

## SENTIMENT DATA IN FX STRATEGIES

2020 has seen an increased decoupling between financial markets and economic fundamentals, with countries associated monetary and fiscal policy reactions to the outbreak of Covid-19 being central to this. The level of market turmoil has tested the processes of many active managers. In this paper we focus on how this has impacted currency management.

Active currency strategies are typically based on traditional financial market data applied to classic factors such as carry (interest rate differentials), value (the identification of mispricing) and momentum (following trends). However, the information content that feeds these strategies has begun to degrade over recent years, with the advent of Covid-19 accelerating this process. As such, it has become more difficult for currency managers who use these classical factors to achieve sustained strong performance. For example, consider the interest rate differentials between the G-10 currencies that drives carry strategies. Since the global financial crisis in 2008, these have stabilized at significantly lower and more uniform levels, meaning lower amplitudes driving returns and lower differentiation for identifying opportunities. With central banks cutting rates in reaction to the economic slowdown caused by Covid-19, this has become yet more pronounced and the predictive edge of carry strategies is significantly diminished. From the perspective of value strategies, any differentials to a definition of fair value may now take an increasingly long term to bear fruit, particularly as large scale corrections typically occur in reaction to turmoil and we have seen many of these play-out recently. Momentum still has its place, but managers need to work increasingly hard to capture trends amidst the noise of a central bank managed, news sensitive environment.

Berenberg's research has shown that an alternative factor that gives a high explanatory power to currency market movements is sentiment. Sentiment reflects the mood of market participants in relation to different factors such as the economy, politics and society, which in turn drive currency returns. Whilst sentiment is not a new factor, advances in technology now allow for the use of alternative data to capture the sentiment of market participants more efficiently and more frequently. Analysing alternative data for sentiment information in a systematic way brings opportunities to find added value in currency markets.

### Alternative Data as a new source for currency manager

“The secret of change is to focus your energy not on fighting the old, but on building the new” – Socrates

As outlined in our most recent paper “History of FX” currency managers face challenges in generating added value using traditional factors like carry, value and momentum. In this follow up paper we discuss sentiment from alternative data as a factor that – based on our research – significantly explains currency returns.

First, let us look back: Friday, June 24th 2016 saw \$2.1 trillion wiped off global stock markets, by Monday the number was \$3 trillion. On a volatility adjusted basis European equities saw one of their biggest moves in recorded history. Prepare for the unexpected – within reason, but the reasoning behind setting expectations had broken down: Brexit. The polls had failed to correctly measure the mood of British

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*Within **Insights** we provide you with a deeper understanding of our investment philosophy and thinking.*

*Traditional factors such as Carry, Value and Momentum have recently faced losses in their information content.*

*Sentiment captures the mood of market participants' and provides high explanatory power to FX movements.*



voters, and the markets had largely accepted the polls as truth. Technology in the age of information had seen a vast proliferation of news, opinion and data but polling methods had largely remained old-school. The importance of this change had yet to be adequately measured, but its influence was keenly felt. November of the same year saw the Trump Presidency start in the US, an event seen as fairly unlikely by the standards of traditional measurement, but one that moved geopolitical and market expectations. The role of using the huge amounts of data now available to capture expectations was clear, and the potential to use this to influence outcomes thrust it firmly into the spotlight.

The advent of this change had not gone unheralded, the BIS IFC Report No. 3 in 2015 discusses central banks interest in and use of big data as a tool to meet their agendas. The conclusions therein indicate an awareness of the growing value of this new resource, but the pace of adoption was slow. As we have experienced recently during the lockdowns of Covid-19, it is necessity that drives change and the events of 2016 accelerated a change in the way data would be used to indicate opinion. If we consider expectation polling, old methods involved using a relatively small sample set of the population with whom you had to actively engage in order to measure opinions. Now huge datasets are available that give the ability to sample the opinions of a relatively large proportion of the population, passively engaging with them in a way that can potentially remove active bias.

