



The Swiss Stock Exchange

# Trading InfoSnack #07: Cryptophoria

11 March 2021

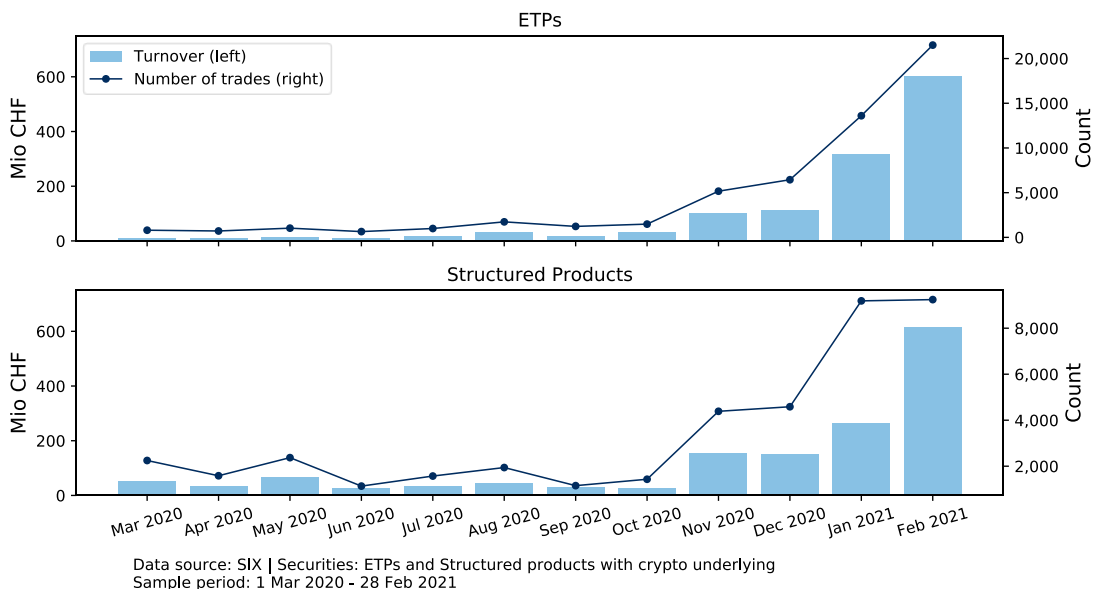
# Cryptophoria

This recent phenomenon has driven the creation of a range of listed synthetic products, such as Exchange Traded Products (ETPs) and Structured Products (SPs), aimed at allowing different investor groups to gain easy exposure in a regulated environment to the returns of underlying crypto-currencies. By analysing the net flows in turnover of ETPs and SPs listed on the Swiss Stock Exchange and their correlation to the returns of a key underlying crypto-currency, we are able to draw some insights on how different investors are seeking crypto-exposures.

The rise and rise of crypto-currencies has been a not-so-subtle backing track to the mass adoption of digital technologies – something which has been significantly accelerated by the pandemic-induced lockdown of life as we ‘knew’ it. In step with the dramatic rise in tech stocks and a renaissance of the retail investor, the market capitalisation of all digital currencies has increased 6-fold over the past 12 months to reach an all time high of USD \$1.4 trillion in February 2021. A key constituent and driver of the significant appreciation in market capitalisation has been Bitcoin, with the value of a single Bitcoin also reaching an all time high of USD \$58,000.00 in February 2021.

Over the past 12 months (1 March 2020 to 28 February 2021), a total of 34 ETPs and 136 SPs with crypto-currency underlyings have been traded on the Swiss Stock Exchange. Turnover traded in both security types (Crypto-ETPs and Crypto-SPs) has grown over 12-fold since October 2020 and reached CHF 1.2 billion in February 2021 – as per Chart 01 below. This growth appears consistent with the appreciation in price and therefore market cap of crypto-currencies over the same period.

