EUROMONEY

How alternative data spread through finance

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Everyone is hungry for data to help navigate the coronavirus crisis, but thorny questions remain about consent and privacy.

Illustration: Informen

At the start of April, Exabel, an artificial intelligence and machine-learning platform for active asset managers, partnered with 1010data, an alternative data provider to the retail, consumer packaged goods and financial services industries, to develop their Covid-19 impact dashboard.

The dashboard derives information from multiple sets of live credit and debit card transaction data, as well as some geolocation data that shows declining visits to stores.

Taken together, these give investors a close to real-time insight into how the pandemic and lockdowns have impacted consumer spending in the US at companies across 11 subsectors of the travel, general merchandise and grocery, and retail industries.

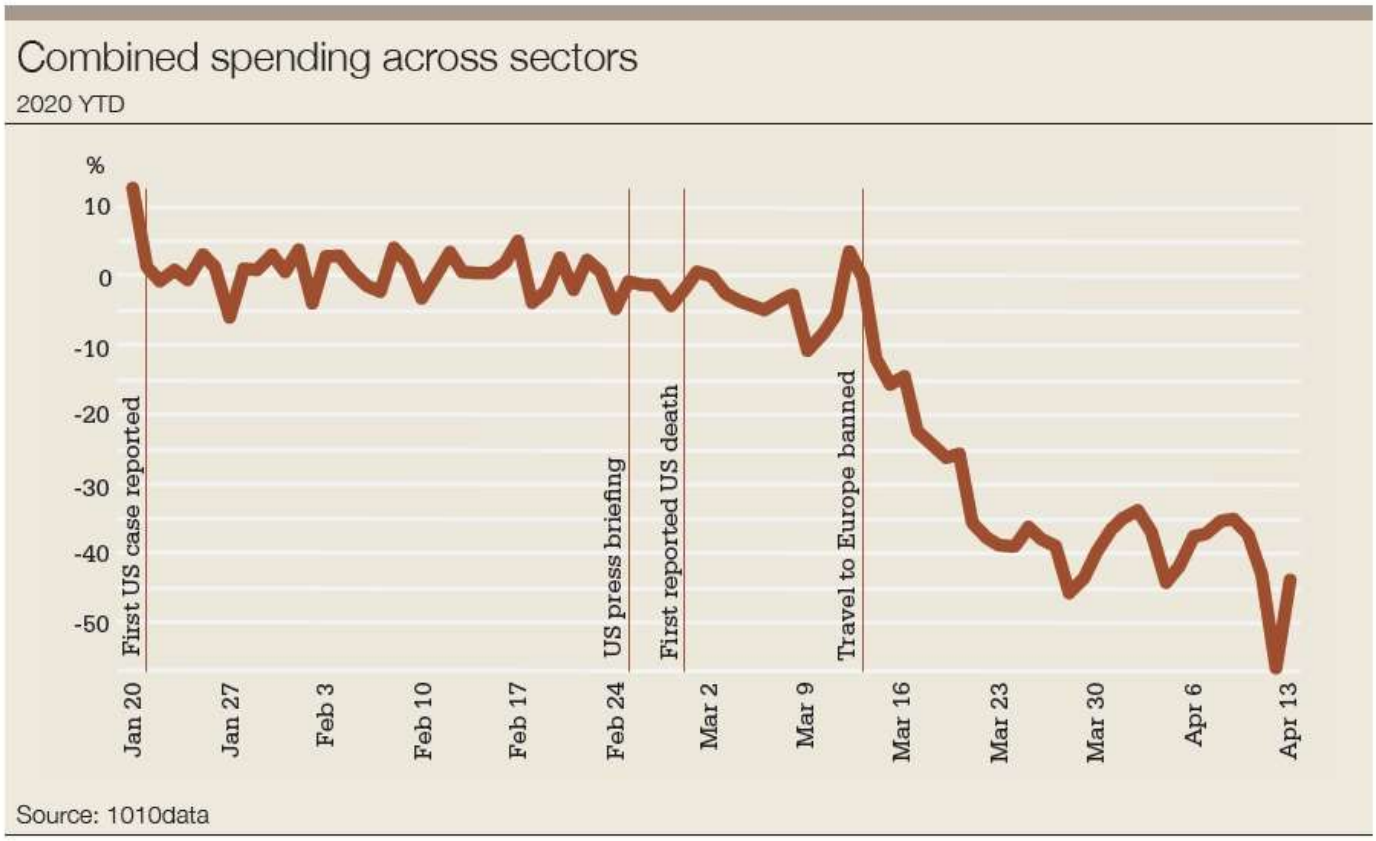
While sell-side analysts struggle to update projections based on slow-to-arrive and already-out-of-date-when-they-do official and audited numbers, such as GDP and quarterly corporate earnings, the dashboard offers searing, immediate insights.

Consumer behaviour started to change around February 25, even before the first coronavirus death in the US. By March 28 the dashboard was showing an astonishing year-on-year aggregate decline in spending of 46.3%. By the end of the quarter that had improved – if one can use that word – to a year-on-year decline of 36.9%. And by April 20 it had reached a 37.8% decline.

That aggregate number breaks down into wide variations. In the travel sector, by the start of April, cruise companies were showing a 96.8% decline in consumer spending and airlines a 100% decline.

"For travel companies, this summer has been cancelled," one banker tells Euromoney. "The big question now is whether next summer will be as well."

By contrast, grocery stores showed a 97% rise in year-on-year spending by March 18, although this subsequently declined, presumably after initial stockpiling, to show a 14.7% lift as at April 2. Visits to grocery stories, measured using geolocation data, were up far more, by 54.9% by April 2.



When visits rise faster than spending, that's a mixed signal for any company. Pharmacies were showing an 18% rise in visits but a 20% year-on-year decline in spending. Are people only going for medicines and essentials and spending far less, as unemployment soars, on extras that begin to look like luxuries?

