No More Walks in the (Office) Park:

Tying Foot Traffic Data to REITs

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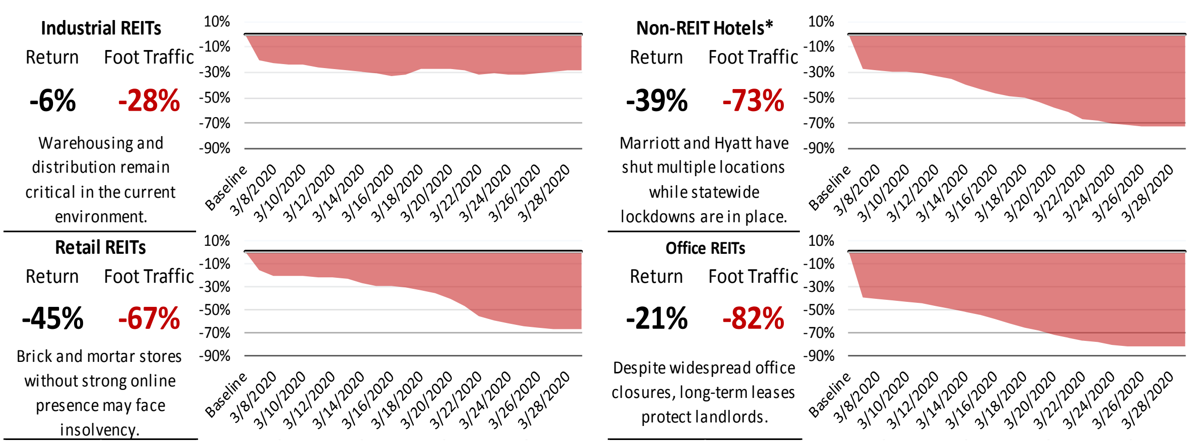
Forty-two states, representing approximately 95% of the US population, had stay-at-home orders in place as of the 7th of April 2020[1], as a result of the COVID-19 pandemic. In the current environment, foot traffic data[2] provides investors and corporate managers with key insights on the level of activity at properties (vacant vs occupied) and the demographic profile (e.g. age) of visitors. Corporate managers can use this information to pinpoint properties at greater risk of tenant defaults, or benchmark their footfall activity to those of competitors. Investors can use foot traffic data to identify real estate investment trusts (REITs) managing properties where activity remains robust, as well as those that own properties that attract visitors with favorable demographic characteristics (e.g., wealthier customers).

More importantly, once the nationwide lockdown eases, foot traffic ***can serve as a leading indicator of a return of economic activity across industries***. For example, tracking footfall at retail locations or hotels can indicate when consumers return to shopping malls and when travel rebounds.

Figure 1: Russell 3000: Year-on-Year Change in Foot Traffic Versus Return Performance (March 2020) for Select REIT Property Types



*Non-REIT Hotels are companies that manage hotel properties but have chosen not to operate as REITs.
*** Return for each sub-industry is the market-cap weighted return of all stocks in that industry with foot-traffic data
Source: AirSage, S&P Global Market Intelligence Quantamental Research. Data as at 04/15/2020

Industrial REITs own warehouses that are critical for the distribution of essential items like food, which explains the lower-than-average 28% drop in footfall (Figure 1). Conversely, most offices have closed, leading to an 82% plunge in foot traffic at properties managed by office REITs. Yet, office REITS had the second best stock performance in March 2020 with a decline of 21%.[3] Office REITs tenants are locked into long-term leases, offering revenue protection for landlords. However, office landlords are not immune from tenants choosing to skip rent payments or tenant bankruptcies. Retail REITs will continue to face revenue challenges[4] from higher vacancy rates as more brick and mortar retailers file for bankruptcy (vacancy rates at US malls hit their highest levels in at least two decades earlier this year[5]).

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[1] New York Times, "See Which States and Cities have Told Residents to Stay Home", April 7, 2020.
[2] See Foot Traffic Data for data description.
[3] See Appendix A for an expanded chart covering eight REIT property types and their definitions.
[4] "Panjiva Research, April 24, 2020.
[5] Financial Times, "US Shopping Mall Vacancies Hit Two-Decade High", January 7, 2020.

