

Appendices – On-line Publication Only under Supplementary Materials

Appendix 1 Classifications of Retail Chains (Anchors)

Panel A provides classification descriptions in Vitorino (2012) and Gould, Pashigian and Prendergast (2005) and classifications of competitors based on the Gale and Hoover business reports. Zhou and Clapp (2015, 2016) develop a list of multi-line anchor stores from the Directory of Major Malls, and sort these stores into three price/quality categories: high, mid, and low following Vitorino (2012). They begin with the specific stores identified by Vitorino for each category, and then drawing on the Gale business report manually classified the remaining stores on their list into the same three categories based on stores that are identified as direct competitors. For example, Wal-Mart is classified as a low-price anchor while Nordstrom is classified as a high-price anchor. In Vitorino, “upscale department stores” (such as Dillard’s, Macy’s, and Nordstrom) sell designer merchandise at a premium price and provide checkout service and customer assistance in each department. In our application, we define this type of stores as “high-price.” Similarly, our “mid-price” (“low-price”) anchors resemble “midscale department stores” (“discount department stores”) in Vitorino. However, Vitorino’s criteria are difficult to apply to some of the anchors in our study. For example, according to Vitorino, TJ Maxx and Marshalls could be classified as either “midscale” or “discount.” In this case, we check Gould, Pashigian and Prendergast (2005) and classify them into “midscale” because both have national reputations. Results are robust to categorizing TJ Maxx and Marshalls as low-price.

Finally, as a robustness check, we develop a new categorization of competing multi-line anchors using the CONCOR (CONvergence of iterated CORrelations) algorithm. CONCOR was developed in social network theory and centers on the application of algebraic concepts to examine structural equivalence of actors. A pair of actors is said to exhibit structural equivalence if they are tied to the same set of other actors. In the first step, the relations among subjects are coded as a binary variable in a symmetric matrix based on the Gale (Hoover) business report, resulting in a 49x49 binary matrix based on competition among chains (retail companies) defined in Gale (Hoover). Next, correlations between each pair (row-column) are calculated. The CONCOR algorithm repeatedly correlates the row and column vectors until all entries become either +1 or -1. As a result, this algorithm splits a set of actors into exactly two subsets and can be applied repeatedly to generate sub-sets (in bipartitions) of the actors. Because we have limited number of chains, we only divide anchors into two groups.

Panel B presents the complete classification of all stores based on (1) price-types created by Zhou and Clapp (2015, 2016) following Vitorino (2012) and Gould, Pashigian and Prendergast (2005); (2) CONCOR classification based on competition among retail chains following the Gale Business Report and (3) CONCOR classification based on competition among retail companies following Hoover. The first classification is used throughout the paper. The second two classifications are used in a robustness test that is shown in Panel C.

Panel A Classification Descriptions and Criteria

Classification in Vitorino (2012) pp.177

“Upscale department stores: These stores generally sell designer merchandise above an average price level. When their items are on sale, their prices resemble those of average priced items at a lower-scale department store. Upscale department stores typically provide checkout service and customer assistance in each department. Examples include Dillard’s, Macy’s, and Nordstrom.

Midscale department stores: These stores sell brand names and non-brand names but do not sell upscale brand names. Compared with upscale department stores, midscale stores usually do not have perfumes and beauty supplies at the main entrance and do not have cosmetic specialists. Examples include JCPenney, Mervyn’s, and Kohl’s.

Discount department stores: These stores encompass retail establishments selling a variety of merchandise for less than conventional prices. Target, Sears, Wal-Mart, and Kmart are examples. Most discount department stores offer wide assortments of goods; others specialize in merchandise such as jewelry, electronic equipment, or electrical appliances. Discount stores are not dollar stores, which sell goods at a dollar or less. Discount stores differ because they sell branded goods, and prices vary widely among products. Compared with midscale department stores, discounters sell fewer major brand names and offer a wider variety of products. Stores in the discount department store category typically have fewer sales workers, relying more on self-service features, and have centrally located cashiers.”

Classification in Gould, Pashgian and Prendergast (2005) pp.414

“Type 1: Prestige/fashion department stores. These stores usually operated in only one or a few markets until recently, when they expanded into more regional and national markets, often by entering into existing malls.

Type 2: High- to moderate-quality department stores with national reputations since the 1950s and 1960s. These stores were usually in the mall right from the beginning and were eagerly recruited by developers to establish the mall.

Type 3: Lower-quality department stores with mostly local or regional reputations. (30% of anchor stores.)

Type 4: Department stores that are members of very well-known national chains that have long operated in many markets. These stores were also usually in the mall right from the beginning and were eagerly recruited by developers to establish the mall. (41% of anchor stores.)”

