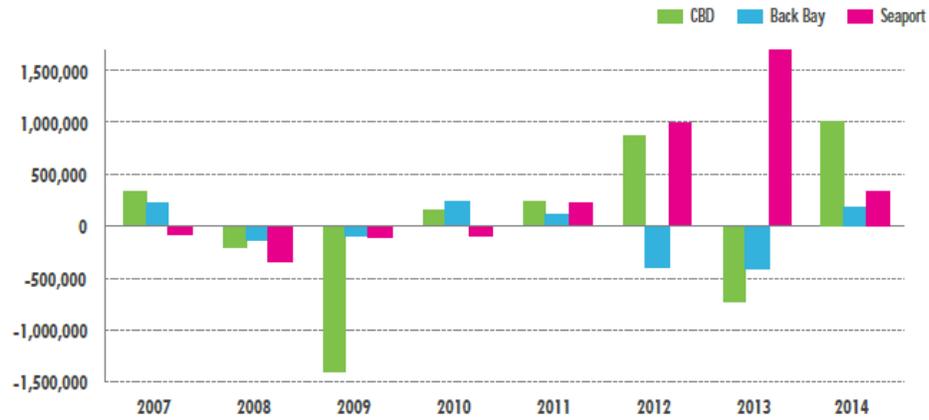
In the last downturn, Class A asking rents fell more precipitously than Class B asking rents, and vacancy rates also increased more substantially.

As shown below, both Class A and Class B asking rents hit their troughs in 2010 and have been steadily increasing since then, with vacancy rates at approximately 12.0%:



Absorption statistics for the greater Boston area going back to 2007 are shown below:

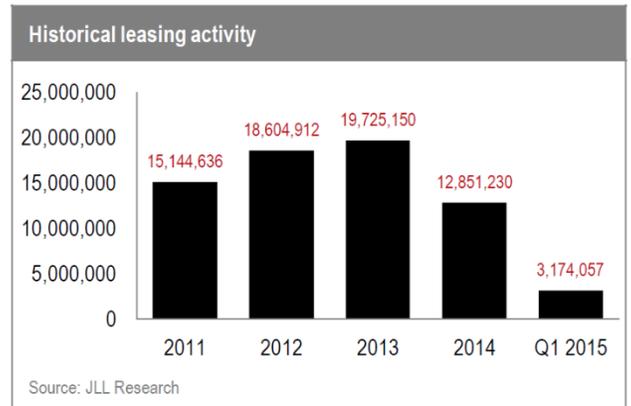
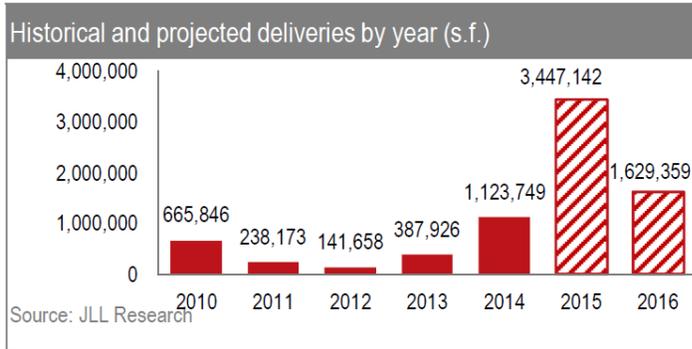
HISTORIC BOSTON SUBMARKET ABSORPTION (SF)



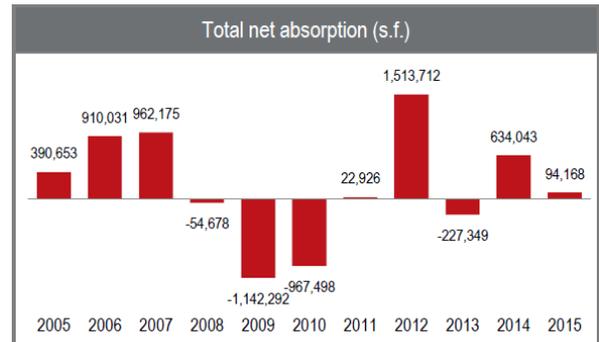
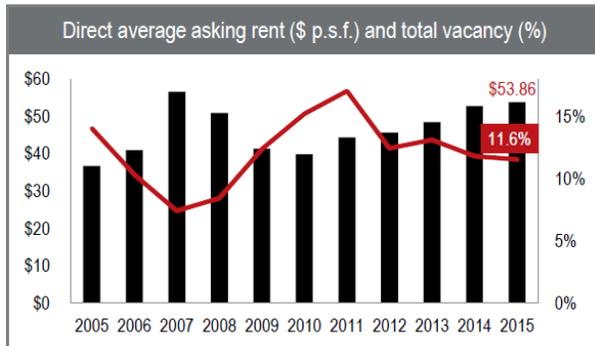
Source: CBRE Research

