

## Forging Stronger Links:

### Using Supply Chain Data in the Investing Process

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Supply chain data can greatly enrich the investment process. This report leverages the Panjiva content set, focused on global maritime shipping, to draw out seven major investment use cases. Working examples are provided from previously published research, including links to underlying reports, for each instance.

- **Lower latency, higher frequency and finer granularity vs. financial data:** Insights into corporate activity can be enhanced with Panjiva's Supply chain data which can be updated as often as on a daily basis - well ahead of, and at a higher frequency than - financial reports at a high level of product granularity. Examples include the underperformance vs. consensus earnings by UPS and LG Electronics in Q3 2018 as well as the near-term impact of solar panel duties.
- **Detection of anomalous activity:** Spikes in imports can indicate inventory build, new products introductions, attempts to boost market share or even capital markets events. Honda's accelerated imports ahead of new tariffs, Sony's launch of the "PlayStation Classic", Target's aim to replace Toys'R'Us and PepsiCo's bid for Sodastream are all examples of this use case.
- **Risk event impact assessment:** Panjiva's supply chain graph includes geographical references for corporate entities, allowing the rapid assessment of the impact of natural disasters and geopolitical actions such as border closures.
- **Automated channel checks:** The activity of a company's suppliers, and customers, can be detected through their trade data, allowing "nth-tier" supplier analysis as well as indicating instances of "channel-stuffing" or over and under-stocking. The automotive sector is particularly well suited, shown by examinations of Kia's Mexican supply chain or BMW's potential to pass through tariffs. Other examples include the impact of duties on Chinese exports and the hot toys for the forthcoming holidays.
- **Industry deep dives:** Supply chain data can provide alternative insights into key fundamentals such as the generic pharmaceutical industry's volumes, product launches, upstream costs and country-to-country relations outside the U.S. The corporate behaviors of Aurobindo, Lek, Teva and Zhejiang Pharma have all been covered.
- **Capital markets activities:** Financial data can be lacking during M&A events and capital raises - supply chain data also provides insights into privately owned companies. Examples include FMC's spin-out of its lithium mining operations, Fiat-Chrysler's sale of Magneti-Marelli and CMA-CGM's stake-building in Ceva Logistics.
- **Thematic trading candidate identification:** Tying together rich geographic and product data helps identify companies exposed to a particular theme, including via supplier / buyer relations. The impact of trade tariffs is a fertile ground for analysis, including the impact on capital goods companies and the impact on the economy of the Pacific northwest.

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## 1 Lower latency, higher frequency and finer granularity vs. financial data

Traditional financial data provides only limited frequency (typically quarterly), high latency (typically three to eight weeks after quarter end) and low granularity (company-defined divisions). Supply chain data, based on international shipment records, can provide an edge in all three areas. Panjiva’s U.S. seaborne import data-set, for example, is updated on a weekly basis within days and can describe individual products on the basis of a standardized product ontology (HS-codes). The examples of previously published reports that follow look at how to “get ahead of the curve” with: trade volumes as a guide to quarterly revenues for UPS; the timing of imports to help predict corporate activity and test guidance assumptions for LG Electronics and; high frequency on solar panels to gauge the impact of tariffs.

### 1.1 UPS Margins Head Down on Fuel, China Tariff Risks the Next Headwind

UPS reported third quarter revenue growth of 9.2%, helped by a 16.6% rise in forwarding revenues and 11.4% in supply chain freight handling. Yet, “unforeseen currency and fuel headwinds” meant that profitability was lower than expected. UPS’ EBITDA margin of 13.5% was below the 14.3% expected by analysts and was also the lowest since at least 2013. The impact of rising fuel costs can be seen in the 5.7% rise in bunker fuel prices in the third quarter sequentially as well as the 7.5% rise in container rates charged by the shipping lines. International volume growth may be increasingly challenged in the fourth quarter by the bilateral duties on \$360 billion of trade between the U.S. and China. UPS’s total U.S.-inbound, seaborne freight handling fell 9.5% in the third quarter year over year and will face significant challenges in the fourth quarter given 60.9% of those volumes came from China.

UPS’ U.S. VOLUMES IN DECLINE

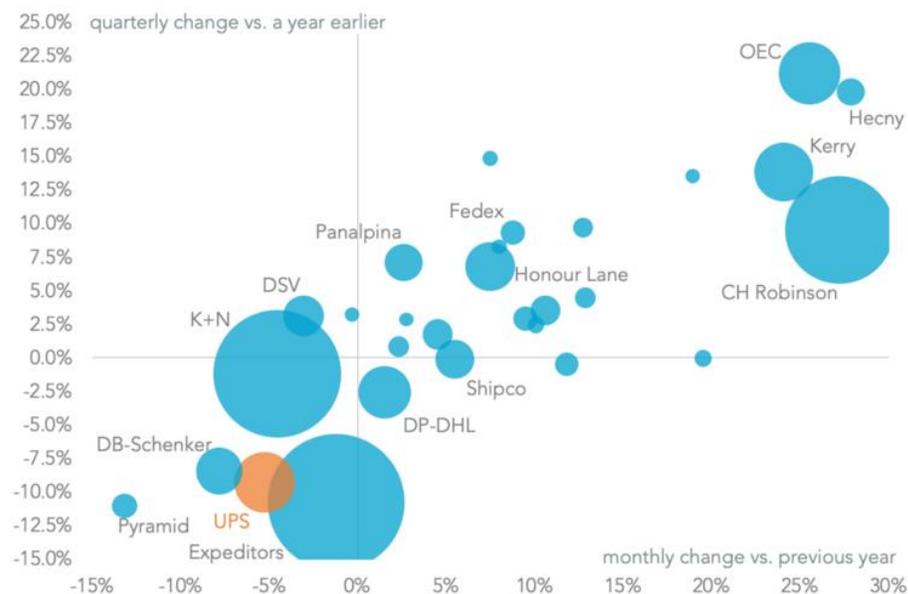


Chart segments U.S. seaborne shipments in the period to Sept. 30 2018 by NVOCC SCAC. Bubble size indicates volumes handled in the past three months.

Source: Panjiva

(Panjiva Research – Logistics, Oct. 24 2018)

**1.2 LG Electronics Blames Protectionism, Imports Could Cool Further**

LG Electronics reported third quarter revenues that rose by just 1.8% on a year earlier and operating profits that were 7.2% below analysts' expectations according to S&P Global Market Intelligence data. That was partly due to ongoing risks from "rising U.S. protectionism" including washing machine tariffs applied earlier in the year, though a widening range of duties on Chinese exports will have an increasing impact in the coming quarters. LG Electronics' U.S. imports in the three months to August 31 (which provided inventories for 3Q sales) fell by 15.5% on a year earlier, while an upturn in 4Q looks unlikely given September volumes rose by just 1.2%. So far only refrigerators (of which 69.3% of LG's imports came from China in the past four quarters) are targeted for tariffs though an extension to microwaves (55.0%) and televisions (80.0%) in later tariffs rounds would also prove damaging.

CHINA ACCOUNTS FOR ONE-IN-THREE OF LG'S U.S. IMPORTS

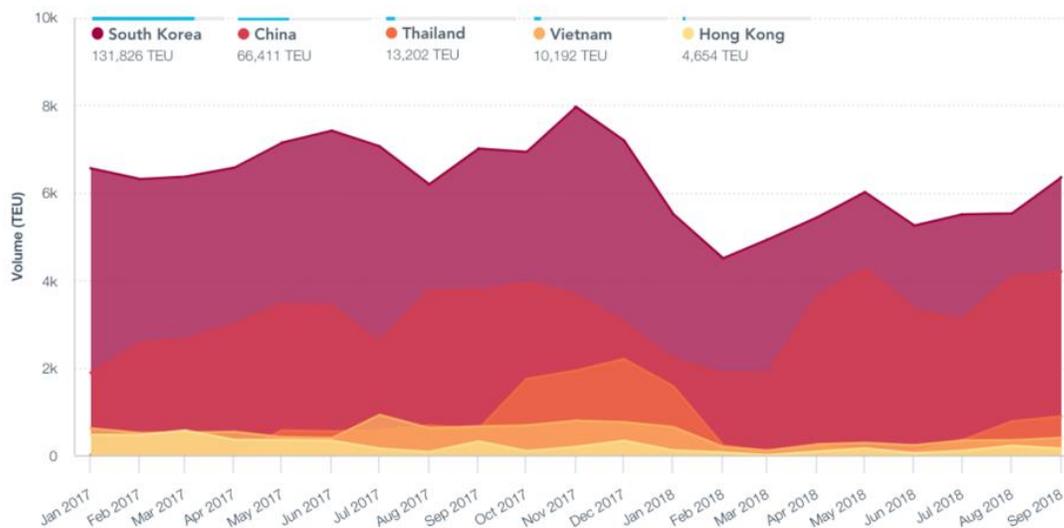


Chart segments U.S. seaborne imports by LG Electronics and FNS by country of origin.  
Source: Panjiva

(Panjiva Research – Industries, Oct. 25 2018)

### 1.3 Dark Past, Brighter Outlook for Solar Industry as Tariffs Become the New Normal

The Trump administration’s import duties on solar panels have become an established fact of life for the renewable energy industry though the impact on renewable energy equipment producers is still rapidly evolving. While installations in 2Q fell 9% on a year earlier a record level of new projects have been booked by utilities to take advantage of tax credits that lapse in 2020. Imports in the six months to end August fell by one third on a year earlier and by 54% vs. 2015 – down but hardly out. The period of “country hopping” that precipitated the section 201 review and 30% duties appears to have stabilized, providing more certainty for the cost bases of the major shippers. Imports in the past six months have been led by shipments from Malaysia (one third of the total, led by Longi) and Vietnam (11% including Boviet and Vina).