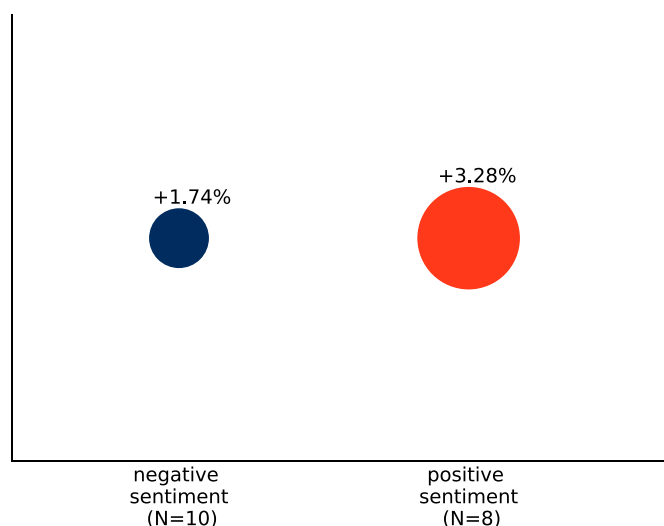
Chart 01: Turnover and trades for derivatives and ETPs with crypto underlying



In keeping with several recent studies exploring the how crypto-currency returns are impacted by communications via both traditional and social media channels, we decided to assess average returns on Bitcoin on days with key public announcements/communications across the sample period. In order to do this, we categorized key announcements into two broad categories (i) announcements from Government & Financial System Regulators via traditional media (negative

sentiment; N=10) and (ii) communications from influential Tech Company leaders via social media (positive sentiment; N=8). Analysing average returns across both of these categories on key announcement days (N=18), we observe that average returns are positive for both, but significantly more positive on days where influential Tech Company leaders posted about Bitcoin on social media – as per Chart 02 below. Across key announcement days we observe an average daily Bitcoin return of +3.28% on positive-sentiment announcement days (N=8), compared to an average daily return of +1.74% for negative-sentiment announcement days (N=10) – which suggests that over the sample period ‘there is no such thing as bad publicity’ for Bitcoin.

Chart 02: Average Bitcoin returns on different announcement days

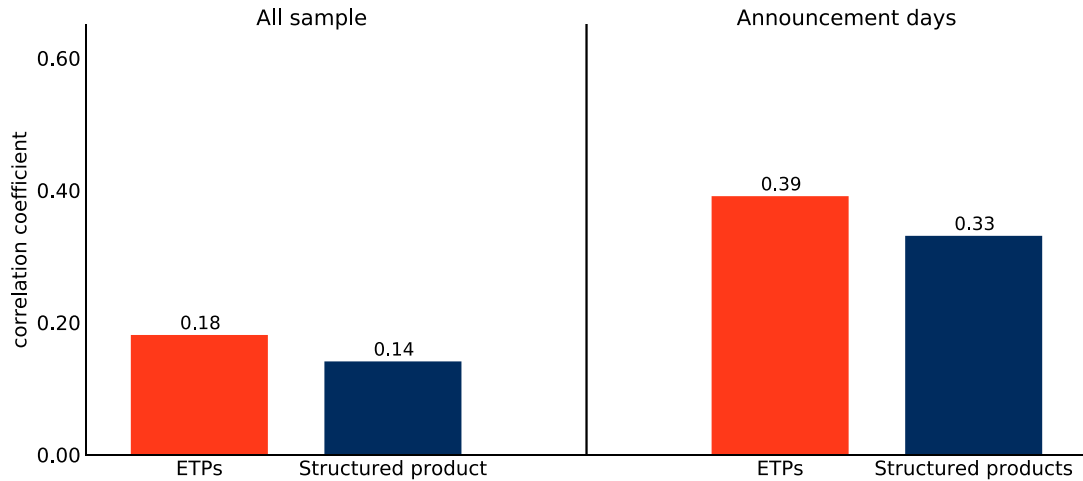


Data source: SIX  
Sample period: 1 Mar 2020 - 28 Feb 2021  
Average return is the equal-weighted mean of daily Bitcoin returns

Following on from this, we then analyse the correlation between aggressive trade imbalance (i.e. buys minus sells) in Crypto-ETPs and Crypto-SPs and average Bitcoin returns. Across all dates in the sample period we observe a correlation coefficient of 0.18 for ETPs and 0.14 for SPs – as per Chart 03 below. Computing the same metric for only days on which key Bitcoin announcements were made (both positive and negative), the correlation co-efficient is 0.39 for ETPs and 0.33 for SPs.

In contrast to this, if we look at the correlation of all aggressive turnover (buys plus sells) to average Bitcoin returns on announcement days we observe a significantly higher positive correlation co-efficient for ETPs (0.48) compared to SPs (0.17). In other words, on announcement days there is suggestive evidence of a more positive correlation between price taking activity and Bitcoin returns in ETPs with little correlation between price taking activity and Bitcoin returns for SPs. Thus, Crypto-ETPs and Crypto-SPs appear to cater to different investor preferences. Taken together, these findings suggest that flows in crypto-products on the Swiss Stock Exchange are momentum-based.