While the CBD submarket lost a significant number of office tenants in 2009, over 1.7 million square feet has been absorbed between 2010 and 2014.

Historical and projected deliveries of office square footage, as well as past leasing activity, are shown below:



Historical rent, vacancy rate, and net absorption figures for the Downtown area as follows:



Again, note that these figures include *both* Class A and Class B office properties.

As shown above, the average asking rents in all three submarkets have followed roughly the same trend in terms of asking rents: a decline into 2009, followed by steady growth since then.

However, the Downtown submarket has been significantly more “volatile” in terms of net absorptions, especially compared with Seaport, which has experienced stronger and more consistently positive net absorption.

Current supply, vacancies, availabilities, and average rents, along with net absorption figures from early 2015 for the Downtown submarket are shown below:

	Supply	Total Vacant	Total Vacant %	Available	Available %	Direct Average Rent	Q1 '15 Direct Net Absorption
Downtown							
Class A	25,111,127	3,143,252	12.52%	4,466,802	17.79%	\$56.79	139,418
Class B	7,827,808	722,408	9.23%	1,090,550	13.93%	\$42.07	-64,269
Totals	34,867,147	4,027,380	11.55%	5,750,931	16.49%	\$53.86	94,168

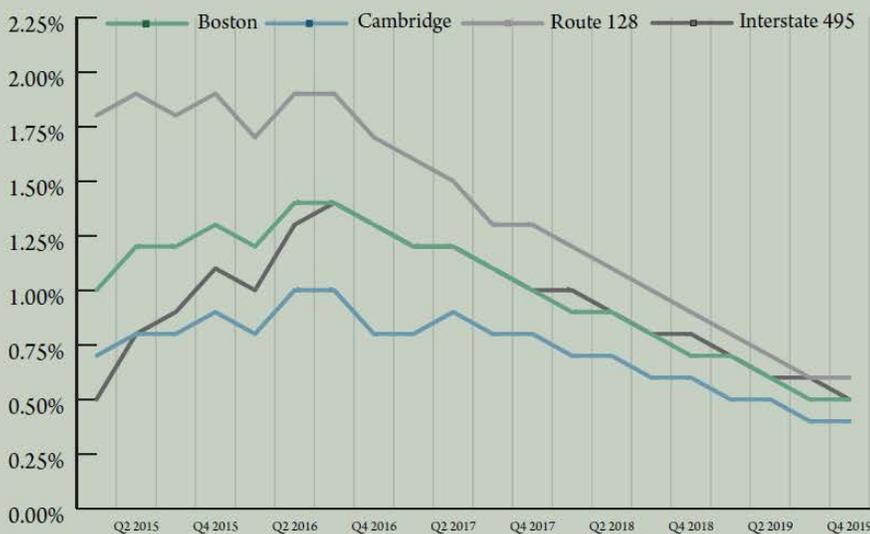
45 Milk Street’s average rent is significantly below the submarket average, and its vacancy rate of 26% is far above the average for *any* submarket in Boston or Cambridge.

