

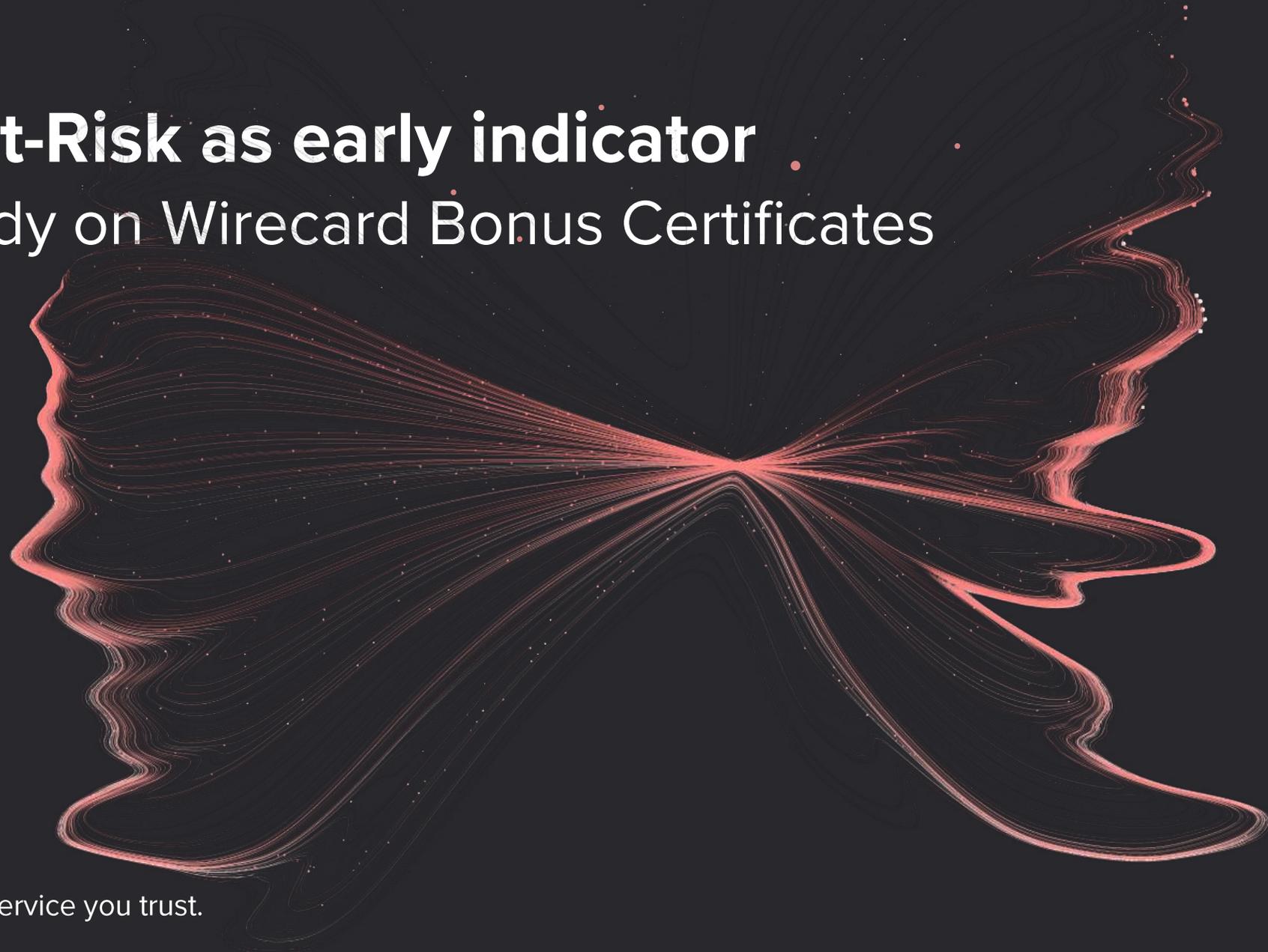


Capital Markets Digitization

Barrier-Hit-Risk as early indicator

A Case-study on Wirecard Bonus Certificates

by TTMzero



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01 Wirecard scandal – Catastrophic loss for investors

In 2017, Wirecard was ranked among the [most innovative growth companies in the world by Forbes](#).

A year later, it replaced Commerzbank in the DAX as one of the 30 most prestigious companies of the German economy. This made the company even more attractive for investors.

