A Dark Winter for REITs: Trouble Brewing

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Add another item to the list of 'firsts' for 2020 - markets saw two REITs declare bankruptcy on the same day for the first time.[1] CBL Properties (CBL) and Pennsylvania Real Estate Investment Trust (PEI) filed for bankruptcy protection on Monday, November 2, 2020. An examination of those factors common to CBL and PEI reveals similar operational and fundamental characteristics. **Our analysis reveals seven REITs that share these common characteristics: 1) a high percentage of anchor tenants that have declared bankruptcy; 2) a decline in building permit activity, 3) a decline in foot traffic, 4) a high degree of leverage, 5) declining cash flow, and 6) a high proportion of tenants that have filed for bankruptcy. (Table 1)**

Table 1. REIT Risk Factors (Select REITs, October 2020)
Green (Orange) Indicates REIT's Ratio is Better (Worse) than Peers

Ticker	Change in Foot Traffic	Vacancy Rate Across Property Locations	Leverage	Change in Free Cash Flow	Permit Activity	Proportion of Total Tenants That Have Filed for Bankruptcy	Property Focus	YTD Return
PEI	-7.73%	8.27%	0.02	-1.91	-47	13.4%	Regional Mall	-90.64%
CBL	-7.40%	10.62%	0.01	-0.10	-21	11.0%	Regional Mall	-85.62%
TCO	-27.34%	10.72%	0.65	-1.17	-110	9.2%	Regional Mall	7.49%
BPYU	-17.95%	9.29%	0.05	1.01	-69	14.7%	Regional Mall	-20.03%
MAC	-13.63%	9.15%	0.19	-0.44	-36	15.3%	Regional Mall	-74.15%
SPG	-12.98%	9.70%	0.86	-0.38	-48	8.8%	Regional Mall	-57.83%
WPG	-2.35%	10.30%	0.04	-6.12	-21	9.5%	Regional Mall	-83.91%

Source: S&P Global Market Intelligence Quantamental Research. Data as of November 6, 2020.

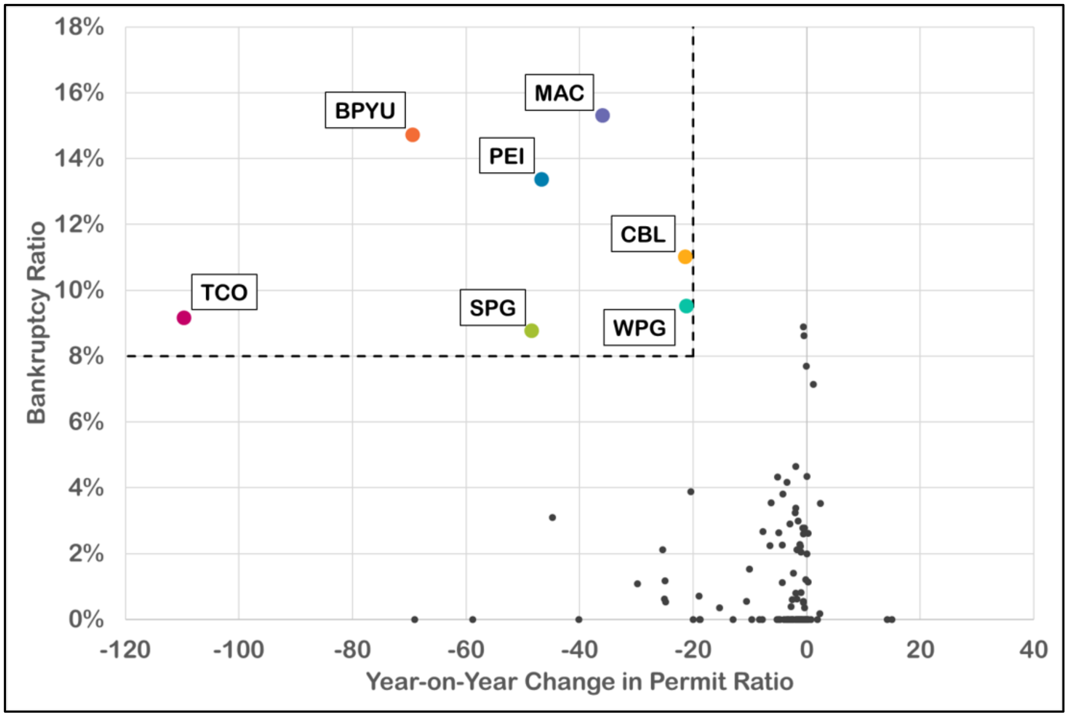
In Figure 1, we identify REITs that have both a high percentage of tenants in bankruptcy[2] and have substantially scaled back permit-requiring activity[3]. Using these criteria, we identified 7 REITs (including CBL and PEI): Macerich Co (MAC), Brookfield Property REIT (BPYU), Washington Prime Group Inc (WPG), Simon Property Group (SPG)[4], and Taubman Centers Inc (TCO). These seven REITs are located far from the cluster of data points associated with the other REITs in the universe.