MARKET & SUBMARKET STATISTICS –PROJECTIONS

Projections for office rental growth increases between 2015 and 2019 are shown below:

Quarter-Over-Quarter Projected Rent Growth

Source: CoStar

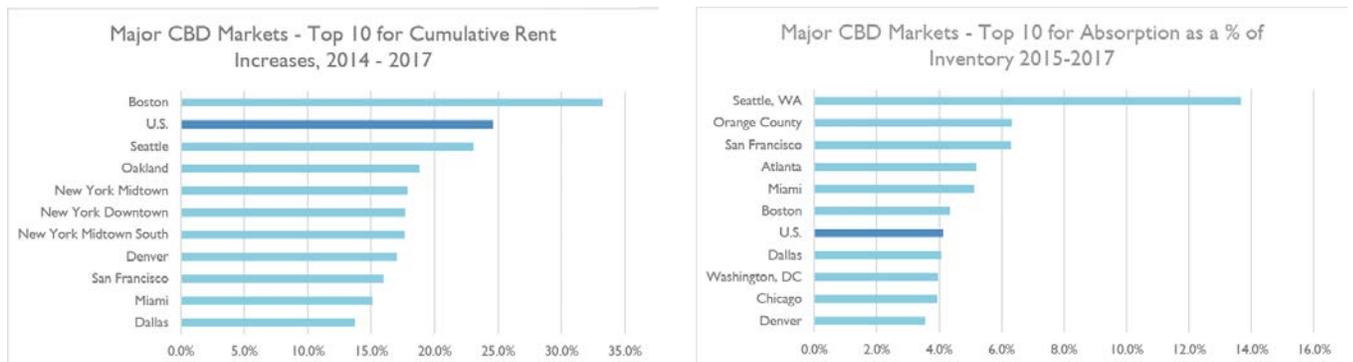


Year	Boston	Cambridge	Rt. 128	I-495
2015	4.7%	4.9%	5.4%	3.3%
2016	5.3%	5.6%	6.8%	5.0%
2017	4.5%	4.5%	5.7%	4.5%
2018	3.3%	3.7%	4.2%	3.5%
2019	2.3%	2.4%	2.7%	2.4%
5 Year	20.5%	22.8%	25.2%	18.9%

Following 2.68 million square feet of annual net absorption, the Greater Boston commercial real estate market recorded solid growth. Looking forward, as the market continues improving, particularly within suburban locations, expect positive overall asking rate growth.

An increase in excess of 20% over the next five years is significant, but it is not unreasonable in light of the demographic factors and supply constraints outlined above.

For reference, another source has forecast the following figures for cumulative rent increases and absorption in the office markets of various US cities between 2015 and 2017:



While aggregate rental growth in excess of 30% over just three years is almost certainly too high for the Class B market, it lends some credence to the projected 5-year rental growth rate of 20% shown at the top of this section.

CASE STUDY INSTRUCTIONS

In this case study, you will analyze the individual tenants in the Property under a range of different scenarios and build a 5-year cash flow analysis.

To do this, you will project key financial figures, such as market rent, absorption, turnover vacancy, free rent, and general vacancy, for each suite on a monthly basis.

Then, you will roll up everything into annual figures and factor in the operating expenses, property taxes, and capital costs to calculate the NOI and Adjusted NOI.

Next, you will build in support for the acquisition itself using the preliminary investment terms (shown below), and you will create a debt schedule that supports TI/LC holdbacks, different amortization and I/O amortization periods, and different maturities.

You will then calculate the key operational and credit-related metrics and ratios, build a “waterfall” schedule for the General Partner (GP) and Limited Partner (LP) returns, and use sensitivity tables to analyze the deal.

Finally, you will write and present the 20-slide recommendation that Yi Ti Capital Partners is expecting from you.

PART 1 – Rent Roll Analysis:

The current owners have provided a **rent roll** for the building, which shows the starting and ending dates for each tenant's lease as well as the rentable square feet occupied by the tenant, the in-place rent per square foot, and the market rent per square foot:

Rent Roll Assumptions:

