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Carl Heinz Daube¹

The Corona Virus Stock Exchange Crash

Abstract

The aim of this working paper is to provide an initial analysis of the massive price slump in the international financial markets since early March 2020. This is done on the basis of an economic view, but sociological and psychological approaches are also used. The initial thesis is that the economic parameters were already "toxic" at the beginning of 2020.

Zusammenfassung

Ziel dieses Working Papers ist es, eine erste Analyse für die massiven Kurseinbrüche an den Internationalen Finanzmärkten seit dem Anfang März 2020 zu liefern. Das geschieht auf Basis einer ökonomischen Betrachtung, aber auch soziologische und psychologische Ansätze werden herangezogen. Ausgangsthese ist, dass die wirtschaftlichen Rahmenparameter bereits zu Beginn des Jahres 2020 „toxisch“ waren.

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Introduction

The corona virus COVID-19² has led to massive losses on the international capital markets: important share indexes lost about 10 % of their value in one day on Monday 9th, 2020. This has been the highest daily loss since September 11th, 2001. Even in the financial market crisis and Lehman's bankruptcy, the losses were not so large. This leads to the question of why the international financial markets have reacted so violently. Additionally, this raises the question of the constitution of the capital markets when the COVID-19 started to spread all over the world.

In the following, a first attempt is made to systematically and analytically prepare this question. It is based on the thesis that the batch situation before the outbreak of the COVID-19 was already „toxic“. All that was needed was the famous drop that caused to overflow the barrel.³ In addition, economic, sociological and psychological aspects will be taken into account. In the context of this working paper, this first step can only be superficial. In the following working papers to come, the individual points will be analysed in more detail.

The perspective beyond the pure economy seems to be appropriate, especially since the discipline of behavioural economics exists in economics. This includes the part of behavioural finance that deals with the behavior of market participants in financial and capital markets.⁴ It is about how investors behave on the financial and capital markets - namely, not always strictly rational as expected by the *homo oeconomicus*, but also sometimes irrational.

² In this paper we use the WHO typing, cf. <https://www.who.int>.

³ Here one could certainly ask the question of whether the financial market and sovereign debt crisis that started in August 2007 has already been overcome; after all, measures such as the ECB's APP asset purchasing program have not yet been completely discontinued. And many budgets of states, municipalities and cities are still critical. And one could pursue the question of whether the tightening regulations that were struck in the wake of the financial market and sovereign debt crisis - especially for the financial industry - have made the international financial and capital markets "safer". cf. Dosdall / Nichelmann (2018).

⁴ For an overview of different aspects of behavioural finance, cf. Baker / Nofsinger (2010).

Economic Data Set early 2020

In fall 2019, the signs that the German economy could be heading for a recession in view of the pattern of economic data were already growing.

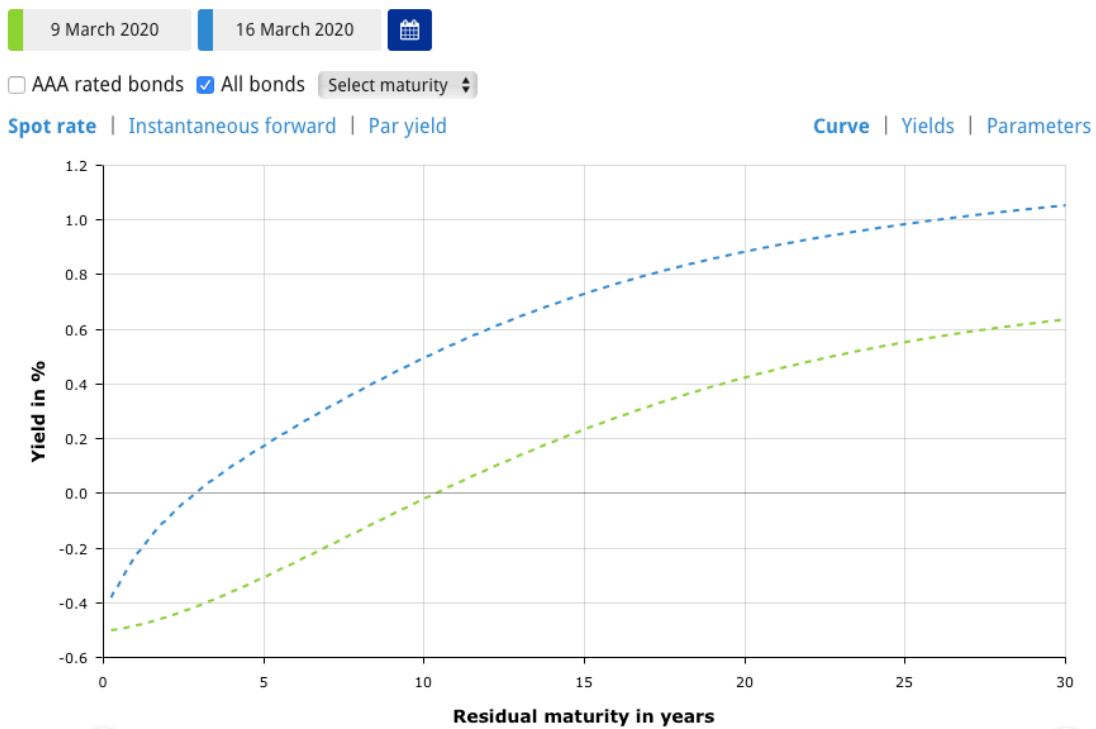
At this time, the economic prospects for Europe were also rather subdued. Among other things, the declining growth rates in China, the ongoing discussion about a trade war, the effectiveness of monetary policy and the question of fiscal leeway, the fragility of the international financial system and the indebtedness of companies and states, as well as the financial burdens from measures for climate protection were seen as potential risks.⁵

