

# Improving Market Analysis in Commercial Real Estate Appraisal Assignments

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## Abstract

The purpose of this article is to present techniques to increase the reliability of commercial real estate appraisals. It discusses methods to improve employment analysis and analysis of market supply and demand. The simple analytical methods used result in a better understanding of the market in which a subject property exists and competes. The discussion highlights the areas of strength or weakness and how this knowledge can be used to make better valuation assumptions in the three approaches to value.

Special servicers that handle defaulted commercial loans typically do not have portfolios full of properties operating at stabilized occupancy rates.<sup>1</sup> More common are properties operating at occupancies well below such a level and situated in markets where the forces impacting demand—population, employment, incomes, occupancies, and absorption—are or have been in decline. Therefore, a properly developed market analysis section in an appraisal report is critical to the accuracy of the data collected, assumptions made in the highest and best use section, and other sections of the valuation.

Appraisers sometimes use what could be characterized as a “Level A+” marketability study, which is an inferred demand analysis supplemented by using a portion of the data required for a Level B study.<sup>2</sup> For most properties in a special servicing portfolio, timing is a major concern. Timing is crucial for analysis of highest and best use and absorption of existing vacant space. Future market strength is significant in estimates

of stabilized occupancy rate, absorption, and rental rate growth. Despite the importance of these issues, appraisal reports may fail to offer the information needed to address the essential considerations. What may be lacking in the report is key *analysis* of the data provided.

Fanning states in *Market Analysis for Real Estate*, second edition, “The balance of supply and demand at any given time is the key to estimating value.”<sup>3</sup> Without an understanding of market supply and demand, report accuracy suffers greatly. How can an appraiser, given time and fee constraints that do not allow for extensive market research, improve understanding of market supply and demand, not only for himself but the reader of the report as well?

Very basic market and submarket supply and demand information is present in virtually all appraisals. This information includes historical population, current unemployment rate, surveys of inventory, vacant space, available space, and net absorption. Often this information is from

1. *Stabilized occupancy* is “an expression of the average or typical occupancy that would be expected for a property over a specified projection period or over its economic life.” Appraisal Institute, *The Dictionary of Real Estate Appraisal*, 6th ed. (Chicago: Appraisal Institute, 2015), s.v. “stabilized occupancy,” definition 2. For a discussion of the term *stabilized* and its meaning in appraisal, see Stephen F. Fanning, *Market Analysis for Real Estate*, 2nd ed. (Chicago: Appraisal Institute, 2014), 615–616.

2. For a comparison of the levels of marketability studies, see Table 15.6 in Appraisal Institute, *The Appraisal of Real Estate*, 14th ed. (Chicago: Appraisal Institute, 2013), 315.

3. Fanning, *Market Analysis for Real Estate*, 2nd ed., 6.

CoStar, REIS Inc., or one of the larger national brokerage or valuation firms' internal research. Upon presenting this information, the appraiser might stop and go no further. Yet, it is the *analysis* of this information that provides the appraiser with the needed understanding of supply and demand, and it is what provides a clearer picture of the market in which the subject competes.

The following pages suggest simple changes to the way appraisers look at the market data they are already presenting. The case study that follows shows the application of the basic analyses found in inferred demand analyses.<sup>4</sup> The case study employs historical population and employment data as well as some data from an actual appraisal report; it is used to show demographic and supply and demand data commonly presented by appraisers.

Applying the demonstrated analysis to data that has already been obtained will take some additional time, but it will not involve subscribing to any additional data services. Additionally, the data used by most appraisers is updated quarterly, so the analysis may not be unique to each report and may be reused in subsequent reports (with the exception of the peer group and subject property analyses). In some cases, the data analysis can be prepared ahead and used as needed.

### Case Study Example: Connecticut Office Market Study

The appraisal assignment is to provide both “as is” and “as stabilized” market values<sup>5</sup> for a four-story office building with 162,745 square feet of net rentable area (NRA) built in 1988 on 11.86 acres in a city in Connecticut. The property is approximately 19.5% occupied. Two tenants remain in occupancy, with a lease for about 12,000 square feet expiring in late 2018, and a lease for about 19,500 square feet expiring in late 2022. Land use in the immediate area includes similar suburban office buildings, multifamily

residential buildings, and a large amount of vacant land suitable for additional office construction. The property is proximate to, but not located on, a major traffic artery, and there is reasonably good access to a major freeway. Visibility from major traffic arteries is poor. The area and neighborhood reports show typical population, housing, and unemployment rate information in tabular fashion from national sources.

The appraiser in this assignment is faced with two big questions: First, what is a reasonable stabilized occupancy that can be used to yield an “as stabilized” market value conclusion? Second, what is a reasonable absorption rate that can be used to yield appropriate deductions for rent loss as well as for the timing of new leases to adequately reflect the occurrence (timing) of tenant improvement costs and leasing commissions? In the actual appraisal report from which this case study is derived, stabilized occupancy was estimated to be 85% with a sixty-month lease up beginning in year one, with rental rates, tenant improvements, concessions, and all other income approach dependent assumptions based on the broad market. The accuracy of the appraiser's value estimates in all approaches to value is significantly dependent upon these assumptions.

### Population and Employment Analysis

Basic information regarding current population can be seen in Exhibits 1 and 2. This is historical information available from the Census Bureau, and it provides a picture of the county, city, and zip code population trends. From Exhibit 1 it can be observed that the county enjoyed steady growth through 2010, peaked, and then retreated slightly. Exhibit 2 shows that the population of the city increased through 2016 and then experienced an overall decline. The graph for the subject property's zip code reflects the same trend.<sup>6</sup>