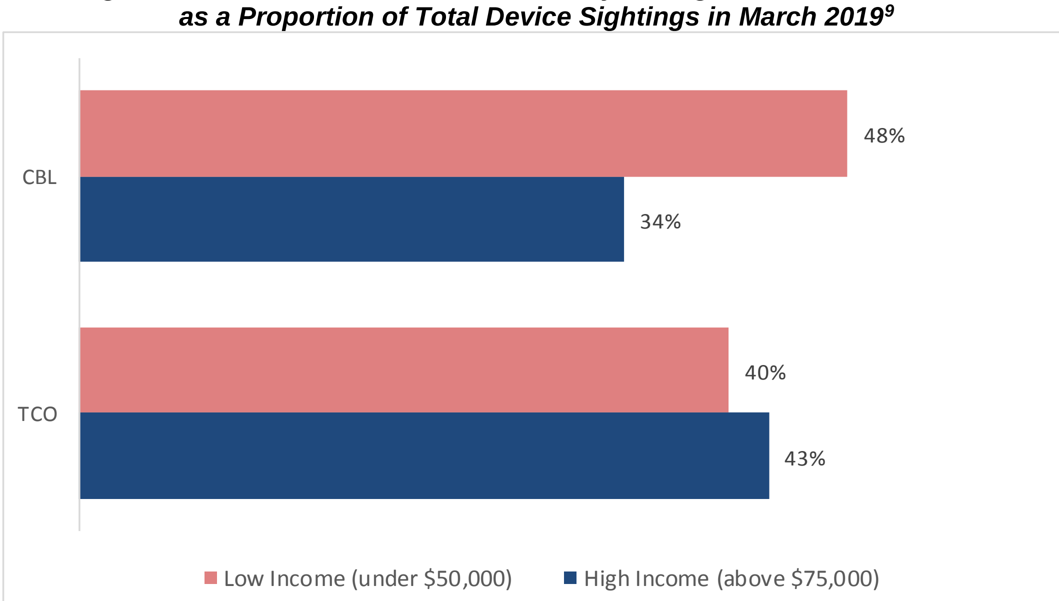
1. Foot Traffic Demographics

While foot traffic *shows activity* at property locations, demographic data[6] provides insights *as to who* is generating this activity. Why is this important? The previous section referenced a Financial Times news article which stated that vacancy rates at U.S malls are at a two-decade high. Determining the income profile of visitors to retail locations may help identify which retail REITs would be more (less) impacted by tenant bankruptcies. Retailers that attract high income visitors should be in a better shape financially, given higher operating margins, and vice versa for retailers with low income visitors.

Figure 2 shows the proportion of visitors classified as either low or high income to total visitors for both Taubman Centers (TCO")[7] and CBL Properties ("CBL"). Visitors with income below $50,000 are classified as "Low Income", while those with income above $75,000 are tagged as "High Income".[8]

Forty-eight percent of visitors to properties owned by CBL fall under the low income category, while 34% fall into the high income category. Contrast that with TCO, where 43% of visitors to its properties are in the high income bracket versus 40% in the low income bracket. TCO tenants are more likely to be high end retailers with higher income customers who will retain spending power, putting TCO in a better position to weather the current nationwide lock-down.

Figure 2: CBL & TCO - Foot Traffic Activity for High/Low Income Visitors as a Proportion of Total Device Sightings in March 2019[9]



Source: AirSage, S&P Global Market Intelligence Quantamental Research. Data as at 04/15/2020.