Classification based on Gale and Hoover Business Report

| List of Retail Chains | Company | Competitor Chain (Gale) | Competitor Company (Hoover) |
|------------------------------|-------------------------|--|---------------------------------------|
| Barneys New York | Barneys New York | Saks, Bloomingdale's | Saks, Bloomingdale's |
| Bealls (Florida) | Bealls | Kohl's, Target, Wal-Mart | Kohl's, TJX, Ross |
| Bealls Outlet | Bealls | Sears, Wal-Mart | Kohl's, TJX, Ross |
| Belk | Belk | Saks Fifth Avenue, Dillard's, JCPenney, Macy's | Dillard's, Kohl's, Macy's |
| McRaes | Belk | Saks Fifth Avenue, Dillard's, JCPenney, Macy's | Dillard's, Kohl's, Macy's |
| BJ's | BJ's | Sam's club, Costco | Target, Costco |
| Bon-Ton | Bon-ton Stores | Dillard's, Macy's, Boscov's | Dillard's, Macy's, Boscov's |
| Boston Store | Bon-ton Stores | Dillard's, Macy's, Boscov's | Dillard's, Macy's, Boscov's |
| Carson Pirie Scott | Bon-ton Stores | Dillard's, Macy's, Boscov's | Dillard's, Macy's, Boscov's |
| Elder-Beerman | Bon-ton Stores | Dillard's, Macy's, Boscov's | Dillard's, Macy's, Boscov's |
| Parisian | Bon-ton Stores | Dillard's, Macy's, Boscov's | Dillard's, Macy's, Boscov's |
| Younkers | Bon-ton Stores | Dillard's, Macy's, Boscov's | Dillard's, Macy's, Boscov's |
| Boscov's | Boscov's | JC Penney, Kohl's, Macy's | JC Penney, Kohl's, Macy's |
| Burlington Coat Factory | Burlington Coat Factory | Ross Stores, TJ Maxx, Marshalls, AJ Wright, Target | Ross, TJX, Target |
| Costco | Costco | Sam's club, BJ's | Target, Wal-Mart |
| Dillard's | Dillard's | Burlington Coat Factory, Kohl's, Macy's, Neiman Marcus, Nordstrom, Saks Fifth Avenue | JC Penney, Kohl's, Macy's |
| Lord & Taylor | Hudson's Bay Company | Neiman Marcus | Neiman Marcus |
| JCPenney | JCPenney | Kohl's, Sears, Target, Wal-Mart, Dillard's, Nordstrom, Bon-Ton Stores | Sears, Kohl's, Macy's |
| Kohl's | Kohl's | Wal-Mart, Target, JCPenney, Sears, Mervyn's, TJ Maxx, Marshalls, AJWright, Ross Stores, Macy's | Target, JC Penney, TJX |
| Bloomingdale's | Macy's | Neiman Marcus, Saks, Barneys New York | Neiman Marcus, Saks, Barneys New York |
| Filene's | Macy's | Saks Fifth Avenue, Nordstrom, Dillard's, JCPenney | Dillard's, JC Penney, Saks |
| Kaufmanns | Macy's | Saks Fifth Avenue, Nordstrom, Dillard's, JCPenney | Dillard's, JC Penney, Saks |
| L. S. Ayres | Macy's | Saks Fifth Avenue, Nordstrom, Dillard's, JCPenney | Dillard's, JC Penney, Saks |
| Macy's | Macy's | Saks Fifth Avenue, Nordstrom, Dillard's, JCPenney | Dillard's, JC Penney, Saks |
| Strawbridge's | Macy's | Saks Fifth Avenue, Nordstrom, Dillard's, | Dillard's, JC Penney, Saks |

| | | | |
|--|-------------------------|--|--|
| Meijer, Inc. | Meijer | JCPenney Wal-Mart, Target | Target, Wal-Mart |
| Neiman Marcus | Neiman Marcus | Barneys New York, Macy's, Bon-Ton Stores, Dillard's, Nordstrom, Saks Fifth Avenue, Von Maur | Saks, Barneys New York, Bloomingdale's |
| Neiman Marcus last call | Neiman Marcus | Nordstrom Rack, Saks Fifth Off | |
| Nordstrom | Nordstrom | Saks Fifth Avenue, Neiman Marcus, Dillard's, Macy's, JCPenney, Sears | Neiman Marcus, Saks, Bloomingdale's |
| Nordstrom Rack | Nordstrom | Neiman Marcus last call, Saks Fifth Off | |
| Ross | Ross Stores | TJ Maxx, Marshalls, AJ Wright, Kohl's, Target, Burlington Coat Factory, JC Penney, Stein Mart, Goody's | Kohl's, TJX, Wal-Mart |
| Proffitts | Saks | Barneys New York, Bloomingdale's, Neiman Marcus, Macy's, Dillard's, Nordstrom | Neiman Marcus, Barneys New York, Bloomingdale's |
| Saks Fifth Avenue | Saks | Barneys New York, Bloomingdale's, Neiman Marcus, Macy's, Dillard's, Nordstrom | Neiman Marcus, Barneys New York, Bloomingdale's |
| Off 5th Saks Fifth Avenue Outlet | Saks | Nordstrom Rack, Neiman Marcus last call | |
| Kmart | Sears | Wal-Mart, Target, JCPenney, Kohl's | Wal-Mart, Macy's |
| Sears | Sears | Wal-Mart, Target, JCPenney, Kohl's | Wal-Mart, Macy's |
| Pamida | Shopko | Wal-Mart, Target, Kmart | Target, K-Mart, Wal-Mart |
| Shopko | Shopko | Wal-Mart, Target, Kmart | Target, K-Mart, Wal-Mart |
| Goodys | Stage Stores | JC Penney, Sears, Ross | JC Penney, Sears, Ross |
| Peebles | Stage Stores | JC Penney, Sears, Ross | J.C. PENNEY, Sears, Ross |
| Stein Mart | Stein Mart | JC Penney, TJ Maxx, Marshalls, AJ Wright, Macy's | TJX, Macy's, Belk |
| Mervyn's | Sun Capital Partners | Ross, Kohl's | Macy's, Ross, Kohl's |
| Target | Target | Costco, Macy's, JCPenney, Kohl's, Sears, Wal- Mart | Wal-Mart, Sears |
| AJ Wright | TJX | Kohl's, JCPenney, Target, Macys | Target, Ross, Kohl's |
| Marshalls | TJX | Kohl's, JCPenney, Target, Macys | Target, Ross, Kohl's |
| TJ Max | TJX | Kohl's, JCPenney, Target, Macys | Target, Ross, Kohl's |
| Von Maur | Von Maur | Macy's, Nordstrom | Macy's, Nordstrom |
| Sam's club | Wal-Mart | BJ's, Costco | Target, Costco |
| Walmart Supercenters | Wal-Mart | Costco, Target, Kmart | Target, Costco |