There is no doubt that the availability and volume of data has increased exponentially over recent years and it is most likely to continue to grow in the years to come. But can it be used in an investment process?

*The amount of data available in terms of news and opinion has grown exponentially, but has only recently begun to be used effectively.*

### **Rationale behind the approach**

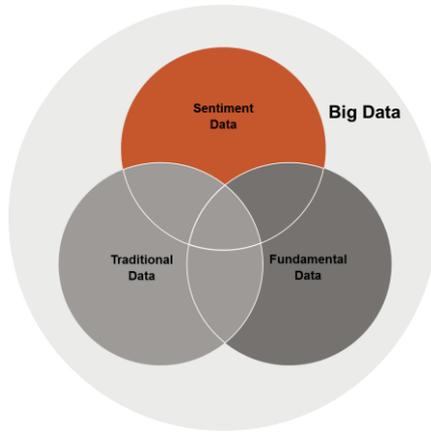
In recent history we have seen how an external factor like Covid-19 impacted markets globally. In many ways, the cycle of social factors to political factors to economic factors has played out repeatedly here. There is no doubt that these factors are relevant for market participants and that actions based on them drove prices. But how can the mood of market participants be measured and ultimately used to generate alpha in FX strategies?

We see that sentiment – in ways similar to carry and value, but different to momentum - represents a factor with a forward looking bias. Carry holds the expectation that interest-rate differentials indicate future risk-premia and value strategies assume that a deviation from fair-value will ultimately be followed by a reversion. Our research shows that sentiment also has many elements of a forward-facing strategy as it generates signals that indicate future price moves based on the expectation that market participants act on news as it disseminates. Therefore, sentiment deserves consideration in modern investment processes.

## Using Sentiment

For the purpose of this paper Big Data comprises the traditional market norms of price data and fundamental data as well as the newer formats of sentiment data,

**Fig. 1 - Big Data Universe**



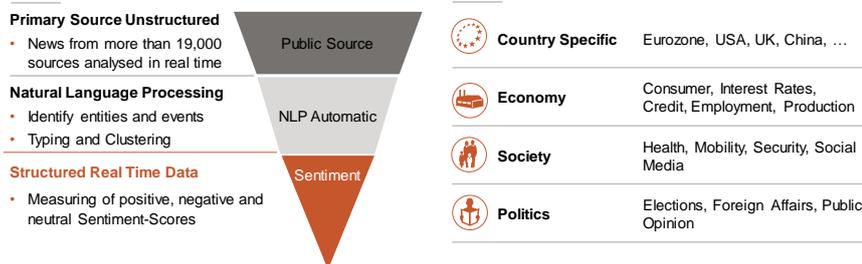
which can be largely categorised as alternative data. Alternative data ranges from satellite data to social media posts. The challenge for Asset Managers is to identify data that is relevant to the investment process and data that defines its competitive edge. Correct data identification and interpretation is crucial.

The most important step in the investment process is to define data that matters to market participants and hence is driving markets – in our case currencies.

## Transforming unstructured data

Figure 2 explains the steps from unstructured news to sentiment. Sourcing large datasets of news and analysing its content is performed via natural language processing. The data covers scheduled news such as releases of macroeconomic data as well as unanticipated news, for example natural disasters or geopolitical events. Algorithms screen large data sources for pre-defined indicative keywords. Sources include editorial content like newspapers, research, news from economic events like central bank meetings as well as user generated data sourced from social media. This data is sorted and analysed according to predetermined parameters. In addition to keywords, natural language processing accesses the sentiment associated with this keyword or the text itself relative to the context of its use. The result is that sentiment reflects a positive, negative, or neutral mood. By analysing thousands of different sources, the overall market mood can be captured and quantified.

**Fig. 2 - From unstructured news to sentiment**



The sentiment data universe is large and noisy. It must be filtered for information that has a causal relationship to the market of interest.

In our analysis we identified that news and events regarding economics, politics and society proved to have the most impact in their explanatory power regarding FX movements. Political and economic developments and decisions regarding trade agreements, conflicts, national debt, interest rates or elections influence exchange rates directly or indirectly via the perceived stability of a country or curren-



cy area. Moreover, societal events like healthcare, mobility, security, and social media proved to be significant.