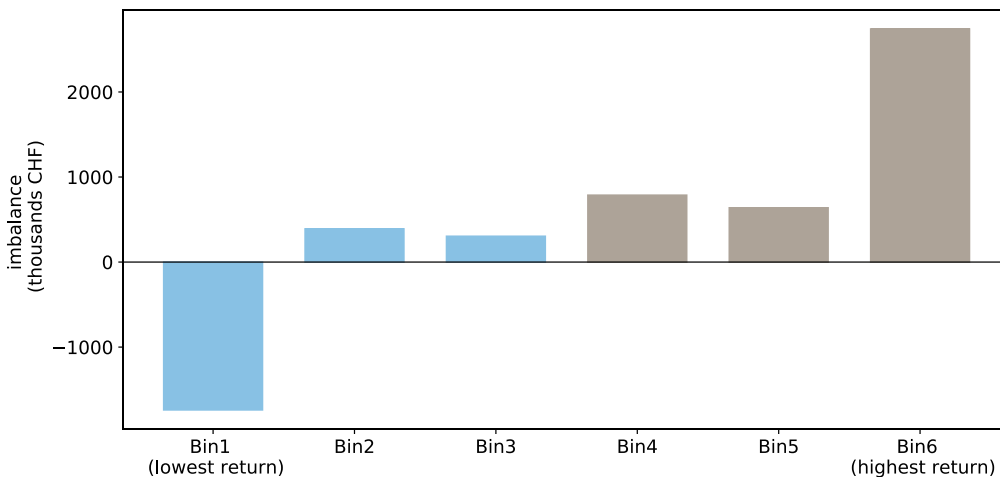
Chart 03: Correlation of aggressive trade imbalance\* and Bitcoin returns



Data source: SIX | Securities: ETPs and Structured products with crypto underlying  
 Sample period: 1 Mar 2020 - 28 Feb 2021 | Frequency: intraday, aggregated daily  
 \* Trade imbalance is the difference between buy and sell flows, in CHF

Taking a more objective view, we categorise Bitcoin returns across the entire sample period into discrete buckets, which are based on the size of the return and formed so that there are the same number of observations in each. This gives an announcement-agnostic view of the overall relationship between Crypto-ETPs and Crypto-SPs net flows (i.e. imbalance) and Bitcoin price changes. Aggregating the aggressive trade imbalance across both Crypto-ETPs and Crypto-SPs, we can make a number of observations about how net flows are impacted by Bitcoin returns – as per Chart 04 below. When considering the fluctuation in trade imbalance across both negative returns (buckets 1 to 3) and positive returns (buckets 4 to 6), we observe that ‘momentum’ behaviour is most pronounced in the extreme buckets – i.e. for the most significant price drops/spikes there is a corresponding sell-off/buy-up of ETP and SP positions. Further to this, we note that the effect appears to be asymmetric, in that the imbalance is positive across all buckets except the first one (which contains the lowest returns). The ‘momentum’ effect is more pronounced for price spikes (bin 6 in Chart 04) than for price drops (bin 1 in Chart 04), with a degree of linearity. This also suggests an overall positive ‘momentum’ for the underlying and synthetic Crypto-Products over the sample period – except during times of significant price correction.

Chart 04: Aggressive trading imbalance per Bitcoin return bin



Data source: SIX | Securities: ETPs and Structured products with crypto underlying  
 Sample period: 1 Mar 2020 - 28 Feb 2021 | Frequency: intraday, aggregated daily  
 Trade imbalance is the difference between buy and sell flows, in CHF  
 Each bin represents average daily imbalance for the whole sample period

Taking all of the above insights together, the following can be concluded: (i) over the past 12 months, trading in crypto-underlyings and synthetic crypto-products (ETPs and SPs) demonstrated 'momentum' behavior in relationship to Bitcoin price changes; (ii) this 'momentum' does not appear to be effected by negative-sentiment from traditional media sources; (iii) there is positive but differing correlation between aggressive trade imbalance and average Bitcoin returns for ETPs and SPs; (iv) there is positive but differing correlation between aggressive trade imbalance and average Bitcoin returns around key announcement dates; and (v) such product-based divergences (i.e. between ETPs and SPs) in correlations on announcement dates may indicate increased activity from certain investor types. When considering these findings in aggregate, perhaps the most pertinent question becomes: Whether different investor types are more reactive to certain information channels and sources?

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