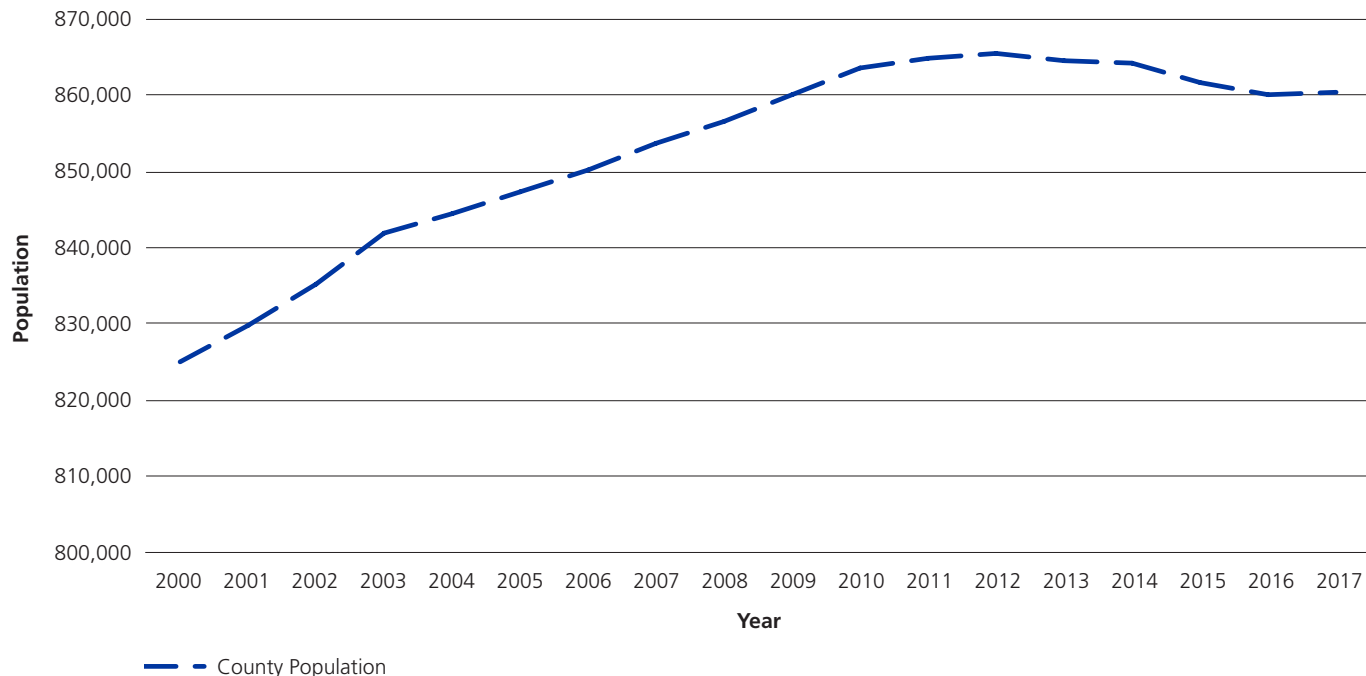
From Exhibits 1 and 2, we can see that the overall population trend is not supportive of an indication of strong real estate demand, much less office demand. For additional insight into real estate

4. For an in-depth look at inferred demand analysis, see Fanning, *Market Analysis for Real Estate*, 2nd ed.

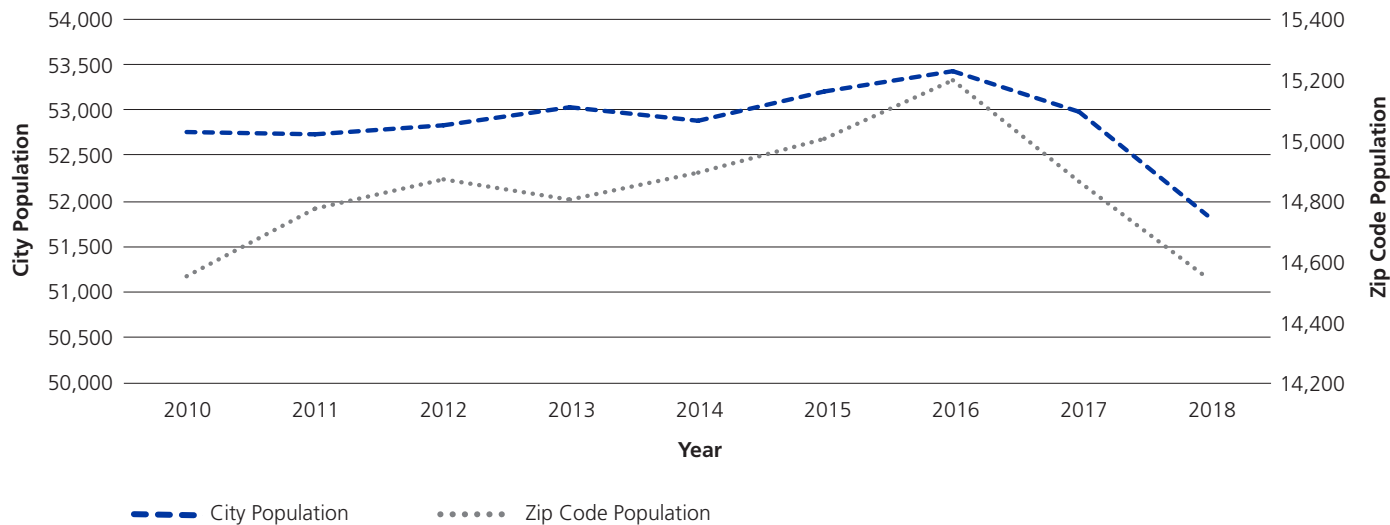
5. *The Dictionary of Real Estate Appraisal*, 6th ed., defines *as is market value* as “The estimate of the market value of real property in its current physical condition, use, and zoning as of the appraisal date.” *The Dictionary of Real Estate Appraisal*, 6th ed., states, “*prospective market value—as stabilized*—reflects the property's market value as of the time the property is projected to achieve stabilized occupancy.”

