M.M.WARBURG & CO
BANK

ECONOMIC SITUATION AND STRATEGY

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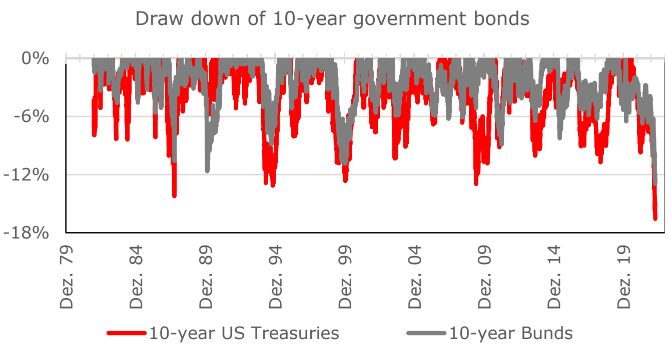
Crash on the bond market: How much further can interest rates rise?

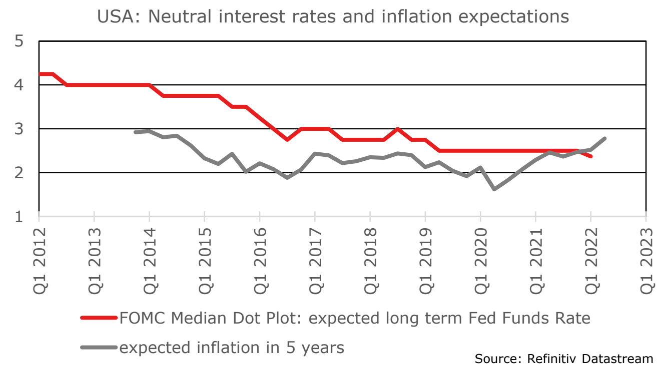
Most media and investors are intensively concerned with the situation on the stock markets. How is the Russian war of aggression affecting the stock markets? How is the current reporting season going? How do companies assess their current and the future situation? In contrast, the bond markets are living a rather unexciting and less closely observed life in the slipstream of the stock markets. This may be due to the fact that events here are often unspectacular and follow a quiet, often boring course. But not this year. In the past days and weeks there has been a collapse in prices on the bond market that can be described as unique in the past 40 years.



Source: Refinitiv Datastream

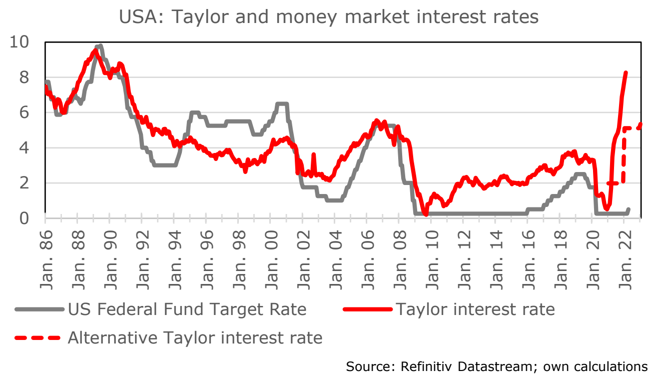
US government bonds in particular are currently suffering heavy losses, but European fixed-income securities are not looking much better. Institutional investors, who are forced to invest in bonds for regulatory reasons, are likely to incur high losses in the meantime, which could call their risk-bearing capacity into question if this negative trend continues. It is now all the more important to answer the question of whether interest rates and yields will continue to rise or whether this is just an exaggeration and prices can soon be expected to rise again.

