

Daube, Carl Heinz

Working Paper

Cost of Capital - challenges for companies in current economic environment

IUCF WorkingPaper, No. 6/2023

Suggested Citation: Daube, Carl Heinz (2023) : Cost of Capital - challenges for companies in current economic environment, IUCF WorkingPaper, No. 6/2023, ZBW - Leibniz Information Centre for Economics, Kiel, Hamburg

This Version is available at:

<https://hdl.handle.net/10419/270872>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Carl Heinz Daube¹

Cost of Capital - challenges for companies in current economic environment

Abstract

In July 2022, the ECB started to gradually increase the key interest rate in order to bring the increased inflation back into the target corridor. An increase in the cost of capital for countries and companies could be observed much earlier. This increase of cost was more significantly caused by the fact that the social and economic conditions in Germany and Europe have changed considerably in recent years. This working paper examines selected conditions regarding their impact on the cost of capital for companies.

Zusammenfassung

Im Juli 2022 hat die EZB angefangen, den Leitzins schrittweise zu erhöhen, um so die gestiegene Inflation wieder in den Zielkorridor zuführen. Ein Anstieg der Kapitalkosten für Staaten und Unternehmen war schon deutlich früher zu beobachten. Maßgeblich verursacht wurde dieser Anstieg dadurch, dass sich die gesellschaftlichen und wirtschaftlichen Rahmenbedingungen in Deutschland und Europa in den letzten Jahren stark verändert haben. In diesem Working Paper werden ausgewählte Rahmenbedingungen hinsichtlich ihrer Wirkung auf die Kapitalkosten von Unternehmen untersucht.

¹ **Prof. Dr. Carl Heinz Daube** is lecturing and researching at IUCF Institute of Corporate Accounting, Controlling and Financial Management. He is Professor of Finance and Vice-Rector Research at NBS Northern Business School - University of Applied Sciences. In addition, he is partner at MGRP Management Group Dr. Röser & Partner.

The author would like to thank Vladislav Krivenkov, B.A., Portfolio-Manager at nordIX AG and lecturer of finance at NBS Northern Business School -University of Applied Sciences.

Special thanks go to dott.ssa. Anna Bertini, researcher at ISS Istituto Superiore di Sanita, for her most valuable comments.

The social and economic conditions in Germany and Europe have changed greatly in recent years. Years of upswing and relative social stability have been replaced by pandemics, war, inflation and a rather pessimistic view of the future. The rise in interest rates poses major challenges for consumers and companies in some cases - some potential property buyers see their dreams of owning their own home dashed, some companies have to rethink their business model in view of the increased cost of capital. A look at the recent past is worthwhile when assessing the current situation.

A brief review

In August 2007, the financial market crisis took its course, culminating in a sovereign debt crisis in the Euro area in summer 2010. In July 2012, then ECB (European Central Bank) President Mario Draghi reassured the financial markets with the words "Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough" (Draghi, 2012). And indeed - the markets calmed down, interest rates fell below the zero line and remained there until the beginning of 2022.² This development was accompanied by a stable economic upswing with only low inflation.³

Countries such as Germany were able to reduce their national debt, and for several years the federal budget showed a "black zero", i.e. no new debt was taken on.⁴ Although the ECB continued its asset purchasing programme ("quantitative easing"), no new bonds were purchased on the secondary market in recent years, but only expiring bonds were replaced.⁵ As the chart below shows, the ECB in March 2023 had around €3.2 trillion of bonds on its books.