Panel B Classification Details

| List of Retail Chains | Company | Price-Type* | Gale Group** | Hoover Group** |
|----------------------------------|-------------------------|-------------|--------------|----------------|
| Barneys New York | Barneys New York | High | 1 | 1 |
| Bealls (Florida) | Bealls | Mid | 2 | 2 |
| Bealls Outlet | Bealls | Low | 2 | 2 |
| Belk | Belk | High | 1 | 2 |
| McRaes | Belk | High | 1 | 2 |
| BJ's | BJ's | Low | 2 | 1 |
| Bon-Ton | Bon-ton Stores | High | 1 | 2 |
| Boston Store | Bon-ton Stores | High | 1 | 2 |
| Carson Pirie Scott | Bon-ton Stores | High | 1 | 2 |
| Elder-Beerman | Bon-ton Stores | High | 1 | 2 |
| Parisian | Bon-ton Stores | High | 1 | 2 |
| Younkers | Bon-ton Stores | High | 1 | 2 |
| Boscov's | Boscov's | High | 1 | 2 |
| Burlington Coat Factory | Burlington Coat Factory | Mid | 2 | 2 |
| Costco | Costco | Low | 2 | 1 |
| Dillard's | Dillard's | High | 1 | 2 |
| Lord & Taylor | Hudson's Bay Company | High | 1 | 1 |
| JCPenney | JCPenney | Mid | 2 | 2 |
| Kohl's | Kohl's | Mid | 2 | 2 |
| Bloomingdale's | Macy's | High | 1 | 1 |
| Filene's | Macy's | High | 1 | 2 |
| Kaufmanns | Macy's | High | 1 | 2 |
| L. S. Ayres | Macy's | High | 1 | 2 |
| Macy's | Macy's | High | 1 | 1 |
| Strawbridge's | Macy's | High | 1 | 2 |
| Meijer, Inc. | Meijer | Low | 2 | 1 |
| Neiman Marcus | Neiman Marcus | High | 1 | 1 |
| Neiman Marcus last call | Neiman Marcus | Mid | 2 | 1 |
| Nordstrom | Nordstrom | High | 1 | 1 |
| Nordstrom Rack | Nordstrom | Mid | 2 | 1 |
| Ross | Ross Stores | Mid | 2 | 2 |
| Proffitts | Saks | High | 1 | 1 |
| Saks Fifth Avenue | Saks | High | 1 | 1 |
| Off 5th Saks Fifth Avenue Outlet | Saks | Mid | 2 | 1 |
| Kmart | Sears | Low | 2 | 2 |
| Sears | Sears | Low | 2 | 2 |
| Pamida | Shopko | Mid | 2 | 1 |
| Shopko | Shopko | Low | 2 | 1 |
| Goodys | Stage Stores | Mid | 2 | 2 |
| Peebles | Stage Stores | Mid | 2 | 2 |
| Stein Mart | Stein Mart | Mid | 2 | 2 |
| Mervyn's | Sun Capital Partners | Mid | 2 | 2 |
| Target | Target | Low | 2 | 1 |
| AJ Wright | TJX | Mid | 2 | 2 |
| Marshalls | TJX | Mid | 2 | 2 |
| TJ Max | TJX | Mid | 2 | 2 |
| Von Maur | Von Maur | High | 1 | 2 |
| Sam's club | Wal-Mart | Low | 2 | 1 |
| Walmart Supercenters | Wal-Mart | Low | 2 | 1 |

*Following Zhou and Clapp (2015, 2016), Vitorino (2012), Gould, Pashigian and Prendergast (2005); ** Based on CONCOR algorithm

Panel C: Robustness Test – Alternative Classification of Anchor Type

Probit regressions are based on a panel sample of anchor store openings from 2005 to 2011. Counties are units of observations. Anchors are classified based on CONCOR algorithm. In Panel A, competitor chains are identified for each anchor based on Gale Business Report summarized in Appendix 1B. Based on CONCOR algorithm, Group 1 anchors include Barneys New York, Proffitts, Neiman Marcus, Belk, McRaes, Macy's, Strawbridge's, Bloomingdale's, Saks Fifth Avenue, Kaufmanns, L.S. Ayres, Filene's, Lord & Taylor, Nordstrom, Bon-Ton, Younkers, Dillard's, Carson Pirie Scott, Boscov's, Boston Store, Elder-Beerman, Parisian and Von Maur. Group 2 anchors include JCPenney, Kohl's, Goodys, Peebles, Bealls (Florida) Mervyn's, Sears, Ross, Burlington Coat Factory, Bealls Outlet, TJ Max, Meijer, Marshalls, Pamida, Shopko, Target, Stein Mart, Walmart Supercenters, AJ Wright, Kmart, BJ's, Nordstrom Rack, Costco, Neiman Marcus last call, Sam's club, Off 5th Saks Fifth Avenue Outlet. Group 1-Open equals 1 if there is any openings of Group 1 anchors within the county and 0 otherwise. Group 1-Close, Group 2-Open and Group 2-Close are defined in a similar way. Group 1/Group 2 is the number of Group 1/Group 2 anchors pre-existing within the county at the beginning of the year of the opening/closing. In Panel B, competitor chains are identified for each anchor based on Hoover's business report summarized in Appendix 1B. Based on CONCOR algorithm, Group 1 company include Neiman Marcus, Barneys New York, Nordstrom, Saks, Macy's, Lord & Taylor, Meijer, Target, Costco, Shopko, BJ's, Wal-Mart. Group 2 company include TJX, Burlington Coat Factory, Stage Stores, Ross Stores, Bealls, Belk, Boscov's, Sears, Bon-ton Stores, Dillard's, Stein Mart, JCPenney, Kohl's and Von Maur. Group 1-Open equals 1 if there is any openings of Group 1 anchors within the county and 0 otherwise. Group 1-Close, Group 2-Open and Group 2-Close are defined in a similar way. Group 1/Group 2 is the number of Group 1/Group 2 anchors pre-existing within the county at the beginning of the year of the opening/closing. All the regressions are controlled for county and year fixed effect. BC3p denotes the bias-corrected estimator proposed by Fernandez-Val (2009) when the regressors are treated as predetermined. P(Open) is unconditional probability of openings. % change is calculated as the marginal effect divided by unconditional probability. *** for t -statistics > 2.58 ; ** for t -statistics > 1.96 ; and * for t -statistics > 1.65 .