The decisive factor for the disastrous development of interest rate securities is the strong rise in inflation, the extent and sustainability of which has surprised almost all central banks. For a long time it was expected that the price increase, which was mainly caused by the Corona pandemic and the resulting supply bottlenecks, would only prove to be temporary, but since the Russian army's invasion of Ukraine at the latest, it can be assumed that inflation is celebrating a more sustained comeback than anyone would have liked. This also means that central banks are under increasing pressure to raise interest rates. The US Federal Reserve has already initiated the turnaround in interest rates, raising rates by 25 basis points in March. The next adjustment will take place at the upcoming FOMC meeting on 4 May, probably in the amount of 50 basis points. The following two meetings are also expected to see "big" rate hikes of 50 basis points. After that, market participants expect rate hikes of 25 basis points at each subsequent meeting until the summer of 2023, so that the US federal funds rate is likely to be 2.5 to 2.75 per cent at the end of the year and 3.25 to 3.5 per cent in July 2023. In addition, the Federal Reserve will soon begin to significantly reduce its securities holdings. The central bank's goal is clear: the more restrictive monetary policy should dampen economic activity to such an extent that the inflation rate falls to two percent again - ideally without a recession occurring at the same time. In order to assess how far the key interest rate must be raised so that "Operation Soft Landing" succeeds, the theoretical concept of the "neutral interest rate" is used. This interest rate, at which the economy is in equilibrium and the goal of price level stability is achieved, can only be estimated relatively roughly. For the USA, however, it can at least be determined where the majority of central bank members locate this interest rate: Thanks to the "dot plots" of the FOMC members published since 2012, one can see that the long-term equilibrium interest rate has fallen from 4.25 percent in 2012 to just under 2.5 percent most recently. Since the US economy is still growing at a respectable rate of around 3.7 percent this year, while the core inflation rate of currently 5.4 percent is far above the target of two percent, it is clear that monetary policy must become more restrictive in order to reach the inflation target. Therefore, the targeted key interest rate must be above the presumed "neutral interest rate". But two questions remain unanswered: 1. how far must the interest rate be raised in order to bring the inflation rate back down? 2. is it possible that the neutral interest rate is at a higher level than the Fed members assume?



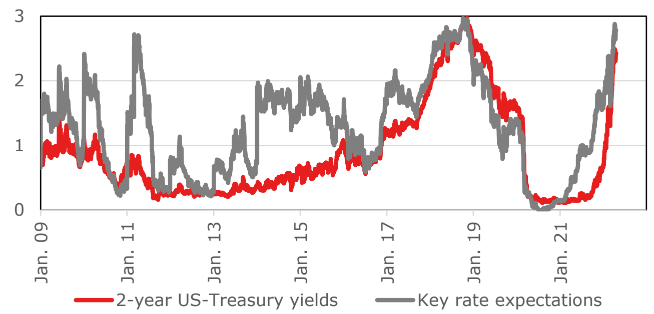
While the second question cannot yet be answered, there is a good rule of thumb for the first question, the Taylor rule, named after its "discoverer", the US economist John Brian Taylor. For this, the (real) equilibrium interest rate as well as the deviation of the inflation rate from its target value (inflation gap) and the deviation of economic growth from growth potential (output gap) play a decisive role. The higher the inflation rate and the stronger the economic growth, the higher the key interest rate should be. In the concrete determination of the Taylor interest rate, especially the calculation of the output gap has some pitfalls, but the real equilibrium interest rate (the neutral interest rate) can only be determined theoretically. Taylor, who developed his rule in the 1990s, assumed at the time a real equilibrium interest rate of two per cent and weighting factors of 0.5 each for the inflation gap and the output gap. This led to a nominal equilibrium interest rate of four percent under the assumption that the inflation rate equals the target value and actual growth equals potential output.

What would currently be the appropriate US policy rate under the Taylor Rule? The OECD projects an output gap for the US of minus two percent in 2021 and -0.2 percent this year. The inflation gap is 3.4 per cent at the most recently reported core inflation rate. Based on the original assumptions of the Taylor rule, an appropriate real Taylor policy rate of 2.9 per cent or a nominal policy rate of 8.3 per cent is calculated. This leads to the conclusion that the market expectation of a key interest rate peak of 3.25 to 3.5 percent could be set much too low. However, it can be assumed that the US core inflation rate will fall again from the summer onwards. Therefore, we apply a modified inflation gap by using the average value of the annual core inflation rate for 2022, which is expected to be 4.8 per cent (after 3.1 per cent in 2021). We also lower the real equilibrium interest rate to 0.5 per cent, resulting in a neutral interest rate of 2.5 per cent, which is roughly in line with the Fed's current long-term policy rate projections. The appropriate key interest rate calculated on this basis according to the Taylor rule is then a good five per cent, which leaves us with the assessment that the US Federal Reserve may have to tighten monetary policy more significantly than is currently expected by the market.