This data moves fast. Looking back to March 18, pharmacies had been showing a 58% rise in year-on-year spending.

While visits to stores stocking office supplies fell, spending rose 70% year on year by March 18, presumably as people bought what they needed to work from home. But spending in such stores was ahead only 4% year on year by April 2.

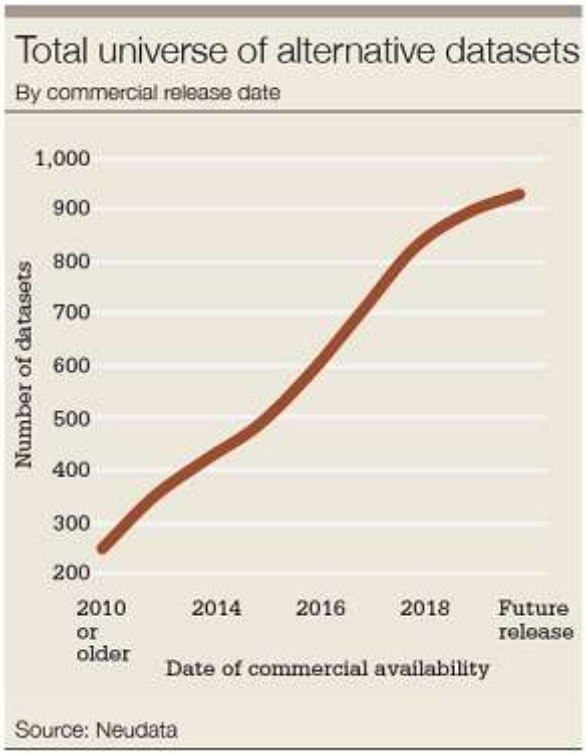
Clothes shopping has done badly, with year-on-year spending down 71% by April 2. Analysts expect rising discounts to shift spring and summer collections now sitting at docks and in warehouses.

"The January sales could well be on all year," says one analyst. "You don't want to sit on this season's unsold stock, if you're a multi-channel seller that can still somehow get it to customers."

Bewildering landscape

For asset managers, and especially for discretionary portfolio managers who strive to distinguish themselves through fundamental research, the dashboard also offers an insight into the potential for big data to inform their thinking.

"Our mission is to help our asset management clients become more data driven," Neil Chapman, chief executive of Exabel, tells Euromoney. "In recent years the landscape of alternative data has become almost bewildering in its variety, quantity and very wide range of quality. But it can be very valuable."



The world of alternative data has grown rapidly during the last few years – there are now an estimated 445 firms providing data, according to AlternativeData.org. An estimated 78% of funds now use alternative data, up from 52% in 2016.

But what data is truly valuable? "Credit and debit card-transaction data is clearly highly correlated to consumer spending," says Chapman. "And while that may not be of much interest to investors in oil majors or heavy industry, it is very relevant for retail or other consumer staples.

"For some problems, you need datasets with sufficient history to train AI models on them, but when you do, those data sets give up their story quite easily." The dashboard is something of a teaser.

Data is presented with a lag. Investors who pay for a premium licence get a more up-to-date view. Better yet, they get to drill down beyond the aggregate sector level and see not just how spending is unfolding for pharmacies or grocery stores in general but what is happening at specific companies and chains.

It's worth remembering too that more subtle stories can emerge from using multiple data sets. It seems obvious that we are all spending more on essentials like groceries, but revenue isn't the whole picture.

"Coronavirus-induced panic buying has caused perhaps the greatest disruption to food supply chains since the Second World War," says Adam Vettese, analyst at multiasset investment platform eToro. "While it would be easy to assume supermarkets were cashing in as a result, the reality is very different."

He points to the preliminary results announcement in April from Tesco, which suggest that just covering for staff absence because of sickness or self-isolation might add between £650 million and £925 million to annual operating costs.

"For investors, this is a classic lesson in due diligence: just because the stores are full doesn't mean everything is rosy behind the scenes," says Vettese.