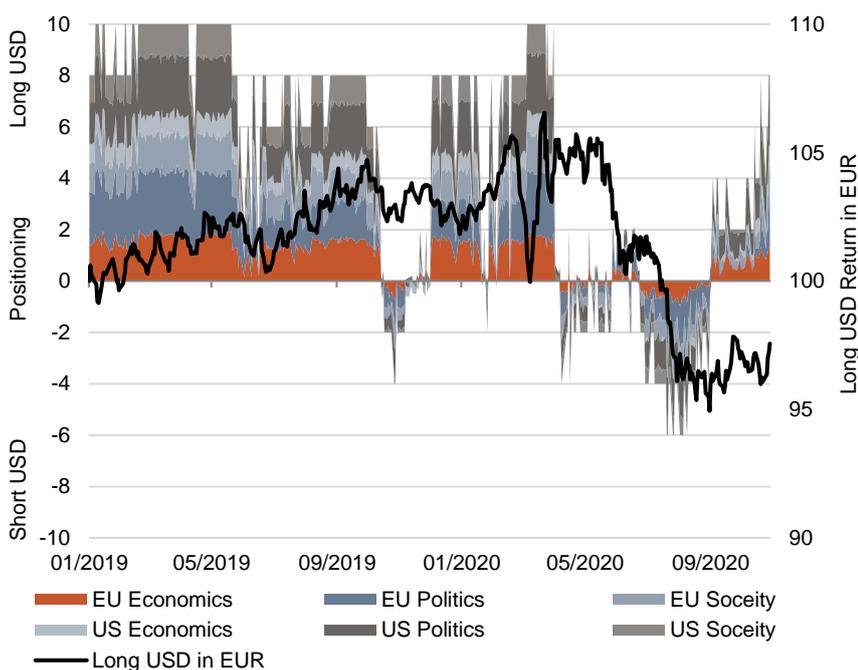
Interestingly the most intuitive query, which is news related to currencies, e.g. “EURUSD”, seems to have no added value. Why is this the case? The explanation is straight forward. a) News about currencies typically tends to be backward looking, i.e., they just describe what has happened over a defined period. b) Identifying sentiment related to currency pairs remains difficult as a “positive” tone about EURUSD performance exposes the process to errors as there are risks about the direction of the interpretation. For instance, does “positive” sentiment in an article relating to EURUSD mean “positive” EUR and “negative” USD, or vice versa?

Translating the analysis into a numerical scoring system and identifying patterns that have been observed in news and moods related to currency market returns defines the next step. A signal for active positioning in the currency market can then be derived. A scoring system is used to generate long or short signals that can be used in an investment process.

### How does it work in practice?

Figure 3 shows sentiment positioning in EURUSD from January 2019 until October 2020. The positioning is based on paper trades and is neither a training period nor a cross validation period which might distort the robustness and stability of the results. It reflects aggregated positions in both EU and US politics, economics and society sentiment. Positioning can range between a score of +10 and – 10. Where - 10 is a maximum short EUR and +10 maximum long EUR position. The strategy is developed to capture low single digit market moves with a medium to long term holding period horizon. On first sight it can be observed that sentiment positioning and the underlying EURUSD movements are very well aligned which gives a very good indication of the effectiveness of sentiment as a factor for currency markets. In detail, the positioning is less extreme and more volatile in 2020 compared to 2019.

Fig. 3 - Sentiment positioning, January 2019 - October 2020



Source: Bloomberg, Berenberg.

The importance of EU and US economic factors has decreased since March 2020 (Covid-19 sell-off) compared to 2019. Sentiment on society - which includes healthcare data – as well as politics both in the EU and in the US gained relative importance in positioning. However, economic sentiment became increasingly important in June 2020 after the first shock of the pandemic was digested by market participants. Also, the pickup in the importance of US politics in October as well as EU politics is reflected in the signals which were driven by the US election and the final stages of the Brexit negotiations.