With the outbreak of the financial market crisis in August 2007, which has developed into a sovereign debt crisis, central banks worldwide have opened their liquidity gates increasingly. One of the measures was (and still is) the so-called APP asset purchase program or also known as quantitative easing. National central banks buy bonds from the market to provide liquidity for banks, which in turn should make it available to the real economy as a loan.⁶ However, the scope and effectiveness of this instrument was questioned.

As a result, the interest rate level continued to fall as the ECB (via the national central banks) appeared as a (further) demand for bonds on the market. The volume of bonds purchased so far amounts to approx. 2.5 trillion euros. Interest rates of government bonds in the Euroarea were negative - even for long maturities. But the picture changes within one week. On March 9th, the yield was negative for up to ten years. Within one week the yield curve shifted northwards - on March 16th, the yield was only negative for up to three years.

⁵ cf. <https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/KfW-Research-Jahresausblick-2020.pdf>.

⁶ cf. <https://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html>.



https://www.ecb.europa.eu/stats/financial_markets_and_interest_rates/euro_area_yield_curves/html/index.en.html

As a result of this development, interest rates on corporate bonds also continued to decline. Coupled with an "investment shortage" of private and institutional investors, bonds were bought in search of at least a few basis point of yield, the risk premium of which may not always be adequate. Whether this was the case with the Norwegian corporate bond is not to be considered here. Belke and Gros have looked at the effects of the ECB's purchase program on government bond spreads and have not seen any permanent change in risk premiums.⁷

The bottom line is that stocks have tended to increase worldwide over the past few years and have given investors attractive dividends and capital gains. This can be seen in the development of the German stock index DAX.

⁷ Here one may raise the question of what that means for the pension systems of an entire generation. And the question arises whether the signal function of interest as a price for the temporary provision of liquidity is still in effect.



<https://de.finance.yahoo.com/chart/%5EGDAXI>

Shares are one of the few asset classes with which investors can still make money. But the recent development shows very clearly that price development is not a one-way street. Here too the question arises as to whether stocks were perhaps overvalued (for a long time) and whether the risk premiums are no longer adequate. The interest rate level is an important parameter in the valuation of shares and, as described above, this is negative or at least very low.⁸

For the sake of completeness, the real estate industry should be briefly discussed here. Real estate prices - not only in Germany but across Europe - have risen continuously in recent years, at least in the so-called "good locations". For example, sometimes it is no longer possible for some people in large cities to find affordable housing.

Summarizing what has been said so far, one gets a picture that might be characterized by the following issues:

- declining growth rates of economic growth

⁸ In the most commonly valuation models dividends, income, free cash flows are discounted; cf. Berk / DeMarzo (2017), pp. 309-338.