#### BIG FIVE, LONG TAIL OF SOLAR PANEL SUPPLIERS

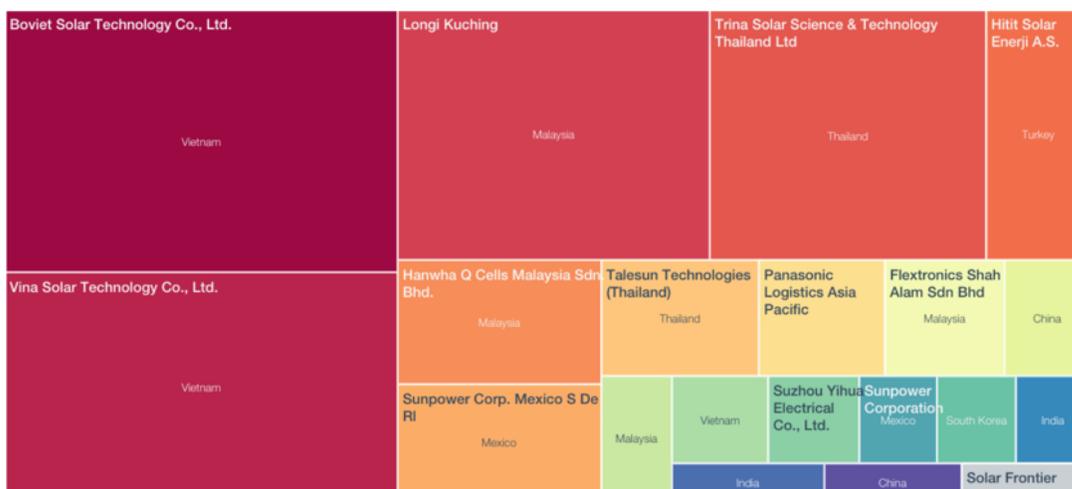


Chart segments U.S. seaborne imports of solar cells and panels by shipper and origin in the past six months, denominated in TEUs.

Source: [Panjiva](#)

(Panjiva Research – Industries, Sept. 14 2018)

## 2 Detection of anomalous activity

Supply-chain data, when combined with other alternative data-sources, can provide powerful signals of corporate behavior that is out-of-norm either with historical averages, prior seasonality or peer group performance.

Spikes in imports – outlined in the section 2.1 - can be indicative of a variety of behaviors ranging from stockpiling to emerging financial challenges. In the second example Sony's imports (section 2.2) may have peaked earlier than normal either in response to a new product (retro PlayStation) or concerns about the imposition of tariffs.

The third report shows changes in supply chain behavior at Target (section 2.3) as it seeks to gain market share left in the toy industry by Toys'R'Us' bankruptcy. In the final example an examination of Sodastream's behavior (section 2.4) ahead of its acquisition by Pepsico indicated both a supplier anomaly (shortage of CO2) and accelerated shipments just ahead of the deal's announcement.

### 2.1 Honda Revs Up Exports, May Reverse as U.S. Regulatory Risk Dissipates

The big seven Japanese automakers saw a 5% rise in exports on a year earlier in August despite a small reduction in domestic production. That may have reversed in September given disruptions from Typhoon Jebi early in the month. There was a marked divergence with Honda's exports up 3.5x while Nissan's slowed by 25%. The automakers have one less medium threat to face after the Japanese and U.S. governments started free trade agreement talks which could include an exemption from America's section 232 review of the industry. Some of the automakers may have been stockpiling ahead of such duties with a spike in U.S. inbound shipments of 20% on a year earlier in August led by a 26% rise in shipments by Honda.

HONDA LEADS, NISSAN MAKES A COMEBACK

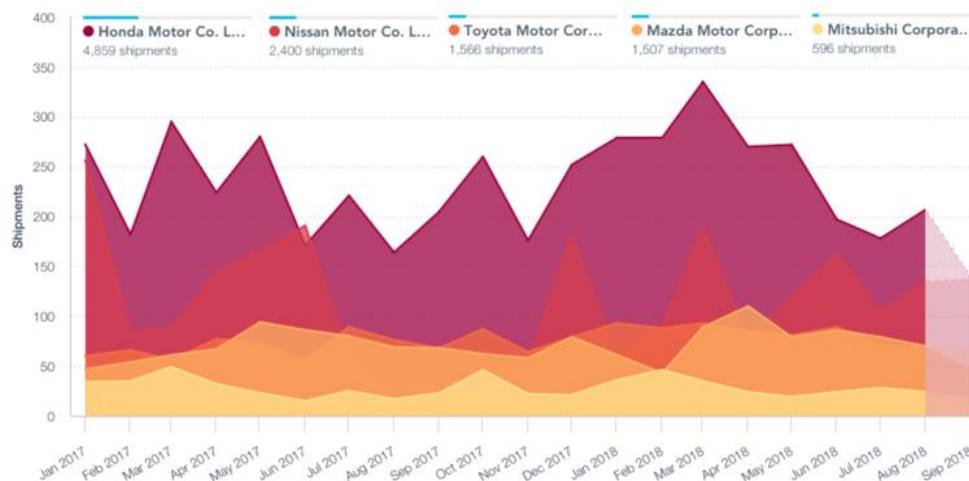


Chart segment U.S. seaborne imports of passenger vehicles (HS 8703) by shipper.

Source: Panjiva

(Panjiva Research – Industries, Sept. 28 2018)

## 2.2 Sony Banks on Retro Gaming Boost as Early Imports Indicate Higher Score in 2018

Sony plans to release a “PlayStation Classic” retro console in time for the holiday gift buying season, following Nintendo’s strategy from 2016. That may help maintain interest in the brand in an “off-year” for its main console line. While imports of videogames normally peak in October the early signs are that retailers expect a strong selling season – imports in the three months to August 31 were 29% higher than a year earlier. So far, the sector has been immune to the U.S.-China trade war, though that could soon change given China accounts for 96% of U.S. imports of videogame consoles. While Nintendo led the charge last year with its new Switch console, imports of Sony PlayStation-related products have grown the fastest with a 2.3x increase in the past three months on a year earlier.

### GAME ALREADY OVER FOR NINTENDO?

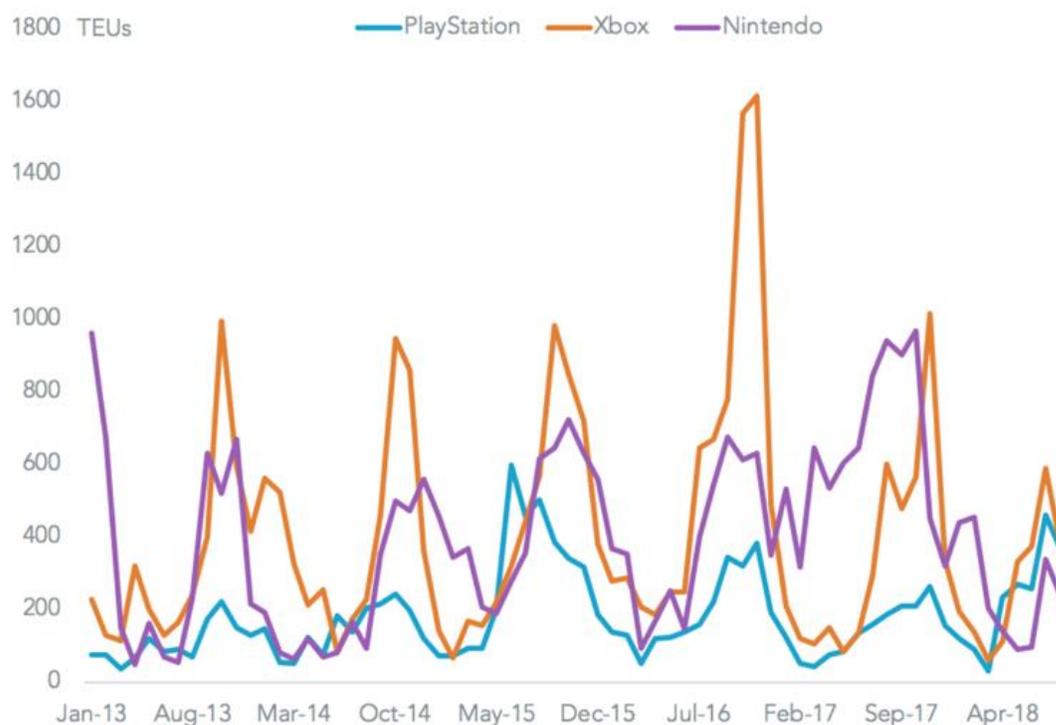


Chart segments U.S. seaborne imports of all products by videogame brand for Sony’s Playstation, Microsoft’s Xbox and Nintendo.

Source: Panjiva

(Panjiva Research – Industries, Sept. 20 2018)

### 2.3 Toy Supply Chains More About Who'R'Next Than Grabbing Growth

The U.S. toy industry is showing signs of life as retailers look to take advantage of the absence of Toys'R'Us – for example Target has significantly restructured its stores and increased its lines offered by 1.8x. Toy imports broadly increased 2% on a year earlier in September with Target's imports having risen by 18%. Manufacturers may also be increasing their own shipping to reduce reliance on a single retailer with Hasbro's seaborne imports up 33% on a year earlier in September. It may be too soon to expect a renaissance in the industry, given imports in the prior three months were down 2% and growth in the prior two years was just 1%.