² Cf. Van Der Heijden, 2018, pp. 1166–1169

³ Cf. German Central Bank, 2023

⁴ Cf. German Federal Statistical Office 2022, pp. 13-14

⁵ Cf. Randow, 2017

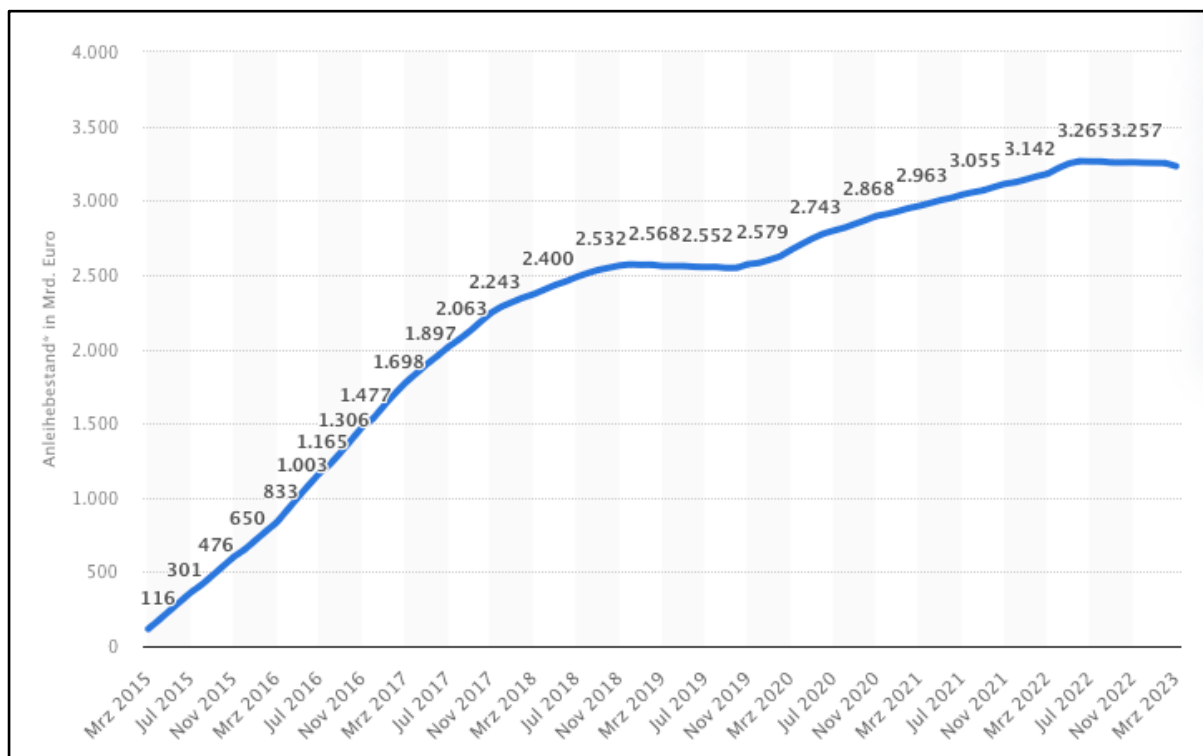


Fig. 1. Stock of the ECB's extended bond purchase programme from March 2015 to March 2023 (in billions of euros)⁶

Given the rise in market interest rates, the market value of this huge bond portfolio is likely to have fallen quite significantly. ECB's 2022 financial statements state: "Write-downs amounted to €1,840 million (2021: €133 million). This was mainly due to unrealised price losses on securities held in the own funds portfolio and the US dollar portfolio as a result of higher bond yields."⁷

Added value declines in times of crisis and war

In January 2020, Covid-19 reached Europe and Germany. As a result, there were lockdowns, massive interventions in many areas of life, large parts of economic life were effectively shut down to zero. In Germany (as in all of Europe), there were considerable losses in added value.⁸⁹ In addition, in February 2022 the war in Ukraine started with negative impacts on added value.