Gale Classification

| | Group 1 | | Group 2 | |
|-------------------------|----------------------|---------------------|----------------------|-------------------|
| | Open | Close | Open | Close |
| P(Open) | 0.019 | 0.039 | 0.287 | 0.054 |
| | BC3p | BC3p | BC3p | BC3p |
| <i>Coefficients</i> | | | | |
| Group 1 | -0.706*** (0.235) | 0.850*** (0.253) | -0.070 (0.207) | -0.209 (0.251) |
| Group 2 | -0.074 (0.071) | 0.011 (0.053) | -0.176** (0.073) | -0.001 (0.087) |
| <i>Marginal Effects</i> | | | | |
| Group 1 | -0.017*** (0.006) | 0.037*** (0.010) | -0.003 (0.007) | -0.005 (0.006) |
| Group 2 | -0.002 (0.002) | 0.001 (0.002) | -0.007*** (0.003) | 0.000 (0.002) |
| <i>% Change</i> | | | | |
| Group 1 | -88% | 95% | -1% | -9% |
| Group 2 | -10% | 3% | -3% | 0% |
| Observations | 875 | 875 | 875 | 875 |
| County FE | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y |

Hoover Classification

| | Group 1 | | Group 2 | |
|-------------------------|----------------------|-------|----------------------|-------|
| | Open | Close | Open | Close |
| P(Open) | 0.195 | 0.007 | 0.183 | 0.085 |
| | BC3p | BC3p | BC3p | BC3p |
| <i>Coefficients</i> | | | | |
| Low | -0.259*** (0.066) | N.A. | 0.022 (0.080) | N.A. |
| Mid | 0.050 (0.065) | N.A. | -0.415*** (0.082) | N.A. |
| <i>Marginal Effects</i> | | | | |
| Low | -0.047*** (0.011) | N.A. | 0.003 (0.010) | N.A. |
| Mid | 0.009 (0.011) | N.A. | -0.057*** (0.010) | N.A. |
| <i>% Change</i> | | | | |
| Low | -24% | N.A. | 2% | N.A. |
| Mid | 5% | N.A. | -31% | N.A. |
| Observations | 875 | 875 | 875 | 875 |
| County FE | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y |

Appendix 2 Robustness Test – Adding Population

This table is supplementary to Table 2 and 3 with addition control of population. Probit regressions are based on a panel sample of anchor store openings from 2005 to 2011. Counties are units of observations. In Panel A, Columns of Low/Mid/High include results using dependent variables based on low/mid/high-price anchors. For example, Low-Open corresponds to dependent variable that equals 1 if there is any openings of low-price within the county and 0 otherwise. Low-Close corresponds to dependent variable that equals 1 if there is any closings of low-price within the county and 0 otherwise. Low/mid/high is the number of low/mid/high-price anchors pre-existing within the county at the beginning of the year of the opening. In Panel B, Columns of Small/Big include results using dependent variables based on small/big-scale anchors. For example, Small-Open corresponds to dependent variable that equals 1 if there is any openings of small-scale within the county and 0 otherwise. Small-Close corresponds to dependent variable that equals 1 if there is any closings of small-scale within the county and 0 otherwise. Small/big is the number of small/big-scale anchors pre-existing within the county at the beginning of the year of the opening. Population is log of population. All the regressions are controlled for county and year fixed effect. BC3p denotes the bias-corrected estimator proposed by Fernandez-Val (2009) when the regressors are treated as predetermined. P(Open) is unconditional probability of openings. % change is calculated as the marginal effect divided by unconditional probability. *** for t -statistics > 2.58; ** for t -statistics > 1.96; and * for t -statistics > 1.65.

Panel A: By Price

| | Low | | Mid | | High | |
|-------------------------|----------------------|--------------------|----------------------|-------|----------------------|---------------------|
| | Open | Close | Open | Close | Open | Close |
| P(Open) | 0.198 | 0.026 | 0.173 | 0.026 | 0.025 | 0.042 |
| | BC3p | BC3p | BC3p | BC3p | BC3p | BC3p |
| <i>Coefficients</i> | | | | | | |
| Low | -0.402*** (0.093) | -0.057 (0.227) | 0.066 (0.089) | N.A. | -0.021 (0.129) | -0.161 (0.116) |
| Mid | 0.164** (0.075) | -0.332* (0.192) | -0.609*** (0.115) | N.A. | -0.049 (0.131) | 0.134 (0.127) |
| High | -0.096 (0.135) | -0.236 (0.254) | 0.058 (0.154) | N.A. | -0.522*** (0.200) | 0.836*** (0.244) |
| Population | -2.289 (1.654) | 2.557 (2.781) | 0.879 (1.698) | N.A. | 0.636 (7.405) | 8.556 (5.553) |
| <i>Marginal Effects</i> | | | | | | |
| Low | -0.070*** (0.014) | -0.002 (0.007) | 0.010 (0.012) | N.A. | -0.001 (0.004) | -0.007 (0.005) |
| Mid | 0.029** (0.012) | -0.012* (0.006) | -0.093*** (0.015) | N.A. | -0.002 (0.004) | 0.006 (0.005) |
| High | -0.017 (0.021) | -0.008 (0.008) | 0.009 (0.021) | N.A. | -0.017*** (0.006) | 0.038*** (0.010) |
| Population | -0.400 (0.264) | 0.919 (0.641) | 0.135 (0.237) | N.A. | 0.021 (0.213) | 0.384 (0.239) |
| <i>% Change</i> | | | | | | |
| Low | -35% | -8% | 6% | N.A. | -4% | -17% |
| Mid | 15% | -46% | -54% | N.A. | -8% | 14% |
| High | -9% | -31% | 5% | N.A. | -68% | 90% |
| Observations | 875 | 875 | 875 | 875 | 875 | 875 |
| County FE | Y | Y | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y | Y | Y |