However, instead of investing directly into the DAX and its constituents, investors often choose Bonus Certificates as preferred investment instruments. Since Bonus Certificates offer partial protection against falling prices in the underlying stock or index, they are considered a great alternative to direct investments. Therefore, Wirecard Bonus Certificates (“Long products” such as Bonus Classic and Bonus Capped) used to be naturally appealing options to many investors.

As the scandal emerged in late April, Wirecard share price however went on a rapid free fall from over 100€ heading to 1€ per share. Once the darling of Germany’s fintech industry, Wirecard is now considered one of the worst financial disasters in Europe since the financial crisis 2008 and it is even referred to as “the Enron of Europe”.

Besides the Covid-19 turmoil which generally caused plunging prices across the global markets in early March, the Wirecard scandal in Q2 surely has turned many investors furious. Unfortunately, those who put their money into either Wirecard stocks directly or its Bonus Certificates (Long products) were simply being left devastated.

02 BHR Key Figure as an early indicator for Wirecard Bonus Certificates

Running a small analysis on Wirecard Bonus Certificates, TTMzero found out that the 3 days on which this product type encountered the most barrier breaches in Q2 were completely in line with the Wirecard scandal timeline: 29/APR (103 barrier breaches), 18/JUN (620 barrier breaches), and 19/JUN (395 barrier breaches).

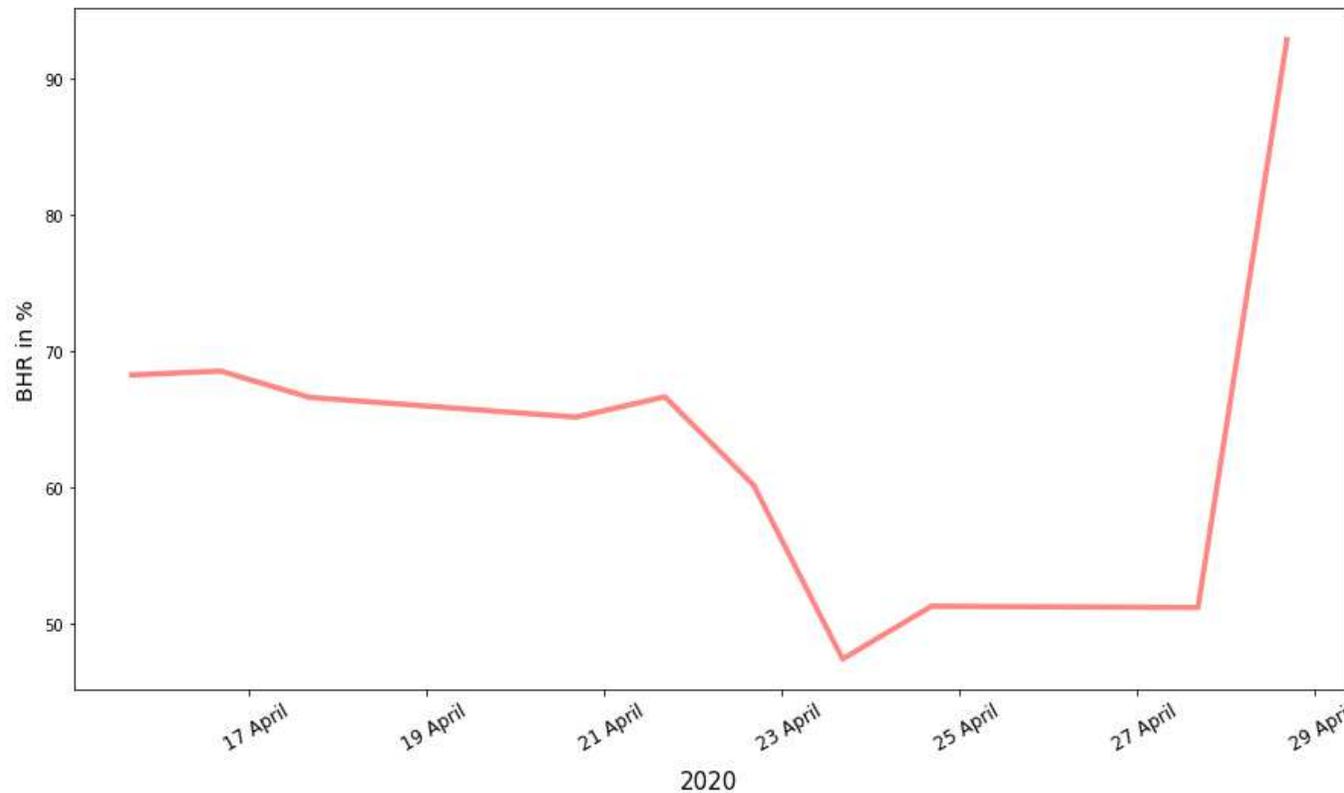
On 28/APR, KPMG published their report stating that it could not verify the 1.9b€ which Wirecard claimed to have available in its balance sheet. Immediately, its stock fell from 130€ per share at Open to 101€ per share at Close. The next day on 29/APR, Wirecard stock price crashed further down from 100€ per share at Open to 91€ per share at Close. Altogether, Wirecard share price hit a 30% dive within 2 days since the KPMG report was released.