The financial stress of the economic lockdown of 2020 first impacted consumers, then the retailers that those consumers patron, and then real estate owners that lease space to those retailers. More than three-dozen publicly-traded consumer discretionary companies filed for bankruptcy this year. Anchor stores in properties owned by CBL and PEI that are in bankruptcy as of November 2020 include J.C. Penney, Sears, Lord & Taylor, Forever 21, and more than a half dozen others.

[1] An analysis of REIT bankruptcies among Russell 3000 REITs, going back to January 2016, revealed only one other bankruptcy (which occurred in August 2019): RAIT Financial Trust (NYSE: RAS).
[2] Using the bankruptcy ratio defined in Appendix A with an 8% cutoff.
[3] Using the permit ratio defined in Appendix B with a 20 permits/property cutoff.
[4] We note that SPG and BPYU are currently in talks to buy the operating and retail assets of J.C. Penney to help the retailer out of Chapter 11.

When property owners are under financial stress, they delay or discontinue expansionary projects. Such behavior can be tracked by monitoring building permits, often required by local jurisdictions before executing such tasks. Both REITs in bankruptcy saw a decline in permit-requiring activity, behavior previously shown to correlate with negative contemporaneous returns.[5]

Figure 1. Bankruptcy Ratio[6] and Permit Ratio[7] (Russell 3000, October 2020)



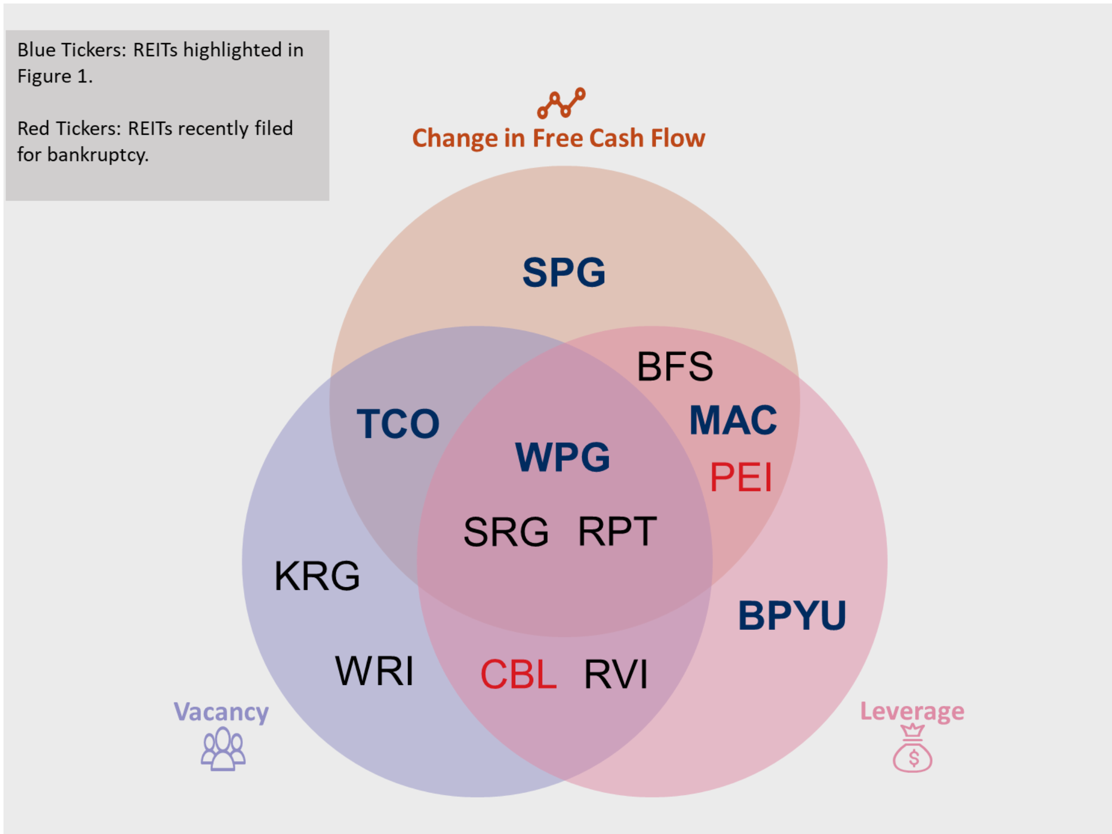
Source: S&P Global Market Intelligence Quantamental Research. Data as of November 6, 2020.