Panel B: By Scale

| | Small | | Big | |
|-------------------------|----------------------|-------|----------------------|-------------------|
| | Open | Close | Open | Close |
| P(Open) | 0.101 | 0.027 | 0.257 | 0.066 |
| | BC3p | BC3p | BC3p | BC3p |
| <i>Coefficients</i> | | | | |
| Small | -0.516*** (0.153) | N.A. | -0.141 (0.107) | -0.153 (0.111) |
| Big | 0.098 (0.065) | N.A. | -0.222*** (0.059) | 0.081 (0.057) |
| Population | 4.837 (4.095) | N.A. | 0.124 (1.662) | 11.53 (14.434) |
| <i>Marginal Effects</i> | | | | |
| Small | -0.055*** (0.014) | N.A. | -0.029 (0.020) | -0.012 (0.008) |
| Big | 0.010* (0.006) | N.A. | -0.046*** (0.011) | 0.006 (0.005) |
| Population | 0.514 (0.390) | N.A. | 0.025 (0.307) | 0.921 (1.306) |
| <i>% Change</i> | | | | |
| Small | -54% | N.A. | -11% | -18% |
| Big | 10% | N.A. | -18% | 9% |
| Observations | 875 | 875 | 875 | 875 |
| County FE | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y |

Appendix 3 County-Level Openings - Fixed Effect Logit Regressions with Bias Correction

This table is supplementary to Table 2 of county-level openings. Logit regressions are based on a panel sample of anchor store openings from 2005 to 2011. Counties are units of observations. In Panel A, Open_Low/Mid/High equals 1 if there is any low/mid/high-price openings within the county and 0 otherwise. Low/mid/high is the number of low/mid/high-price anchors pre-existing within the county at the beginning of the year of the opening. In Panel B, Open_Small/Big equals 1 if there is any small/big-scale openings within the county and 0 otherwise. Small/big is the number of small/big-scale anchors pre-existing within the county at the beginning of the year of the opening. All the regressions are controlled for county and year fixed effect. FE denotes uncorrected fixed effects estimator. BC3 denotes the bias-corrected estimator proposed by Fernandez-Val (2009). BC3p denotes the bias-corrected estimator proposed by Fernandez-Val (2009) when the regressors are treated as predetermined. P(Open) is unconditional probability of openings. *** for t -statistics > 2.58 ; ** for t -statistics > 1.96 ; and * for t -statistics > 1.65 .

Panel A: By Price

| | Open_Low | | | Open_Mid | | | Open_High | | |
|-------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|------|------|
| P(Open) | 0.198 | | | 0.173 | | | 0.025 | | |
| | FE | BC3 | BC3p | FE | BC3 | BC3p | FE | BC3 | BC3p |
| <i>Coefficients</i> | | | | | | | | | |
| Low | -0.854*** (0.127) | -0.667*** (0.109) | -0.481*** (0.115) | 0.117 (0.076) | 0.091 (0.072) | 0.084 (0.084) | -0.087 (0.303) | N.A. | N.A. |
| Mid | 0.267*** (0.094) | 0.210** (0.087) | 0.181** (0.079) | -1.066*** (0.144) | -0.839*** (0.124) | -0.643*** (0.128) | -0.668* (0.390) | N.A. | N.A. |
| High | -0.271 (0.176) | -0.216 (0.161) | -0.153 (0.148) | 0.158 (0.175) | 0.123 (0.161) | 0.141 (0.164) | -2.267*** (0.673) | N.A. | N.A. |
| <i>Marginal Effects</i> | | | | | | | | | |
| Low | -0.122*** (0.016) | -0.115*** (0.015) | -0.085*** (0.017) | 0.015 (0.010) | 0.014 (0.010) | 0.013 (0.012) | -0.002 (0.006) | N.A. | N.A. |
| Mid | 0.038*** (0.013) | 0.036*** (0.013) | 0.032** (0.013) | -0.137*** (0.015) | -0.131*** (0.015) | -0.103*** (0.017) | -0.013 (0.008) | N.A. | N.A. |
| High | -0.039 (0.025) | -0.037 (0.025) | -0.027 (0.024) | 0.020 (0.023) | 0.019 (0.022) | 0.023 (0.024) | -0.045*** (0.011) | N.A. | N.A. |
| <i>% Change</i> | | | | | | | | | |
| Low | -62% | -58% | -43% | 9% | 8% | 8% | -8% | N.A. | N.A. |
| Mid | 19% | 18% | 16% | -79% | -76% | -60% | -52% | N.A. | N.A. |
| High | -20% | -19% | -14% | 12% | 11% | 13% | -180% | N.A. | N.A. |
| Observations | 875 | 875 | 875 | 875 | 875 | 875 | 875 | 875 | 875 |
| County FE | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y | Y | Y | Y | Y | Y |