TARGET AND HASBRO LOOK TO TAKE UP TOYS'R'US SLACK

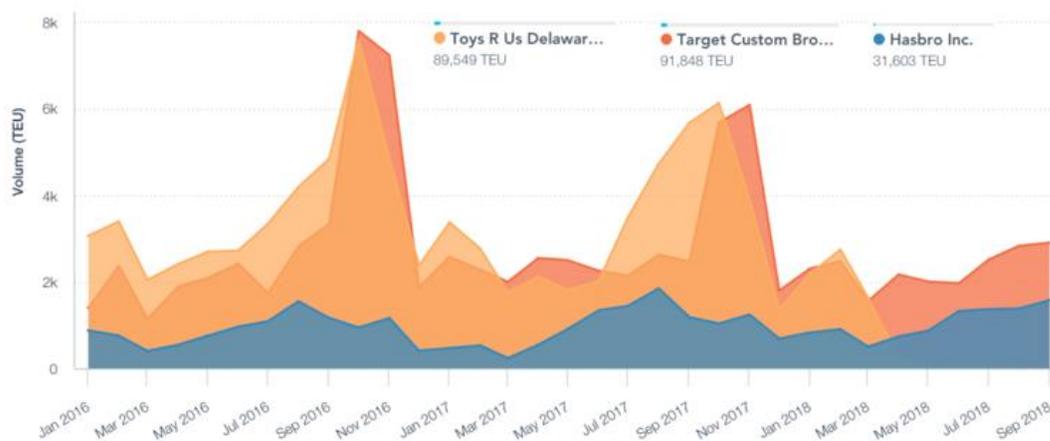


Chart segments U.S. seaborne imports of toys by consignee.

Source: Panjiva

(Panjiva Research – Industries, Oct. 19 2018)

### 2.4 Sodastream Got Busy, Looking a Little Less Fizzy as PepsiCo Arrives

PepsiCo's \$3.2 billion acquisition of Sodastream helps diversify sales while also taking advantage of Sodastream's rapid growth, which saw revenues climbed 31% in 2Q after 25% in 1Q. Sodastream's businesses are highly seasonal with U.S. seaborne imports normally peaking in July and August. This year has been different though with a 90% rise in the three months to May 31 before a 31% drop in the past two months. That likely reflects a shortfall of carbon dioxide for its canister systems which fell 29% in June / July. Importantly shipments of its syphon machines climbed 6x in the past two months, which may help future sales of syrups and gases.

SYPHONING OFF LESS GAS BECAUSE OF EUROPE?

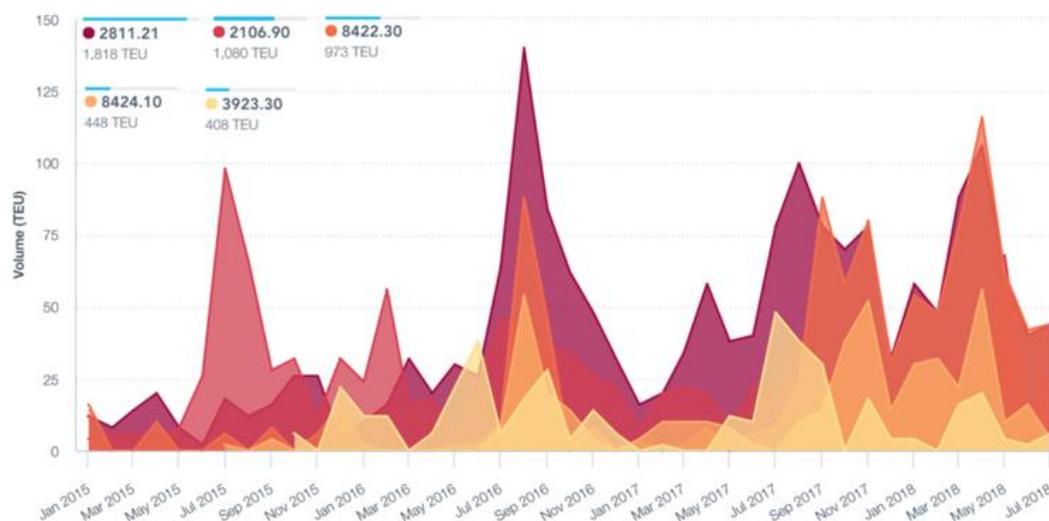


Chart segments U.S. seaborne imports associated with Sodastream by product (HS-4).

Source: Panjiva

(Panjiva Research – Industries, Aug. 20 2018)

### 3 Risk event impact assessment

Investment theses can rapidly change in the face of exogenous risks ranging from natural disasters and labor disputes to court cases and regulatory changes. Panjiva's supply chain data includes geotagging and standardized product descriptions (using HS codes) that can help investors rapidly determine which corporates are affected by an emerging event.

Sections 3.1 and 3.2 consider the impact of hurricanes, assessing the potential disruptions involved, including Gildan and Caterpillar from Hurricane Florence in 2018 and to automotive supply chains from Hurricane Harvey in 2017. Section 3.3 considers the risk of geopolitical actions, such as border closures, for the flow of goods into corporate supply chains and options for alternative transportation modes.

#### 3.1 Florence's Passage May Hurt Caterpillar's Customers, Supply Chain Secure

Hurricane Florence threatened regional supply chains in the Carolinas with the risk of inland flooding remaining high. The port of Charleston has reopened with Wilmington set to remain shut through Sept. 19. Inland supply chains may continue to suffer disruptions. In Wilmington's case that may have an impact on apparel-maker Gildan (5% of the ports' containerized traffic), construction equipment manufacturer Caterpillar and specialty chemicals firm Evonik. For Caterpillar the knock-on effect to its supply chain should be minor as most of its shipments into Wilmington were completed machinery from the U.K. including backhoes (50% of shipments in the past year) and shovel loaders (34%). Disruptions at parts-focused ports including Newark and Houston would prove more problematic but have yet to emerge this year.

CATERPILLAR'S MULTI-PORT PRESENCE PROVIDES SUPPLY CHAIN RESILIENCE

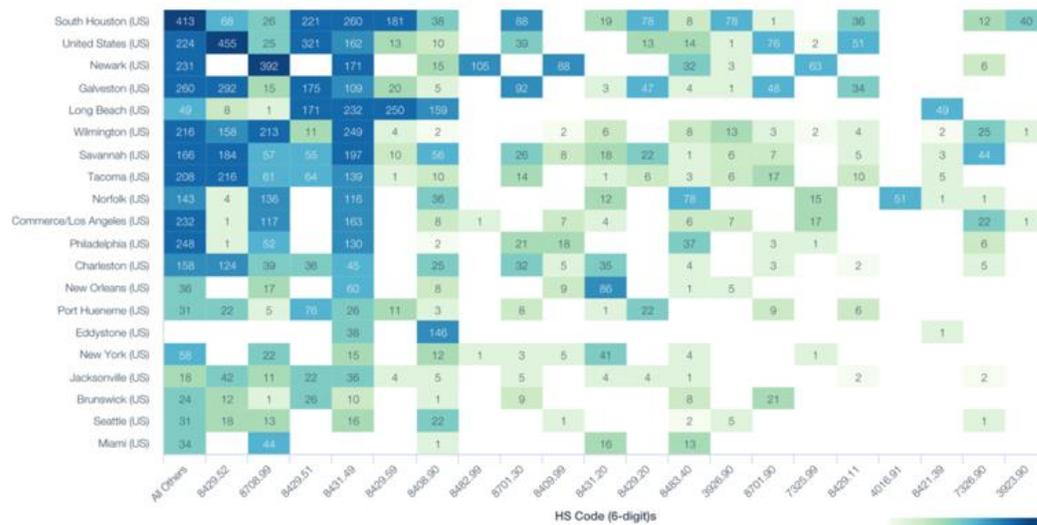


Chart segments U.S. maritime inbound traffic for Caterpillar Inc by product and port of unloading in the 12 months to August 31, denominated in number of shipments.  
Source: Panjiva

(Panjiva Research – Logistics, Sept. 17 2018)

### 3.2 Houston’s Harvey Closure Disrupts 6,500 TEU Per Day

Hurricane Harvey does not appear to have damaged port facilities at Corpus Christi and Houston, but both remain closed for several days as rainfall and flooding conditions – which could persist – were assessed. Port Houston handles around 6,500 TEU of container freight per day, which will either be delayed or redirected – road and rail conditions have suffered too. Shipping disruption could spread to other ports as consignees including General Motors and handlers including Expeditors and Schneider look for other routes. The largest consignee for crude oil at Houston is Valero, while at Corpus Christi it is ExxonMobil.

#### EXXONMOBIL FOCUSED ON CORPUS CHRISTI, VALERO AT HOUSTON

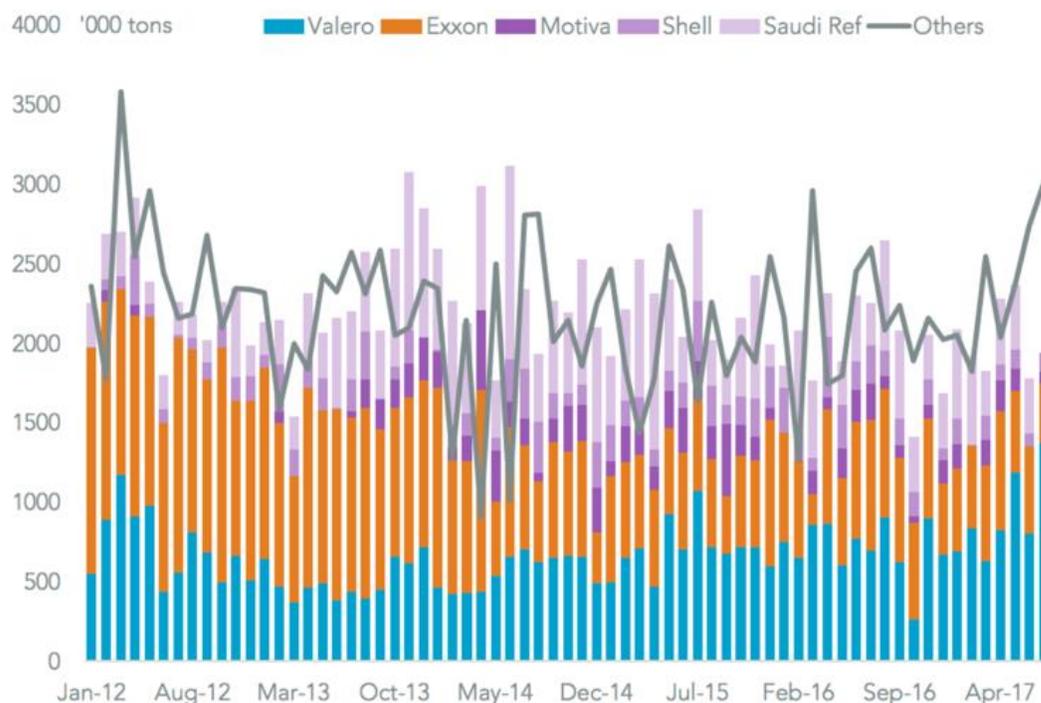


Chart segments crude oil imports to Port Arthur, Houston and Corpus Christi by refiner