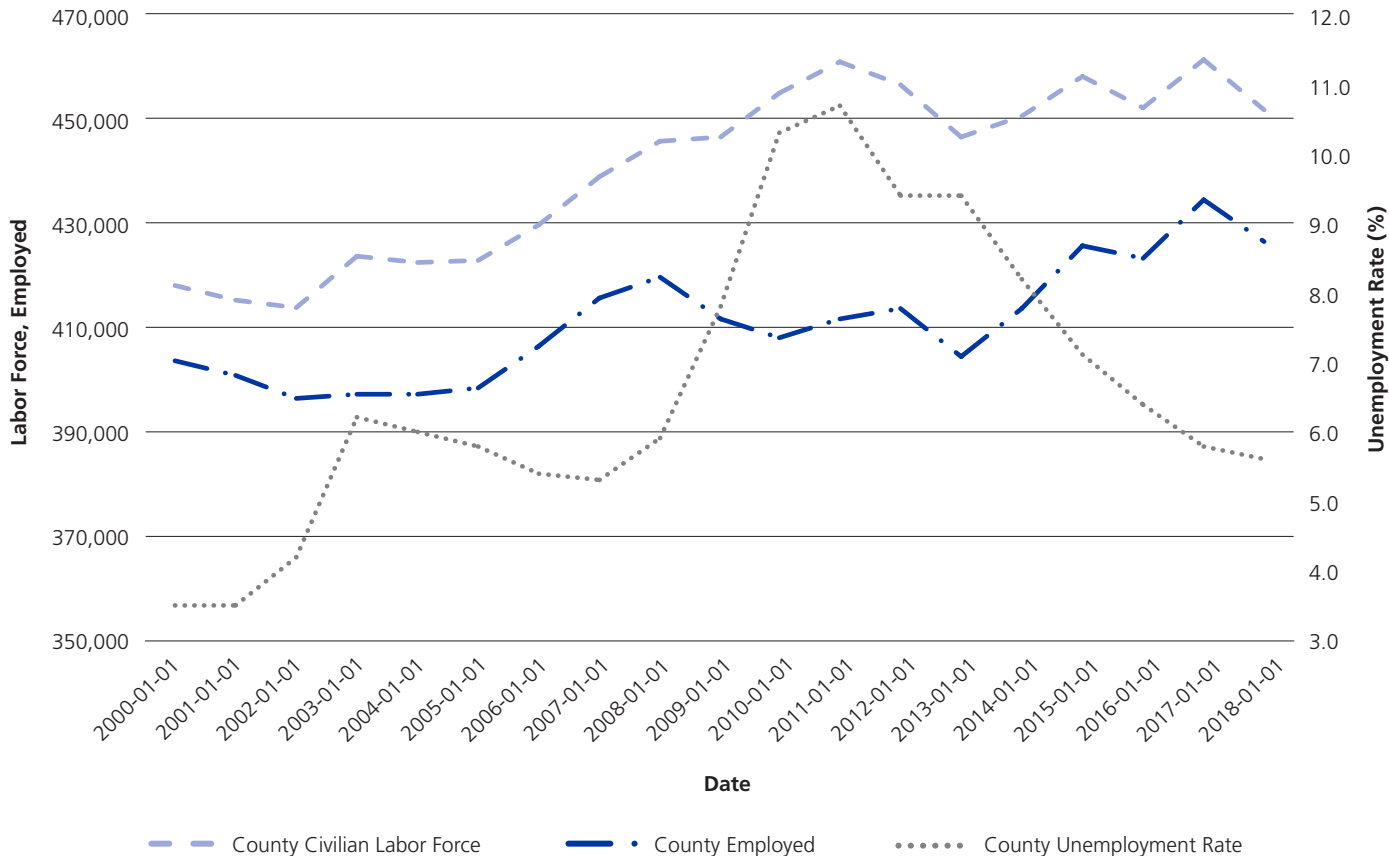
6. Due to limitations of the published information from the Census Bureau, the 2017 and 2018 zip code populations have been extrapolated from the city population using the average percentage of the population that the zip code represented from 2010 to 2016.

**Exhibit 1** County Population



**Exhibit 2** Historical Population, City and Subject Zip Code



**Exhibit 3** County Labor Force Employment

demand, graphs of civilian labor force and employment (information not included in the original appraisal) are provided in Exhibits 3 and 4.

Exhibit 3 shows that up until 2010, the county was experiencing steady growth in the labor force. Since that time, growth—while still positive—has been at a lower rate, and it has experienced two retreating periods and appears to have entered a third. This basic trend is also reflected in employment growth, and the unemployment rate has yet to recover to 2000 levels. This information should give the appraiser some insight into what might be reflected in sales activity, occupancy levels, rental rates, and capitalization and discount rates.

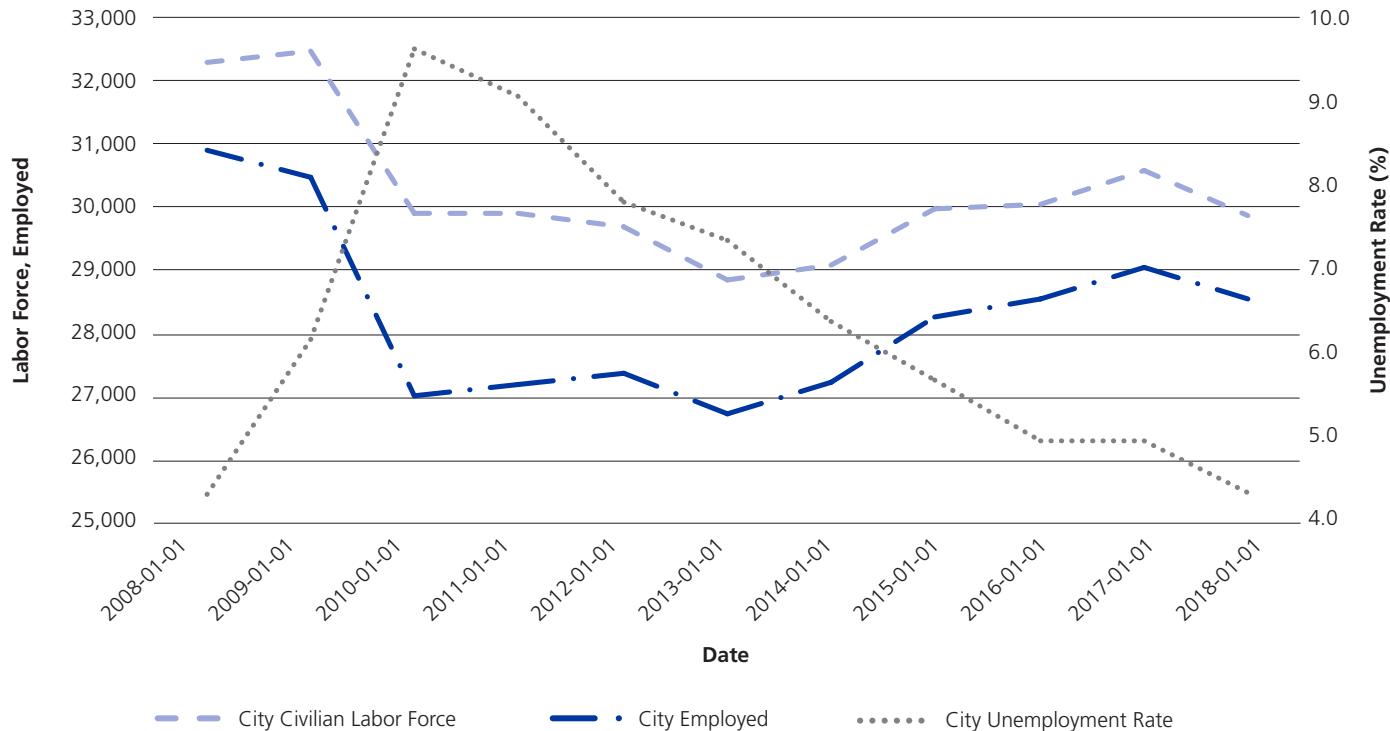
Employment information for the city is provided in Exhibit 4. Exhibit 4 shows an improved

trend in the unemployment rate, but there still is a recent downward trend in the actual numbers in the labor force and employed. Further, the number of employed is still about 4,000 less than in 2009. Employment information for the subject's zip code is displayed in Exhibit 5.