All seven REITs highlighted in Figure 1 saw a year-on-year decline in foot traffic that was worse than their peers in October 2020 (Table 1). An extended deterioration in footfall at property locations should translate to lower sales and reduced cash flows for a given REIT. Combined with fundamental data, foot traffic can help identify REITs in poor financial health.

All seven REITs in Figure 1 have unfavorable exposures to one or more of the three fundamental metrics we selected to assess the financial health of REITs (Figure 2). WPG is the only one out of the seven REITs with an unfavorable exposure to all three fundamental risk metrics. All seven REITs manage regional malls, a business that was already under stress prior to COVID-19 (as more consumers shifted to online shopping). This may make it more challenging, going forward, for these REITs to repair balance sheets impaired by the pandemic.

[5] Rana, A., Sandberg, D.J., 2020. "Just the (Build)Fax: Property Intelligence from Building Permit Data." S&P Global Research Brief.
[6] See Appendix A.
[7] See Appendix B.

Figure 2: Retail REITs with the Largest Decline in Foot Traffic, Highest Leverage, Biggest Decline in Cash Flow and Unfavorable Vacancy Demographics – Russell 3000 (October 2020)



Source: AirSage, S&P Global Market Intelligence Quantamental Research. Data as of November 6, 2020.

Data

Foot Traffic 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.

Building Permit Data

Building permit data is sourced from BuildFax,[8] a leading provider of property condition and building permit data for financial institutions and is available through S&P Global Market Intelligence's Data Marketplace. The BuildFax database aggregates and standardizes content delivered by more than 2,700 permit-granting jurisdictions covering 98% of US towns and

[8] BuildFax is a Verisk business.

cities with a population more than 50,000. The dataset contains 84 billion data points covering 100+ million structures.

Property Data

The S&P Global SNL REIT property dataset covers 110,000+ properties owned by over 1,000 companies operating in 46 countries. This SNL industry-specific content includes tenant lease information, occupancy rates, and demographic information.

Financials

S&P Global Market Intelligence's Capital IQ Premium Financials and Compustat North America packages were the sources of fundamental data for this study. Bankruptcy data was sourced from S&P Global's Key Developments, Future Events & Events dataset. All datasets are point-in-time databases, eliminating any look-ahead bias in our backtests. Over 2,500 key developments, categorized into 100 key development types, are collected daily.

APPENDIX A: Bankruptcy Score

The Bankruptcy Ratio for each REIT was calculated as follows:

$$Bankruptcy\ Ratio_{it} = \frac{\sum_{jk} O_{ijt} T_{jkt} Bankruptcy_{ijkt}}{\sum_{jk} O_{ijt} T_{jkt}} \qquad \text{Eqn. 1}$$