Panel B: By Scale

| P(Open) | Open_Small | | | Open_Big | | |
|-------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | 0.101 | | | 0.257 | | |
| | FE | BC3 | BC3p | FE | BC3 | BC3p |
| <i>Coefficients</i> | | | | | | |
| Small | -0.884*** (0.173) | -0.726*** (0.155) | -0.522*** (0.188) | -0.120 (0.132) | -0.098 (0.120) | -0.132 (0.105) |
| Big | 0.079 (0.062) | 0.066 (0.060) | 0.065 (0.061) | -0.541*** (0.087) | -0.417*** (0.076) | -0.250*** (0.063) |
| <i>Marginal Effects</i> | | | | | | |
| Small | -0.080*** (0.014) | -0.078*** (0.013) | -0.057*** (0.017) | -0.021 (0.023) | -0.020 (0.022) | -0.028 (0.021) |
| Big | 0.007 (0.006) | 0.007 (0.006) | 0.007 (0.006) | -0.093*** (0.014) | -0.086*** (0.013) | -0.054*** (0.012) |
| <i>% Change</i> | | | | | | |
| Small | -79% | -77% | -56% | -8% | -8% | -11% |
| Big | 7% | 7% | 7% | -36% | -33% | -21% |
| Observations | 875 | 875 | 875 | 875 | 875 | 875 |
| County FE | Y | Y | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y | Y | Y |

Appendix 4 County-Level Closings - Fixed Effect Logit Regressions with Bias Correction

This table is supplementary to Table 3. Logit regressions are based on a panel sample of anchor store openings from 2005 to 2011. Counties are units of observations. In Panel A, Close_Low/Mid/High equals 1 if there is any low/mid /high-price closings within the county and 0 otherwise. Low/mid/high is the number of low/mid/high-price anchors pre-existing within the county at the beginning of the year of the opening. In Panel B, Close_Small/Big equals 1 if there is any small/big-scale closings within the county and 0 otherwise. Small/big is the number of small/big-scale anchors pre-existing within the county at the beginning of the year of the opening. All the regressions are controlled for county and year fixed effect. BC3p denotes the bias-corrected estimator proposed by Fernandez-Val (2009) when the regressors are treated as predetermined. P(Open) is unconditional probability of openings. % change is calculated as the marginal effect divided by unconditional probability. *** for t -statistics > 2.6 ; ** for t -statistics > 2.3 ; and * for t -statistics > 1.96 .

Panel A: By Price

| | Close_Low | Close_Mid | Close_High |
|-------------------------|-----------|-----------|---------------------|
| P(Open) | 0.026 | 0.026 | 0.042 |
| | BC3p | BC3p | BC3p |
| <i>Coefficients</i> | | | |
| Low | N.A. | N.A. | -0.229* (0.120) |
| Mid | N.A. | N.A. | 0.195 (0.124) |
| High | N.A. | N.A. | 0.913*** (0.292) |
| <i>Marginal Effects</i> | | | |
| Low | N.A. | N.A. | -0.011** (0.005) |
| Mid | N.A. | N.A. | 0.009* (0.005) |
| High | N.A. | N.A. | 0.043*** (0.012) |
| <i>% Change</i> | | | |
| Low | N.A. | N.A. | -26% |
| Mid | N.A. | N.A. | 21% |
| High | N.A. | N.A. | 102% |
| Observations | 875 | 875 | 875 |
| County FE | Y | Y | Y |
| Year FE | Y | Y | Y |

Panel B: By Scale

| | Open_Big | Wal-Mart |
|-------------------------|----------|-------------------|
| P(Open) | 0.027 | 0.066 |
| | BC3p | BC3p |
| <i>Coefficients</i> | | |
| Small | N.A. | -0.036 (0.094) |
| Big | N.A. | 0.029 (0.055) |
| <i>Marginal Effects</i> | | |
| Small | N.A. | -0.003 (0.007) |
| Big | N.A. | 0.002 (0.004) |
| <i>% Change</i> | | |
| Small | N.A. | -5% |
| Big | N.A. | 3% |
| Observations | 875 | 875 |
| County FE | Y | Y |
| Year FE | Y | Y |

Appendix 5 Openings in Growth, Stable and Decline Markets - Fixed Effect Logit Regressions with Bias Correction

This table is supplementary to Table 4. Logit regressions are based on a panel sample of anchor store openings from 2005 to 2011. Counties are units of observations. Counties are classified into “Growth”, “Stable” and “Decline” based on average growth rate of employment in retail trades from 1995Q1 to 2005Q1. For example “Growth” counties have growth rates greater than 67th percentile. “Decline” counties have growth rates less than 33rd percentile. There are 125 counties, among which 42 counties are classified as “Growth”, 42 counties are classified as “Decline” and the remaining 41 are classified as “Stable”. In Panel A, Open_Low/Mid/High equals 1 if there is any low/mid /high-price closings within the county and 0 otherwise. Each specification contains three subsamples, “Growth”, “Stable” and “Decline”. Low/mid/high is the number of low/mid/high-price anchors pre-existing within the county at the beginning of the year of the opening. In Panel B, Open_Small/Big equals 1 if there is any small/big-scale closings within the county and 0 otherwise. Small/big is the number of small/big-scale anchors pre-existing within the county at the beginning of the year of the opening. All the regressions are controlled for county and year fixed effect. BC3p denotes the bias-corrected estimator proposed by Fernandez-Val (2009) when the regressors are treated as predetermined. P(Open) is unconditional probability of openings. % change is calculated as the marginal effect divided by unconditional probability. *** for t -statistics > 2.58; ** for t -statistics > 1.96; and * for t -statistics > 1.65.