⁶ Cf. Statista, 2023

⁷ Cf European Central Bank, 2023

⁸ Cf. Eurostat, 2023

⁹ Cf. Koenen, Kunath, & Obst, 2022, pp. 8-15

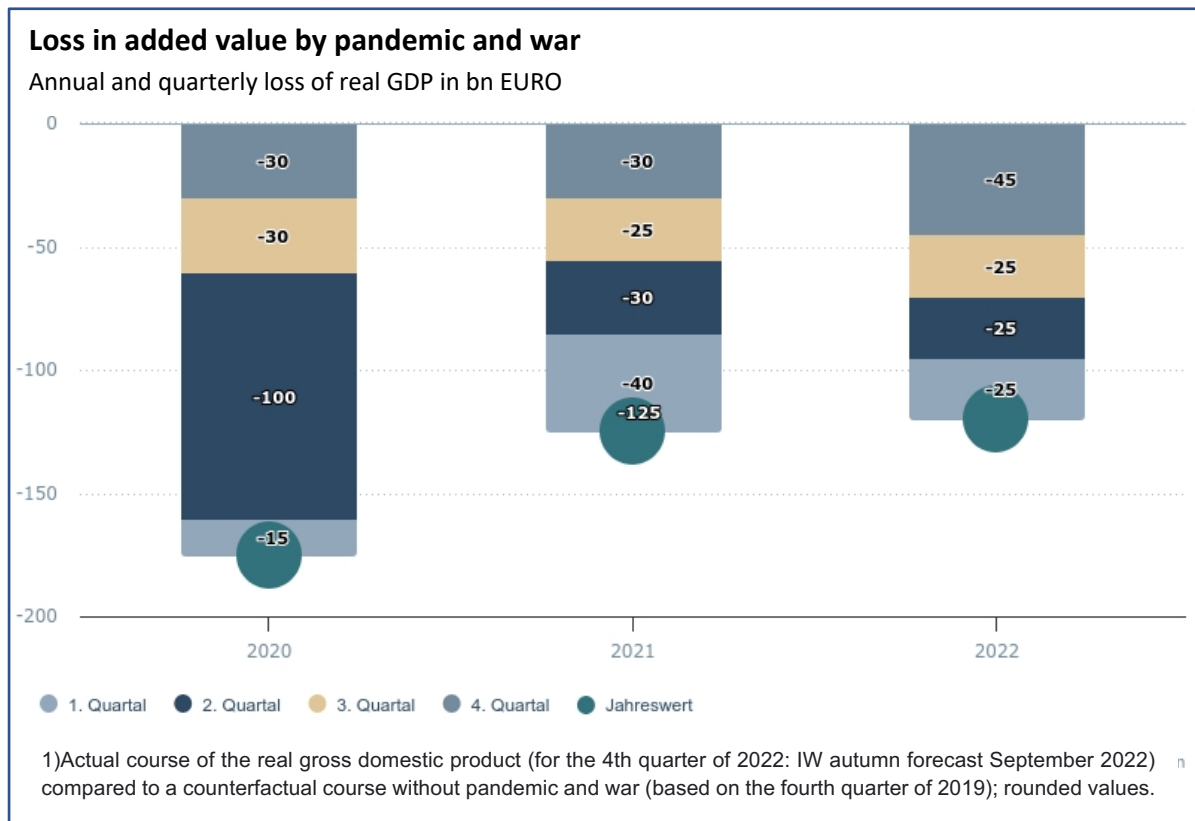


Fig. 2 Value-added losses due to the pandemic and war in Germany

(in real GDP in billion EURO)¹⁰

Economic stagnation and high uncertainty

Once again, there is a danger of massive economic collapses – accompanied by rising rates of inflation. Some market participants already fear a so-called stagflation, i.e. a situation of an economy in which economic stagnation and inflation go hand in hand. This phenomenon was observed in almost all western economies in the 1970s in the course of the oil crisis.¹¹

How is the current situation? At the end of 2022, the momentum of the German economy has weakened noticeably. In the fourth quarter of 2022, gross domestic product declined by 0.2% compared to the previous quarter. The annual result was revised downwards by a tenth to 1.8%. In particular, private consumption and investment are likely to have weakened in the

¹⁰ Cf. Grömling, 2022

¹¹ Cf. European Commission for Economic and Financial Affairs, 2022, pp. 22-24

fourth quarter. Industry continues to be burdened by high uncertainty and high energy prices.¹²

No improvement is expected for 2023 either. According to the ifo Institute (Leibniz Institute for Economic Research at the University of Munich), high inflation rates are currently burdening consumer and construction activity due to declining purchasing power and significantly increased financing costs. At the same time, the industrial economy is recovering due to easing supply bottlenecks for primary products and strong declines in energy prices. The price-adjusted gross domestic product will stagnate this year at about the same level as the previous year (-0.1%) and increase by 1.7% next year. The inflation rate will be only slightly lower in 2023 than in the previous year, averaging 6.2%. Only in the coming year the rate is expected to fall to 2.2%.¹³

According to the latest DIHK (German Chamber of Industry and Commerce) survey, Germany's companies expect mostly stagnation and sideways movement in the current year. Compared to the autumn, twice as many companies now expect better business in the next twelve months. However, the number of pessimists remains significantly higher. The balance of business expectations is still clearly in negative territory and thus far below the long-term average. The current business situation has stabilised. About one third of the companies assess their business situation at the beginning of the year as good.¹⁴

In its latest report on the assessment of the macroeconomic situation, the German Council of Economic Experts comes to the following conclusion. The outlook for the overall economic development in Germany has improved slightly compared to the economic forecast of November 2022. The Council of Economic Experts expects gross domestic product (GDP) to grow by 0.2% in 2023. The short-term downside risks to growth have reduced. Above all, uncertainty about the energy supply situation has decreased for the time being, which has led to a decline in wholesale energy prices. For example, the average price of natural gas in Europe in the first half of March 2023 was around €46 per MWh, around 80% lower than at its peak

¹² Cf. Federal Ministry of Economic Affairs and Climate Actions, 2023

¹³ Cf. ifo Institut – Leibniz-Institut of Economic Research, 2023

¹⁴ Cf. German Chamber of Industry and Commerce (DIHK), 2023

in August 2022.¹⁵ The graph below summarises the historical development since 2018 and the current forecast.