Source: [Panjiva](#)

([Panjiva Research – Logistics](#), Aug. 29 2017)

### 3.3 Trump’s Border Threat Brings Supply Chain Choice for Johnson Controls, Caterpillar

President Trump has threatened to close the U.S.-Mexico border in response to an anticipated surge in immigration. While there may be a low likelihood of such a move, it would have a significantly disruptive impact on supply chains – in particular those that are reliant on trucking. Mexican exports by truck to the U.S. and Canada were worth \$266 billion in the past 12 months, or 70% of Mexico’s total northbound exports. The largest industries where consignees in the U.S. are located north of the four states that are contiguous to Mexico and use trucking – and therefore may benefit from using rail or marine services instead even without border closures – are autos (\$3.32 billion for components, batteries and engines) and capital equipment (including \$1.17 billion of parts and cables). Major consignees in those industries that use trucking services to northerly states include Johnson Controls, Caterpillar and ZF Transmissions.

SUPPLY CHAIN CONTROL RISKS FOR CAPITAL GOODS MAKERS

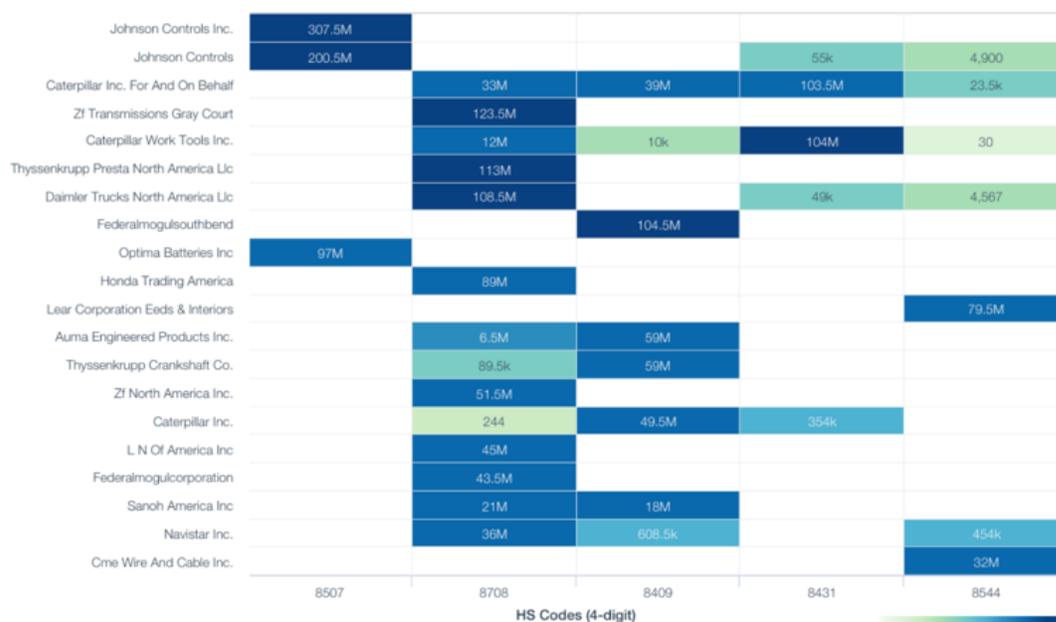


Chart segments Mexican exports to U.S. states north of California, Arizona, New Mexico and Texas by product (HS-4) and consignee in the past 12 months, denominated in dollars.

Source: [Panjiva](#)

([Panjiva Research – Logistics](#), Oct. 19 2018)

#### 4 Automated channel checks

Channel checks – reaching out to divisional or even factory-level managers within a corporation - can provide regular details not just regarding a company’s activity but also its suppliers and customers. Panjiva’s supply chain data can provide a more automated way to check a company’s, and its suppliers’, activities.

In the section 4.1 Panjiva’s Mexico data provides insights into Kia’s regional sales that are not otherwise available through corporate reporting. In section 4.2 supply chain data identified the BMW’s key suppliers to whom it may try to transfer the pressure from new tariffs.

In section 4.3 supply chain data is used more broadly to access the potential shift in behavior from “channel stuffing” ahead of tariffs to more significant changes in supply chain activity. Finally, section 4.4 shows that supply chain data can be used to closely monitor over / under-stocking of key products (“hot toys”) ahead of the peak holiday season.

##### 4.1 Kia Takes Diversification Road to Mitigate NAFTA, Tariff Risks

Automaker Kia has already started to prepare its Mexican manufacturing operation for renewed NAFTA terms as well as potential section 232 duties against the automotive industry more broadly. The company was the fifth largest exporter from Mexico in the 12 months to July 31 and saw a 36% drop in exports in July year over year after a 28% improvement in 2Q. That may indicate prior stockpiling in its largest export market of the U.S. ahead of new duties. Kia appears to be diversifying sales of its Mexican exports as a longer-term response with 58% of its Mexican exports going to the U.S. in the three months to July 31 vs. 62% in the same period a year earlier.

KIA MEXICO NOT SIMPLY AN OVER-THE-BORDER AMERICAN FACTORY

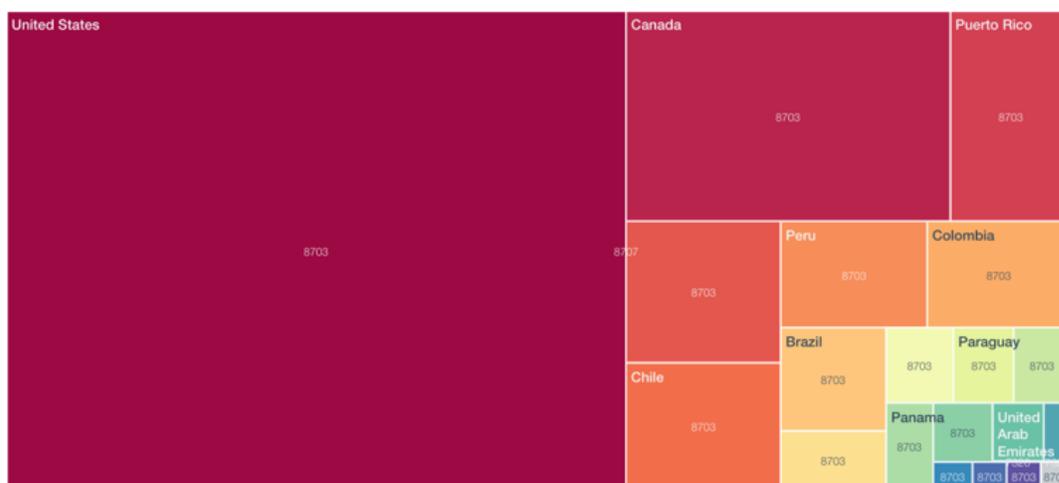


Chart segments Kia’s exports from Mexico by destination and product (HS-4) in the three months to July 31, denominated in dollars.

Source: [Panjiva](#)

(Panjiva Research – Industries, Sept. 10 2018)

#### 4.2 Magna May Pay the Price for BMW's China Tariff Woes

BMW has cut its earnings guidance for several reasons including trade “conflicts” that are blamed for distorting demand and causing downward pricing pressure. As outlined in prior Panjiva research the has previously tried to increase retail prices in China by 7% to pass through tariff increases against U.S. exports. The U.S. had accounted for 20% of BMW's \$14 billion of Chinese imports in the 12 months to March 31. Other U.S. auto suppliers to China may have also tried to raise prices, shown by average export values per vehicle that rose 10% in July on a year earlier. However, that has come at the price of a decline in shipments. One solution for BMW may be to pressure suppliers including Magna Powertrain (from Mexico) and Hella though most of its supplies come from its own German facilities. An added complication is that BMW also faces duties on its U.S. parts purchases from China as well as the ongoing section 232 review of the industry.

**BMW'S U.S. SUPPLY CHAIN MAY GET KNOCKED DOWN BY TARIFFS**

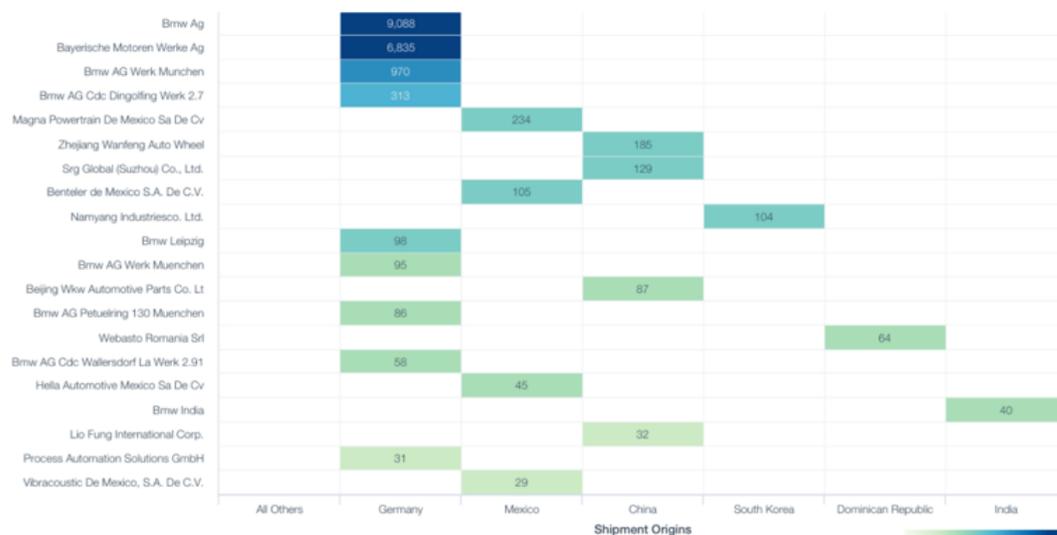


Chart segments BMW's U.S. seaborne imports of auto parts by supplier and shipment origin in the past 12 months, denominated in TEUs.