Panel A: By Price

| | Open_Low | | | Open_Mid | | | Open_High | | |
|-------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------|--------|---------|
| | Growth | Stable | Decline | Growth | Stable | Decline | Growth | Stable | Decline |
| P(Open) | 0.241 | 0.213 | 0.139 | 0.235 | 0.202 | 0.082 | 0.031 | 0.017 | 0.027 |
| | BC3p | BC3p | BC3p | BC3p | BC3p | BC3p | BC3p | BC3p | BC3p |
| <i>Coefficients</i> | | | | | | | | | |
| Low | -0.795*** (0.159) | -0.410*** (0.188) | -0.366*** (0.165) | 0.164 (0.139) | -0.065 (0.159) | 0.262* (0.145) | N.A. | N.A. | N.A. |
| Mid | 0.166 (0.159) | 0.092 (0.124) | 0.360* (0.161) | -1.022*** (0.191) | -0.580*** (0.188) | -0.483*** (0.180) | N.A. | N.A. | N.A. |
| High | -0.429 (0.306) | -0.147 (0.219) | 0.122 (0.321) | 0.332 (0.291) | 0.173 (0.238) | -0.212 (0.286) | N.A. | N.A. | N.A. |
| <i>Marginal Effects</i> | | | | | | | | | |
| Low | -0.150*** (0.027) | -0.074*** (0.028) | -0.053*** (0.020) | 0.032 (0.025) | -0.011 (0.025) | 0.022* (0.012) | N.A. | N.A. | N.A. |
| Mid | 0.031 (0.028) | 0.017 (0.020) | 0.052** (0.021) | -0.197*** (0.029) | -0.101*** (0.028) | -0.041*** (0.014) | N.A. | N.A. | N.A. |
| High | -0.081 (0.053) | -0.026 (0.036) | 0.018 (0.043) | 0.064 (0.051) | 0.030 (0.038) | -0.018 (0.023) | N.A. | N.A. | N.A. |
| <i>% Change</i> | | | | | | | | | |
| Low | -62% | -35% | -38% | 14% | -5% | 27% | N.A. | N.A. | N.A. |
| Mid | 13% | 8% | 37% | -84% | -50% | -50% | N.A. | N.A. | N.A. |
| High | -34% | -12% | 13% | 27% | 15% | -22% | N.A. | N.A. | N.A. |
| Observations | 294 | 287 | 294 | 294 | 287 | 294 | 294 | 287 | 294 |
| County FE | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y | Y | Y | Y | Y | Y |

Panel B: By Scale

| | Open_Small | | | Open_Big | | |
|-------------------------|-----------------------|-------------------|--------------------|----------------------|----------------------|-------------------|
| | Growth | Stable | Decline | Growth | Stable | Decline |
| P(Open) | 0.143 | 0.111 | 0.048 | 0.313 | 0.282 | 0.177 |
| | BC3p | BC3p | BC3p | BC3p | BC3p | BC3p |
| <i>Coefficients</i> | | | | | | |
| Small | -1.0232*** (0.474) | -0.274 (0.248) | -0.526* (0.287) | -0.231 (0.167) | -0.160 (0.251) | -0.029 (0.218) |
| Big | 0.092 (0.114) | 0.037 (0.099) | 0.035 (0.114) | -0.338*** (0.084) | -0.379*** (0.104) | -0.049 (0.101) |
| <i>Marginal Effects</i> | | | | | | |
| Small | -0.154*** (0.048) | -0.034 (0.026) | -0.030* (0.014) | -0.058 (0.038) | -0.033 (0.046) | -0.005 (0.034) |
| Big | 0.011 (0.015) | 0.005 (0.011) | 0.002 (0.006) | -0.085*** (0.018) | -0.078*** (0.018) | -0.009 (0.016) |
| <i>% Change</i> | | | | | | |
| Small | -108% | -31% | -63% | -19% | -12% | -3% |
| Big | 8% | 5% | 4% | -27% | -28% | -5% |
| Observations | 294 | 287 | 294 | 294 | 287 | 294 |
| County FE | Y | Y | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y | Y | Y |

Appendix 6 Openings inside Shopping Centers - Fixed Effect Logit Regressions with Bias Correction

This table is supplementary to Table 3. Logit regressions are based on a panel sample of anchor store openings from 2005 to 2011. Counties are units of observations. In Panel A, Open_Low/Mid/High equals 1 if there is any low/mid/high-price openings inside pre-existing shopping centers within the county and 0 otherwise. Each specification contains “All” based on all pre-existing shopping centers and “Large SC” based on pre-existing shopping centers with GLA>400,000 sq.ft. Low/mid/high is the number of low/mid/high-price anchors pre-existing within the county at the beginning of the year of the opening. In Panel B, Open_Small/Big equals 1 if there is any small/big-scale openings inside pre-existing shopping centers within the county and 0 otherwise. Small/big is the number of small/big-scale anchors pre-existing within the county at the beginning of the year of the opening. All the regressions are controlled for county and year fixed effect. BC3p denotes the bias-corrected estimator proposed by Fernandez-Val (2009) when the regressors are treated as predetermined. P(Open) is unconditional probability of openings. % change is calculated as the marginal effect divided by unconditional probability. *** for t -statistics > 2.58; ** for t -statistics > 1.96; and * for t -statistics > 1.65.