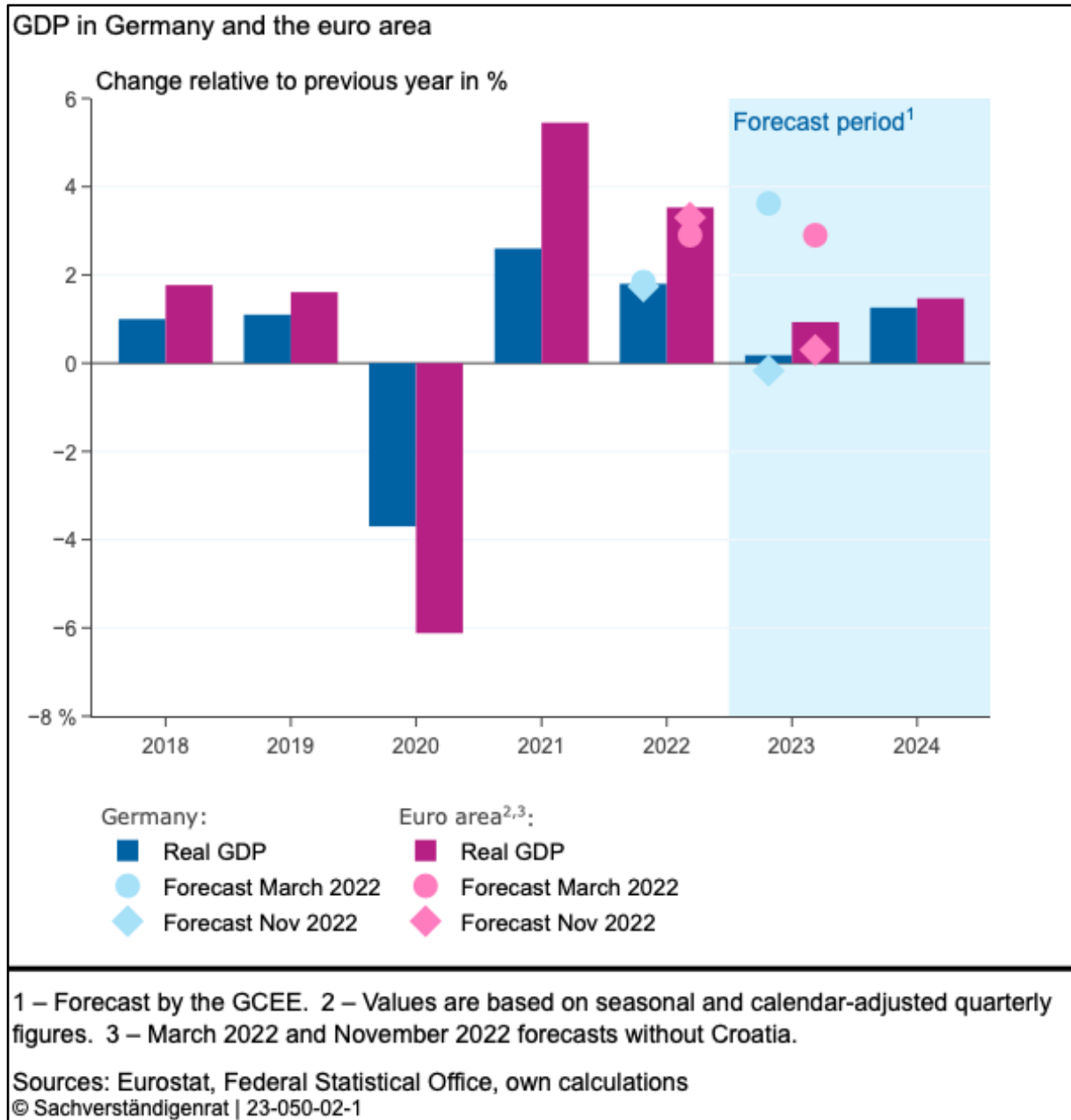


Fig. 3 GDP development in Germany and the euro area¹⁶

Broken down to individual sectors, the Council of Economic Experts' forecast for 2023 and 2024 looks as follows.

¹⁵ Cf. German Council of Economic Experts, 2023, pp. 2-5

¹⁶ Cf. German Council of Economic Experts, 2023, p. 4

Key economic indicators (in %)			
	2022	2023 ¹	2024 ¹
Germany			
Gross domestic product ^{2,3}	1.8	0.2	1.3
Consumer prices ³	6.9	6.6	3.0
Unemployment rate ⁴	5.3	5.4	5.2
Effective wages ^{3,5}	4.7	5.9	4.5
Budget balance ⁶	– 2.6	– 1.6	– 0.4
Euro area			
Gross domestic product ^{2,3,7}	3.5	0.9	1.5
Consumer prices ^{3,8}	8.4	5.9	2.9
Global economy			
Gross domestic product ^{2,3,7}	2.9	2.2	2.7
Consumer prices ³	7.4	5.3	3.5

1 – Forecast by the GCEE. 2 – Constant prices. 3 – Change relative to previous year. 4 – Registered unemployed in relation to civil labour force. 5 – Gross wages and salaries (domestic concept) per employees hour worked. 6 – In relation to nominal GDP; regional authorities and social security according to national accounts. 7 – Values are based on seasonal and calendar-adjusted quarterly figures. 8 – Harmonised Index of Consumer Prices.

Sources: Eurostat, Federal Statistical Office, national statistical offices, own calculations
 © Sachverständigenrat | 23-050-02-2

Fig. 4 Forecast for 2023 and 2024¹⁷

Also interesting in this context are the factors of the energy crisis and the loss of purchasing power due to inflation, which are having a dampening effect on the economy despite the improved outlook. The determining factors are shown in the following graph.

