Dark stores, dark theories, and dark magic

The geography of dark stores

Steven P. Laposa, PhD, FRICS
Peter F. Korpacz, MAI, CRE, FRICS
Shining a *new* light on dark store theory
Are we all on the “same page”? 

What’s your current understanding of truly comparable properties for a four-year-old, successfully operating subject big-box property?
Is this an appropriate comparable?
Is this an appropriate comparable?
Are these appropriate comparables?
First question

Why are dark stores ‘dark’?

- Internal corporate strategies and operations
  - Bankruptcies, restructurings, new store formats
- Increased competitors and new retail stock
  - New entrants and increased retail supply
- Significant changes in trade area demographics and economics
  - Population, density, and household incomes
- Property owner’s appraiser’s opinion dark stores exist!
  - Assessment appeal cases based on faulty fee simple estate interpretation
Second question

What theories apply to dark stores?

- Plenty of urban economic theories
  - How cities grow, decline, or regenerate
- Trade area economics and demographics
  - Submarket shift-share models that explain rising vs. declining submarkets
    - Changes in submarket or trade area share of new supply, occupied stock, rent ratio to market
- Retail theories
  - Gravity models and spatial agglomeration
- Appropriate real property valuation methodology based on market behavior
Third question

How magic applies to dark stores?

- Sale comparables
  - ✔️ Selection of relevant comparables

- Comparable adjustments
  - ✔️ Subjective vs. objective adjustments

- Use of industry studies
  - ✔️ Various studies referenced in dark store appraisals or hearings

- Misappropriation of real estate valuation methodologies
  - ✔️ Slight of hand with HBU and IAAO market segmentation
An understanding of the geography of dark stores is paramount to challenge appraisals using dark store methods, research, and studies.
Relevant dark store theories

Or....

Everything you wanted to ask about dark stores in your economic classes but were too afraid to ask
What’s relevancy got to do with it?

Understand why cities grow (or don’t)

- Plenty of theories that explain growth
  - Concentric, axial, or multi-nuclei growth patterns
- Recent theories on land consumption and land values

Theories identify factors that explain land values

- Spatial distributions and variances of land values
- Why retail spatial agglomerations exist

Do dark store appraisals fully understand and acknowledge urban growth (or decline) patterns for subject property and comparables?
Rise and fall of retail submarkets

Retail submarket risk ratings:
Explaining differences and rationally adjusting

Dark store appraisals generally discount urban growth patterns and overlook dynamics of retail submarkets within a specific market or when using comps from numerous markets.

Source: CoStar, Alvarez & Marsal, ESRI
Note: data as of 3Q2018 for illustrative purposes only
Magic of dark store appraisals

Or....

Don’t let truth get in the way of a good story
Mark Twain
Finding Waldo and selecting comparables
Are dark stores really different?

How can we analyze?
- Trade area demographics
  - Population, density, median household incomes, retail sales and leakages
- Retail real estate data
  - Investigate current and historical trends of total and single tenant stock and occupied stock

Data and methods
- Sample appraisal using dark store application
- Keller, Craig & Associates report
  - 10-county study of big box retail in Kansas
- Commentary on several industry studies
Real data…real transformations