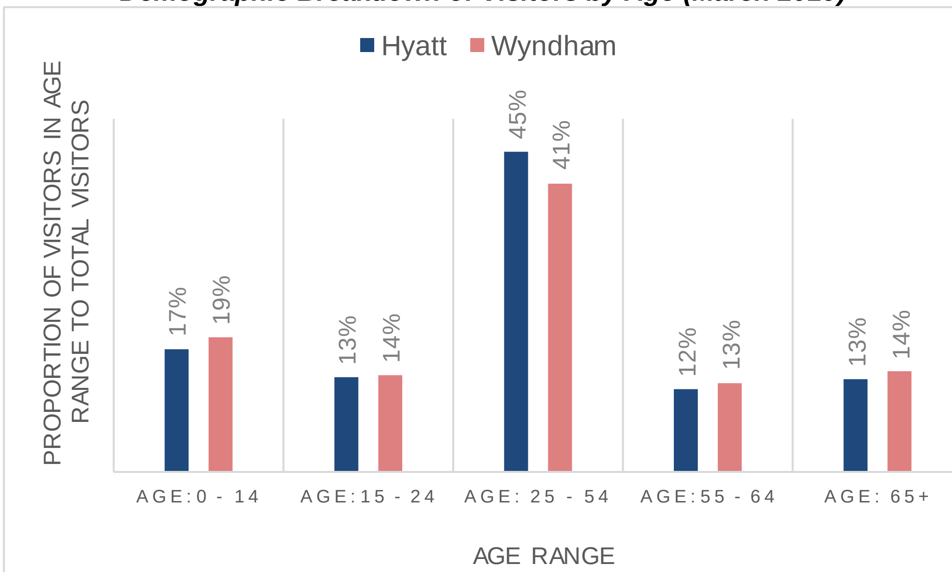
1.1. Is Business or Vacation Travel Coming Back Anytime Soon?

Examining the age distribution of visitors that frequent hotel properties may help investors measure the return of vacation traffic relative to business travel. Figure 3 suggests that Wyndham has had more

[6] AirSage data includes demographic data provided by the U.S Census Bureau.
[7] Simon Property Group agreed to acquire TCO in February 2020.
[8] The proportion if middle income visitors to total visitors is 17% and 18% for TCO and CBL respectively.
[9] We use March 2019 data for this analysis given the collapse in foot traffic in March 2020.

customers that are traveling for pleasure (compared to Hyatt), assuming that those travelling for pleasure are more likely to be those below 25 years, plus those above 65. Hyatt has more business travelers, those in the age group 25-64, compared to Wyndham, indicating that Hyatt may be more dependent on business travel for revenue compared to Wyndham.

Figure 3: Wyndham Hotels vs Hyatt Hotels
Demographic Breakdown of Visitors by Age (March 2019)



Source: AirSage, S&P Global Market Intelligence Quantamental Research. Data as at 04/15/2020.

2. Foot Traffic & REITs Property Location Data

Foot traffic data is sourced from AirSage, a leader in mobile location data for visitation insights and population movement. AirSage foot traffic data is now available through S&P Global Market Intelligence's Data Marketplace, with history available from January 2017. The data is aggregated and covers mobile device sightings at over 27,000 property locations owned by REITs in the US. AirSage uses data from the U.S. Census Bureau to provide demographic characteristics of visitors at each property location.