Tenant:	Suite:	Rentable		Lease Start:	Lease End:	In-Place	Annual
		Sq. Ft:				Annual Rent	Market Rent
						per sq. ft:	per sq. ft:
Rockland Trust	A - 110	3,500.5		2015-01-31	2019-06-30	\$ 36.20	\$ 38.00
Athenahealth	A - 115	4,637.9		2015-01-31	2020-06-30	37.00	38.00
Eaton Vance	A - 120	8,507.9		2011-03-31	2017-03-31	35.50	38.00
Vistaprint	B - 105	7,859.7		2009-12-31	2016-06-30	35.50	38.00
Keurig Business Unit	B - 120	8,869.0		2010-09-30	2018-06-30	37.50	38.00
Suffolk Construction	B - 135	9,197.4		2011-10-31	2017-10-31	37.50	38.00
HarborOne Credit Union	C - 110	8,173.8		2011-09-30	2017-09-30	37.00	38.00
Consigli Construction	C - 120	3,474.4		2013-01-31	2016-02-29	37.80	38.00
HubSpot	C - 130	4,257.3		2013-05-31	2019-07-31	39.00	38.00
Hill Holiday	D - 110	5,467.9		2014-10-31	2020-11-30	34.00	38.00
Cubist Pharmaceuticals	D - 120	5,815.8		2015-02-28	2022-12-31	35.30	38.00
Massachusetts Medical Society	D - 130	6,462.3		2014-03-31	2020-03-31	38.00	38.00
Google	E - 110	8,291.8		2014-04-30	2021-03-31	37.40	38.00
Vacant	E - 125	584.1					38.00
Vacant	F - 105	3,701.6					38.00
Vacant	F - 120	6,827.1					38.00
Vacant	G - 110	7,546.0					38.00
Vacant	G - 125	2,450.4					38.00
Vacant	G - 135	2,122.6					38.00
Vacant	H - 110	5,647.3					38.00
Vacant	H - 120	1,273.3					38.00
Total Rentable Square Feet (RSF):						114,668.0	

Based on this rent roll, please create a **Key Tenants** schedule and **Lease Expiration** schedule.

These schedules should rank the tenants by square feet and show the percentage of the rentable square feet, the in-place revenue, and the potential market revenue that may be lost each year if the tenants with lease expiration dates in that year do not renew.

PART 2 – Pro-Forma and Monthly Rent, TI, and LC Schedules

Once you have reviewed the rent roll and created the schedules above, please turn your attention to the 5-year Pro-Forma Model for the property.

For your reference, your **FINISHED** model should include all of the following line items on an annual basis:

Property Pro-Forma:*Units:*

Revenue:	
Base Rental Revenue @ Market Rates:	\$
Absorption & Turnover Vacancy:	\$
Free Rent (Abatement):	\$
Scheduled Base Rental Revenue:	\$
Expense Reimbursement Revenue:	\$
Potential Gross Revenue:	\$
General Vacancy:	\$
Effective Gross Revenue:	\$
Operating Expenses:	
Management Fees:	\$
Utilities:	\$
Association Fees:	\$
Janitorial Fees:	\$
Repairs and Maintenance:	\$
Property Taxes:	\$
Insurance:	\$
Total Operating Expenses	\$
Net Operating Income (NOI):	\$
Less: Replacement Reserve:	\$
Cash Flow After Replacement Reserve:	\$
Tenant Improvements (TIs) & Leasing Commissions (LCs):	
Tenant Improvements (TIs):	\$
Leasing Commissions (LCs):	\$
Total TI and LC Costs:	\$
Adjusted Net Operating Income (NOI):	\$
Debt Service:	
Less: Interest Expense on Debt:	\$
Less: Debt Principal Repayment:	\$
Less: Origination & Prepayment Fees:	\$
Total Debt Service:	\$
Cash Flow After Debt Service:	\$
Repayment of Debt Principal Upon Exit:	\$
Gross Selling Price of Property:	\$
Selling Costs and Fees:	\$
Net Cash Flow to Equity Investors:	\$

You can start building the model by projecting the operating expense line items.

After that, you will have to use the rent roll and the assumptions below to determine the proper monthly figures for:

- The market rent by suite.
- The cost of free-rent months by suite.
- The cost of turnover and vacancy absorption by suite.
- The cost of general vacancies by suite.
- Tenant improvements by suite.
- Leasing commissions by suite.

Please use the following assumptions for the *historical* income and expenses down to the “Cash Flow After Replacement Reserve” line item:

Key Assumption:	Units:	Value:
Scheduled Base Rental Revenue:	N/A	Link to the rent roll and the assumptions in the “Scenarios” table below.
Expense Reimbursement Revenue:	\$ / Square Foot / Year	\$0.20
General Vacancy:	N/A	Link to the rent roll and the assumptions in the “Scenarios” table below.
Management Fees:	% Effective Gross Revenue	3.0%
Utilities:	\$ / Square Foot / Year	\$2.50
Association Fees:	\$ / Square Foot / Year	\$1.50
Janitorial Fees:	\$ / Square Foot / Year	\$1.75
Repairs and Maintenance:	\$ / Square Foot / Year	\$2.80
Property Taxes:	\$ / Square Foot / Year	\$3.40
Insurance:	\$ / Square Foot / Year	\$0.40
Replacement Reserve:	\$ / Square Foot / Year	\$0.40

You will also need to make assumptions for more granular items, such as free months of rent, tenant improvements (TIs), and leasing commissions (LCs).