<table>
<thead>
<tr>
<th>Property ID</th>
<th>Total retail stock</th>
<th>Single tenant retail stock</th>
<th>2018 Total Population</th>
<th>2018 median household income</th>
<th>Total retail stock</th>
<th>Single tenant retail stock</th>
<th>2018 Total Population</th>
<th>2018 median household income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Former Walmart Comp #1</td>
<td>9,688,040</td>
<td>1,354,343</td>
<td>145,738</td>
<td>$82,949</td>
<td>61.8</td>
<td>56.2</td>
<td>53.2</td>
<td>146.9</td>
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<tr>
<td>Former Super K Comp #2</td>
<td>29,006,588</td>
<td>3,107,307</td>
<td>474,900</td>
<td>$50,824</td>
<td>184.9</td>
<td>129.0</td>
<td>173.3</td>
<td>90.0</td>
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<tr>
<td>Former Super K Comp #3</td>
<td>72,300,271</td>
<td>7,289,314</td>
<td>1,173,305</td>
<td>$53,849</td>
<td>461.0</td>
<td>302.7</td>
<td>428.2</td>
<td>95.4</td>
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<tr>
<td>Former Sam's Club Comp #4</td>
<td>43,214,225</td>
<td>7,603,130</td>
<td>626,894</td>
<td>$76,948</td>
<td>275.5</td>
<td>315.7</td>
<td>228.8</td>
<td>136.3</td>
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<tr>
<td>Former Super K Comp #5</td>
<td>21,283,162</td>
<td>2,559,987</td>
<td>264,648</td>
<td>$53,881</td>
<td>135.7</td>
<td>106.3</td>
<td>96.6</td>
<td>95.4</td>
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<tr>
<td>Former Kmart #6</td>
<td>32,090,623</td>
<td>4,385,821</td>
<td>511,415</td>
<td>$79,849</td>
<td>204.6</td>
<td>182.1</td>
<td>186.6</td>
<td>141.4</td>
</tr>
<tr>
<td>Former Lowe's #7</td>
<td>40,573,292</td>
<td>5,525,678</td>
<td>603,224</td>
<td>$50,494</td>
<td>258.7</td>
<td>229.5</td>
<td>220.1</td>
<td>89.4</td>
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<tr>
<td><strong>Subject property</strong></td>
<td><strong>15,683,585</strong></td>
<td><strong>2,408,100</strong></td>
<td><strong>274,027</strong></td>
<td><strong>$56,452</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: CoStar; Alvarez & Marsal; ESRI ; data representative of 10-mile radius

Data is representative of an appraisal implementing the dark store theory. In order to maintain confidentiality, the subject property’s retail and demographic data is indexed to 100 and specific variables are adjusted accordingly for each comparable relative to the subject property.  

*Note: Be cautious of appraisals using short radius or driving times to define big-box trade area without justification.*
Stock and # properties – does it matter?

Geography of retail stock in 10-mile trade area

Comps #3, #4, and #7 significantly higher than subject property while #1 and #5 similar based on retail stock benchmarks

Source: CoStar; Alvarez & Marsal
Note: data as of 1Q2019 using 10-mile radius
Subject property = 100
How about single tenant retail?

Geography of single tenant stock comparisons

Single tenant occupancy trends, ex-#7, are lower than subject property; thus implications for vacancy, rent, and valuation trends

Source: CoStar; Alvarez & Marsal
Note: data as of 1Q2019 using 10-mile radius
Compound annual growth rate ("CAGR") based on 2006 to 2019 change
Visualizing differences and distances

Implications for rational and reasonable adjustment requirements?

Source: CoStar, Alvarez & Marsal; ESRI

Note: data as of 1Q2019 using 10-mile radius
Trade area demographic profiles

Population, retail sales, and income comparisons

Differences with subject property are visually apparent for numerous comparables in terms of population and retail sales.

Source: CoStar; Alvarez & Marsal
Note: data as of 1Q2019 using 10-mile radius
So what’s the big so what?

Big so what is how to rationally adjust trade area demographics and retail market characteristics

<table>
<thead>
<tr>
<th>Property ID</th>
<th>Overall retail market</th>
<th>Single tenant retail market</th>
<th>Population</th>
<th>Sales</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Former Walmart Comp #1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Former Super K Comp #2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Former Super K Comp #3</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Former Sam's Club Comp #4</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Former Super K Comp #5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Former Kmart #6</td>
<td>4</td>
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<tr>
<td>Former Lowe's #7</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

Scale rating: 1 (significantly lower), 2 (lower), 3 (similar), 4 (higher), 5 (significantly higher)
General descriptives