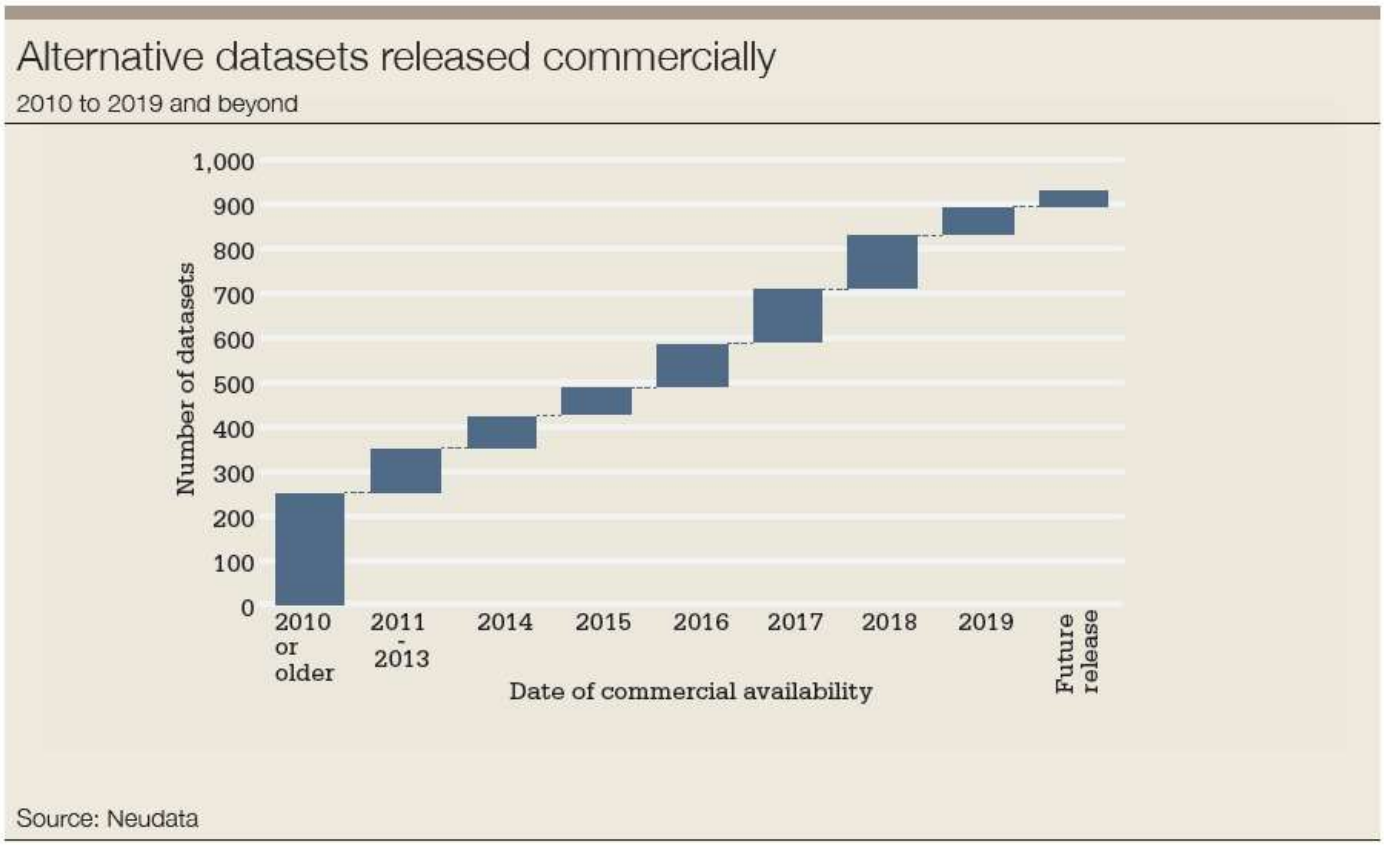
But investors will continue to look for up-to-the-minute data. "The use cases for alternative data have just exploded in the wake of Covid-19," says Rado Lipuš, chief executive of Neudata. "We have received

more requests in the last two months than ever before, and our business volumes are up four times."

Rado Lipuš, Neudata: "Geolocation data can be used to monitor which factories and plants are seeing greater movement of people as production resumes"

Neudata advises asset managers on which of the thousands of alternative data sets now being marketed might best fit their investment approaches. Using such data has until recently been the preserve of large quantitative hedge funds. But interest from conventional asset managers was growing even before the pandemic, and there was a surge in data sets coming onto the market in 2018.

"We follow 3,700 data sets, and have looked in great depth into the quality of 1,000 of these," says Lipuš. "While systematic quant funds want ones with depth, breadth and long history, which is rare, the benefit for fundamental investors is that much of this data is close to real time."



Cautious about consent

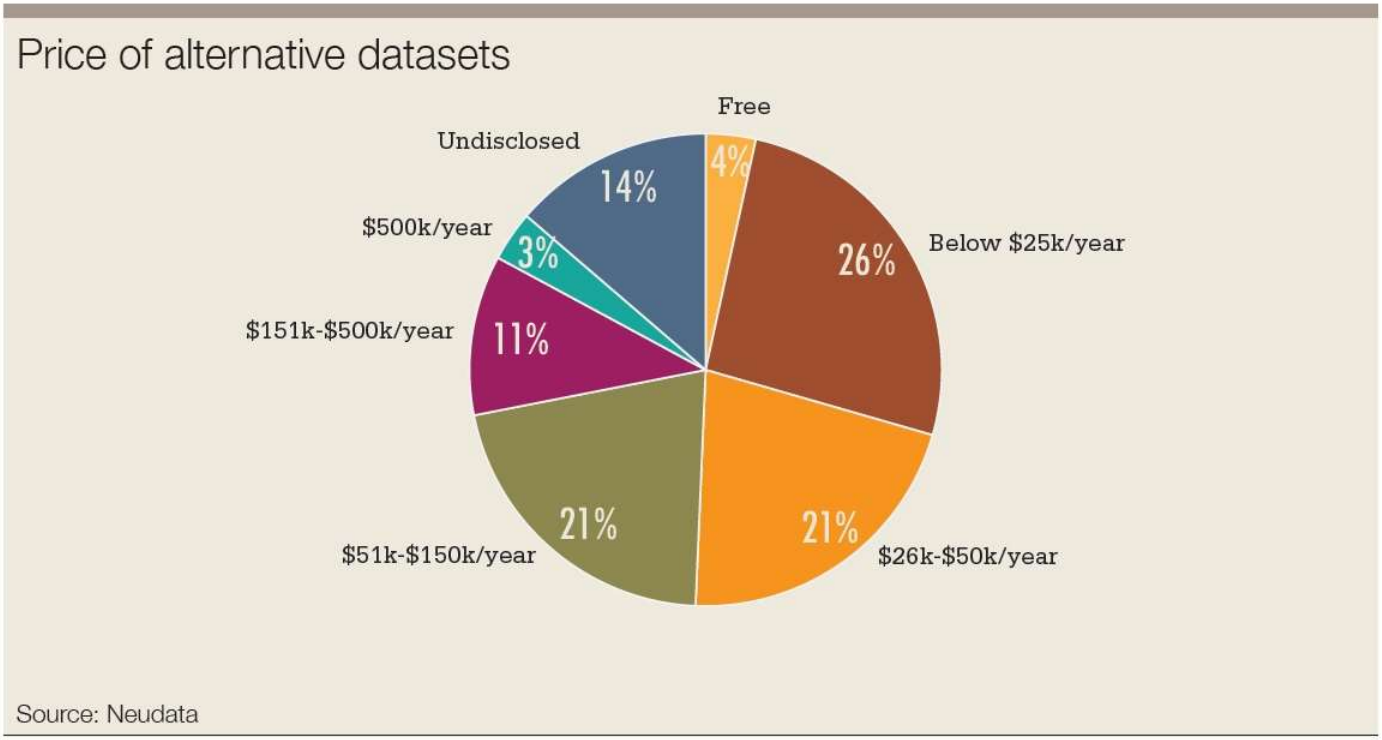
Much of the alternative data out there is generated almost as a by-product of companies' day-to-day operations. Selling it is not their main business, but they have become increasingly keen to monetize it if they can.