If the US Federal Reserve were to actually raise the key interest rate to or at least in the direction of five percent, further price losses on the bond market would be inevitable. This is because the US key interest rate, the Fed Funds Target Rate, is very closely aligned with the yield on 2-year US government bonds, which would also rise in the direction of five percent. The yield on 10-year US Treasuries is less significantly influenced by the key interest rate than is the case with short-term government bonds, but the direction of the yield will still follow the key interest rate. In addition, it can be assumed that a US key interest rate of five percent will lead to a recession in the USA. The yield curve, i.e. the difference in yields between two-year and ten-year bonds, could become very flat or even inverted with a lead time of a few months. This suggests that the yield on 10-year US Treasuries could even rise to four or four and a half percent in the course of further key interest rate increases in the next twelve months. This would correspond to further price losses of a good six to ten percent.

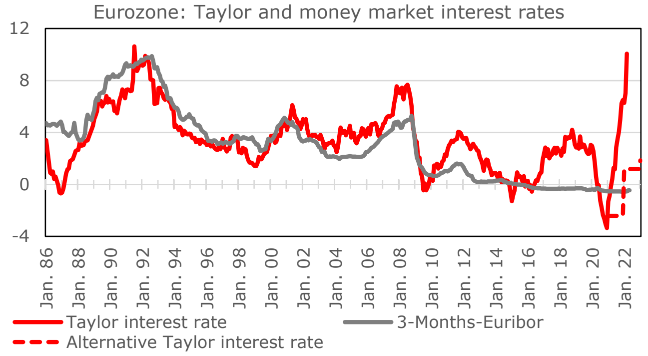
USA: interest rate development



Source: Refinitiv Datastream

What are the results of applying the Taylor rule to the euro area? Analogous to the USA, the high inflation rates in the euro area also suggest a significant increase in the key interest rate. With a recently observed inflation rate of 7.5 per cent, the inflation gap is 5.5 per cent. In contrast to the estimates for the output gap in the USA, however, the OECD assumes a significantly larger output gap in the euro area (-4.6 percent) for 2021. Economic growth in Greece (-12.3 per cent), Italy (-5.4 per cent) and Portugal (-8.4 per cent) in particular showed a considerable gap to potential growth. For this year, however, the OECD expects the output gap to close in the direction of -1.7 per cent. This results in an appropriate real Taylor interest rate of 2.8 per cent or a nominal interest rate of 10.1 per cent. As in the USA, there is a clear discrepancy between the model-theoretical and the current key interest rate. Even the market expectations of a key interest rate peak of around 1.5 per cent are clearly below the Taylor interest rate. However, the gap narrows if the current core inflation rate of 2.7 percent is used as a basis and the equilibrium interest rate is also lowered to 0.5 percent. Under these assumptions, the appropriate key interest rate according to the Taylor rule is 1.2 per cent. The fact remains that even in this scenario there is a considerable need for action by the ECB in order not to remain "behind the curve".

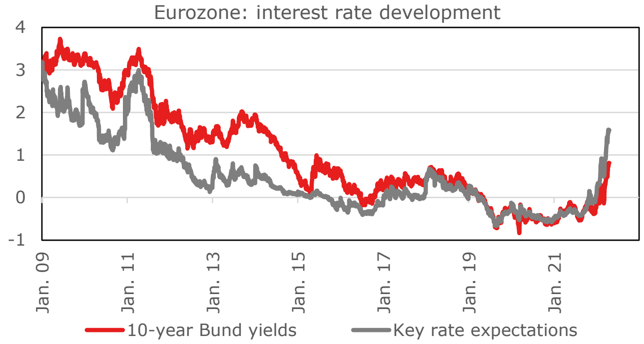
Eurozone: Taylor and money market interest rates



Source: Refinitiv Datastream, own calculations

A look at the recent very close synchronisation between key interest rate expectations in the euro area and the yield on 10-year Bunds also points to yield increases. Even if the ECB manages to anchor the key interest rate expectations of market participants at around 1.5 percent despite further price increases, there is still further potential for price losses based on the current yield level.

Eurozone: interest rate development



Source: Refinitiv Datastream

There is no question that the Fed must continue its monetary tightening and that the ECB should change its monetary policy course as soon as possible. However, it is questionable whether market expectations correctly anticipate the future or whether the central banks might not have to act more aggressively. It is therefore clear that the bond market crash is not yet over and that a recovery of bond prices seems unlikely at this point in time.