Source: [Panjiva](#)

(Panjiva Research – Industries, Sept. 25 2018)

### 4.3 Hopping May Follow Stockpiling as Supply Chains React to Trump’s \$200 billion

The implementation of 10% duties – set to rise to 25% – on \$200 billion of Chinese exports by President Trump has likely led many companies to start stockpiling. Looking at the final list of around 5,700 product lines targeted for tariffs, imports increased for 82% of the products covered in the three months to July 31 on a year earlier. Over a quarter of products saw imports jump by more than 25%. That expansion was led by PC components (up 28%) and standalone PCs (47% higher) in absolute terms while consumer products including household freezers (31%) also surged. The stockpiling likely continued in August – for example seaborne imports of household freezers climbed 43% on a year earlier, led by Samsung. A 17% drop in imports of freezers from South Korea indicates the potential for manufacturers to reallocate global production patterns. Such “country hopping” could lead to further trade cases, as has been seen earlier this year for washing machines and solar panels.

ELECTRONICS AND BUILDING MATERIALS SHOW THE MOST STOCKPILE URGENCY

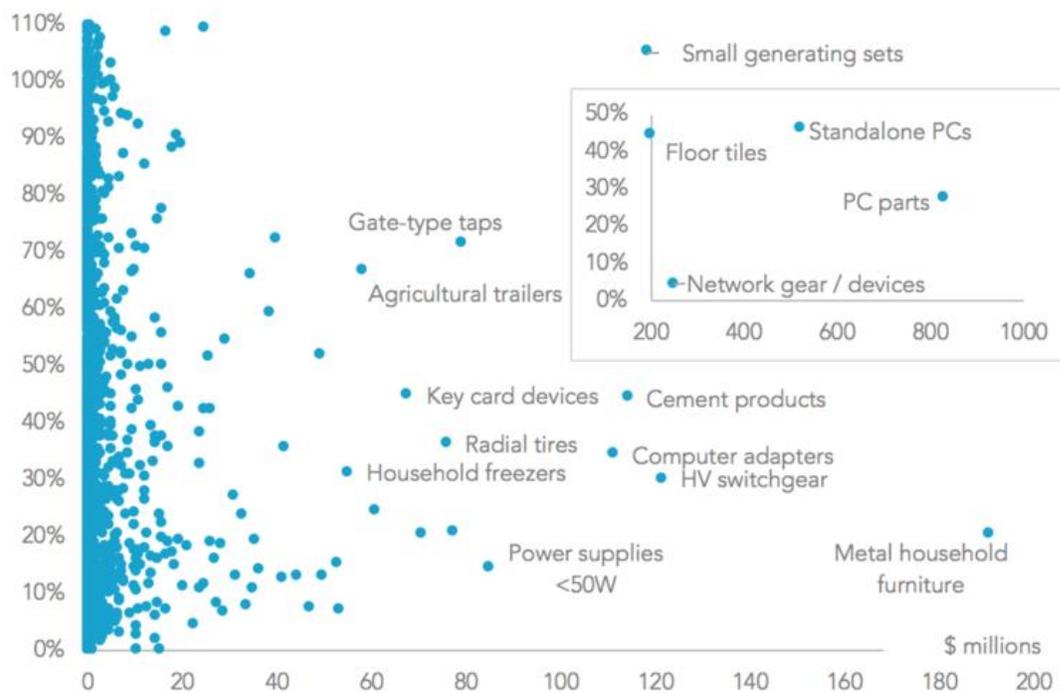


Chart segments U.S. imports from China covered by the revised \$200 billion duty list by product (HS-8) for the three months to July 31. Horizontal axis shows change in dollars, vertical axis the percentage. Inset shows largest four items. Products with declining imports not shown.

Source: [Panjiva](#)

([Panjiva Research – Industries](#), Sept. 18 2018)

#### 4.4 Target Targets Toy Success by Bucking Import Trend

Target will expand its range of toys on sale by 1.8x this holiday season to capitalize on the financial failure of Toys'R'Us. That follows a 30% rise in unique product lines offered by Walmart. Toy imports have historically peaked in the August through November period. The current season is off to a slow start with total imports in the three months to August 31 down by 9% on a year earlier. Target has bucked the trend and started increasing imports with a 10% rise in the past three months including a 16% surge from China. Toys should remain immune to the Trump administration's China tariffs. The key to success is stocking the right hot toys at the right time. In 2017 Hatchimals imports were 1.9x those of Fingerlings after a failure by makers of Hatchimals to meet demand in 2016. Yet, in 2018 they are similar with 536 TEUs of Hatchimals vs. 498 TEUs of Fingerlings. Other emerging hot products flagged by Target this year include Pikmi Pops (137 TEUs) and Crate Creatures (31 TEUs).

HATCHIMALS SURPRISED IN 2016, FINGERLINGS GETTING A GRIP IN 2018

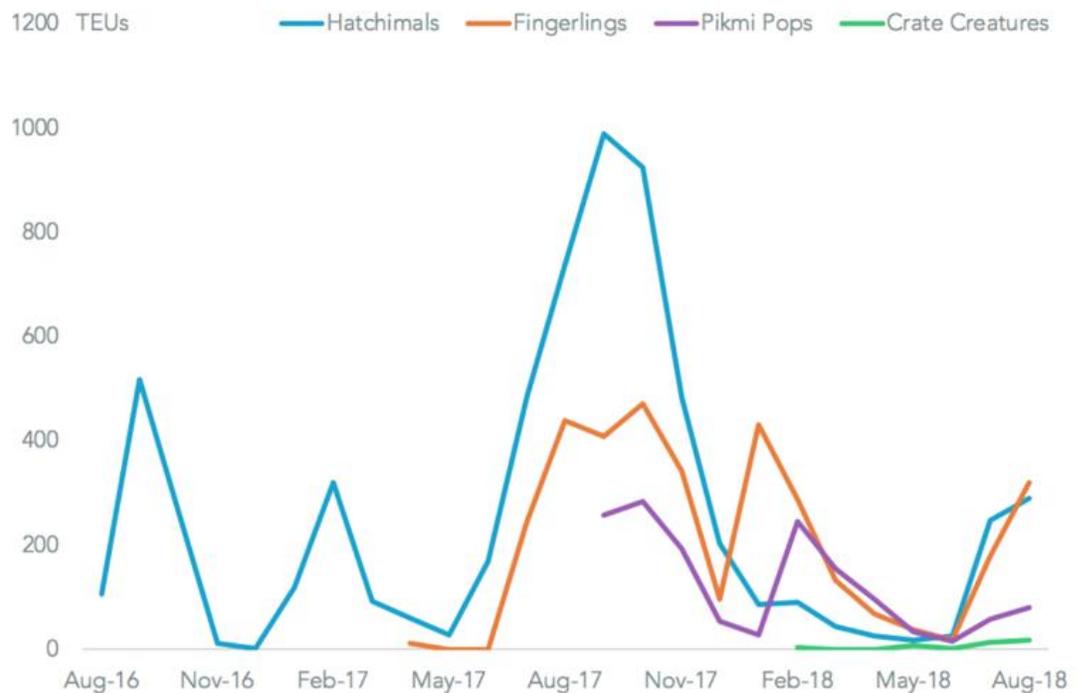


Chart segments U.S. seaborne imports of toys by brand keyword.

Source: [Panjiva](#)

(Panjiva Research – Industries, Sept. 6 2018)

## 5 Industry deep-dives - Pharmaceuticals

Supply chain data can provide rich insights into the performance of a sector that would not be available through other datasets. The generic pharmaceutical sector is an example. U.S. seaborne data can provide insights into flows of generic drugs ahead of prescription writing or patent challenges; trade data more broadly can provide intelligence into prevailing upstream costs; combinations of national datasets allow country-to-country relations outside the normal U.S. focus to be gleaned; the impact of the wider regulatory environment on industry activity can be analyzed; and insights gleaned regarding activity levels.

### 5.1 Price Pressure Ahead for America's \$73 Billion Drug Import Industry

President Trump has proposed a new healthcare policy which would base U.S. drug prices on levels seen in other countries. The growing demand for healthcare services and demand for lower cost products has led to a \$73.4 billion imports of pharmaceuticals in the 12 months to Aug. 31. That was 7.5% larger than a year earlier and included a 33.6% surge in volumes offset by 19.8% deflation in average import values per gram (AIVG). Deflation has not been universal, with imports of oncology drugs seeing a 16.6% rise in volumes despite 17.8% AIVG inflation. Anticonvulsants (AC) meanwhile have seen a 25.0% jump in volumes despite price deflation of just 2.0%. Leading shippers of ACs to the U.S. include Aurobindo (24.9% of volumes shipped by sea in the 12 months to Sept. 30) and Alkem (13.4%).