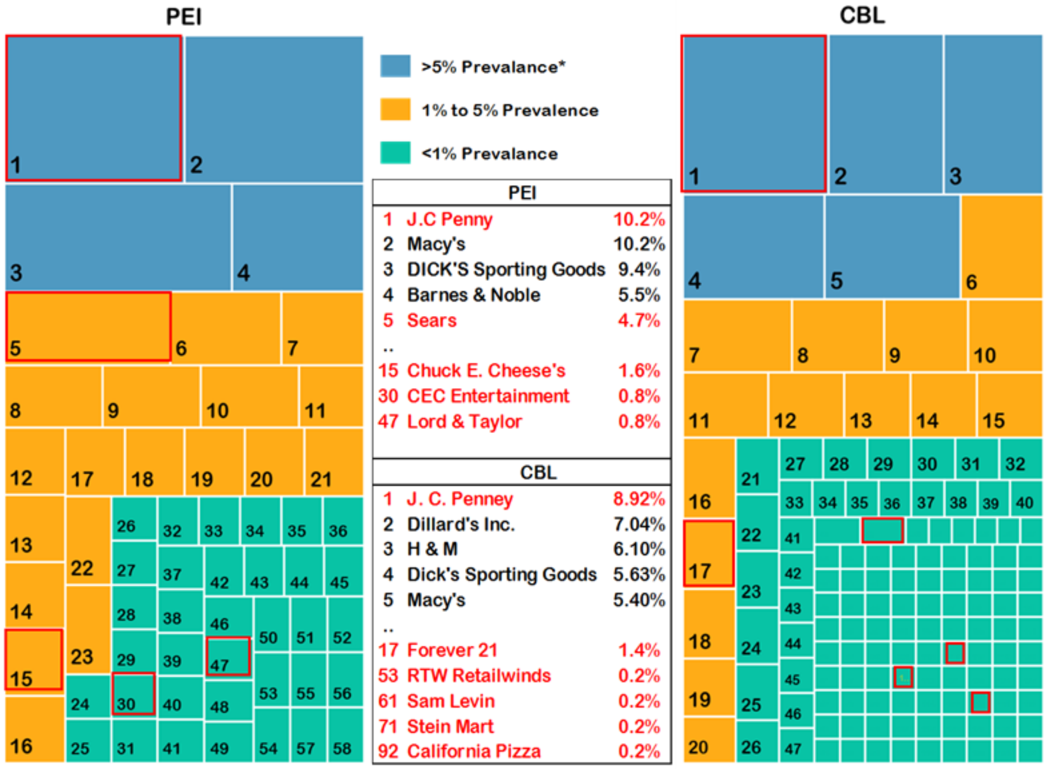
The SNL REIT database includes anchor tenants for each property. The Key Developments database was used to identify and flag any of the anchor tenants that have declared bankruptcy from Jan 1– Nov 6th, 2020. The following Xpressfeed sample code for CBL generates a table with the REIT InstitutionId, anchor tenant InsitutionIds and their respective counts across all properties owned by the REIT:

```
select P.institutionId as 'REIT InstitutionID', t.institutionId as 'tenant
InstitutionID', MAX(t.tenantName), Count(*)
from snlPropOwnership P
join snlPropTenants T on T.propertyId=P.propertyId
where P.institutionId=' 103092' – InstitutionId for CBL
and currentOwner=1
and currentTenant=1
group by P.institutionId, t.institutionId
order by Count(*) desc
```

The following Xpressfeed sample code generates a table of Bankruptcy announcement events from the Key Development package and meta data:

```
select headline, -- Event description text
       cast(announcedDate as date), -- Announcement date
       co.companyid, -- CapitalIQ company identifier
       co.companyName, -- Company Name
       ccr.identifierValue -- SNL Primary Identifier
-- ciqKeyDev* tables are from S&P Events package
from ciqKeyDevToObjectToEventType kdo
join ciqKeyDev kd on kd.keyDevId = kdo.keyDevId
join ciqKeyDevEventType kde on kde.keyDevEventTypeId = kdo.keyDevEventTypeId
--join to ciqCompany to grab company name
join ciqCompany co on co.companyId = kdo.objectId
join ciqCompanyCrossRef ccr on ccr.companyID = co.companyID
-- Key Dev event id for Bankruptcy/Liquidation = 153
where kdo.keyDevEventTypeId=153
-- Bankruptcy/Liquidation announced from 01/01/2020 up to current date
and announcedDate > '01/01/2020'
-- Return SNL InstitutionID
and identifierTypeId= 9458
```

Anchor Tenants and Bankruptcies (January – November 6, 2020)



*All percentages refer to the relative 'prevalence' of an anchor tenant, which is defined as the number of locations for that anchor tenant divided by the total number of anchor tenants across all properties.

**Tenants listed in red have declared bankruptcy between January 1, 2020 and November 6, 2020.

Source: S&P Global Market Intelligence Quantamental Research. Data as of November 6, 2020.