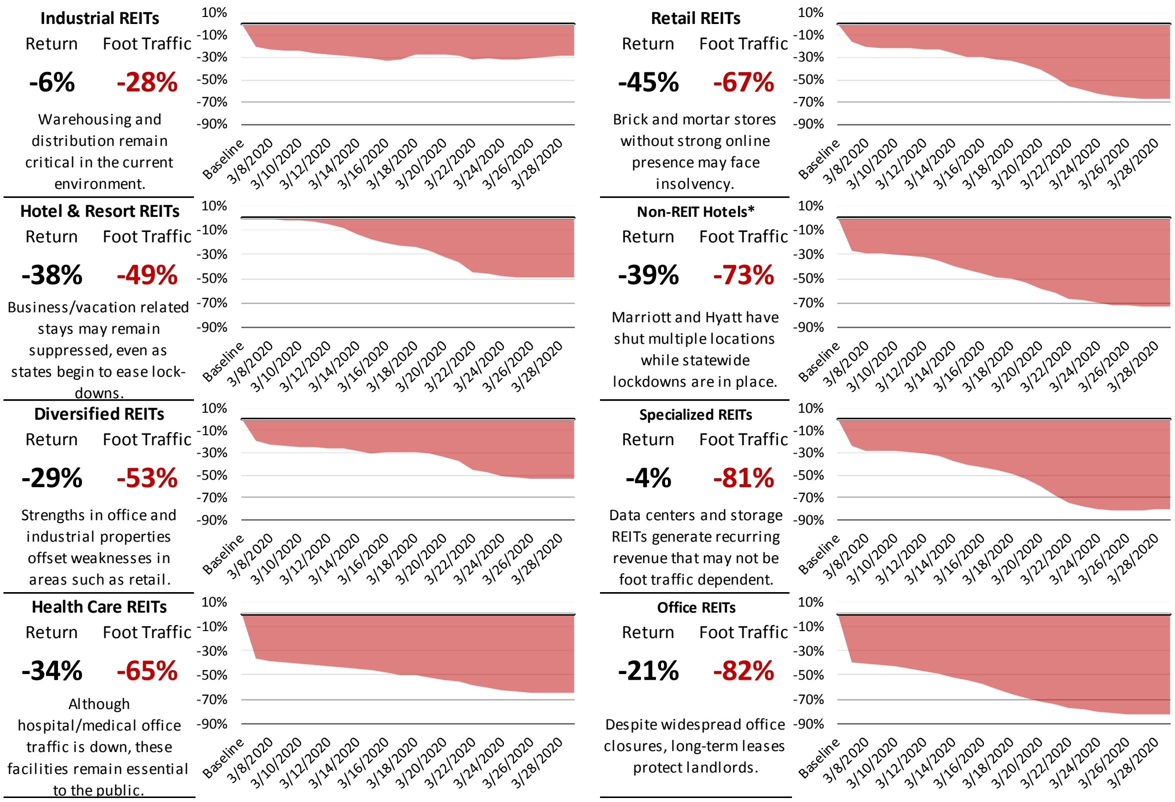
REIT property location data is from S&P Global Market Intelligence's Global Real Estate database. The database covers 110,000+ properties owned by over 1,000 companies operating in 46 countries.

3. Conclusion

Foot traffic data provides decision-makers with key insights on the level of activity at properties and the demographic profile of visitors. Corporate managers can use this information to identify properties at risk (tenant bankruptcies) or benchmark footfall activity to those of their competitors. Investors can use foot traffic data to identify REITs managing properties where activity remains robust, and those that own properties that attract visitors with favorable demographic characteristics. More importantly, foot traffic can serve as a leading indicator of a return of economic activity across industries, once the nationwide lockdown eases.

APPENDIX A: Foot Traffic Trend for Eight REIT Property Types

Russell 3000: Year-on-Year Change in Foot Traffic for Eight REIT Property Types Versus Return Performance (March 2020)



*Non-REIT Hotels are companies within GICS 25301020 sub-industry. These companies have chosen not to operate as REITs.
*** Return for each sub-industry is the market-cap weighted return of all stocks in that industry with foot-traffic data.
Source: AirSage, S&P Global Market Intelligence Quantamental Research. Data as at 04/15/2020.

25301020 Hotels, Resorts & Cruise Lines	Owners and operators of hotels, resorts and cruise-ships. Includes travel agencies, tour operators and related services not classified elsewhere . Excludes casino-hotels classified in the Casinos & Gaming Sub-Industry.
60101010 Diversified REITs	A company or Trust with significantly diversified operations across two or more property types.
60101020 Industrial REITs	Companies or Trusts engaged in the acquisition, development, ownership, leasing, management and operation of industrial properties. Includes companies operating industrial warehouses and distribution properties.
60101030 Hotel & Resort REITs	Companies or Trusts engaged in the acquisition, development, ownership, leasing, management and operation of hotel and resort properties.
60101040 Office REITs	Companies or Trusts engaged in the acquisition, development, ownership, leasing, management and operation of office properties.
60101050 Health Care REITs	Companies or Trusts engaged in the acquisition, development, ownership, leasing, management and operation of properties serving the health care industry, including hospitals, nursing homes, and assisted living properties.
60101070 Retail REITs	Companies or Trusts engaged in the acquisition, development, ownership, leasing, management and operation of shopping malls, outlet malls, neighborhood and community shopping centers.
60101080 Specialized REITs	Companies or Trusts engaged in the acquisition, development, ownership, leasing, management and operation of properties not classified elsewhere. Includes trusts that operate and invest in storage properties. It also includes REITs that do not generate a majority of their revenues and income from real estate rental and leasing operations.