#### DRUG DEMAND NOT ALWAYS A FUNCTION OF COSTS

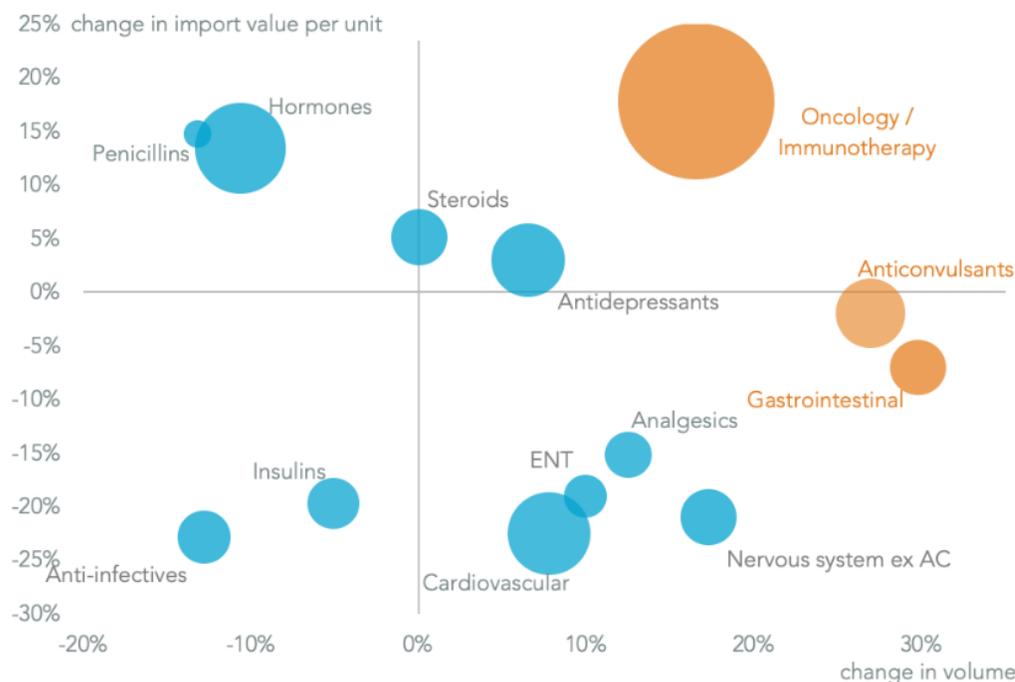


Chart segments U.S. pharmaceutical imports by drug class. Data compares change in value per gram vs. change in volumes for the 12 months to Aug.31, denominated in US\$. Bubble size indicates value of imports in the past 12 months.

Source: Panjiva

(Panjiva Research – Industries, Oct. 29 2018)

### 5.2 Lek's Gain is Merck's Loss as Statin Costs Drop

Rising U.S. healthcare costs are leading the administration of President Donald Trump to consider options to cut costs. America's reliance on imported drugs include \$5.26 billion of cardiovascular drug imports in the 12 months to Aug. 31, including statins, where the value of imports has already fallen by 14.7% on a year earlier. That's included a 22.5% drop in average import values per gram, likely due to the availability of generic versions of Merck's Zetia (ezetimibe). Since the end of the patent in April 2017 generic ezetimibe imports reached 11.5% of all seaborne statin imports from 1.3% a year earlier. That's come at the cost of pravastatin and atorvastatin. Leading shippers who have taken advantage of the end of Merck's patent include Lek Pharma (38.9% of imports since Aug. 2017) and Alkem (27.8%).

EZETIMIBE SHARE OF STATIN IMPORTS STARTING TO PICK UP

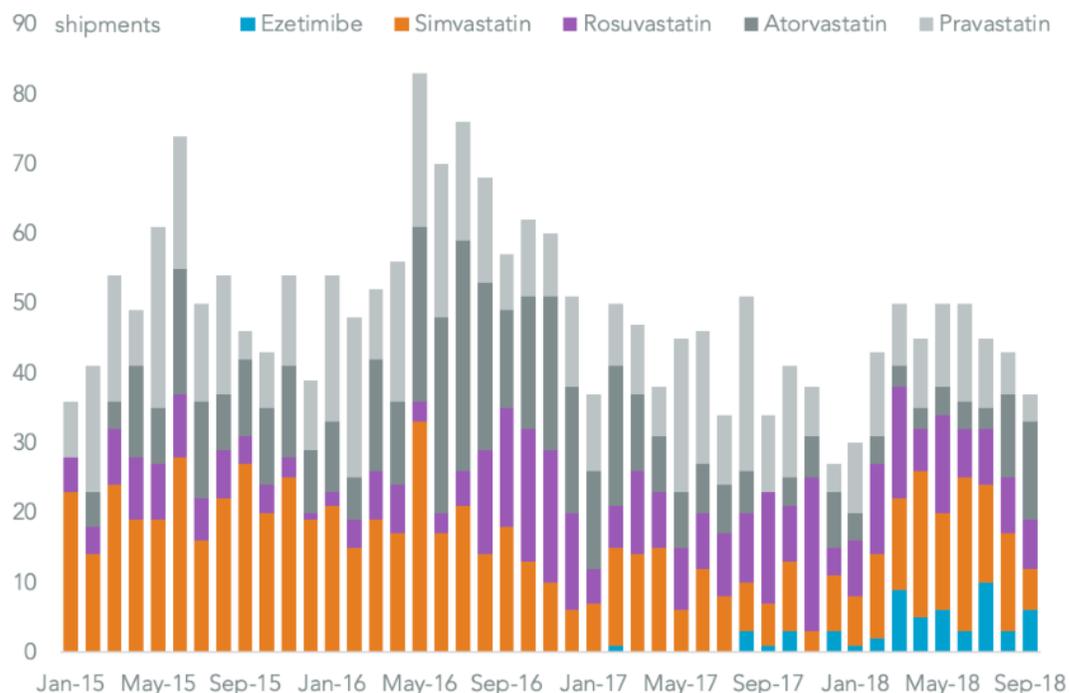


Chart segments U.S. imports of statin-type drugs by generic name including pravastatin, simvastatin, atorvastatin, rosuvastatin and ezetimibe.

Source: Panjiva

(Panjiva Research – Industries, Oct. 29 2018)

### 5.3 Mylan and Cipla Get Regulatory Help as China Draws on Indian Medicines

The Chinese government will hold training programs on import regulations for Indian pharmaceutical producers to encourage their exports. That follows an agreement between President Xi and Prime Minister Modi to boost bilateral trade. While Indian pharmaceutical exports reached \$11.3 billion in the 12 months to March 31 shipments to China were negligible. Major Indian exporters, which may benefit from the new program, include Mylan (\$1 billion of exports), Cipla (\$716 million) and Dr. Reddy's (\$634 million).

#### MYLAN LEADS GLOBALLY, CADILA BIGGEST IN AMERICA

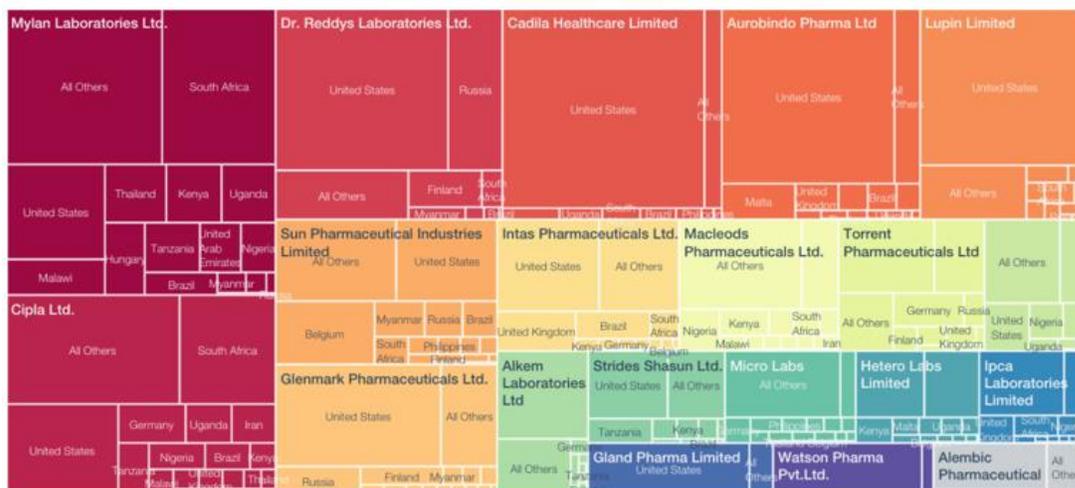


Chart segments Indian exports of pharmaceuticals (HS-3004) by top 20 shippers and destinations.

Source: [Panjiva](#)

(Panjiva Research – Industries, Jun. 13 2018)

### 5.4 Could Croatia Pay the Price for Netanyahu’s Teva Request?

Teva Pharma has launched a significant restructuring program, designed to cut 19% from its cost base after significant price deflation and sector-wide profit warnings from August. That will include “optimization” of its generic drug portfolio, including price rises and product terminations in the U.S. Exports of Teva’s products to the U.S. by sea fell 13% on a year earlier in the three months to November 30 and by 33% vs. the second quarter. Average import values for all drugs by all manufacturers fell 19% on a year earlier in October. That was the 15th straight reduction and was led by a 34% slide for cardiovascular drugs and 17% for antidepressants. Prime Minister Benjamin Netanyahu has requested that Teva minimize job cuts in Israel. In the past year 27% of Teva’s U.S. shipments came from Israel vs. 18% from Croatia and 14% from Ireland. The latter may bear the brunt of the cuts if Teva follows the Prime Minister’s request.