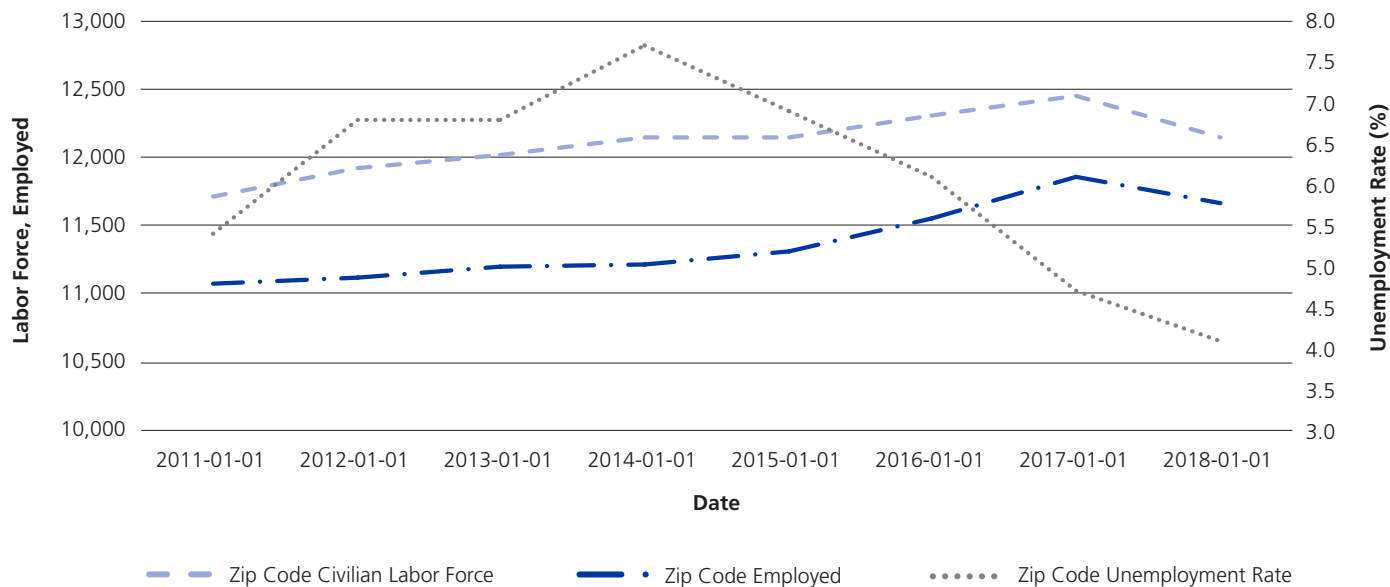
From Exhibit 5 we can see that employment for the subject's more immediate area has experienced a weakening of the primary factors affecting demand for real property; the loss is not as large as noted for the city however.<sup>7</sup> Rather than exhibiting a general recovery in the underpinnings of demand, we see that the improving unemployment rate is a function of the decline in the labor force, which is greater than the decline in unemployment. This again is not indicative of strong real property demand.

7. Due to limitations of the published information from the Bureau of Labor Statistics, the labor force and employment data for the subject's zip code for 2017 and 2018 were extrapolated from city data using the average of the city from 2010 to 2016.

**Exhibit 4** City Labor Force Employment



**Exhibit 5** Zip Code Labor Force Employment



The level of information shown in Exhibits 3, 4, and 5 was not provided in the original appraisal report. The point is not to fault the appraiser but to illustrate the importance of an *analysis* of the information obtained as part of the basic research and to emphasize the need to understand what lies behind the numbers. Appraisers can obtain such information from the St. Louis Federal Reserve (<http://bit.ly/FREDhelp>), the Bureau of Labor Statistics (<http://bit.ly/2s1LDSf>), the US Census Bureau (<http://bit.ly/2NNf56q>), and the CCIM Institute's Site to Do Business (<https://www.stdb.com/>).<sup>8</sup>

Use of an unemployment *rate* as a sole indicator of market health can lead to a false impression of the job market, and therefore the health of the real property market. By understanding the numbers behind the numbers, appraisers have better insight into the job market and a more complete picture than what is suggested from just observation of the unemployment rate. For example, a grocery retail center recently showed declining sales, and the decline was blamed on a newly renovated national grocery located about two miles away. However, a review of historical population, labor force, and employment data revealed the county had lost population and had lost over 3,000 jobs since 2000. This indicator of market strength was not evident by simply reviewing the unemployment rate, but the loss of population and employed residents had had a sizeable impact in the county. Knowledge of this additional information affected the appraiser's perception of the grocer's ability to recapture previous sales levels and to continue to pay existing rent. As the grocery store example illustrates, additional research and analysis are integral to understanding the factors impacting the subject property.

### Market Supply and Demand Analysis

From the initial analysis of the basic demographic information, an analysis of supply and demand for the case study office building can begin. The supply and demand data presented in the initial appraisal will be restated and then analyzed in the discussion on market supply and demand analysis.<sup>9</sup>

To understand supply and demand forces, a number of *fair share* analyses are presented. The simple fair share analyses are a method of analyzing actual capture rates and are couched in the assumption that, all things being equal, a submarket, micromarket, peer group, and subject property should be able to capture occupancy and absorption equivalent to its percentage of the larger market(s) in which it exists. The fair share (FS) percentage is expressed mathematically as,

$$\frac{\text{Subject Net Rentable Area (NRA)}}{\text{Market NRA or Submarket NRA or Peer Group NRA}}$$

Any deviations in actual capture rate from the fair share reflect some type of enhancement or impairment within the market (economic conditions) or with the subject property itself (physical, functional, and/or locational conditions). The data also can be used to develop the market share (MS) estimate, which is expressed mathematically as,

$$\frac{\text{Subject Absorption Rate}}{\text{Market Absorption Rate}}$$

Market share then is divided by fair share to yield a *penetration ratio* (PR = MS/FS).

Any ratio above 1 would indicate a superior advantage for the subject. In practical application, using tables to present historical fair share percentages adequately illustrates the subject's ability to perform above, at, or below the market norms without the additional mathematical steps of market share or penetration ratio computation. Therefore, while it would be beneficial to at least model these additional market indicators and become familiar with their use, they will be omitted from this discussion.

The case study supply and demand analysis begins with a presentation of the Greater County office market and the West submarket data, as provided in the appraisal and shown here in Exhibits 6 and 7. In Exhibit 6, the trend in office occupancy and absorption for the Greater County relates to the population and employment analyses exactly as should be anticipated from the prior demo-

8. For discussion of additional data sources, see Dan L. Swango, "Resource Center," *The Appraisal Journal* (Fall 2015): 226–236; Dan L. Swango, "Resource Center," *The Appraisal Journal* (Spring 2017): 142–157; and Dan L. Swango, "Resource Center," *The Appraisal Journal* (Summer 2017): 231–241.

9. Although the published average rental rates would be part of the analysis of an office building, these were omitted to simplify the presentation as the intent is to focus on demand analysis.

graphic trend analysis. In Exhibit 7, the West submarket information is shown. The data seem to indicate that the West submarket is, in some ways, performing at an improved level in comparison to the overall office market. This might lead an appraiser to believe the subject's submarket is in

some way superior to the overall market. The lack of any direct comparison or analysis of the two markets, however, increases the difficulty in making accurate assumptions about the market. The fair share analysis of the two markets, shown in Exhibit 8, helps provide that comparison.