APPENDIX B: Building Permit Ratio

The Change in Building Permit Ratio used in the discussion and Figure 1 was calculated using

$$Building\ Permit\ Ratio_t^i = \frac{\sum_j \{ O_{ij} (\#Permits_t^j - \#Permits_{t-12}^j) \}}{\sum_j \{ O_{ij} \}} \qquad \text{Eqn. 2}$$

where index i spans over our universe[1] of REITs; index j spans over the properties in the SNL database; index t spans the months from Jan 2016 to Oct 2020; $Permit\ Ratio_t^i$ is the value of REIT i's activity at month t; O_{ij} is a binary flag equal to 1 when property j in owned by REIT i, else 0; and $\#Permits_t^j$ is the total number of permits filed in the trailing 6 months on property j. **Note that the permit ratio we defined is evaluating a REIT's permit activity relative to its own activity in the previous year, as well as relative to the size of its portfolio (the term in the denominator, $\sum_j \{ O_{ij} \}$, is a count of properties in the focal REIT's portfolio).**

[1] The universe for this analysis was the set of REITs in the SNL database that have had Russell 3000 index membership at some time from Jan 2016 to Oct 2020.

APPENDIX C: Screen Construction

The screen for Figure 2 was constructed using the following steps:

1. Calculate the change in average daily foot traffic in October 2020 to average daily foot traffic in 2019 as a benchmark, for each property owned by a REIT. Aggregate this value across all locations of a REIT using an equal-weight approach.
2. Using the results from step 1, divide the universe into two equal parts. Keep the half with REITs that had the largest decline in foot traffic.
3. Determine values for risk measures:

   i) **Vacancy**: Assign a Metropolitan Statistical Area (MSA)[1] code to each property location and the associated vacancy rate for that MSA. Calculate the aggregate vacancy rate for each REIT by taking the average across all its properties. The vacancy metric (light purple circle) in Figure 2 shows the 50% of REITs in the universe with the highest vacancy rates.

   ii) **Leverage**: Leverage is calculated as market capitalization divided by the sum of total debt and preferred equity. The leverage metric (light red circle) in Figure 2 shows the 50% of REITs with the worst leverage values.

   iii) **Change in Free Cash Flow**: Change in free cash flow metric is calculated as the percent year over year change in trailing four quarter free cash flow per share. The change in free cash flow metric (light orange circle) in Figure 2 shows the 50% of REITs with the biggest decline in free cash flow values.

APPENDIX D: Company Names, Tickers, and GICS Sub-Industry

Company Name	Ticker	GICS Sub-Industry
Brookfield Property REIT Inc.	BPYU	Retail REITs
CBL Properties	CBL	Retail REITs
Kite Realty Group Trust	KRG	Retail REITs
Pennsylvania Real Estate Investment Trust	PEI	Retail REITs
Retail Value Inc.	RVI	Retail REITs
RPT Realty	RPT	Retail REITs
Saul Centers, Inc.	BFS	Retail REITs
Seritage Growth Properties	SRG	Retail REITs
Simon Property Group, Inc.	SPG	Retail REITs
Taubman Centers, Inc.	TCO	Retail REITs
The Macerich Company	MAC	Retail REITs
Washington Prime Group Inc.	WPG	Retail REITs
Weingarten Realty Investors	WRI	Retail REITs

Source: S&P Quantamental Research. Data as at Nov 6th, 2020.

Our Recent Research

October 2020: Sweet Spots in the C-Suite: Executive Best Practices for Shareholder Friendly Firms

The Business Roundtable, an association of CEOs of America's leading companies, published a new statement on corporate responsibility in August 2019. The statement identifies five important corporate stakeholders: customers, employees, suppliers, communities and shareholders.1 This report highlights four key types of executive policy that drive value creation for stakeholders: profitability vs. growth decisions, mergers & acquisitions policy, return of cash to shareholders, and insider stock ownership. In it, we demonstrate empirically those practices that increase corporate value over time, thereby rewarding shareholders, employees, and other stakeholders. These practices also form a scorecard by which stakeholders can evaluate whether or not management is undertaking actions likely to increase corporate prosperity.

October 2020: Just the (Build)Fax: Property Intelligence from Building Permit Data

Investors have struggled to price the uncertainties facing commercial Real Estate owners as tenants' businesses continue to be impacted by the economic lockdown following the COVID19 global pandemic. Building permit1 data has provided valuable transparency for investors of Real Estate Investment Trusts (REITs) during this time. Publicly-traded REITs that have continued permit-requiring activities have outperformed their peers during and following the economic lockdown. A one standard deviation increase in a derived permit ratio, compared to the industry2 average, is associated with 427 bps of excess return over the same period.