#### INDIA GONE, WILL CROATIA BE NEXT?

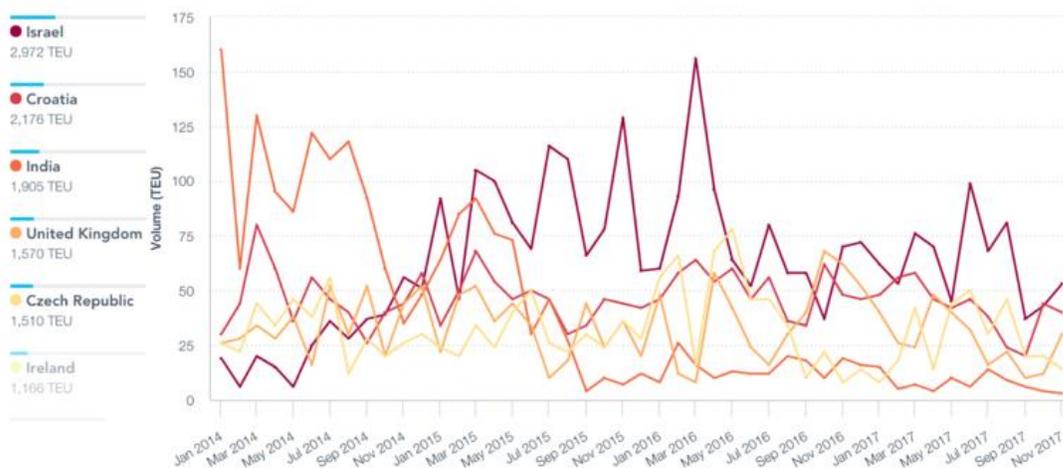


Chart segments U.S. seaborne imports by Teva by country of origin.

Source: [Panjiva](#)

([Panjiva Research – Industries](#), Dec. 14 2017)

## 6 Capital markets activities

Financial data around capital market activities such as mergers and acquisitions or initial public offerings can be lacking. Supply chain data can also provide insights into both privately owned companies and those where less visible subsidiaries are involved.

The FMC Corp. example in section 6.1 provides deep insights into the performance of a corporate subsidiary – and its peers – that may be the subject of an IPO. In the case of Fiat-Chrysler in section 6.2 the risks to a subsidiary disposal can be assessed, particularly where the acquirer is privately owned. In section 6.3 we show that for CMA-CGM and Ceva the data can be used to find other companies that may be affected by a deal or who may need to make a strategic response.

### 6.1 FMC Plans IPO As Lithium Export Values Soar, Chilean Risks Mount

FMC plans to sell a 20% stake in its lithium mining subsidiary, Livent, for \$100 million. Livent sources from Argentina at a time when Chilean supplies, led by SQM, face potential disruption from water shortages. Chilean exports surged 14% in the second quarter in volume terms, led by a 48% jump in shipments to South Korea. That’s driven a record high export value per ton of \$14k in June, 25% higher than the start of 2018. A shortfall in Chilean output would help FMC’s sales efforts in the U.S. and China. In the U.S. FMC’s exports in the past year were already 5.4x those of SQM’s. In the Chinese market Argentine supplies rely on relatively few customers, with the top five buyers representing 88% of imports, so a Chilean shortfall could help FMC diversify.

FMC ALREADY RULES AMERICA’S LITHIUM MARKET

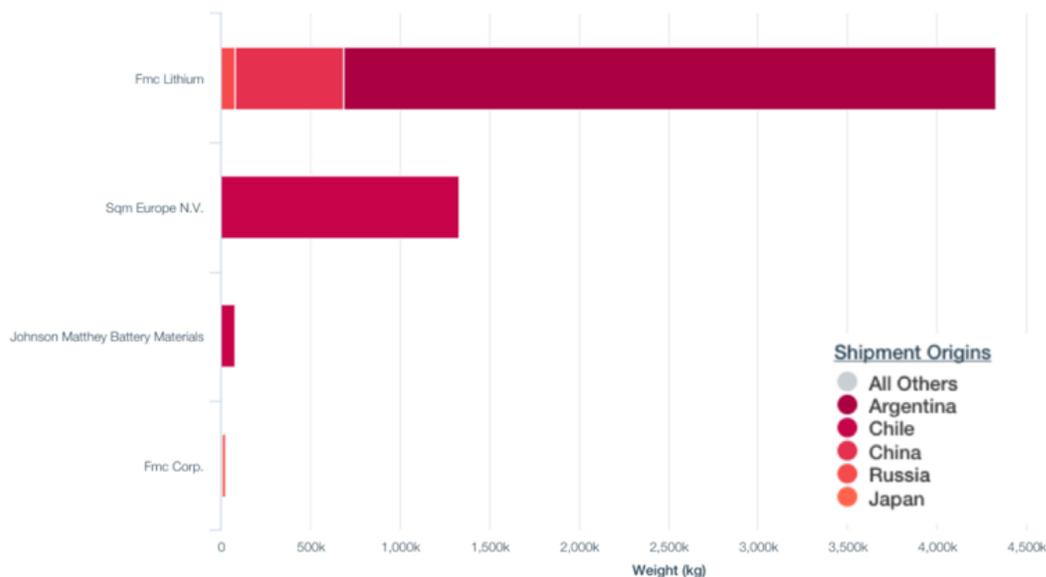


Chart segments U.S. lithium dioxide and carbonate imports by shipper and origin for the 12 months to August 26.

Source: [Panjiva](#)

([Panjiva Research – Industries](#), Aug. 29 2018)

**6.2 Marelli-Calsonic, a New Auto-Parts Leader, Faces Three Big Regulatory Risks**

Fiat-Chrysler has sold its auto-parts division, Magneti-Marelli to KKR which will merge it with Calsonic-Kansei. The deal appears to be more financial than operational in nature as Fiat-Chrysler will retain a multi-year parts deal with Magneti-Marelli. Both Magneti-Marelli and Calsonic have struggled for growth recently with a 3% rise in U.S. imports in the past year despite a third quarter rebound for the former. The combined entity faces trade regulatory risk across the board with new rules-of-origin regulations under the renegotiated NAFTA (USMCA), trade negotiations with the EU (34% of U.S. parts imports in the past 12 months) and Japan (17%) and tariffs on Chinese exports (16%). The latter is particularly relevant for the new company’s imports of compressor systems and steel tubes given the risk of tariffs being increased to 25% from January.

QUARTERLY BOUNCE, SLOW ANNUAL GROWTH FOR BIG PARTS IMPORTERS

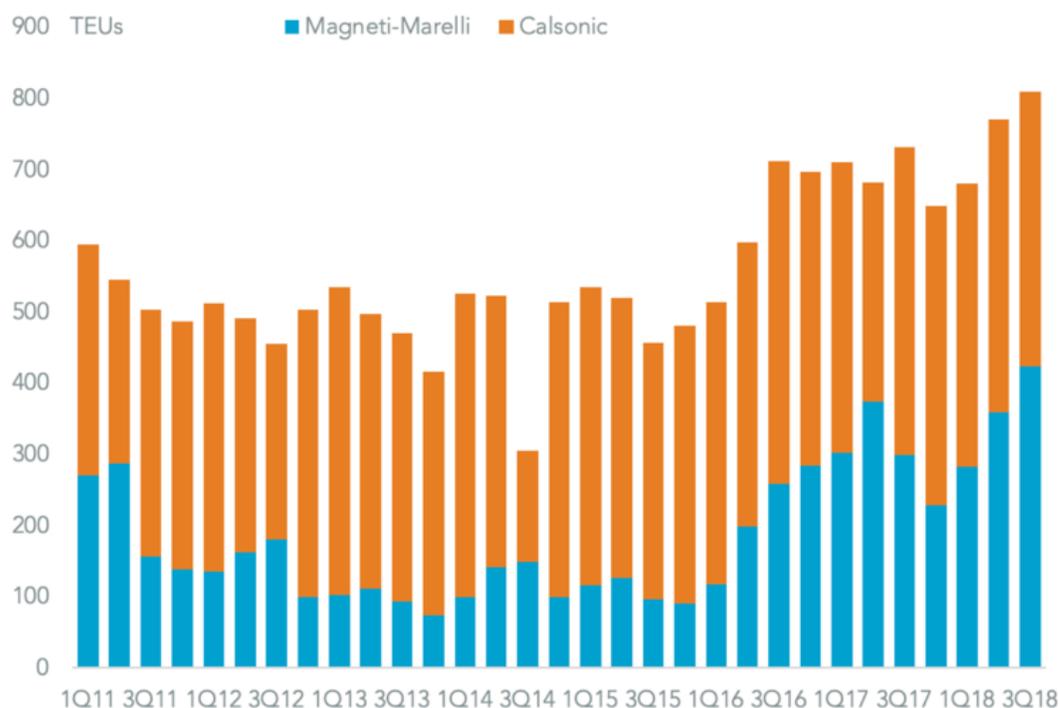


Chart compares U.S. seaborne imports by Magneti-Marelli and Calsonic Kansei.  
Source: Panjiva

(Panjiva Research – Industries, Sept. 25 2018)

### 6.3 CMA-CGM Will Buy Ceva (Eventually), UPS and K+N May Have Concerns

Container-line CMA-CGM has announced an enhanced strategic arrangement with Ceva Logistics that will see CMA-CGM offer to buy Ceva shares at a 33% premium to the last closing price. That follows DSV's decision to withdraw a bid at a similar price. Ceva's revenues are 33.2% the size of CMA-CGM's, though its lower profitability means Ceva's EBITDA is just 15.1% the size of CMA-CGM's. The deal is driven by a trend towards end-to-end service provision between third party logistics (3PL) companies and container-lines which Maersk has pioneered. The largest 3PLs currently using CMA-CGM's services on U.S.-inbound lines, and potential competitors to Ceva, include OEC (2.9% of CMA-CGM's volumes), UPS (2.3%) and K+N (2.0%). The 3PLs may choose to review their commercial relations with CMA-CGM, particularly K+N which shares a joint stockholder with Hapag-Lloyd.

OEC, K+N AND UPS AMONG LARGEST USERS OF CMA-CGM VESSELS



Chart segments U.S.-inbound container volumes on CMA-CGM vessels by NVOCC SCAC and port of lading country for the 12 months to Sept. 30 2018, denominated in TEUs.

Source: Panjiva

(Panjiva Research – Logistics, Oct. 25 2018)

## 7 Thematic trading candidate identification

Supply chain data can use highly granular, product-level data as well as geolocation information to identify companies with common characteristics. It can also help determine relative importance for a company particularly when combined with other financial datasets. As a result, it can help investors identify stocks with similar characteristics that a specific investment theme can be applied to.