¹⁷ Cf. German Council of Economic Experts, 2023, p. 4

Determining factors for the German forecast			
Despite improved outlook, energy crisis and inflation-related loss of purchasing power dampen economy			
	Current situation	Assumptions for the outlook	Risks
Energy crisis	Gas shortage avoided; tight energy supplies, and energy prices remain elevated	Gas shortage avoided also in 2023/24; energy intensive industries remain depressed	Natural gas imports or energy savings lower than expected; gas shortage
High inflation	Core inflation becomes main driver of inflation; decisive monetary tightening	Monetary policy has delayed effects; inflation decreases slowly; purchasing power starts to recover	Inflation more persistent than expected; risk of credit crunch due to monetary tightening; financial markets risks; deter sufficient monetary policy measures against inflation
Global economy	China's exit from zero-Covid policy improves outlook for 2023 slightly; inflation depresses global growth in forecast period	Easing of supply bottlenecks; US monetary policy depresses demand; growth in China strengthens global economy	Chinese demand increases global inflation; rise in geopolitical tensions
Source: own representation © Sachverständigenrat 23-049-01			

Fig. 5 Determining factors for the German forecast¹⁸

Inflation is back

Inflation rates of this magnitude were last seen around 40 years ago. The inflation rate is largely driven by the massive increase in energy costs - also due to the sanctions against Russia.¹⁹

As the mood began to improve in the course of 2021, primarily due to the vaccines that were now available, economic activity picked up and confidence in an improvement in the general conditions increased, Russia began to march up to the border with Ukraine. Business and political leaders were extremely concerned about this development. In February 2022, Russia launched its invasion of Ukraine in violation of international law. The economic mood

¹⁸ Cf. German Council of Economic Experts, 2023, p. 3

¹⁹ Cf. Mbah, 2022, pp. 149-150

suddenly deteriorated and financial markets around the globe suffered losses.²⁰ Inflation rose massively within weeks.²¹²²



Fig. 6 Inflation development in the euro area²³

The FED (Federal Reserve Bank) of the USA has already started March 17th, 2022, to fight inflation by significantly raising interest rates.²⁴ So far it has raised key interest rates ten times in a row.²⁵ The ECB reacted somewhat later by raising key interest rates, as it assumed for a long time that rising inflation was a temporary problem.

²⁰ Cf. Mbah, 2022, pp. 149-151

²¹ Cf. German Central Bank 2023

²² Cf. Koenen, Kunath, & Obst, 2022, pp. 22-25

²³ Cf. European Central Bank, 2023

²⁴ Cf. Tepper, 2023

²⁵ Cf. Barrett, 2023

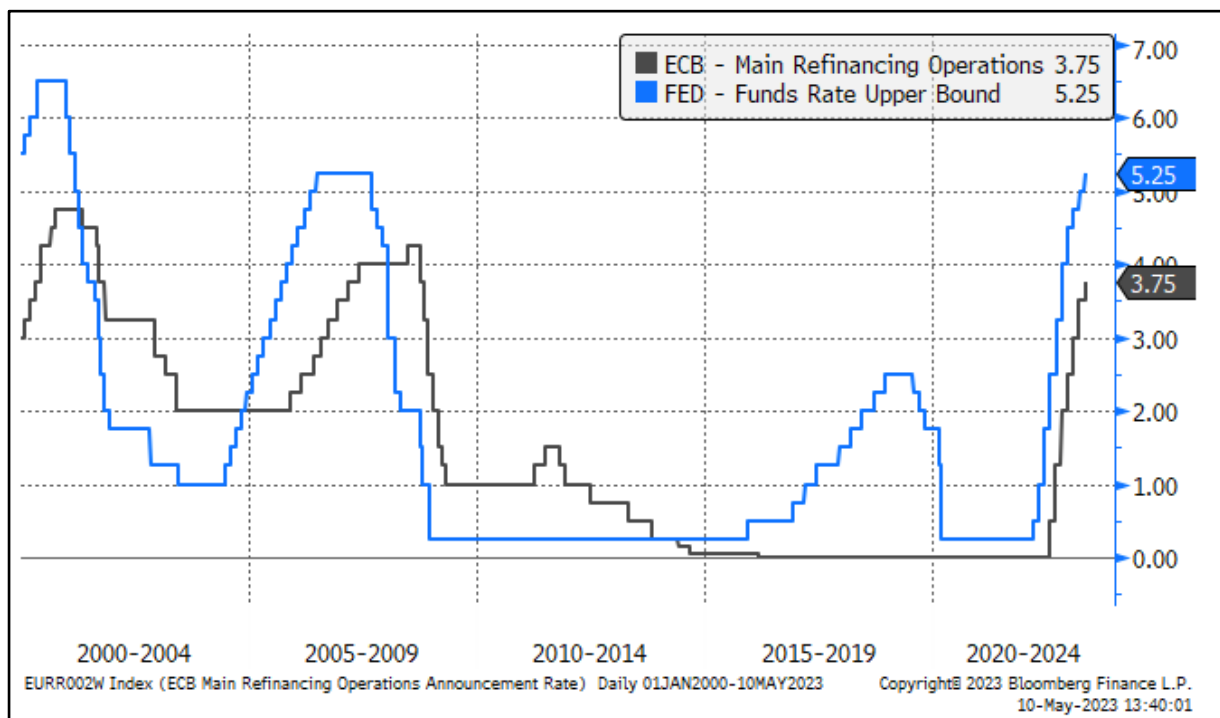


Fig. 7 Comparison of key interest rate development FED and ECB²⁶

Cost of Capital increased

At the same time, the interest rate level rose continuously. The yield curves of government bonds from the Eurozone on the cut-off dates May 10th, 2021, 2022, and 2023, may serve as an illustration.