However, as supply has gone up, the price of data has generally become more transparent and has come down, albeit with some exceptions. Transaction data from e-receipts and credit and debit cards is highly valued as long as it is generated at sufficient scale.

Data vendors and users must exercise caution about whether or not consent has been properly obtained from cardholders and data truly aggregated and anonymized so that individual cardholders' privacy is protected.

The jury is still out on this. In January US lawmakers wrote to the Federal Trade Commission requesting it look into whether or not Envestnet, operator of Yodlee, the largest consumer financial data aggregator in the US, sufficiently protects individuals' privacy when selling data on through data brokers to hedge funds.

"The SEC is really trying to keep on top of these questions of consent and privacy, which may make it harder to monetize information, although the legal framework is not quite there yet," says Lipuš. "One of our roles is to verify where underlying data sets come from and if they are compliant and so usable for investors." It seems unlikely that US federal and state governments will pause before using mobile phone geolocation data to assess if populations are observing lockdowns.



Investors can use this data too, not just to track declining visits to US stores but also, for example, to trace activity in countries now coming out of lockdowns.

Alongside consumer spending transaction data, geolocation data is a hot area. "In early February, when the virus appeared to impact only China, already some of our airline data vendors were showing the impact to have far outreached 9/11 and Sars," says Abi O'hUiginn, head of marketing at Eagle Alpha.

Eagle Alpha was set up in 2012. It is an alternative data aggregator with 1,200 datasets from vendors across the world on its platform. The firm has recently begun running webinars on the types of alternative data that would be useful in navigating the pandemic and its resulting economic impact.

Some 65% of its clients have requested alternative data specifically around the coronavirus, as well as information on China's supply chains coming back online, whether or not Chinese consumers are starting to spend, and data that can monitor hiring declines in the US.

"Geolocation data can be used to monitor which factories and plants are seeing greater movement of people as production resumes," says Lipuš.

Advan is one of the most advanced providers of geolocation data. In April, it launched a global map of foot-traffic hot spots. This shows where multiple mobile phones intersect for more than 15 minutes and, while excluding residential buildings, can identify individual city blocks around the world where people are gathering.

It has obvious use for governments and local authorities checking that populations are following lockdown orders. It also offers some rather sad insights.

"In New York, the busiest hot spots in February would have been around midtown Manhattan and Times Square," Yiannis Tsiounis, chief executive of Advan, tells Euromoney. "In mid April, they're the hospitals." Advan tracks not just footfall in stores, hotels, factories, malls, office buildings, hospitals, airports and ports, it can also trace truck traffic by following

drivers' mobile devices. It derives data from 150 million locations around the world, with in-depth coverage of 2,050 companies.

"We are getting five or six billion data points a day," says Tsiounis. "We have something like six trillion data points going back over the last five years." Where does the data come from? There are three potential sources. First, mobile phone companies share which masts users are taking signal from them. But that's not very specific and Advan doesn't take data from the phone companies anyway because users have not given their permission for it to be sold.

Another potential source is advertisers whose displays pop up when phone users go online. But advertising fraud is so vast that this is not reliable.

"The only way to get the data is from applications on users' phones which have a legitimate reason to request their location data – such as weather alerts, mapping and some others – explicitly request permission and anonymize data before selling it on," Tsiounis explains. "The data is expensive, but the alternative is cheap, low-quality data, which would not be of use to investors; in fact, it could lead to wrong decisions.

Yiannis Tsiounis, Advan: "We are getting five or six billion data points a day"

"Especially with geolocation data, the whole value is in its accuracy." Data becomes useful mainly when tracked against other reference points, for instance Advan can see footfall in every Starbucks store. It can also check that against opening and closing times for each one. Right now, it is garnering insights into the business of hospitals.

"If your phone has been at a hospital for a day, you could be visiting. If it's there for 15 days, you're probably a doctor or a nurse or a porter. If you're there for between three and 15 days, that's an admission," says Tsiounis.

The other advantage with geolocation data is that it arrives after a typical delay of only one day, whereas transaction data can take up to four. But sales data is still valuable: as more people have been forced to work from home to avoid the virus, purchase receipt data can provide some guidance for investment opportunities.

Data so far indicates that the number of subscribers to Chinese video-streaming company iQiyi had grown by about 30% from mid February to mid March.

Advan data shows the daily visits of workers to Amazon warehouses rising swiftly in March and that growth continuing into April. Historically, based on Advan's analysis, the number of employees seen at Amazon warehouses has a strong correlation – approximately 0.85 – with company revenues.

Hedge funds were all over stories at the end of March of workers threatening walk outs at certain Amazon and Whole Foods warehouses over inadequate protective and cleaning supplies.