#### Exhibit 6 Greater County Office Market—All Classes

Year	Inventory	Available Sq. Ft.	Actual % Available	Net Absorption
1993	11,523,376	3,515,970	30.5	—
1994	11,392,376	2,874,678	25.2	510,292
1995	11,384,376	3,109,813	27.3	(243,135)
1996	11,498,481	3,015,023	26.2	208,895
1997	10,886,896	2,621,685	24.1	(55,969)
1998	10,838,596	1,905,927	17.6	569,992
1999	10,439,037	1,538,075	14.7	319,007
2000	11,325,245	2,075,353	18.3	554,976
2001	12,516,128	2,189,794	17.5	415,299
2002	12,781,587	1,997,560	15.6	198,666
2003	12,815,815	2,340,530	18.3	(25,242)
2004	12,824,030	2,268,336	17.7	181,675
2005	12,561,518	2,148,071	17.1	38,831
2006	12,041,126	1,855,402	15.4	281,926
2007	12,039,894	2,052,541	17.0	(159,543)
2008	11,993,137	1,886,678	15.7	88,772
2009	11,914,769	1,824,958	15.3	(17,992)
2010	12,231,337	1,972,971	16.1	168,555
2011	12,229,369	1,824,452	14.9	148,519
2012	12,385,905	1,799,553	14.5	37,699
2013	12,377,654	1,799,553	14.5	(256,785)
2014	11,550,334	1,790,302	15.5	176,566
2015	11,548,132	1,928,538	16.7	(182,641)
2016	11,669,136	2,154,123	18.5	(166,183)
2017	11,758,556	2,353,607	20.0	(154,326)
Q2 2018	11,698,767	2,353,607	20.1	(45,355)

**Exhibit 7** West Office Market—All Classes

Year	Inventory	Available Sq. Ft.	Actual % Available	Actual Net Absorption
1993	2,066,551	771,221	37.3	—
1994	2,066,551	754,659	36.5	16,562
1995	2,066,551	735,943	35.6	18,716
1996	2,069,762	767,263	37.1	(28,109)
1997	1,643,403	777,822	47.3	30,867
1998	1,643,403	430,654	26.2	324,966
1999	1,643,403	212,367	12.9	218,287
2000	1,649,163	309,122	18.7	75,738
2001	1,674,763	311,788	18.6	16,260
2002	1,674,763	309,049	18.5	2,739
2003	1,637,698	440,021	26.9	(110,305)
2004	1,666,841	356,888	21.4	32,801
2005	1,661,841	427,865	25.7	19,747
2006	1,701,385	418,945	24.6	36,835
2007	1,734,565	360,960	20.8	57,985
2008	1,705,518	379,479	22.3	(33,746)
2009	1,705,518	313,444	18.4	66,035
2010	1,695,266	339,589	20.0	(36,397)
2011	1,693,298	347,627	20.5	(8,038)
2012	1,693,298	370,238	21.9	(22,611)
2013	1,693,298	482,735	28.5	(112,497)
2014	1,694,310	448,992	26.5	126,357
2015	1,694,310	438,826	25.9	9,673
2016	1,694,310	431,880	25.5	6,860
2017	1,688,288	519,993	30.8	(88,925)
Q2 2018	1,688,288	494,668	29.3	6,116



**Exhibit 8** Fair Share Comparison of West Office Market to Greater County Office Market

Greater County Office Market—All Classes					West Office Market Fair Share of Greater County Office Market—All Classes								
A	B	C	D	E	F	G	H	I	J	K	L	M	
Year	Inventory	Available Sq. Ft.	Actual % Available	Net Absorption	Inventory	Fair Share Inventory (%) (Column F / Column B)	Available Sq. Ft.	Fair Share Available (Column G * Column C)	Actual % Available (Column H / Column F)	Fair Share % Available (Column I / Column F)	Actual Net Absorption	Fair Share Net Absorption (Column M * Column E)	
1993	11,523,376	3,515,970	30.5	—	2,066,551	17.934	771,221	630,538	37.3	30.5	—	—	
1994	11,392,376	2,874,678	25.2	510,292	2,066,551	18.140	754,659	521,460	36.5	25.2	16,562	92,566	
1995	11,384,376	3,109,813	27.3	(243,135)	2,066,551	18.153	735,943	564,509	35.6	27.3	18,716	(44,135)	
1996	11,498,481	3,015,023	26.2	208,895	2,069,762	18.000	767,263	542,713	37.1	26.2	(28,109)	37,602	
1997	10,886,896	2,621,685	24.1	(55,969)	1,643,403	15.095	777,822	395,750	47.3	24.1	30,867	(8,449)	
1998	10,838,596	1,905,927	17.6	569,992	1,643,403	15.163	430,654	288,986	26.2	17.6	324,966	86,425	
1999	10,439,037	1,538,075	14.7	319,007	1,643,403	15.743	212,367	242,137	12.9	14.7	218,287	50,221	
2000	11,325,245	2,075,353	18.3	554,976	1,649,163	14.562	309,122	302,209	18.7	18.3	75,738	80,815	
2001	12,516,128	2,189,794	17.5	415,299	1,674,763	13.381	311,788	293,013	18.6	17.5	16,260	55,570	
2002	12,781,587	1,997,560	15.6	198,666	1,674,763	13.103	309,049	261,739	18.5	15.6	2,739	26,031	
2003	12,815,815	2,340,530	18.3	(25,242)	1,637,698	12.779	440,021	299,090	26.9	18.3	(110,305)	(3,226)	
2004	12,824,030	2,268,336	17.7	181,675	1,666,841	12.998	356,888	294,834	21.4	17.7	32,801	23,614	
2005	12,561,518	2,148,071	17.1	38,831	1,661,841	13.230	427,865	284,182	25.7	17.1	19,747	5,137	
2006	12,041,126	1,855,402	15.4	281,926	1,701,385	14.130	418,945	262,164	24.6	15.4	36,835	39,836	
2007	12,039,894	2,052,541	17.0	(159,543)	1,734,565	14.407	360,960	295,706	20.8	17.0	57,985	(22,985)	
2008	11,993,137	1,886,678	15.7	88,772	1,705,518	14.221	379,479	268,300	22.3	15.7	(33,746)	12,624	
2009	11,914,769	1,824,958	15.3	(17,992)	1,705,518	14.314	313,444	261,230	18.4	15.3	66,035	(2,575)	
2010	12,231,337	1,972,971	16.1	168,555	1,695,266	13.860	339,589	273,454	20.0	16.1	(36,397)	23,362	
2011	12,229,369	1,824,452	14.9	148,519	1,693,298	13.846	347,627	252,617	20.5	14.9	(8,038)	20,564	
2012	12,385,905	1,799,553	14.5	37,699	1,693,298	13.671	370,238	246,020	21.9	14.5	(22,611)	5,154	
2013	12,377,654	1,799,553	14.5	(256,785)	1,693,298	13.680	482,735	246,184	28.5	14.5	(112,497)	(35,129)	
2014	11,550,334	1,790,302	15.5	176,566	1,694,310	14.669	448,992	262,618	26.5	15.5	126,357	25,900	
2015	11,548,132	1,928,538	16.7	(182,641)	1,694,310	14.672	438,826	282,950	25.9	16.7	9,673	(26,797)	
2016	11,669,136	2,154,123	18.5	(166,183)	1,694,310	14.520	431,880	312,770	25.5	18.5	6,860	(24,129)	
2017	11,758,556	2,353,607	20.0	(154,326)	1,688,288	14.358	519,993	337,930	30.8	20.0	(88,925)	(22,158)	
Q2 2018	11,698,767	2,353,607	20.1	(45,355)	1,688,288	14.431	494,668	339,657	29.3	20.1	6,116	(6,545)	
26-Period Avg.	11,854,830	2,199,888	18.6	103,700	1,740,244	14.680	459,694	322,935	26.4	18.6	25,037	15,223	
12-Period Avg.	11,949,749	1,978,407	16.6	(30,226)	1,698,356	14.212	410,703	281,181	24.2	16.6	(2,432)	(4,296)	
8-Period Avg.	11,902,232	2,000,467	16.8	(55,313)	1,692,425	14.219	441,870	284,454	26.1	16.8	(10,383)	(7,865)	
4-Period Avg.	11,668,648	2,197,469	18.8	(137,126)	1,691,299	14.494	471,342	318,510	27.9	18.8	(16,569)	(19,876)	