Our Recent Research

April 2020: Cold Turkey - Navigating Guidance Withdrawal Using Supply Chain Data

A recent surge in corporate earnings guidance withdrawals has left decision-makers missing a wrench in their toolbox. Corporate guidance was already declining, in 2018, when the number of companies in the Russell 3000 providing guidance peaked at 1,721, dropping 6.9% year over year in 2019 to 1,632 companies. Guidance has been further impacted by the Coronavirus pandemic – 173 companies withdrew their previous guidance in the first quarter. This leaves decision-makers looking for alternative forward-looking information on a company's prospects.

Shipping data can provide a near real-time view into a firm's activities. Declines in shipping activity could indicate the rate at which a company's underlying business is slowing. Alternatively, if shipments remain largely unchanged, a company's underlying health may also be unchanged. Increased international trade activity could indicate an increase in corporate inventories and associated activity. A buildup in inventories often occurs as firms hope to turn imports into sales, or plan for an anticipated supply disruption. Firms and industries that show a decrease in international trade may suggest 1) inventory levels are over-stocked 2) demand forecasts are unfavorable, or 3) significant supply chain shifts are underway.

April 2020: Data North Star - Navigating Through Information Darkness

Crisis creates uncertainty. Familiar landmarks lose their value and decision makers are left to navigate on partial information. Following the outbreak of the COVID-19 pandemic, this is the environment in which investors and corporate decision-makers now suddenly find themselves. The S&P Global Quantamental Research team has launched a series of research briefs that will aid decision-makers in navigating this uncertain environment. Utilizing non-traditional datasets across the entire S&P Global Market Intelligence product suite, these briefs will provide market participants with analysis on COVID-19's impact to the financial markets geared to fill the current information gap.

March 2020: Long Road to Recovery: Coronavirus Lessons from Supply Chain and Financial Data

COVID-19 continues to disrupt global supply chains in unprecedented ways. Leveraging maritime shipping data from Panjiva, this report includes a review of trade and financial data to analyze the impact of the SARS-CoV-2 / COVID-19 coronavirus outbreak. Findings include:

- Second-order supply chain effects are also emerging with the apparel industry now seeing a shortage of materials globally due to earlier outages in China.
- Retailers including Costco and Target are gaining from increased sales of health- and personal care products. Yet, supply shortages are rapidly emerging in part due to medical supply export restrictions in several countries.
- There is a notable, but not statistically significant, relationship with firms with higher exposure to Asia having seen a weaker sector neutral stock price performance.

February 2020: Ship to Shore: Mapping the Global Supply Chain with Panjiva Shipping Data in Xpressfeed™

World merchandise trade accounted for an estimated $19.7 trillion in 2018, about 90% of which is by sea. While financial data tells us "how a company has done in the past," shipping data provides a closer-to-real time indicator of "what a company is doing now." Panjiva's shipping data allows investors to track trends, identify anomalies, and assess risks for companies engaged in international trade. This paper illustrates how to find investment insights in Panjiva's US seaborne and Mexican datasets using the US auto parts industry as a case study.

Findings include:

- Shipment trends often lead fundamentals: Rising shipments amid flat or declining fundamentals may signal future financial trend reversal
- Growth in the number of a company's suppliers and in the types of products it imports may signal strengthening demand and/or product line diversification.
- Tracking industry-level product-line trends can help identify companies with significant exposure to rising or declining product lines.

January 2020: Natural Language Processing – Part III: Feature Engineering Applying NLP Using Domain Knowledge to Capture Alpha from Transcripts

Unstructured data is largely underexplored in equity investing due to its higher costs. One particularly valuable unstructured data set is S&P Global Market Intelligence's machine readable earnings call transcripts.