How to use it

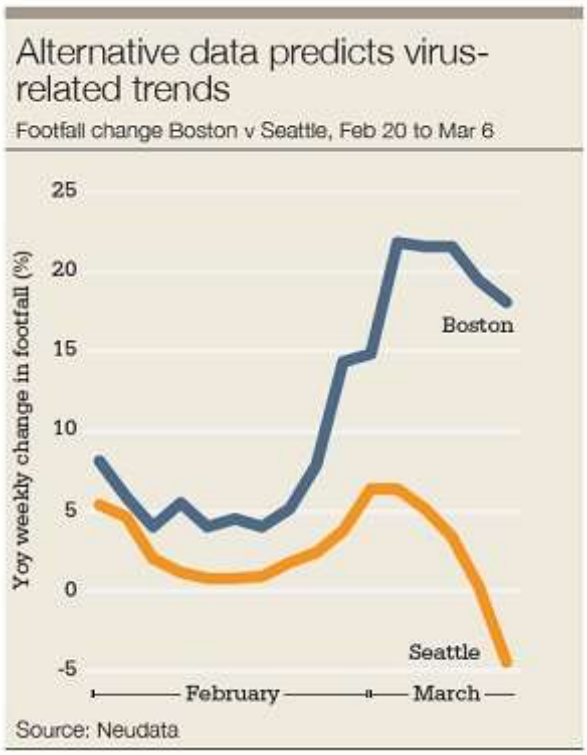
Eagle Alpha points out several other forms of data currently being used. For better understanding of when China's economy will improve, one can look at footfall in Macau's casinos or at company job vacancy volumes.

The amount of times that Zoom or Skype is mentioned on social media, along with reference to 'working from home' can indicate the stay-at-home sector's performance. To better understand airline solvency, one can look at flight cancellation data versus actual flights taking place.

Brendan Furlong, senior research analyst at Eagle Alpha, says: "There is a host of data outside the traditional realm of balance sheets, income statements and government data that one sees on Bloomberg or FactSet that can help with early predictions of broader economic or narrower stock performance." He points to satellite data that can take images of the numbers of cars at a manufacturer's car lot that would indicate whether or not production is increasing.

"Consumer transaction data – such as emailed receipts – can indicate whether consumers are spending," says Furlong. "Supply-chain data also can offer insights into the state of economic health."

In recent months alternative data has shown how useful it can be for predicting the spread and impact of the virus. On February 28, foot traffic in three busy retail areas in Seattle started to fall. From 373,801 visitors to South Lake Union that Friday, pedestrian footfall steadily declined so that by Wednesday, March 4, it was just 242,985.



This was not the case in other US cities, such as Boston, where retail shopping was climbing year on year due to a milder winter, but then other US cities had not been so close to the US's first reported outbreak and deaths from Covid-19.

Washington State, of which Seattle is the largest city, was home to the first case in the US in January and home to the country's first death from the virus, announced on February 29.

This particular data is from Thasos.com, a New York-based alternative data firm. "What this real-time data showed, for example, was what would likely happen in other US cities – and indeed what did happen one week later," says Wei Pan, chief data scientist at Thasos.

By mid April, hedge funds and other investors were trying to peer through the lockdowns and think about what might follow.

"A lot [of investors] are in cash right now and want to time when to get back in," says Pan. "Real-time data like this will give them that edge."

"Investors are constantly looking for an information advantage," says Chapman at Exabel. "While fundamental asset managers that are not paying attention to this data prepare for quarterly earnings releases, those using these kinds of data typically find a point of maximal information advantage, roughly 60 or 62 days into a quarter, where the data has told its story ahead of the quarterly earnings release."

One might argue that that is not what happened in the first quarter of 2020, however. It was only in the last 30 days that the pandemic suddenly arrived.

Sell-side strategists haven't done much for their credibility with their initial talk of V-shaped recoveries and their painfully slow realization of the enormity of the economic shutdown. Alternative data and 'nowcasting' look set to exert an increasing allure amid this overturning of financial markets.

"This kind of data has been around for a long time," Chapman points out. "The first to use it were the great quant funds – Renaissance Technologies, Two Sigma, Acadian Asset Management – that bought the premium datasets and hired armies of advanced mathematicians, data scientists and software engineers to harness them.

"Your typical discretionary fundamental manager doesn't have that infrastructure to receive, ingest and model the data to provide insights to portfolio managers, which might support or challenge their investment hypotheses.

"It is for these less-technical firms that Exabel delivers most accessible value, via an instantly available software-as-a-service platform." The pitch here is that asset managers can mutualize the costs of all those data scientists and software engineers and let firms like Exabel do the heavy lifting.

"We have partnered with Exabel from the off because the platform is the perfect balance for us," says Chris Reid, CIO for startup fundamental long/short fund Iguana Investments. "First we develop our own proprietary technique and then the Exabel platform implements it in exactly the right way mathematically. It is a fully transparent way of incorporating quantitative insights into our fundamental stock-picking process."

> "The use cases for alternative data have just exploded in the wake of Covid-19"
>
> - Rado Lipuš, Neudata

Exabel doesn't sell research – the Covid-19 impact dashboard is an exception – or build complete investment models. But it can take valuable raw data and draw from it information that might tell portfolio managers a story.

Consumer spending is just a quick and easy one to read – and quite gripping right now. There are other uses, however.

"Many fundamental managers might follow, say, a momentum strategy and, from a universe of tens of thousands of companies, screen for maybe 20 to 50 that they analyze in great depth," says Chapman. "They often lack a quantitative model to back test that initial screening, even though a few tweaks to the list of companies they focus on might add several percentage points of alpha.

"We are data agnostic and we do not group buy data. But we do have a role in helping vendors articulate the value of alternative data to the buy side," he continues. "And we also believe that efficient markets are good markets. Having just a few very large quantitative hedge funds outperforming a long tail of investors with no access to these data modelling tools doesn't look sustainable."

But if more investors take alternative data, doesn't that mean that markets arbitrage this information out and it loses value to anyone seeking a cutting edge?

"Look, forgive the baseball analogies, but with geolocation data, we're still only in the sixth inning; with consumer transaction data, we may be in the seventh," one source tells Euromoney. "But it's still a relatively small number of hedge funds and discretionary fundamental managers using this data; more importantly, they all use it in different ways.