Panel A: By Price

| | Open_Low | | Open_Mid | | Open_High | |
|-------------------------|----------------------|----------------------|----------------------|-------------------|----------------|----------|
| | All | Large SC | All | Large SC | All | Large SC |
| P(Open) | 0.137 | 0.061 | 0.159 | 0.067 | 0.025 | 0.017 |
| | BC3p | BC3p | BC3p | BC3p | BC3p | BC3p |
| <i>Coefficients</i> | | | | | | |
| Low | -0.424*** (0.117) | -0.207*** (0.090) | 0.085 (0.079) | 0.040 (0.074) | -0.050 N.A. | N.A. |
| Mid | 0.222** (0.087) | 0.047 (0.109) | -0.571*** (0.128) | -0.188 (0.136) | -0.182 N.A. | N.A. |
| High | -0.132 (0.139) | 0.001 (0.153) | 0.230 (0.177) | 0.249* (0.137) | -0.663 N.A. | N.A. |
| <i>Marginal Effects</i> | | | | | | |
| Low | -0.059*** (0.013) | -0.017*** (0.006) | 0.013 (0.011) | 0.004 (0.006) | N.A. | N.A. |
| Mid | 0.031*** (0.011) | 0.004 (0.008) | -0.089*** (0.017) | -0.018 (0.011) | N.A. | N.A. |
| High | -0.018 (0.017) | 0.000 (0.011) | 0.036 (0.025) | 0.023* (0.011) | N.A. | N.A. |
| <i>% Change</i> | | | | | | |
| Low | -43% | -28% | 8% | 6% | N.A. | N.A. |
| Mid | 22% | 6% | -56% | -26% | N.A. | N.A. |
| High | -13% | 0% | 23% | 35% | N.A. | N.A. |
| Observations | 875 | 875 | 875 | 875 | 875 | 875 |
| County FE | Y | Y | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y | Y | Y |

Panel B: By Scale

| | Open_Small | | Open_Big | |
|-------------------------|----------------------|---------------------|----------------------|-------------------|
| | All | Large SC | All | Large SC |
| P(Open) | 0.094 | 0.040 | 0.195 | 0.098 |
| | BC3p | BC3p | BC3p | BC3p |
| <i>Coefficients</i> | | | | |
| Small | -0.522*** (0.182) | -0.310** (0.142) | -0.147 (0.106) | -0.143 (0.107) |
| Big | 0.066 (0.062) | 0.129* (0.075) | -0.210*** (0.065) | -0.078 (0.064) |
| <i>Marginal Effects</i> | | | | |
| Small | -0.053*** (0.016) | -0.018** (0.007) | -0.027 (0.017) | -0.017 (0.011) |
| Big | 0.007 (0.006) | 0.008* (0.004) | -0.038*** (0.010) | -0.009 (0.007) |
| <i>% Change</i> | | | | |
| Small | -56% | -46% | -14% | -17% |
| Big | 7% | 19% | -20% | -9% |
| Observations | 875 | 875 | 875 | 875 |
| County FE | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y |

Appendix 7 Openings of Freestanding Anchors - Fixed Effect Logit Regressions with Bias Correction

This table is supplementary to Table 6. Logit regressions are based on a panel sample of anchor store openings from 2005 to 2011. Counties are units of observations. In Panel A, Open_Low/Wal-Mart/Target equals 1 if there is any openings of low-price/Wal-Mart/Target within the county and 0 otherwise. Low/mid/high is the number of low/mid/high-price anchors pre-existing within the county at the beginning of the year of the opening. In Panel B, Open_Big/Wal-Mart/Target equals 1 if there is any openings of big-scale/Wal-Mart/Target within the county and 0 otherwise. Small/big is the number of small/big-scale anchors pre-existing within the county at the beginning of the year of the opening. All the regressions are controlled for county and year fixed effect. BC3p denotes the bias-corrected estimator proposed by Fernandez-Val (2009) when the regressors are treated as predetermined. P(Open) is unconditional probability of openings. % change is calculated as the marginal effect divided by unconditional probability. *** for t -statistics > 2.58 ; ** for t -statistics > 1.96 ; and * for t -statistics > 1.65 .

Panel A: By Price

| | Open_Low | Wal-Mart | Target |
|-------------------------|-------------------|--------------------|----------------|
| P(Open) | 0.093 | 0.055 | 0.021 |
| | BC3p | BC3p | BC3p |
| <i>Coefficients</i> | | | |
| Low | -0.037 (0.077) | -0.078 (0.113) | -0.036 N.A. |
| Mid | 0.053 (0.095) | 0.127 (0.113) | -0.021 N.A. |
| High | -0.148 (0.128) | -0.345* (0.209) | -0.102 N.A. |
| <i>Marginal Effects</i> | | | |
| Low | -0.005 (0.009) | -0.006 (0.008) | N.A. |
| Mid | 0.007 (0.011) | 0.010 (0.008) | N.A. |
| High | -0.019 (0.014) | -0.027* (0.014) | N.A. |
| <i>% Change</i> | | | |
| Low | -5% | -11% | N.A. |
| Mid | 8% | 18% | N.A. |
| High | -20% | -50% | N.A. |
| Observations | 875 | 875 | 875 |
| County FE | Y | Y | Y |
| Year FE | Y | Y | Y |

Panel B: By Scale

| | Open_Big | Wal-Mart | Target |
|-------------------------|-------------------|-------------------|--------|
| P(Open) | 0.106 | 0.055 | 0.021 |
| | BC3p | BC3p | BC3p |
| <i>Coefficients</i> | | | |
| Small | -0.142 (0.110) | -0.120 (0.131) | N.A. |
| Big | 0.032 (0.051) | 0.063 (0.065) | N.A. |
| <i>Marginal Effects</i> | | | |
| Small | -0.021 (0.014) | -0.010 (0.009) | N.A. |
| Big | 0.005 (0.007) | 0.005 (0.005) | N.A. |
| <i>% Change</i> | | | |
| Small | -20% | -18% | N.A. |
| Big | 5% | 9% | N.A. |
| Observations | 875 | 875 | 875 |
| County FE | Y | Y | Y |
| Year FE | Y | Y | Y |