We have performed similar analysis over a range of currency pairs and have found similar results regarding the predictive ability of sentiment models.

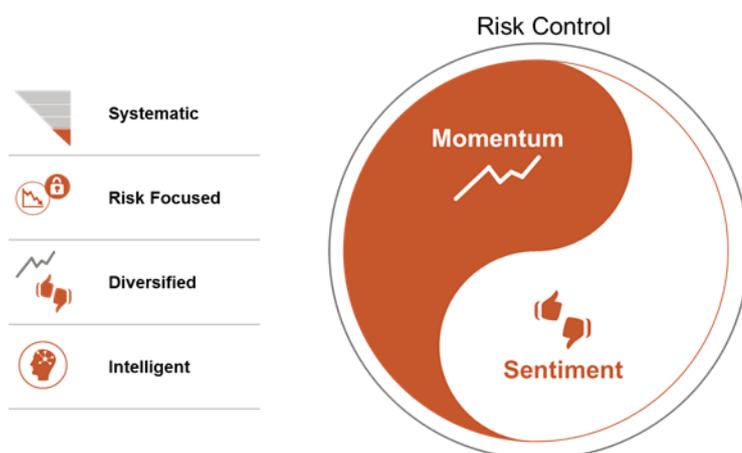
The fact that we are referencing to periods starting in 2019 is based on the quality of data available. We found that the most reliable data is available from 2016 onwards. From that time on, data quality and the significance of model signals increased significantly. We excluded training and cross validation periods in machine learning setups. The paper trading period, starting in 2019, gives the most unbiased and reliable data set to draw out conclusions on the efficiency of the strategy.

We used top level sentiment criteria, i.e. economics, politics and society for illustrative purposes in this paper. The Berenberg investment process goes deeper than that. As displayed in figure 2 the top level sentiment criteria are split into more granular data sources. For example interest rates, consumer, credit, inflation data etc. are used for economic sentiment. But currency specific drivers like commodities / energy, equity market or housing market data is used in the signal generation process. A similar granularity is applied to social and political sentiment as well as positioning and liquidity data.

#### Including Sentiment and alternative data to the existing investment process

Berenberg's sentiment approach supplements the existing trend-following momentum approach, which analyses price data based on the ideas of behavioural finance and adjusts positioning to follow market trends. The addition of sentiment data enables earlier positioning into emerging trends and thus improves performance. As a leading indicator for trends, sentiment works well alongside momentum. Momentum will ultimately confirm or reject a sentiment position and acts as a layer of confidence.

Fig. 4 - Berenberg Currency Management





The combination of forward looking and backward facing elements is the key feature that allows the taking of positions ahead of the curve (sentiment) in order to predict market movements, and to get a positive or adverse confirmation from momentum to either stick, increase or reduce positioning.

As with all investment strategies, risk management remains key to the long-term success. Factors that drive the market / strategy returns may change over time, and an investment strategy should be able to identify changes.

**BERENBERG**

PARTNERSHIP SINCE 1590

## PUBLISHER INFORMATION

### PUBLISHER

Matthias Grimm | Head of Investment & Risk Management Solutions

### AUTHOR



**Dr Heiko Dankert**

**Innovation & Data**

+49 40 350 60 - 248 | [heiko.dankert@berenberg.de](mailto:heiko.dankert@berenberg.de)

### CO-AUTHOR



**Matthias Grimm**

**Head of Investment & Risk Management Solutions**

+49 40 350 60 - 8583 | [matthias.grimm@berenberg.de](mailto:matthias.grimm@berenberg.de)

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Joh. Berenberg, Gossler & Co. KG  
Neuer Jungfernstieg 20  
20354 Hamburg, Germany  
Telephone +49 40 350 60-0  
Telefax +49 40 350 60-900  
[www.berenberg.de/en/](http://www.berenberg.de/en/)  
[Overlaymanagement@berenberg.com](mailto:Overlaymanagement@berenberg.com)