- new impacts on the economy and private households through climate protection measures
- public debt higher in many countries than before 2007
- various geopolitical risks
- negative interest rates
- destruction of savings for old-age provision
- excess liquidity that moves to alternative forms of investment
- possibly overvalued stock markets
- tendency to a real estate bubble

Such an overall picture certainly has the potential to appear “toxic” under certain conditions or in certain constellations; the whole system could have been vulnerable. The market participants might have been aware of these risks - however, they did not know the specific extent or the triggering event. In a case like this, one speaks of “unknowable risks”; they are insidious because they occur completely unexpectedly and often lead to considerable losses. They are also known as the “black swan”.⁹

Attempts to Explain the Price Decline

As mentioned at the beginning of March 2020, for several days in a row, there were massive and long-unobserved falls in prices on international stock markets. The pictures were all alike - the development of the DAX, EuroStoxx50 and Dow Jones are shown here as examples.

⁹ cf. Hull (2015), p. 656.

DAX PERFORMANCE-INDEX (^GDAXI) ☆

XETRA - XETRA Verzögerter Preis. Währung in EUR

8.917,11 +174,86 (+2,00 %)

Ab 5:31PM CET. Markt geöffnet.



ESTX 50 PR.EUR (^STOXX50E) ☆

Zürich - Zürich Verzögerter Preis. Währung in EUR

2.525,68 +75,31 (+3,07%)

Börsenachttag: 5:30PM MEZ



Dow Jones Industrial Average (^DJI) ☆

DJI - DJI Echtzeitpreis. Währung in USD

20.776,55 +588,03 (+2,91 %)

Ab 12:49PM EDT. Markt geöffnet.



But why did this massive price decline (with increasing turnover) occur? The key economic data 2020 discussed above certainly play an important role. As is well known, future expectations are traded on the stock exchanges. The expectations were already subdued. And now they received another significant damper from the COVID-19 and the global expansion with expected massive effects on the entire global economy.

Beyond the economic perspective, it seems to be attractive to have a look at the development from a different perspective. Sometimes, one could read that globalisation in recent decades may have reached its limits. If one looks at this from a system theoretical perspective, one could come to the conclusion that there are several systems, all of which depend very much on other systems and their performance. As a result, individual systems can lose their operational autonomy and collapse. The same can happen if systems in their environment increasingly appear as so-called black boxes, which only revolve around themselves and increasingly ignore the needs of society - sooner or later they too can collapse.¹⁰ Therefore, systems should find a balanced mix of autonomy and purpose-based dependency. In the current context, it could therefore be that the market participants (subconsciously) no longer found this mix to be balanced, which led to massive sales and price losses across the board.

Market participants also tend to over- or underestimate situations; that's described in behavioural finance.¹¹ This is the reason why, on some exchanges, trading stops take effect when prices are too erratic; this is what happened on the New York Stock Exchange. An interruption of trading is also possible in Germany.¹² The situation or the behavior of the market participants on the stock exchanges, which is sometimes described as panic, can often not be adequately explained with an economic perspective or an economic

¹⁰ cf. Willke (1999).

¹¹ cf. Brealey et al (2019), pp. 227.

¹² cf. https://www.bafin.de/DE/Aufsicht/BoersenMaerkte/Handel/Handelsaussetzung/handelsaussetzung_node.html.

model. Another perspective seems to be helpful here, too, in that the phenomenon of “panic” is viewed from a psychological point of view. Uncertainty, the desire for predictability and control, the illusion of control and trust in a system play an important role.¹³ If these points are not operated, overreactions can occur. In such a situation, the trigger for this can be a single short sentence. The three words from former ECB President Mario Draghi “whatever it takes” on July 26th, 2012 contributed to a certain calming of the markets. And so the statement by the current ECB President Christine Lagarde “... that it is not the task of a central bank to lower the yield premiums of individual countries” on March 12th, 2020 did just the opposite. The reader might have a look at the Euroarea government yield curves March 9th vs. March 16th again.

Conclusion and Outlook

In this working paper, a first attempt was made to find explanations for the massive price slumps caused by COVID-19 on the stock markets worldwide. The starting point was the thesis that the economic situation was “toxic” at the beginning of 2020 and the markets were “vulnerable”. The key economic data have already indicated an economic downturn - and thus reduced opportunities to continue to benefit from rising prices in the future. However, the mere attempt to explain the development on the stock exchanges by economic data seemed to be too short. Therefore, sociological and psychological approaches were used to understand and explain the violent drop of the prices. These approaches in particular offer potential to supplement and enrich the economic view of erratic price developments on exchanges. This should be done in further analyses.

¹³ cf. Bracha / Weber (2012).

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