August 2020: The Analyst Matrix: Profiting from Sell-Side Analysts' Coverage Networks

Sell-side analyst coverage data provides a new and rich source of establishing connections between firms, as analysts (given their industry expertise) are likely to cover fundamentally related firms. This report uses sell-side analysts' coverage data to build a connected-firm network (CFN) - a portfolio of companies that are covered by analyst(s) that follow a focal firm. This network has three broad applications: measuring the "strength" of economic relationships between companies; forecasting fundamentals of companies in the network; and as a stock selection signal.

June 2020: The Information Supply Chain Begins Recovering From COVID

The COVID-19 shockwaves emanating through the global supply chain continue to reverberate. The information that decision makers have traditionally relied have also been disrupted but is slowly showing signs of normalizing. S&P Global Market Intelligence processes 64,000 financial documents each day, placing it in a central position in the information supply chain with a unique view into the specific areas and magnitude of information disruption.

May 2020: Never Waste a Crisis: Following the Smart Money Through Beneficial Ownership Filings

Investors looking for ideas amid the recent market downturn may profit from reviewing beneficial ownership filings: SEC schedules 13D and 13G. These purchases often represent high conviction buys by activists, industry insiders, hedge funds, etc. Our previous investor activism research shows that investors can benefit by following activists' lead: a portfolio of stocks that activists had targeted outperformed the market by over 8% annually.

This report examines recent 13D and 13G filings, and spotlights four purchases of target companies with high historical operating cash flows and below average dividend payments, characteristics of companies typically targeted by activists.

May 2020: Risky Business: Foot Traffic, Vacancy Rates and Credit Risks

The COVID-19 pandemic has led to widespread closures of retail stores, offices and hotels. Foot traffic data can be combined with traditional financial ratios to provide a more holistic view of business health for both credit and equity investors. This report extends our prior analysis of foot-traffic data by setting foot traffic figures in the context of a screen for identifying where risks may be highest.

The analysis in this report can help: i) Creditors identify customers that require additional credit facilities to support growth, or companies where existing credit lines need to be reassessed given bleak prospects; and ii) Equity investors identify companies where revenues may be accelerating or firms that may have difficulty meeting financial obligations.

May 2020: Finding the Healthy Stocks in Health Care During Lockdown

Elective and non-essential medical procedures are on an indefinite hold in many places. Simultaneously, essential medical services are in high demand, and likely to remain in demand for the near future. This dynamic creates winners and losers among Health Care device manufacturers and distributors. Investors can identify potential opportunities in the Health Care Equipment and Services subsector by analyzing 510(k) premarket notifications, which are filings required by the U.S. Food and Drug Administration (FDA) for any company seeking to market a medical device in the United States.

May 2020: No More Walks in the (Office) Park: Tying Foot Traffic Data to REITs

Foot traffic data provides investors and corporate managers with key insights on the level of activity at properties and the demographic profile of visitors to these locations. Corporate managers can use this information to pinpoint properties at greater risk of tenant defaults, while investors can use foot traffic data to identify REITs managing properties where activity remains robust. More importantly, once the nationwide lockdown eases, foot traffic can serve as a leading indicator of a return of economic activity across industries.

May 2020: **Do Markets Yearn for the Dog Days of Summer: COVID, Climate and Consternation**

Stakeholders are turning to untraditional data sources to quantify the impact of the COVID-19 shutdown. While no single variable can forecast which locations will be most susceptible to the virus, mounting scientific literature suggests that there is a correlation between temperature and viral propagation. If correct, regions in the temperature 'target zone' may need to implement more stringent lockdown policies for a longer period to achieve comparable mitigation.

Investors can combine weather data with property data, to expose one dimension of risk for Real Estate Investment Trusts (REITs) of prolonged closures, as well as areas that may see a resurgence of the virus later this year.

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.

April 2020: **Data North Star - Navigating Through Infomation 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

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

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

June 2018: The (Gross Profitability) Trend is Your Friend

May 2018: Buying the Dip: Did Your Portfolio Holding Go on Sale?

March 2018: In the Money: What Really Motivates Executive Performance?