Please use the following figures across the Base Case, Downside Case, and Upside Case for these assumptions:

Key Assumption:	Base Case:	Downside Case:	Upside Case:
Occupancy:	New tenants are found for E – 125, F – 105, and H – 120 in January 2018.	No new tenants are found for currently vacant suites.	New tenants are found for E – 125, F – 105, H – 120, and F – 120 in January 2017.
Lease Renewal Probability:	70%	70%	75%
Average Lease Term (Both New AND Renewal):	6 Years	6 Years	6 Years
Downtime When Tenants Do Not Renew:	9 Months	9 Months	6 Months
Months of Rent Abatement (New / Renew):	2 / 1	3 / 2	2 / 1
Average Rental Growth, Years 1 – 2:	3.50%	3.00%	4.00%
Average Rental Growth, Post-Year 2:	2.50%	2.00%	3.00%
Average Expense Growth, Years 1 – 2:	3.50%	3.00%	3.50%
Average Expense Growth, Post-Year 2:	2.50%	2.00%	2.50%
Tenant Improvements (New / Renew):	\$7.00 PSF / \$4.00 PSF	\$8.00 PSF / \$5.00 PSF	\$6.00 PSF / \$3.00 PSF
Leasing Commissions % Total Lease Value @ Initial Rate: (New / Renew):	6.00% / 3.00%	7.00% / 4.00%	5.50% / 2.50%
Leasing Commission Payment Term:	12 Months	12 Months	12 Months

Based on these figures, build 5-year cash flow projections and make sure your model supports all the cases shown above.

HINT: We strongly recommend the following **completion order** for this part of the case study:

- 1) Project items that are based on a % of effective gross revenue or rentable square feet first.
- 2) Then, forecast the monthly rents and free-rent months if you assume that existing tenants renew their leases and that the new tenants above move in.

- 3) Project the general vacancy and absorption figures, again assuming that existing tenants renew and that the new tenants above move in.
- 4) Then, turn your attention to what happens if tenants do not renew, and start by calculating the downtime required to find a new tenant in each case. The new tenants above should still move on.
- 5) After that, project the months of free rent, the general vacancy, and the absorption figures for these non-renewal-to-new tenants. You will also need these numbers for the new tenants set to occupy the vacant suites.
- 6) Roll up the effective gross revenue by suite on a monthly and annual basis.
- 7) Now, turn your attention to the tenant improvements and leasing commissions, once again dividing them into the renewal and non-renewal cases (in both cases, new tenants set to occupy vacant suites will be treated the same way).
- 8) For the leasing commissions, calculate the month when they are incurred and then the distribution over time in separate schedules.
- 9) Roll up the TIs and LCs by suite on a monthly and annual basis, and then fill out all the line items in the Pro-Forma based on everything above.

Here are a few other notes:

- When existing tenants renew their leases, you can assume they do so at the **market rental rate** at that time.
- The **Free Months of Rent**, **General Vacancy**, and **Turnover Vacancy** figures should all be based on the **market rental rate** at the time.
- **Absorption** is defined as the difference between market rent and the actual rent paid by the tenant.
- Be careful to avoid **double-counting** items or **accidentally excluding** items – you can do a simple check by taking the effective monthly rent, adding absorption, adding general vacancy, and then adding free months of rent, and seeing if that number equals the market rent for that tenant in that month.

PART 3 – Acquisition Assumptions, Sources & Uses, and Debt Schedule

There will be four investor groups in this deal:

- **Yi Ti Capital (General Partners):** Your firm will provide 20% of the equity funding required for the deal.
- **Limited Partners:** Your firm's LPs will provide 80% of the required equity funding.
- **Senior Loan Investors:** They will provide 70% of the required debt funding, less the TI/LC holdbacks in the initial transaction.
- **Mezzanine Investors:** They will provide the remaining 30% of the debt funding.