- Topic Identification – Firms that referenced the most positive descriptors around their financials outperformed historically.
- Transparency – Firms that provided greater call transparency exhibited by executives' behaviors and decisions outperformed historically.
- Weighted Average Sentiment – Quantifying call sentiment using a weighted average construct led to better returns and less volatility historically.
- Additive Forecasting Power – The newly introduced signals demonstrated additive forecasting power above commonly used alpha and risk signals historically.

December 2019: The "Trucost" of Climate Investing: Managing Climate Risks in Equity Portfolios

Does sustainable investing come at a "cost", and is the fear of investors around the performance concessions of "green" portfolios warranted? Our latest research suggests investors' fears are misplaced – carbon-sensitive portfolios have similar returns and significantly better climate characteristics than portfolios constructed without carbon emission considerations. Other findings include:

- Highly profitable firms are likely to be leaders in reducing their carbon emission levels.
- There is no degradation in fundamental characteristics for the carbon-sensitive portfolios compared to the baseline portfolio, even though the difference in constituents can be as high as 20%.
- Carbon-sensitive portfolios were observed as having significant reductions in water use, air pollutants released and waste generated.

October 2019: #ChangePays: There Were More Male CEOs Named John than Female CEOs

This report examines the performance of firms that have made female appointments to their CEO and CFO positions. Our research finds that firms with female CEOs and/or CFOs:.

- Are more profitable and generated excess profits of $1.8 trillion over the study horizon.
- Have produced superior stock price performance, compared to the market average.
- Have a demonstrated culture of Diversity and Inclusion, evinced by more females on the company's board of directors.

June 2019: Looking Beyond Dividend Yield: Finding Value in Cash Distribution Strategies

Examines the relationship between yield-oriented strategies (dividend yield, buyback yield, and combined shareholder yield) and future stock return, across multiple countries/regions. Also provides insights into two additional topics:

- Which company fundamental characteristics support and enhance future shareholder payouts?
- Under which interest rate environment should investors favor yield-oriented strategies?

June 2019: The Dating Game: Decrypting the Signals in Earnings Report Dates

The first part of this report focuses on companies that deviate from a historical reporting pattern, while the second part examines a related topic – the market's reaction to companies that postpone a previously scheduled (announced) earnings release date.

- "Advancers" (companies that advance their earnings report date by at least 6 days) are likely to report improving year-year on sales, better earnings surprises, and more positive conference call sentiment readings than their industry group peers and "delayers" (companies that delay their earnings report date by at least 6 days).
- Advancers outperform delayers by over 7% on an annualized basis (Russell 3000). This return rises to 8.80% (Russell 2000) and falls to 2.21% (Russell 1000).
- The annualized return to stocks identified as buy candidates and tagged as advancers is 10.77%, compared to 6.29% for buy candidates tagged as delayers.
- Companies that postpone a previously announced earnings release date underperform the broad market by 2.44% in the 3 days surrounding the announcement. These companies are also likely to report deteriorating fundamentals.

May 2019: Bridges for Sale: Finding Value in Sell-Side Estimates, Recommendations, and Target Prices

February 2019: U.S Stock Selection Model Performance Review

February 2019: International Small Cap Investing: Unlocking Alpha Opportunities in an Underutilized Asset Class

January 2019: Value and Momentum: Everywhere, But Not All the Time

November 2018: Forging Stronger Links: Using Supply Chain Data in the Investing Process

September 2018: Their Sentiment Exactly: Sentiment Signal Diversity Creates Alpha Opportunity

September 2018: Natural Language Processing – Part II: Stock Selection: Alpha Unscripted: The Message within the Message in Earnings Calls

July 2018: A Case of 'Wag the Dog'? - ETFs and Stock-Level Liquidity

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January 2018: **U.S Stock Selection Model Performance Review**

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October 2015: **Global Country Allocation Strategies**

September 2015: **Equity Market Pulse – Quarterly Equity Market Insights Issue 5**

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November 2014: **Equity Market Pulse – Quarterly Equity Market Insights Issue 2**

October 2014: **Lenders Lead, Owners Follow - The Relationship between Credit Indicators and Equity Returns**

August 2014: **Equity Market Pulse – Quarterly Equity Market Insights Issue 1**

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