²⁶ Cf. Bloomberg, 2023

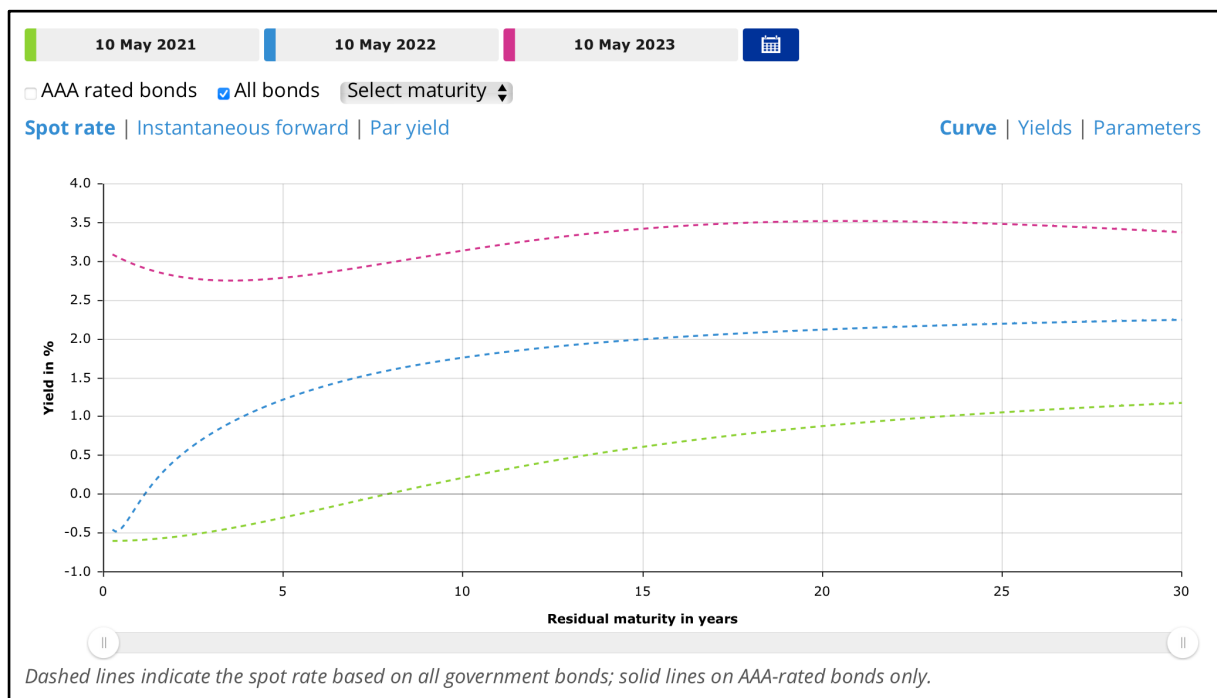


Fig. 8 Yield curves of euro area government bonds²⁷

If we take the yields of 10-year government bonds as an example, the average yield on May 10th, 2021, was 0.211%. One year later (i.e. after Russia's invasion of Ukraine) it was 1.760% and on May 10th, 2023, it was 3.139%. In very simplified terms, the budgetary burden for a 10 billion government bond in May 2021 was about €21,1 million p.a. - two years later the budgetary burden was about €310 million of interest payments p.a.

The situation is similar in the corporate environment, where the cost of capital is made up of the cost of equity and the cost of debt; one therefore speaks of the Weighted Average Cost of Capital WACC²⁸. The cost of equity is likely to have risen in the current environment because investors are demanding a higher risk premium in light of the many uncertainties²⁹. The higher cost of debt - most companies are not permanent issuers that tap the capital market on a weekly or monthly basis - does not immediately impact the total liabilities side, but only over time. Companies that still have loans or bonds with comparatively long remaining terms to maturity are affected by this interest effect later. Nevertheless, the interest effect is immediate if, for example, investments are to be financed by raising new or additional debt

²⁷ Cf. European Central Bank, 2023

²⁸ Cf. Berk, Harford, & DeMarzo, 2022, p. 436

²⁹ Cf. Berk, Harford, & DeMarzo, 2022, p. 397

capital. Consequently, the current interest rate development poses a potential threat to the interest coverage ratio. In addition, the sharp rise in the cost of capital reduces the attractiveness of new investments - which is a deliberate goal of the central banks in the fight against high inflation.