"Quant funds might be using it for lots of small long and short positions held for short periods across thousands of stocks," the source adds. "Fundamental managers and even private equity investors, who are also now using this kind of data more, use it to help dig into a handful of companies that they may hold for a long time, including names that aren't even listed."

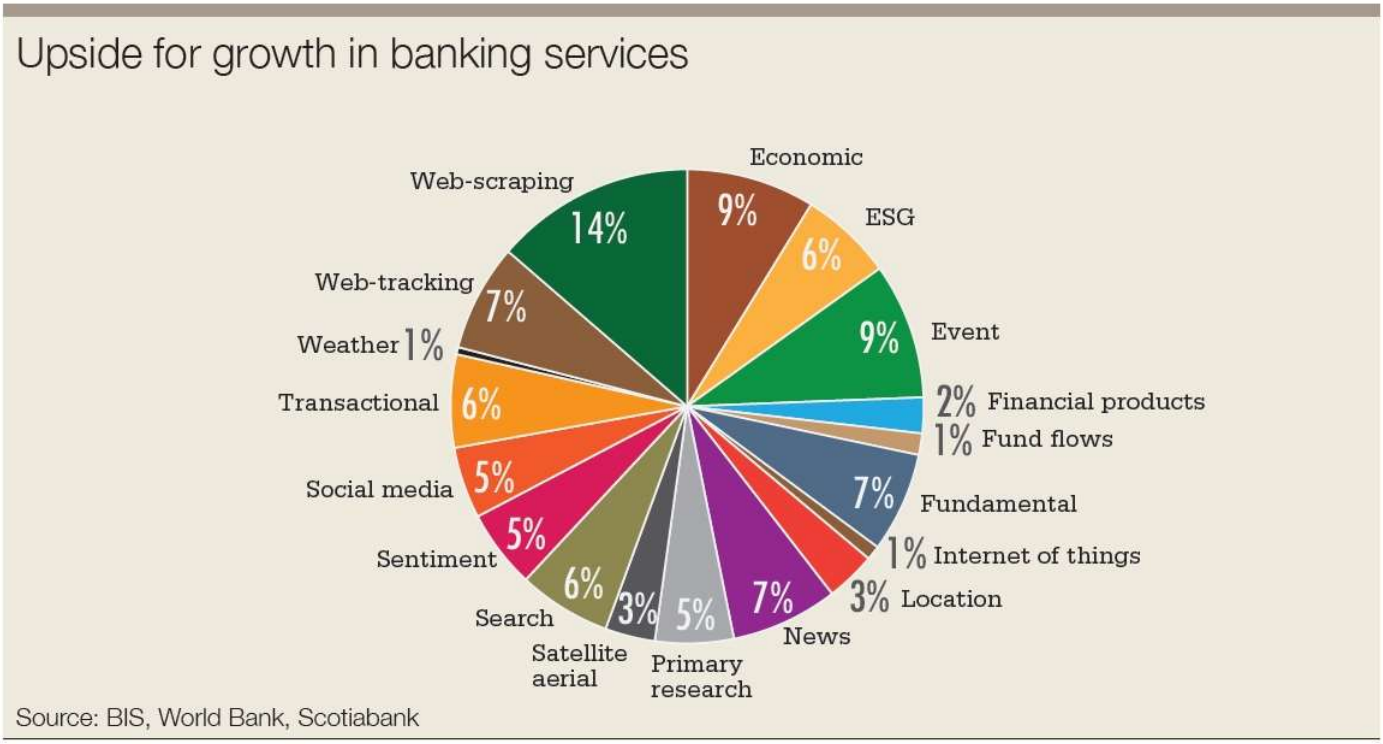
So maybe all the value has not yet been mined.

And beyond investors, Eagle Alpha's O'hUiginn says the firm has received requests more recently from Treasury departments and central banks trying to understand the economic impact of the virus. Pan at Thasos also says the firm has seen interest from non-traditional users.

What about corporations? For some companies there are benefits to keeping data that they might be tempted to monetize in-house and even source more from others.

Big logistics companies might have very useful insights into storage capacity at docks and other warehouses and into fastchanging freight transport usage amid the current supply-chain disruptions. But does the revenue from selling that add up to much? Might it not be better to keep such data private as it will drive dynamic pricing to logistic companies' own clients?

The world's biggest banks have hugely valuable stores of transaction data, but they need it for their own risk management and pricing. And they must be wary of the reputational risk – especially in the aftermath of this crisis – that might come from being seen to sell it to third parties.



The future for research?

Banks are finding other ways to play the alternative data game. Sell-side research is integrating alternative data to navigate the current coronavirus crisis. It may even be the future for bank research, although it's not an easy transition.

Most banks have been slow to adopt alternative data and are far behind other users such as hedge funds. Those banks that have invested in alternative data, however, believe that it is invaluable and that we are likely to see bank research change as a result of this crisis.

Abraham Thomas is founder and chief data officer at Quandl, a large alternative data provider. Thomas says that over the last few weeks his firm has seen a growing appetite for alternative data from bank in-house research teams that are trying to make sense of Covid-19 and its economic impact.

"Based on our own interactions, I would say this is more a question of when sell-side research will start to include alternative data, rather than if," says Thomas.

"Many banks have been using small but steadily increasing amounts of alternative data in their research for several years now," he adds. "I expect the Covid-19 crisis to accelerate that adoption curve, simply because the crisis has certain characteristics – speed, uncertainty, unique macro impact – that make alternative data especially valuable right now compared to more traditional data."

Thomas points out that it's not just about speed. "The granularity of alternative data – the way it can provide a more detailed picture than, say, financial statements – is also a benefit," he says. "We all know there is a huge economic fallout in sectors like hotels, events and travel, but alternative data can also help figure out the spill over into other less obvious industries.

"One might assume retail is doing badly, but grocery stores are doing well, as are logistics and shipping. One alternative data source I have seen is pricing for long-haul truckers – that gives a key indication of what is happening in logistics."