<table>
<thead>
<tr>
<th>Demographic variable</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-2010 Growth Rate: Population</td>
<td>-0.93</td>
<td>2.73</td>
<td>0.71</td>
</tr>
<tr>
<td>2010-2018 Growth Rate: Population</td>
<td>-0.24</td>
<td>1.41</td>
<td>0.62</td>
</tr>
<tr>
<td>2018 Median Household Income</td>
<td>$43,908</td>
<td>$88,361</td>
<td>$56,367</td>
</tr>
<tr>
<td>2018 Total Retail Stock Per Capita</td>
<td>51.84</td>
<td>90.20</td>
<td>77.53</td>
</tr>
<tr>
<td>2018 Population Density per Square Mile</td>
<td>115</td>
<td>2,473</td>
<td>1,144</td>
</tr>
</tbody>
</table>

Source: Keller, Craig & Associates; Alvarez & Marsal; ESRI

Keller, Craig & Associates study (“Keller”) includes 385 big-box retail properties for the 10 most populated counties in Kansas over period of 2017 and 2018. A **sample of 66 properties** were selected from the 2018 vintage that indicated a change in use, vacant, or not original tenant.

Current and historical trade area demographic and retail real estate data using 10-mile radius supplemented basic property descriptive data for each of the 66 sample retail properties.
1st clue, slowing demand

Majority of dark stores experienced lower population growth rates post-2010

Source: Keller, Craig & Associates; Alvarez & Marsal; ESRI
2nd clue, demand growth ≠ occupancy growth

Population growth does not result in positive occupied stock growth

Although population growth rates increase, results not reflective in occupied retail stock growth for majority of dark store trade areas

Source: Keller, Craig & Associates, Alvarez & Marsal, ESRI
Importing or exporting retail sales?

Understanding retail leakage or surplus:
Another clue to understand dark store trade areas

<table>
<thead>
<tr>
<th>Store #</th>
<th>Retail sales using retail business establishments (sales)</th>
<th>Retail sales based on trade area households (potential)</th>
<th>Sales less potential</th>
<th>Retail Leakage / Surplus Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$1,298</td>
<td>$781</td>
<td>$517</td>
<td>-24.8</td>
</tr>
<tr>
<td>2</td>
<td>$320</td>
<td>$222</td>
<td>$98</td>
<td>-18.1</td>
</tr>
<tr>
<td>3</td>
<td>$9,762</td>
<td>$11,644</td>
<td>-$1,882</td>
<td>8.8</td>
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<tr>
<td>4</td>
<td>$26,560</td>
<td>$28,376</td>
<td>-$1,817</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Source: Keller, Craig & Associates, Alvarez & Marsal, ESRI ($ in millions)

**Trade areas importing $$$**
Retail sales for stores 1 and 2 trade areas are greater than what is estimated based on household demographics and spending.

**Trade areas exporting $$$**
Retail sales for stores 3 and 4 trade areas are less than what is estimated based on household demographics and spending.
3rd clue, trade areas importing $$$(?)

Dark store trade areas import $$$ - isn’t that a good thing? Maybe

Why are dark stores ‘dark’ if trade areas import retail sales dollars? Lower incomes? Increase competition? See 4th clue for probable answer

Source: Keller, Craig & Associates, Alvarez & Marsal, ESRI
4th clue, highly competitive trade areas

Rising stock per capita as trade areas import > export retail sales
Importing retail sales is good, increased competition bad?

As import > export retail sales, retail stock per capita increases – raises questions on competitive nature of retail market in trade area and factors impacting value

Source: Keller, Craig & Associates, Alvarez & Marsal, ESRI
Note: U.S. retail stock per capita ≈ 46; most cities range from 40 to 55 retail stock per capita (City Observatory link)
Geography of dark stores matter – big time!