Fair Share of Inventory = West Office inventory / Greater County inventory. This percentage is used to calculate all other fair share amounts for the West Office market.

In Exhibit 8, the fair share analysis of each year's data and the averages over different periods are displayed for comparison. The results of the data analysis suggest the following:

1. A stabilized vacancy rate for the Greater County market appears to be around 17.5%. The averages of the periods analyzed support this rate.
2. A stabilized vacancy rate for the West submarket appears to be around 25%. The averages of the periods analyzed support this rate.

3. The West submarket has historically underperformed the Greater County market in occupancy. Comparing the averages of the periods' actual vacancy to the fair share occupancy, the West submarket obviously has a higher vacancy rate
4. The West submarket has historically performed at about its fair share of absorption. Comparing the averages of the periods' actual net absorption to the fair share of absorption, the West submarket appears to underperform some periods and outperform in others. A generalization would be to assume that the submarket will perform at approximately its fair share.

**Exhibit 9** Supply and Demand Data by Radius from Subject Property

Year	Inventory	Available Sq. Ft.	Actual % Available	Actual Net Absorption
<b>One-Mile Radius Class A Office Market</b>				
2015	603,612	212,331	35.2	(17,514)
2016	603,612	177,417	29.4	34,914
2017	603,612	206,559	34.2	(29,142)
Q2 2018	603,612	220,471	36.5	13,912
4-Period Avg.	603,612	204,195	33.8	543
<b>Three-Mile Radius Class A Office Market</b>				
2015	952,315	241,643	25.4	(17,514)
2016	952,315	206,729	21.7	34,914
2017	952,315	206,559	21.7	(29,142)
Q2 2018	952,315	220,471	23.2	13,912
4-Period Avg.	952,315	218,851	23.0	543
<b>Five-Mile Radius Class A Office Market</b>				
2015	3,503,357	488,326	13.9	4,885
2016	3,503,357	425,880	12.2	62,446
2017	3,503,357	345,045	9.8	80,835
Q2 2018	3,503,357	355,225	10.1	(10,180)
4-Period Avg.	3,503,357	403,619	11.5	34,497

These four points, combined with the population and employment data, suggest the West office market is probably operating at a stabilized level with no population or employment growth to alter demand. It also suggests that the West market experiences less demand in relation to the Greater County market. These observations from the fair share analysis should be considered in comparable selection as well as analysis of the subject itself.

In the case study appraisal, the appraiser provided supply and demand data relative to distance from the subject using one-, three-, and five-mile radiuses; this information is restated in Exhibit 9.

Note that in Exhibit 9 the micro supply and demand data is for Class A office buildings, which is the class the appraiser designated for the subject. In the Greater County and West office supply and demand data, all classes of office buildings are presented. While there is a disconnect in this data, it is generally observed that Class A buildings typically outperform Class B and Class C buildings. In analyzing the appraiser's data, therefore, one would anticipate fair share analyses of the data to reflect a higher capture rate for Class A properties. (A penetration ratio analysis might be added due to the difference in the data.)

The fair share analysis of the Greater County and West office markets in comparison to the one-mile micromarket is presented in Exhibit 10. It appears indeed that Class A office space captures more than its fair share of absorption, based on the comparison of actual versus fair share, and

the most recent trend (Q2 2018) is quite encouraging. However, Class A in the immediate area of the subject significantly underperforms the Greater County market and underperforms the West office submarket in regard to occupancy, again as noted in the comparison between actual and fair share. Further, while the Class A space has been performing at an anticipated improved capture rate of absorption, that rate is still extremely low as a percentage of either total space or available space. This further indicates

that demand for office space in the subject's area is weak, as initially predicted by the population and employment analysis.

With a baseline of demand developed, the analysis can then turn to the subject property itself. Actual performance of the subject property is shown in Exhibit 11. This data demonstrates that the subject property's performance has continued to deteriorate over time. Note that there has been very little occurrence of net positive leasing activity for several years.