If we look at the yields (based on the respective BVLI index from Bloomberg) of corporate bonds starting from January 2014, we also have to note a significant increase in yields. On May 10th, 2021, the average 10 year yield was 0.656%. One year later it was 2.733 % and May 10th, 2023, the average 10 years is 3.984%.

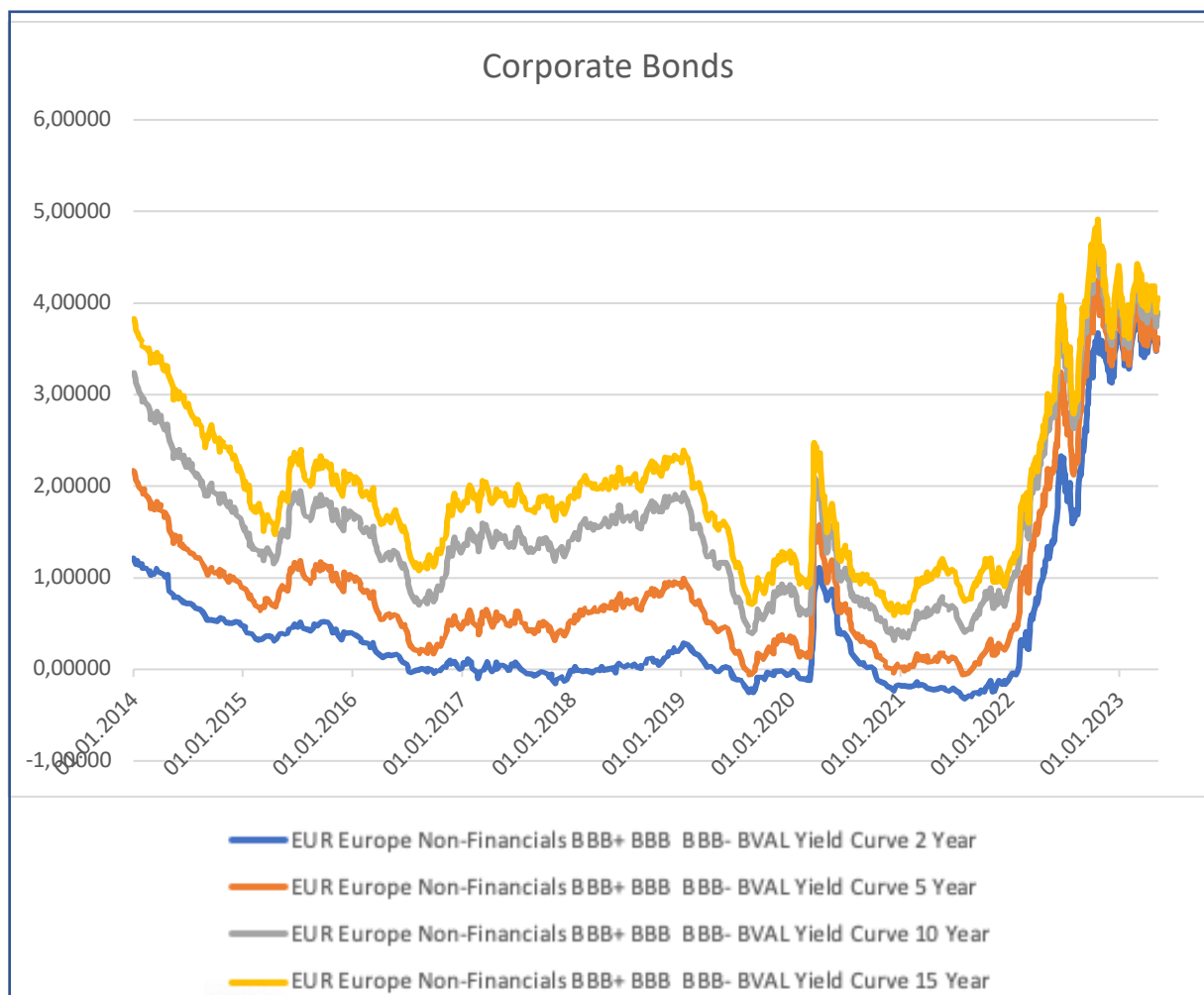


Fig. 9 Yield curves of corporate bonds denominated in euro³⁰

³⁰ Own representation based on Bloomberg, 2023

Consequently, the cost of capital for companies has already risen since the beginning of 2022 due to current geopolitical and macroeconomic developments. In view of the above forecasts, companies will have to be prepared for the cost of capital to remain at least at the current level or possibly even to rise in the further course of 2023. A slight easing - provided there are no new exogenous shocks - seems possible in 2024.

However, two recent events in the financial industry show how quickly such exogenous shocks can occur - the collapse of SVB Silicon Valley Bank³¹ and the (forced) takeover of Credit Swiss by UBS United Bank of Switzerland³². Both events have - at least in the short term - introduced additional uncertainty into the financial markets. Right now, it seems that the quick action of the FED on the one hand and the SNB (Swiss National Bank) on the other hand has reduced the risk to any kind of domino effects. Nevertheless, the transmission channels of a banking crisis are manifold. Among other thing, they might include negative wealth effects. Real GDP losses can occur as companies reduce their investments.³³ A certain degree of uncertainty and special vigilance with a focus on the financial industry will remain for the time being.