Market data

Stock marktes	As of 22.04.2022 08:12	Change versus 01.04.2022 -1 week	07.03.2022 -1 month	07.01.2022 -3 months	07.04.2021 -1 year	31.12.2021 YTD
Dow Jones	34793	-0,1%	6,0%	-4,0%	4,0%	-4,3%
S&P 500	4394	-3,3%	4,6%	-6,1%	7,7%	-7,8%
Nasdaq	13175	-7,6%	2,7%	-11,8%	-3,8%	-15,8%
DAX	14502	0,4%	13,0%	-9,1%	-4,4%	-8,7%
MDAX	31443	0,8%	10,9%	-10,1%	-3,2%	-10,5%
TecDAX	3271	-1,0%	9,1%	-11,8%	-5,1%	-16,6%
EuroStoxx 50	3928	0,2%	11,8%	-8,8%	-0,7%	-8,6%
Stoxx 50	3781	1,2%	11,3%	-0,9%	12,9%	-1,0%
SMI (Swiss Market Index)	12301	1,0%	9,8%	-3,9%	10,5%	-4,5%
Nikkei 225	27553	-0,4%	9,2%	-3,2%	-7,3%	-4,3%
Brasilien BOVESPA	114344	-5,9%	2,5%	11,3%	-2,8%	9,1%
Russland RTS	961	-7,0%	2,6%	-37,8%	-32,7%	-39,7%
Indien BSE 30	57630	-2,8%	9,1%	-3,5%	16,0%	-1,1%
China CSI 300	4037	-5,6%	-7,3%	-16,3%	-20,9%	-18,3%
MSCI Welt (in €)	2960	-1,3%	5,4%	-3,0%	12,6%	-4,4%
MSCI Emerging Markets (in €)	1087	-3,3%	-1,4%	-7,7%	-11,0%	-7,9%
Bond markets						
Bund-Future	153,80	-455	-1610	-1620	-1787	-1757
Bobl-Future	127,04	-171	-599	-578	-818	-620
Schatz-Future	110,28	-44	-203	-171	-184	-175
3 Monats Euribor	-0,48	11	10	11	7	12
3M Euribor Future, Dec 2017	0,50	20	61	-9950	106	1
3 Monats $ Libor	0,99	2	34	75	79	78
Fed Funds Future, Dec 2017	2,65	28	116	0	257	2
10 year US Treasuries	2,92	53	117	115	127	143
10 year Bunds	0,95	41	100	102	131	113
10 year JGB	0,25	3	11	13	16	18
10 year Swiss Government	0,91	30	73	90	119	104
US Treas 10Y Performance	631,39	-2,4%	-7,6%	-7,4%	-6,7%	-9,6%
Bund 10Y Performance	613,30	-1,0%	-6,3%	-6,5%	-8,4%	-7,4%
REX Performance Index	463,58	-1,4%	-5,3%	-5,2%	-6,3%	-5,5%
US mortgage rate	0,00	0	0	0	0	0
IBOXX AA, €	1,45	10	47	91	126	96
IBOXX BBB, €	2,18	12	43	123	155	130
ML US High Yield	6,48	22	44	138	170	158
Convertible Bonds, Exane 25	7369	0,0%	2,9%	-9,7%	-11,3%	-10,0%
Commodities						
MG Base Metal Index	532,24	-0,6%	-8,6%	14,5%	34,1%	15,4%
Crude oil Brent	106,99	2,4%	-13,1%	30,7%	69,1%	36,5%
Gold	1954,78	1,4%	-1,3%	9,1%	12,2%	7,3%
Silver	24,51	-1,0%	-3,7%	9,9%	-2,7%	5,3%
Aluminium	3361,26	-2,2%	-9,9%	15,7%	50,0%	19,8%
Copper	10314,50	-0,3%	0,6%	6,4%	15,6%	5,9%
Iron ore	154,27	-3,5%	-2,9%	22,2%	-8,8%	37,1%
Freight rates Baltic Dry Index	2239	-5,0%	0,2%	-2,2%	5,3%	1,0%
Currencies						
EUR/ USD	1,0847	-1,9%	-0,4%	-4,0%	-8,7%	-4,2%
EUR/ GBP	0,8326	-1,1%	0,6%	-0,4%	-3,5%	-0,8%
EUR/ JPY	138,67	2,5%	10,5%	5,9%	6,2%	6,4%
EUR/ CHF	1,0338	1,2%	2,7%	-0,8%	-6,4%	0,1%
USD/ CNY	6,4658	1,6%	2,3%	1,4%	-1,2%	1,7%
USD/ JPY	123,94	1,2%	7,5%	7,2%	12,8%	7,7%
USD/ GBP	0,77	0,6%	0,9%	4,2%	5,9%	4,0%

Source: Refinitiv Datastream

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