### Exhibit 10 Fair Share Comparison of One-Mile Class A Market to Greater County and West Office Markets

Year	Inventory	Available Sq. Ft.	% Available	Net Absorption	Inventory	Fair Share Inventory (%)	Available Sq. Ft.	Fair Share Available	Actual % Available	Fair Share % Available	Actual Net Absorption	Fair Share Net Absorption
	<b>Greater County Office Market—All Classes</b>				<b>One-Mile Radius Class A Office Market Fair Share of Greater County Office Market</b>							
2015	11,548,132	1,928,538	16.7	(182,641)	603,612	5.23	212,331	100,803	35.2	16.7	(17,514)	(9,547)
2016	11,669,136	2,154,123	18.5	(166,183)	603,612	5.17	177,417	111,427	29.4	18.5	34,914	(8,596)
2017	11,758,556	2,353,607	20.0	(154,326)	603,612	5.13	206,559	120,820	34.2	20.0	(29,142)	(7,922)
Q2 2018	11,698,767	2,353,607	20.1	(45,355)	603,612	5.16	220,471	121,437	36.5	20.1	13,912	(2,340)
4-Period Avg.	11,668,648	2,197,469	18.8	(137,126)	603,612	5.17	204,195	113,674	33.8	18.8	543	(7,093)
	<b>West Office Market—All Classes</b>				<b>One-Mile Radius Class A Office Market Fair Share of West Office Market</b>							
2015	1,694,310	438,826	25.9	9,673	603,612	35.63	212,331	156,335	35.2	35.6	(17,514)	3,446
2016	1,694,310	431,880	25.5	6,860	603,612	35.63	177,417	153,861	29.4	25.5	34,914	2,444
2017	1,688,288	519,993	30.8	(88,925)	603,612	35.75	206,559	185,913	34.2	30.8	(29,142)	(31,793)
Q2 2018	1,688,288	494,668	29.3	6,116	603,612	35.75	220,471	176,858	36.5	29.3	13,912	2,187
4-Period Avg.	1,691,299	471,342	27.9	(16,569)	603,612	35.69	204,195	168,218	33.8	27.9	543	(5,913)

Fair Share of Inventory = One-Mile inventory / Greater County or West Office inventory. This percentage is used to calculate all other fair share amounts for the one-mile market.

**Exhibit 11** Subject Property Historical Vacancy and Absorption

Year	Inventory	Actual Available Sq. Ft.	Actual % Vacant	Actual Net Absorption
2007	162,745	13,020	8.00	—
2008	162,745	13,020	8.00	0
2009	162,745	13,020	8.00	0
2010	162,745	13,020	8.00	0
2011	162,745	18,390	11.30	(5,371)
2012	162,745	34,665	21.30	(16,275)
2013	162,745	42,151	25.90	(7,486)
2014	162,745	122,221	75.10	(80,071)
2015	162,745	131,172	80.60	(8,951)
2016	162,745	116,525	71.60	14,647
2017	162,745	131,172	80.60	(14,647)
Q2 2018	162,745	131,172	80.60	0
12-Period Avg.	162,745	64,962	39.92	(10,741)
8-Period Avg.	162,745	90,934	55.88	(14,769)
4-Period Avg.	162,745	127,511	78.35	(2,238)

From this point, fair share analyses of the subject in comparison to the Greater County, West, and one-, three-, and five-mile markets can all be developed to provide insight into how the subject competes within each of those markets. For brevity, the fair share analysis of the one-mile micromarket is the only analysis presented. This is likely the most important analysis, as it best illustrates how the subject property competes against its peers. For some properties a wider area would make sense; however, expanding the market too much can result in conclusions that are misleading.

The fair share comparison of the subject and the one-mile market is provided in Exhibit 12. There is 220,471 square feet of space available in the one-mile radius micromarket as of Q2 2018. The subject's vacant space (131,172 square feet) represents 59.5% of this micromarket's available space. If we assume the subject's available space is similar to the West office market's eight-period average of 26.1% (Exhibit 8), the available square feet in the one-mile radius would drop to 21.8%:

$$\begin{aligned} &\text{Subject available } 162,745 \text{ sq. ft.} \times 0.261 \\ &= 42,676 - 131,172 = -88,696 \text{ sq. ft.} \end{aligned}$$

$$\begin{aligned} &\text{One-mile radius available } 220,471 \text{ sq. ft.} \\ &- 88,896 \text{ sq. ft. from subject} / 603,612 \text{ sq. ft.} \\ &= 21.8\% \text{ availability} \end{aligned}$$

This rate is actually better than that of the West office market and is indicative of the anticipated result for Class A buildings. However, this observation also raises a question about the overall economic viability of the subject property. A summary of all fair share comparisons of the subject is found in Exhibit 13.

From these analyses, where the subject significantly underperforms in all comparative fair share periods, it appears there is some physical or economic problem with the subject. A reader of this information would be curious as to what is happening to this property that it is performing so poorly. An experienced appraiser should foresee any number of topics that potentially need to be researched *and discussed* in the report to explain the cause of the abnormal performance.

**Exhibit 12** Fair Share Comparison—Subject Property to One-Mile Micromarket

Year	One-Mile Radius Class A Office Market				Subject Fair Share of One-Mile Class A Office							
	Inventory	Actual Available Sq. Ft.	Actual % Available	Actual Net Absorption	Inventory	Fair Share Inventory (%)	Actual Available Sq. Ft.	Fair Share Available Sq. Ft.	Actual % Available	Fair Share % Available	Actual Net Absorption	Fair Share Net Absorption
2015	603,612	212,331	35.2	(17,514)	162,745	26.962	131,172	57,248	80.6	35.2	(8,951)	(4,722)
2016	603,612	177,417	29.4	34,914	162,745	26.962	116,525	47,835	71.6	29.4	14,647	9,413
2017	603,612	206,559	34.2	(29,142)	162,745	26.962	131,172	55,692	80.6	34.2	(14,647)	(7,857)
Q2 2018	603,612	220,471	36.5	13,912	162,745	26.962	131,172	59,443	80.6	36.5	0	3,751
4-Period Avg.	603,612	204,195	33.8	543	162,745	26.962	127,511	55,055	78.4	33.8	(2,238)	146

**Exhibit 13** Fair Share Analysis Summary

Year	Subject		Fair Share of Greater County Market		Fair Share of West Market		Fair Share One-Mile Radius	
	Actual % Available	Actual Net Absorption	Fair Share % Available	Fair Share Net Absorption	Fair Share % Available	Fair Share Net Absorption	Fair Share % Available	Fair Share Net Absorption
2007	8.0	—	17.0	(2,157)	20.8	5,440		
2008	8.0	0	15.7	1,205	22.3	(3,220)		
2009	8.0	0	15.3	(246)	18.4	6,301		
2010	8.0	0	16.1	2,243	20.0	(3,494)		
2011	11.3	(5,371)	14.9	1,976	20.5	(773)		
2012	21.3	(16,275)	14.5	495	21.9	(2,173)		
2013	25.9	(7,486)	14.5	(3,376)	28.5	(10,812)		
2014	75.1	(80,071)	15.5	2,488	26.5	12,137		
2015	80.6	(8,951)	16.7	(2,574)	25.9	929	35.2	(4,722)
2016	71.6	14,647	18.5	(2,318)	25.5	659	29.4	9,413
2017	80.6	(14,647)	20.0	(2,136)	30.8	(8,572)	34.2	(7,857)
Q2 2018	80.6	0	20.1	(631)	29.3	590	36.5	3,751
12-Period Avg.	39.9	(10,741)	16.6	(412)	24.2	(233)		
8-Period Avg.	55.9	(14,769)	16.8	(756)	26.1	(998)		
4-Period Avg.	78.4	(2,238)	18.8	(1,614)	27.9	(1,322)	33.8	146

Rather than looking at bulk information—with no immediately discernible patterns relating to the subject property—the data analysis demonstrated in this article gives the appraiser some direction as to the market research and analysis that will answer the “why” questions of

the subject’s performance in relation to the market. The appraisal report can focus the descriptive and valuation discussion to answer the “why” questions suggested by the fair share analysis. Some possible causes to investigate include the following:

### Physical Factors

#### Location

- Is the subject’s location less desirable?
- Has the office market shifted to another location?
- Is there enough vacant land for any large user to build their own building? (This is usually a more desirable option among single-tenant users.)