UBS is one bank that has embraced alternative data with enthusiasm. Investing heavily, it set up UBS Evidence Lab six years ago. This is now the largest alternative data lab in the world, with 45 labs and hundreds of employees working around the world gathering, testing and cleaning data, and building frameworks. Last year the Lab fed data into over 3,000 research reports.

"What is happening now within alternative data reminds me of what happened with 24-hour news after the Gulf War," says Barry Hurewitz, global head of UBS Evidence Lab Innovations. "Up to that point, people didn't really understand the value of TV news 24 hours a day, but that war was a watershed moment. In the midst of this current crisis, people are having a similar moment with alternative data, in that it's helping people see what is going on in real time. People are now understanding its value."

Hurewitz says alternative data is particularly helpful when markets cease functioning as normal: "People tend to use past events to extrapolate forwards – to provide some base rate – but we just don't have that here. As a result, people are having to form new belief systems and recalibrate as more becomes known.

"The more those belief systems represent the reality, the greater the likelihood of making good decisions; and that's where alternative data can help, by providing realtime facts instead of narratives that have yet to be validated."

Barry Hurewitz, UBS Evidence Lab Innovations: "That's where alternative data can help, by providing real-time facts instead of narratives that have yet to be validated"

Through the crisis, these narratives have not always matched reality: markets have gone up in response to unemployment figures that would have ordinarily caused a selloff.

At YipitData, an on-demand data provider, head of marketing, Travis Wittenburg, explains that while one might have thought that meal-delivery services would be popular, the data is showing that deliveries have actually slowed.

And Hurewitz points to luxury goods as another anomaly. "Surprisingly, luxury price data in China started going up early in certain categories," he says.

Among the data that UBS has been looking at about the economic impact of the virus in China is pollution (a climatologist is on staff), mobility patterns of people in Shanghai, which are almost in line with last year's levels, and the number of private jets in and out of Macau to gauge the movements of high rollers.

Hurewitz gives another example of where alternative data has provided insights into risk management and investments.

"When the price of oil came down a few years ago, we looked at the regions and towns where frackers were going bankrupt to plot which firms might be impacted using geospatial data," he says. "The greatest exposure in a number of towns with high exposure was a hospital company. We can use a similar technique during this period – to understand which companies are exposed to areas of biggest contagion.

"It's not for us to determine what that means in terms of economic recovery or whether that's priced in. That's up to analysts and our clients," Hurewitz adds. "But we have worked backwards trying to understand how analysts think and what they need to come to their decisions so we can work on getting data, insights and analysis that can help them."

If the current crisis leads to a surge in demand for alternative data, Hurewitz says that some financial institutions will find themselves lagging. "Two thirds of the data we use we gather ourselves, and we began six years ago. If you haven't been collecting it already, it's going to be hard. There are vendors of course, but it means the data you will be buying will be piecemeal.

"Having high-quality analysis at scale is hard," he continues. "It's a large commitment and the longer you're at it, the better you get. I think that's why some large financial institutions that ignored it or saw it as a 'nice to have' have now felt it too expensive to get into if it doesn't support their core business."

Not an easy lift

The investment is substantial, as shown by the division's tear-down lab. "We bought a Tesla, a Chevy Bolt and a BMW and took them apart to price every part to understand the profitability," Hurewitz says.

"Similarly, we bought ball bearings that are used in wheels and machinery from several different manufacturers and spun them billions of times over months to see which would last, so analysts might better understand which manufacturer ultimately had the highest quality ball bearings."

Hurewitz says the lab also has an incubator team that is tasked with building new frameworks and scouting for brand new data: "That way in two to three years, half of the data we produce and use will be new."

Citi began its foray into alternative data in 2017 – initially to analyze the bank's own data but since expanding to include third-party data, such as browsing, travel and website information.

"Back then we assumed we could hire data scientists and be off and running, but that was not the case," says Rich Webley, head of Citi Global Data Insights. "Not only do you need the new skills – we have seven data scientists on board now – but then you have to access the information. If you are a large firm, you need the architecture, the engineering, systems, legal approvals and discussions with regulators, as well the assurance that all internal rules are being met.

"It's not an easy lift. But we reached critical mass last year, so now we are at a point where in just a few hours we can spin out interesting analyses of data we are using." Webley says alternative data is slowly changing the sell-side research model.

"Research departments are fairly antiquated in how they think about information – working on a quarterly cycle and focusing on company fundamentals. This new range of data techniques has been slowly creeping into bank research – and the coronavirus crisis has ignited and accelerated that adoption."

> At Quandl, Thomas says the adoption is likely to see banks collecting their own primary data, mashing up multiple datasets, building models or dashboards, making economic forecasts using alternative data, as well as other means of implementation.

Abraham Thomas, Quandl: "We have recognised in this crisis that good data is helping us to understand the world."

"Research teams are strongly motivated to add value, not just redistribute raw data or third-party material," he says. "I know of teams doing all of the above. At the same time, it's simply more efficient for these teams to leverage external resources like Quandl where they can, instead of reinventing the wheel for every single dataset or insight. So I expect a combination of inhouse work and external collaboration, and that's the pattern we're already seeing in our sell-side engagements."

Ultimately the question of whether sellside research teams will adopt alternative data is going to be driven by the customers for that research.

"Our own experience working with the buy-side firms, who make up that same customer base, suggests that they do indeed find alternative data to be valuable," says Thomas.