An invaluable lesson can be learnt from the Wirecard case: while the market movement is almost always unpredictable, on-point data such as the Barrier-Hit-Risk for Bonus Certificates could be a remarkable early indicator for investors to act upon. The Barrier-Hit-Risk (BHR) is a key figure that continuously quantifies the probability of a barrier breach that a Bonus Certificate encounters, taking into account the most important impacting factors which are time to maturity, distance to the barrier and implied volatility.

A Wirecard Bonus Classic Certificate Case Study

For our analysis, we picked one Bonus Classic Certificate that was freshly traded on 15/APR with a barrier level of 90€. For this product that got breached on 29/APR (Low at 84.9€), the BHR key figure had clearly signaled a barrier breach probability of over 90% on the previous day (28/APR - Low at 95€, Close at 101€). As a matter of fact, right at the first highlighted critical point of the scandal timeline (28/APR and 29/APR), investors who would have based their judgements on such reliable computed data could have shielded themselves from the dreadful price dips.

Barrier-Hit-Risk for DE000HZ93E97
from 15Apr to 28Apr (before barrier hit on 29Apr)



04 Wirecard scandal timeline depicted

Fast forwards, on 16/JUN, the news broke out that EY refused to sign off Wirecard's accounts indicating that the 1.9b€ was spurious. In a matter of 8 trading days, Wirecard share price fell down from grace: from 120€ per share on 17/JUN to 1.4€ per share on 26/JUN, a loss of almost 99% in value. A total market value of [over 10b€ evaporated](#) through thin air.

The dramatically turbulent journey of Wirecard price movement was well documented in the following chart which displays our Evaluated Real-Time Price **TTMzero estimate for Wirecard** from 1/JAN to 31/JUL. The 3 days when Wirecard Bonus Certificates encountered the most barrier breaches in Q2/2020 (during which the scandal exploded) are also marked.

TTMzero estimate for Wirecard chart demonstrates historical data from 1/JAN to 31/JUL evaluated for Wirecard share prices. Data computed in real-time by TTMzero.



Looking at the chart above, it could not be any clearer that investors who have access to reliable information in real-time could have made a timely “evacuation” and saved themselves from catastrophic losses.

05 Into the future

While the case still remains a big headline with many questions left to be answered, the saga of a German fintech success now comes to an end. As the story unfolds, the Wirecard scandal apparently causes significant public outrage not only in Germany but also internationally. Since investigation for fraud is ongoing, investors have promptly become extra cautious with their assets. In fact, they certainly have every right to watch out for themselves more carefully.

And yet again, quality data has undoubtedly proven to be a huge advantage in our financial world today. Key figures such as BHR are constantly calculated by TTMzero and available for interested parties at Börse Stuttgart or at <https://tools.ttmzero.com/bhr>. TTMzero computes over 70 different key figures for more than 1.8 million financial instruments. Our Key Figures can substantially help investors to make well informed financial decisions and to avoid costly risks, given the stormy market conditions that we are exposed to nowadays.

Furthermore, our cost-effective Evaluated Real-Time Prices solution which is available for over 5.000 Indices, Equities, Futures, currencies, crypto-currencies and FX pairs is conveniently accessible via FIS Market Map platform for investors who are committed to make excellent educated data-driven decisions and enjoy long-term values.

TTMzero also made their previous BHR reports (for [Q1](#) and 1st Half Year of 2020 in [English](#) or [German](#)) publicly available. Investors who are interested in such insightful contents can [subscribe](#) to our Blog section or follow us on [LinkedIn](#) to be informed immediately once a new publication is rolled out.



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