Please use the following assumptions for the initial acquisition:

Key Assumption:	Units:	Value:
Purchase Price:	\$ as Stated	\$18 million
Renovation Costs:	\$ as Stated	\$2 million
Purchase Date:	Date	2014-12-31
Purchase Fees:	% of Purchase Price	3.0%
Loan-to-Value (LTV) Ratio:	%	70.0%

For the initial equity contribution from GPs and LPs, you will need to know the returns distribution at different IRR levels.

Please use the following assumptions for this returns split, and please base the initial equity contributed by GPs and LPs on the percentages in the “IRR Up to 10%” level:

IRR Level:	LP Share:	GP Share:
Up to 10%:	80%	20%
Between 10% and 15%:	70%	30%
Above 15%:	60%	40%

Please use the following assumptions for the Senior Loan and Mezzanine:

Term:	Senior Loan:	Mezzanine:
% Total Debt Funding:	70.0%	30.0%
Origination Fee:	1.0%	1.0%

Early Prepayment Fee:	3.0%	3.0%
Interest Rate:	L + 350 bps	10.0%
LIBOR Floor:	0.50%	N/A
Amortization Period:	10 years	N/A
Interest-Only Amortization Period:	2 years	5 years
Maturity:	5 years	5 years
TI/LC Holdback Funding:	5.0%	N/A
TI/LC Reserves – First 24 Months:	\$1.50 per RSF	N/A
TI/LC Reserves – Thereafter:	\$0.75 per RSF	N/A

The Senior Loan investors are skeptical of this deal, and have requested a customary 5% holdback as a way to mitigate risk in downside scenarios.

This holdback means that only **95%** of the Senior Loan will be drawn in the beginning, and that the entire renovation cannot be completed immediately as a result.

Assume that the holdback is released according to the reserve schedule shown above over the first 24 months and the remaining 36 months.

Finally, please use the following assumptions for the resale of the property in the future:

Key Assumption:	Units:	Value:
Baseline Exit Date:	Date	2019-12-31
Holding Period:	# Years	Adjustable; between 1 year and 5 years
Exit Cap Rate:	%	Determine based on the market data and your model

Selling Costs:	%	3.0%
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Based on these assumptions, build schedules for the acquisition assumptions, the Sources & Uses (both total and initially drawn), and the debt balances, principal repayments, interest payments, and the associated fees.

Also make sure you properly track the TI/LC holdback and reserves and make more of the Senior Loan available each year.

Here are a few additional notes:

- For simplicity, you can net the TI/LC holdback against the Renovation Costs to ensure that the Sources & Uses schedule balances.
- For simplicity, you can link the interest expense and principal repayments on debt to the amount of **currently drawn debt**.

PART 4 – Key Metrics, Returns Calculations, and Sensitivities

In this part of the case study, you will analyze the property’s performance according to key operational and credit-related metrics and ratios, returns to different investor groups, and returns under different operational and financial scenarios.

To start with, please create a schedule with relevant margin and growth-related metrics.

You can look at various items as percentages of base rental revenue or as percentages of effective gross revenue; it’s up to you to decide on the most important metrics.

For the debt-related metrics, please include the interest coverage ratio and debt service coverage ratio (DSCR) at the bare minimum.

Beyond those, please include anything else relevant.

For the returns calculations, please build a waterfall schedule that supports a variable holding period (between 1 year and 5 years) and reflects the returns splits between LPs and GPs at different IRR levels, as outlined above.

In addition to the leveraged IRRs for the LPs and GPs, make sure you calculate the cash-on-cash multiple and annual yield on investment for each group, as well as the overall unleveraged IRR.

For the sensitivity tables, think about the assumptions that make the **biggest impact** on the deal, such as the Exit Cap Rate and the LTV Ratio, but also consider anything that is within your firm’s ability to control.

You do **not** need to examine extreme downside cases, as the Downside scenario above should already factor in those outcomes.

However, make sure the ranges you select for key assumptions represent plausible outcomes backed up by market data.

PART 5 – Case Study Presentation

Please refer to the instructions given at the beginning of this document for this 20-slide case study presentation.

In particular, make sure you state the **main risk factors** and ways to mitigate them.

If you are recommending *against* the deal, make sure you explain **what might cause you to change your mind**.