In the two examples below, there are industry implications for Honeywell’s warning about the impact of trade tariffs on its business, and evidence from port activity in Seattle can be extrapolated to other companies that import similar products or have a similar geographic exposure.

### 7.1 Honeywell’s Harbinger of Tariff Troubles for Caterpillar and Deere

Honeywell has indicated that the section 301 duties implemented by the U.S. against Chinese exports could cost the company “hundreds of millions of dollars” in 2019. That excludes attempts to raise prices for customers and the firm so far doesn’t plan “big overhauls” to its supply chain. The risks Honeywell faces can be seen in its U.S. imports of capital equipment components from China, which accounted for 54% of its U.S. seaborne shipments in the past 12 months. The top five component products (jet engine parts, gas pumps, electrical cabling, control instruments and construction machinery parts) are all subject to tariffs within the \$250 billion already targeted by the Trump administration. Other U.S. importers that may face similar risks, based on their import profiles of the five product groups mentioned, include Caterpillar (590 TEUs in the past month due to report earnings October 23), Ingersoll-Rand (October 24) and Deere (November 21).

KOMATSU, DEERE AND CAT’s EXPOSURE SIMILAR TO HONEYWELL

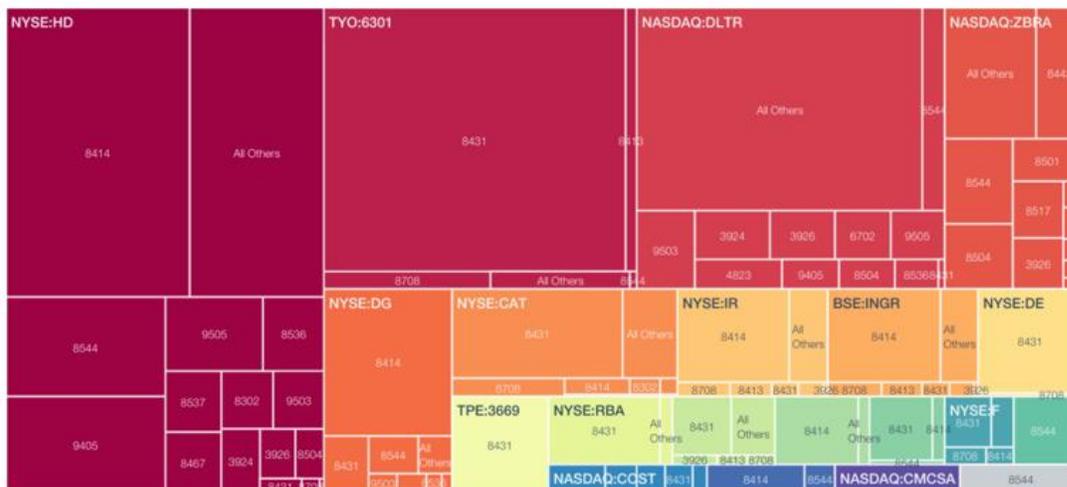


Chart segments U.S. seaborne import shipments including five industrial products (by HS code) by product and company (U.S. stock ticker) in the past 12 months, denominated in TEUs.

Source: [Panjiva](#)

(Panjiva Research – Industries, Oct. 22 2018)

### 7.2 Xerox and Jabil Hold Keys to Seattle’s Performance as Tariffs Weigh on Port Activity

Container handling at the ports of Seattle and Tacoma fell 6% on a year earlier in August, reversing from a 6% expansion in the three months to July 31. A slump in imports from China of 11% was likely the result of the widening tariffs on Chinese exports applied by the Trump administration since early July. The tariff effect will increase with end-September tariff coverage nationally reaching \$250 billion from \$34 billion in early July. Leading shippers of capital goods and electronics to the Seattle and Tacoma from China which face rising tariffs include Fuji Xerox (3.2k TEUs shipped in the past year), Hitachi Construction and Jabil Circuit. The downturn also meant total west coast U.S. container handling (inbound and outbound) fell 2% to 2.33 million TEUs – below July’s value for the first time since 2013.

#### ELECTRONICS AND DIGGERS IN THE SAME SINKING TARIFF BOAT

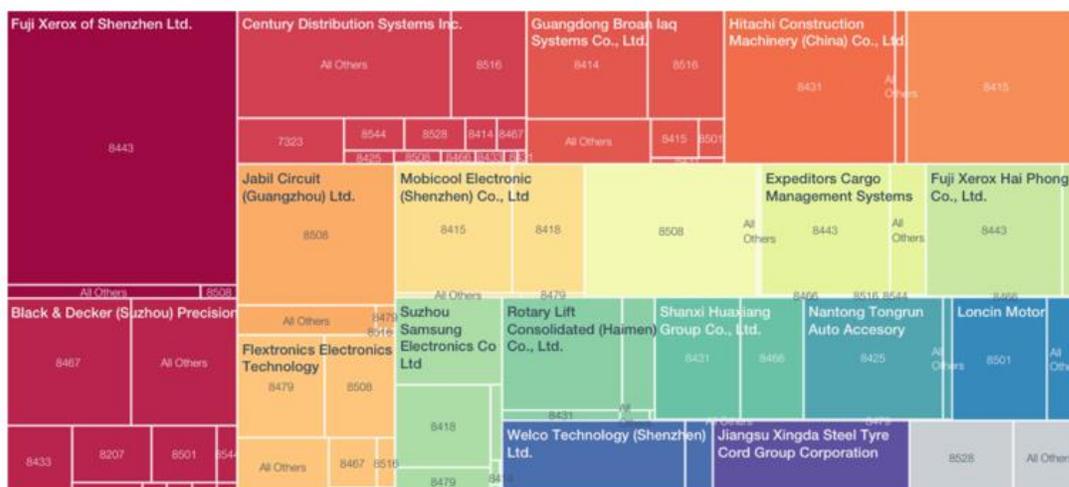


Chart segments containerized freight inbound into Seattle and Tacoma by shipper and product (HS-4) in the 12 months to August 31, denominated in TEUs.

Source: [Panjiva](#)

(Panjiva Research – Industries, Sept. 20 2018)

## Our Recent Research

### **September 2018: Their Sentiments Exactly: Sentiment Signal Diversity Creates Alpha Opportunity**

- Companies where management is both positive/optimistic and fact-focused outperform historically.
- Hedge fund sentiment confirms and complements management sentiment.
- Market sentiment surrounding earnings calls amplifies the effectiveness of earnings transcript-based signals.

Analyst sentiment, as reflected in target price/recommendation changes, adds an important voice to ownership-based signals.

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

#### **Highlights include:**

- Sentiment-based signals: Firms whose executives and analysts exhibited the highest positivity in sentiment during earnings calls outperformed their counterparts. Firms with the largest year-over-year positive sentiment change and firms with the strongest positive sentiment trend outperformed their respective counterparts.
- Behavioral-based signals: Firms whose executives provided the most transparency by using the simplest language and by presenting results with numbers outperformed their respective counterparts.
- Sentiment- and behavioral-based signals are not subsumed by commonly used alpha and risk signals.
- Positive language from the unscripted responses by the executives during the Q&A drove the overall predictability of the positive sentiment signal.
- The sentiment of CEOs has historically been more important than the sentiment of other executives.
- The aggregate sentiment of analysts historically enhanced the predictability of the 3-month FY1 EPS analyst revision signal.

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

#### **Highlights include:**

- We present an ETF price impact model, which posits single-day impact of up to 370 bps / day on an individual security and up to 250 bps / day on the index itself. Analyses indicate the effect is transitory and reverses over a period of 3-5 trading days.
- The Feb 2018 market correction was accompanied by a \$25B outflow of assets from ticker SPY, the SSGA S&P 500 Trust ETF. Modeling suggests that as much as one-third of the pullback was due to price pressure from ETF trading and that securities more sensitive to ETF flow underperformed.
- Sensitivity to ETF flow is used to build a risk model, which generates improved performance in a historical optimization. We offer a method for estimating ETF sensitivity for funds, using the S&P Global Ownership dataset.

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

Trend strategies based on changes in stock price or earnings are widely used by investors. In this report, we examine the performance of a trend strategy derived from gross profitability (“GP”). Gross profitability trend (“GPtrend”), was proposed by Akbas et al. who argued that the trajectory of a firm’s profitability is just as important as the level (GP). We define GPtrend as the year-on-year difference in either quarterly or trailing twelve month GP, where GP is calculated as revenue minus cost of goods sold, divided by total assets. Our back-tests confirm that GPtrend has historically been an effective stock selection signal globally, with the added benefit of low to moderate correlation with commonly used investment strategies.

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

‘Buy the Dip’ (“BTD”), the concept of buying shares after a steep decline in stock price or market index, is both a Wall Street maxim, and a widely used investment strategy. Investors pursuing a BTD strategy are essentially buying shares at a “discounted” price, with the opportunity to reap a large pay-off if the price drop is temporary and the stock subsequently rebounds. BTD strategies are especially popular during bull markets, when a market rally can be punctuated by multiple pullbacks in equity prices as stock prices march upwards.

**March 2018: In The Money: What Really Motivates Executive Performance?**

CEO compensation has soared over the past four decades, aided by consultants, compensation committees, the CEOs themselves, and an extended bull market (1982-1999). “Pay for performance” has become dogma and large equity grants de rigueur. But there is a cost to such largesse. Figure 1 shows that realized pay<sup>1</sup> for a company’s top five executives can approach 6%-11% of earnings before interest and taxes (EBIT), on the index level, for small and mid-cap firms. What types of compensation motivate top executives to boost shareholder returns? And what are the fundamental characteristics of companies in which executives are motivated to boost stock performance?

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

Terminated deals impact capital market participants in various ways. Predicting deals that are likely to be canceled is of interest to both M&A advisers and equity investors. This report identifies several drivers of cancelled deals, including size, deal proportionality, perceived price discount, CEO age, and regulatory risk, and concludes with a model built from four of these drivers.

**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](#)

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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](#)

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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