February 2018: The Art of the (no) Deal: Identifying the Drivers of Canceled M&A Deals

January 2018: U.S Stock Selection Model Performance Review

September 2017: Natural Language Processing - Part I: Primer

July 2017: Natural Language Processing Literature Survey

June 2017: Research Brief: Four Important Things to Know About Banks in a Rising Rate Environment

April 2017: Banking on Alpha: Uncovering Investing Signals Using SNL Bank Data

March 2017: Capital Market Implications of Spinoffs

January 2017: U.S. Stock Selection Model Performance Review 2016

November 2016: Electrify Stock Returns in U.S. Utilities

October 2016: A League of their Own: Batting for Returns in the REIT Industry - Part 2

September 2016: A League of their Own: Batting for Returns in the REIT Industry - Part 1

August 2016: Mergers & Acquisitions: The Good, the Bad and the Ugly (and how to tell them apart)

July 2016: Preparing for a Slide in Oil Prices -- History May Be Your Guide

June 2016: Social Media and Stock Returns: Is There Value in Cyberspace?

April 2016: An IQ Test for the "Smart Money" – Is the Reputation of Institutional Investors Warranted?

March 2016: Stock-Level Liquidity – Alpha or Risk? - Stocks with Rising Liquidity Outperform Globally

February 2016: U.S. Stock Selection Model Performance Review - The most effective investment strategies in 2015

January 2016: What Does Earnings Guidance Tell Us? – Listen When Management Announces Good News

November 2015: Late to File - The Costs of Delayed 10-Q and 10-K Company Filings

October 2015: Global Country Allocation Strategies

September 2015: Research Brief: Building Smart Beta Portfolios

September 2015: Research Brief – Airline Industry Factors

August 2015: Point-In-Time vs. Lagged Fundamentals – This time i(t')s different?

August 2015: Introducing S&P Capital IQ Stock Selection Model for the Japanese Market

July 2015: Research Brief – Liquidity Fragility

May 2015: [Investing in a World with Increasing Investor Activism]

April 2015: [Drilling for Alpha in the Oil and Gas Industry – Insights from Industry Specific Data & Company Financials]

February 2015: [U.S. Stock Selection Model Performance Review - The most effective investment strategies in 2014]

January 2015: [Research Brief: Global Pension Plans - Are Fully Funded Plans a Relic of the Past?]

January 2015: [Profitability: Growth-Like Strategy, Value-Like Returns - Profiting from Companies with Large Economic Moats]

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

July 2014: [Factor Insight: Reducing the Downside of a Trend Following Strategy]

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February 2014: [U.S Stock Selection Model Performance Review]

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June 2013: [Behind the Asset Growth Anomaly – Over-promising but Under-delivering]

April 2013: [Complicated Firms Made Easy - Using Industry Pure-Plays to Forecast Conglomerate Returns].

March 2013: Risk Models That Work When You Need Them - Short Term Risk Model Enhancements

March 2013: Follow the Smart Money - Riding the Coattails of Activist Investors

February 2013: Stock Selection Model Performance Review: Assessing the Drivers of Performance in 2012

January 2013: Research Brief: Exploiting the January Effect Examining Variations in Trend Following Strategies

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November 2012: 11 Industries, 70 Alpha Signals -The Value of Industry-Specific Metrics

October 2012: Introducing S&P Capital IQ's Fundamental Canada Equity Risk Models

September 2012: Factor Insight: Earnings Announcement Return – Is A Return Based Surprise Superior to an Earnings Based Surprise?

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June 2012: Riding Industry Momentum – Enhancing the Residual Reversal Factor

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January 2012: Intelligent Estimates – A Superior Model of Earnings Surprise

December 2011: Factor Insight – Residual Reversal

November 2011: Research Brief: Return Correlation and Dispersion – All or Nothing

October 2011: The Banking Industry

September 2011: Methods in Dynamic Weighting

September 2011: Research Brief: Return Correlation and Dispersion

July 2011: Research Brief - A Topical Digest of Investment Strategy Insights

June 2011: A Retail Industry Strategy: Does Industry Specific Data tell a different story?

May 2011: Introducing S&P Capital IQ's Global Fundamental Equity Risk Models

May 2011: Topical Papers That Caught Our Interest

April 2011: Can Dividend Policy Changes Yield Alpha?

April 2011: CQA Spring 2011 Conference Notes

March 2011: How Much Alpha is in Preliminary Data?

February 2011: Industry Insights – Biotechnology: FDA Approval Catalyst Strategy

January 2011: US Stock Selection Models Introduction

January 2011: Variations on Minimum Variance

January 2011: Interesting and Influential Papers We Read in 2010

November 2010: Is your Bank Under Stress? Introducing our Dynamic Bank Model

October 2010: Getting the Most from Point-in-Time Data

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