#### Construction

- Is there adequate parking?
- Is the property’s age less desirable in the market?
- Is the property’s curb appeal poor?
- Are the building’s systems out of date?
- Does the property’s age give rise to any functional obsolescence? Is it curable?

#### Condition

- Does this property have significant deferred maintenance that needs to be addressed immediately?
- Does this property have large capital items that need to be addressed over the short term?

### Economic Factors

#### Underlying demand based on jobs

- Are there indications that jobs will be moving into or out of the submarket or micromarket?
- Have governments enacted or proposed incentives to attract new businesses?

#### Changes in supply and/or location of supply

- Is there a large amount of new supply in a competing market?
- Are any demolitions planned that might reduce supply?

#### Management’s competency/financial condition

- Is management actively attempting to lease-up the property?<sup>10</sup>
- Can ownership/management afford to (or does it have the desire to) pay tenant improvement and leasing commission costs? Inability or unwillingness to pay decreases leasing activity.

#### Rental rates

- How do the subject’s rents compare to the current market? Is its occupancy or absorption due to above- or below-market rent?
- What are competing properties doing to induce leasing—concessions? lower rental rates? higher tenant improvement allowances? nothing?
- What could be done at the subject property to induce leasing activity?

#### Absorption of vacant space

- What is a reasonable absorption rate?
- Historical averages reflect what length of time?

### Valuation Factors

- What are the trends in capitalization and discount rates?
- How active is the market?
- What properties sell—only well occupied? only Class A? only credit tenant? only “value add”? only in a specific few micromarkets? only redevelopment with a change in use?

10. The property rent roll may indicate a large amount of space is leased even when it is vacant if the tenant is still paying rent. There is little incentive to lease space in this scenario unless the remaining term is very short.

As can be seen, an incredible number of questions have arisen from the fair share analysis of the market, submarket, micromarket, and subject property. Yet, having identified how the subject competes in its market, the appraiser can focus on identifying which questions are applicable to the subject property and how the answers affect the selection of comparable data, thereby improving appraisal report credibility. What if the market, submarket, micromarket, and subject analyses indicated exactly the opposite of the data presented? The comparison of the subject's operating performance would still have relevance, as it would still indicate whether or not the subject is performing at its expected level. Even if the subject is performing above the expected level, the discussion of "why" still needs to be presented, understood, and considered in the valuation process.

At the beginning of the case study the question was posed as to acceptable estimates of stabilized occupancy and absorption. After reviewing these analyses, does it appear that the appraiser's estimate of stabilized occupancy of 85% is reasonable? The answer seems to be no. Even correcting the one-mile market for the subject's atypical vacancy, the micromarket would still be around 80% occupied. This is assuming the subject does not have any type of location or functional issues. The analysis shows the West market average occupancy from 2007 to Q2 2018 was 75.8%. What about absorption? The appraiser assumed a sixty-month absorption rate beginning in year one. However, is there any indication in the population, employment, or absorption data that would lead to an assumption that significant leasing is likely to occur over the next twelve months? Again, the answer appears to be no. What about the estimated sixty-month total absorption? The 26-period actual absorption rate for the West office market (Exhibit 8) is 1.13% of the total average inventory per year (25,037 sq. ft. net absorption/2,199,888 sq. ft. = 1.13%); this equates to a fair share of about 1,840 square feet per year at the subject property. To reach 80% occupancy (about 98,450 square feet to absorb, assuming no additional losses) at this rate would take over fifty years. Clearly, something must happen in

the market or must be done to property economics to induce leasing activity—sixty months does not appear to be supportable without it.

How might these analyses influence the appraiser's assumptions in the income approach and appraisal report? The valuation and the report discussion could possibly consider the following scenarios:

- Below-market near-term rent and above-market concessions to bring occupancy up to a reasonable level at a more rapid absorption rate
- No lease up in at least the first twelve months
- Little or no near-term market rent growth
- Significantly higher tenant improvement allowances to attract tenants and obtain a more rapid absorption rate
- Low tenant retention rates over the near term without concessions similar to new leases
- A location adjustment to comparable leases executed outside the micromarket
- A much higher equity return requirement in development of the band of investment technique<sup>11</sup>
- Capitalization rates from sales only located in similarly weak markets or poorly occupied properties
- Discount rates that reflect a higher return compared to markets performing at their fair share or better
- A property tax appeal and its impact on value if the assessed value is well above the appraiser's concluded "as is" value, and certainly if above the appraiser's concluded "as stabilized" value
- Omission of the income approach from any weighting (but not from the appraisal entirely) in the appraisal reconciliation

## Conclusion

A simple presentation of market and submarket information from published sources is inadequate to truly understand supply and demand forces affecting a subject property. A more detailed anal-

11. It is not an uncommon problem for poorly occupied properties to have difficulty obtaining market financing, especially properties with significant actual or pending vacancy or probability of near-term vacancy. This could influence the allocation of debt and equity as well as the equity return rate in the band of investment presentation.

ysis of population and employment along with use of fair share tables can provide a much clearer picture of the actual competitiveness of the subject in its market. Additional dissection of information in the market analysis section of the report can help the appraiser identify and focus on areas requiring additional discussion. It also will increase the accuracy of the many assumptions required to complete an appraisal assignment.

The briefest definition of *market value* is “the present value of future benefits.” A clear under-

standing of the trends, competitiveness of the subject, and the subject’s submarket and micro-market are key to predicting the future. Simple graphs and tables comparing population, employment, and existing supply and demand trends help provide this clarity. Users of appraisal services are employing these analyses as a check of appraisers’ selection of sales, adjustments in the sales comparison approach, and assumptions made in the income approach. The provider of appraisal services should use them as well.

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### About the Author

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### Additional Resources

Suggested by the Y. T. and Louise Lee Lum Library

#### Appraisal Institute

- **Education**—*Advanced Market Analysis and Highest and Best Use*  
<https://www.appraisalinstitute.org/education/>
- **Practice Standards and Guide Notes**  
<http://bit.ly/2SUKPMB>
- **Lum Library, External Resources [Login required]**  
Information Files—Economic data
- **Publications**  
<https://www.appraisalinstitute.org/store/books-and-ebooks/>
  - *The Appraisal of Real Estate*, fourteenth edition
  - *Market Analysis for Real Estate*, second edition