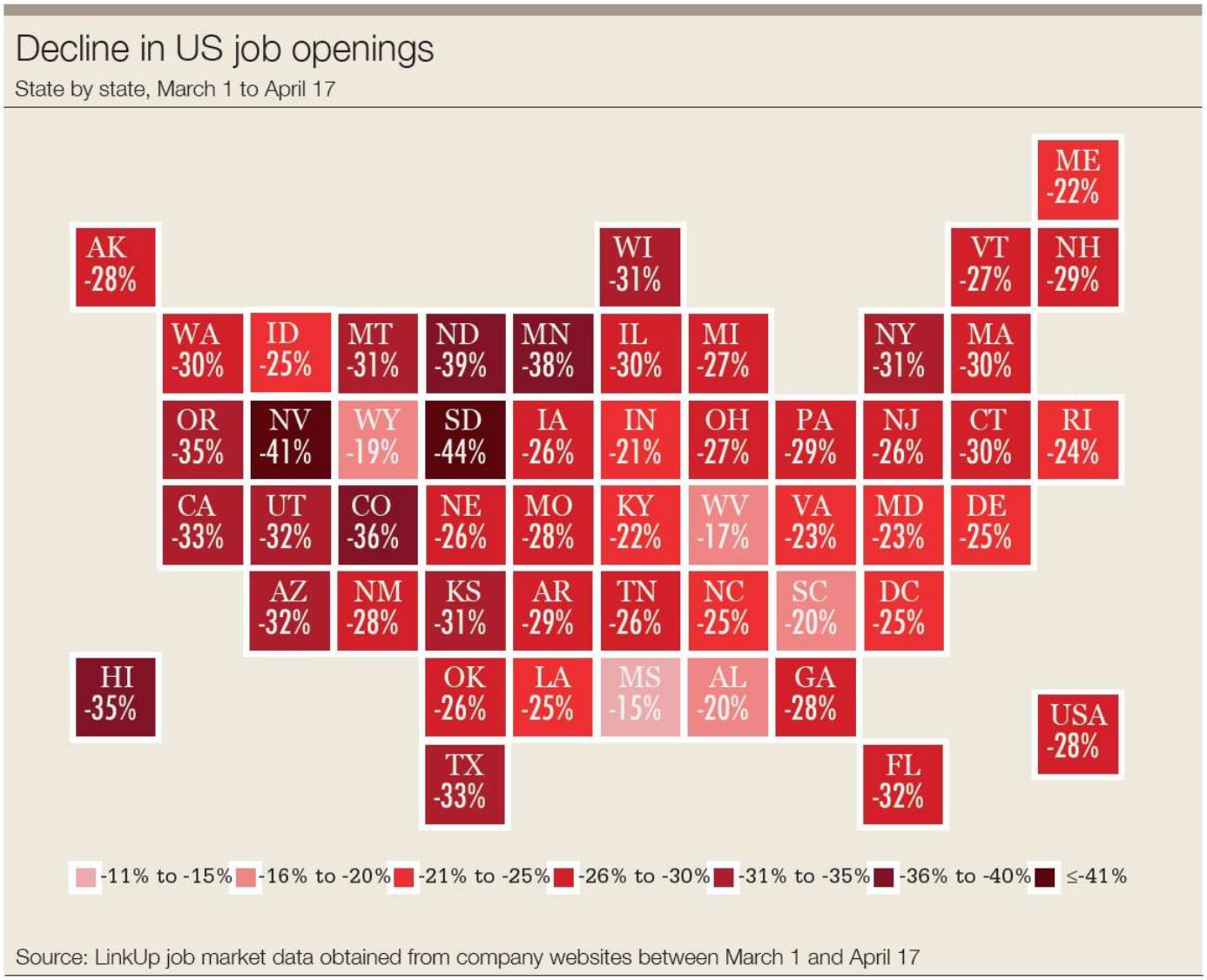
Citi provides its clients as well as its bankers with data. UBS's Evidence Lab has been taken out of the bank's research division and now provides insights and analytics not just to the firm's analysts but also to its bankers and its clients through the institutional and wealth management divisions. Hurewitz says the bank will even be looking to sell its data to corporates in the future.

"All of a sudden, mutual funds and asset managers want information to help them judge the long-term implications or when the markets will bounce," says Thomas.

Other useful data during this period has been sales of car insurance. "Car sales data is slow to get, but we can see into car sales by looking at sales of new car insurance policies – that dataset updates daily," says Thomas.

"Similarly, we can understand what the financial stress of the economy is by using datasets that measure the timing of small business bill payments. That will give us earlier insights than SBA [US Small Business Administration] or BEA [Bureau of Economic Analysis] data." Citi's Webley points to data on job postings as offering insights into which sectors and regions are being most affected and which will recover fastest.

"That data is down to the zip code, so we can really see into where geographies are being hit." Webley also points to data from thirdparty vendors such as SimilarWeb that analyses the web cookies from 130 million Americans: "That browsing activity translates into analysis on company and sector performance. Unsurprisingly, browsing of travel sites has fallen."



Finally, Webley mentions air pollution data. “The last six weeks of data shows New York City air pollution to be the best it has been in 20 years. Sadly, when that air quality starts to deteriorate, we will know that the economy is getting back to work.” That data, he adds, might also support environmental, social and governance investing: “It might encourage more innovation for us to do things differently.” Where alternative data is lacking, however, is in comparisons with the last financial crisis.

“We’ve only had alternative datasets during a 12-year bull market,” says Thomas. “Twitter was just getting started in 2008. Satellite data is only about five years old. We just don’t have granular alternative data around prior crises. It’s always been top down or anecdotal. So I think whatever data we are gathering now will be really crucial in helping us prepare for future crises.”

However, the current crisis is providing a “rubber hits the road moment” for alternative data according to Webley, who is expecting more content to come out of the sell side. But he also says there are challenges ahead.

“The discussion of what data is appropriate to use will be ongoing. We have decided not to use geolocation data at present, for example, and data rights will be a key topic particularly if there is a change in the administration in the next US election.

“But I think we have recognized in this crisis that good data is helping us to understand the world. It’s right that we have increasing scrutiny, but I think the momentum is here now that appropriate and high-quality data will become part of mainstream research.”