Dark store general characteristics and signals

- Slowing population growth rates
- Demand growth, if positive, still results in negative occupancy growth
- Trade areas may import more than export retail sales, but
- Highly competitive retail real estate market, e.g., above average total retail stock per capita benchmarks

Subjective adjustments need not apply

- Challenge unsupported, pulled-out-of-the-sky adjustments
- Demand rational, reasonable, and justified adjustments for any dark store comparable
- Several industry studies ignore geospatial analytics
Practical Applications
Observations

- Critical component for most assessment valuations
- Often poorly analyzed and reported in property owner’s appraisal
- Properly done, leads to truly comparable data, including
  - Trade area demographics, market segmentation, comparable land and improved sales and rentals
- Six-step market and marketability study
  - Financial feasibility and maximally productive test of highest and best use often ignored or poorly analyzed

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1 “Highest and Best Use and Property Rights-Does It Make a Difference?” article by Stephen F. Fanning, MAI, GRIS, Larry T. Wright, MAI, SRA, AI-GRS, and Rick J. Muenks, JD, MAI
Observations

- Dark store theorists insist the property should be valued as if vacant before any highest and best use analysis is undertaken that supports that conclusion.

- They ignore that the property’s highest and best use is valued based on market supply and demand factors not the specific retailer’s use.
Highest and best use conclusions are often too general.

- A general conclusion of highest and best use, such as “retail use” is often not enough to clearly define the use that will be found to be not only legally permitted and physically possible but be financially feasible and maximally productive.

- General categories...may be adequate in some situations, but in other situations, the particular use demanded by market participants should be specified, such as a suburban office building with 10 or more floors...” (The Appraisal of Real Estate, 14th Edition)
Best practices

Match subject property’s HBU

- Mirror the subject property’s highest and best use, including a similar conclusion regarding first- and second-generation space

Keep in mind

- Both first- and second-generation space relate to utility of the space and not the first or subsequent occupant

Market segmentation

- Application of IAAO classifications
  - Investment classes vs. type of space, location, tenants, and investor types

HBU conclusion allows for the property to be properly classified which drives the identification and analysis of comparable data such as comparables and trade area geographic characteristics
Improper selection and adjustment of comparable sales

- Using second-generation comparables to compare to a first-generation subject

- Using lease-up costs on improved comparables to arrive at vacant property values to compare to an occupied subject property

- Removing the value of the leases on sale properties to derive adjusted unoccupied comparable sale price to relate to a subject property considered as unoccupied/vacant
Unacceptable practices – comparable data selection and analysis

- Selecting a cap rate from comparable sales with short remaining lease terms, especially if it is likely the existing tenant will likely not renew

- Selecting a market rent estimate from second-generation properties, older leases, and/or with dissimilar physical and trade area characteristics
Best practices – comparable data selection and analysis

- Use comparable data with similar physical, locational, and trade area characteristics

- Adjust dissimilar comparable data, if possible and credible, or discard the comp

- Select a cap rate from comparables with remaining lease terms that would mirror the likely lease term of the subject if leased
Final thoughts

- Value improved occupied big-box properties as occupied real estate.

- Value improved vacant big-box properties as vacant properties.

- The question to answer is not what the subject property would rent or sell for if vacant, but what would the occupied subject property rent or sell for if it were leased at market rent.

To do otherwise, is a fatal flaw.
Who knew the Munsters were back?
Thank you

Steven P. Laposa, PhD, FRICS
Alvarez & Marsal Disputes and Investigations LLC
Real Estate & Environmental Services
707 17th Street, Suite 2125
Denver, CO 80202
slaposa@alvarezandmarsal.com
303-704-4525 direct
970-231-8403 cell

After October 31, 2019
Laposa Realty Advisors, LLC
steve@laposara.com
www.laposara.com
970-231-8403 cell

Peter F. Korpacz, MAI, CRE, FRICS
Founder & President
Korpacz Realty Advisors, Inc.
3121 Glen Abbey Drive
Mount Airy, MD 21771
301.829.3770 - office
866.213.3772 - fax
301.639.5694 - cell
pkorpacz@korpaczra.com
www.korpaczra.com