³¹ Cf. Panagiotidis, 2023

³² Cf. Ritter, 2023

³³ Cf. Obst, T., 2023.

Bibliography

- Barrett, S. (23. 03 2023). *ZDFheute*. Retrieved on 27. 03 2023
<https://www.zdf.de/nachrichten/wirtschaft/fed-leitzins-us-notenbank-100.html>
- Berk, J., Harford, J., & DeMarzo, P. (2022). *Fundamentals of Corporate Finance, Global Edition* (5 Ausg.). Pearson International Content
- Bloomberg. (2023). Retrieved on 20.03.2023 <https://www.bloomberg.com/markets/rates-bonds>
- Draghi, M. (07 2012). President of the European Central Bankat. London. Von <https://www.ecb.europa.eu/press/key/date/2012/html/sp120726.en.html> abgerufen
- European Central Bank. (26. 03 2023). *Euro area yield curves*. Retrieved on 04.04.2023
[https://www.ecb.europa.eu/stats/financial_markets_and_interest_rates/euro_area_yield_c
urves/html/index.en.html](https://www.ecb.europa.eu/stats/financial_markets_and_interest_rates/euro_area_yield_curves/html/index.en.html)
- European Central Bank. (26. 03 2023). *HICP inflation rate - Overall index* . Retrieved on 10.05.2023
https://www.ecb.europa.eu/stats/macroeconomic_and_sectoral/hicp/html/index.en.html
- European Central Bank. (2023). *Annual Report 2022*. Retrieved on 23. 02 2023
<https://www.ecb.europa.eu/press/pr/date/2023/html/ecb.pr230223~398b74f1dc.de.html>
- European Commission for Economic and Financial Affairs. (2022). *Stagflation risks in Europe: Are the 2020s different from the 1970s? European Economic Forecast Summer 2022*.
- Eurostat. (12. 03 2023). *Bruttoinlandsprodukt, Veränderung in Prozent*. Retrieved on 23.03.2023
Eurostat: <https://ec.europa.eu/eurostat/de/web/products-datasets/-/TEINA011>
- Federal Ministry of Economics and Climate Actions. (2023). *Economic Situation in Germany February 2023*. Retrieved on 27. 03 2023
[https://www.bmwk.de/Redaktion/DE/Pressemitteilungen/Wirtschaftliche-
Lage/2023/20230213-die-wirtschaftliche-lage-in-deutschland-im-februar-2023.html](https://www.bmwk.de/Redaktion/DE/Pressemitteilungen/Wirtschaftliche-Lage/2023/20230213-die-wirtschaftliche-lage-in-deutschland-im-februar-2023.html)
- German Chamber of Industry and Commerce. (2023). *DIHK-Konjunkturumfrage Jahresbeginn 2023*. Berlin. Retrieved on 26. 03 2023 [https://www.dihk.de/de/themen-und-
positionen/wirtschaftspolitik/konjunktur-und-wachstum/konjunkturumfrage-jahresbeginn-
2023](https://www.dihk.de/de/themen-und-positionen/wirtschaftspolitik/konjunktur-und-wachstum/konjunkturumfrage-jahresbeginn-2023)
- German Central Bank. (09. 03 2023). *Deutsche Bundesbank*. Retrieved on 09.03.2023
[https://www.bundesbank.de/dynamic/action/de/statistiken/zeitreihen-
datenbanken/zeitreihen-
datenbank/723452/723452?tsTab=1&listId=www_szista_iwf&id=0&tsId=BBK01.SU0200&star
tDate=2000&endDate=&startVintage=&endVintage=](https://www.bundesbank.de/dynamic/action/de/statistiken/zeitreihen-datenbanken/zeitreihen-datenbank/723452/723452?tsTab=1&listId=www_szista_iwf&id=0&tsId=BBK01.SU0200&star
tDate=2000&endDate=&startVintage=&endVintage=)
- German Council of Economic Experts. (2023). *Economic forecast 2023 and 2024*. Retrieved on 20.03.2023
[https://www.sachverstaendigenrat-
wirtschaft.de/fileadmin/dateiablage/Konjunkturprognosen/2023/KJ2023_Gesamtausgabe.pdf](https://www.sachverstaendigenrat-wirtschaft.de/fileadmin/dateiablage/Konjunkturprognosen/2023/KJ2023_Gesamtausgabe.pdf)
- German Federal Statistical Office. (2022). *Finanzen und Steuern - Schulden des Öffentlichen Gesamthaushalts*.
- Grömling, M. (2022). *Ökonomische Verluste in Deutschland durch Pandemie und Krieg*. Köln: Institut der deutschen Wirtschaft.
- ifo Institut – Leibniz-Institut of Economic Research. (2023). *ifo Economic Forecast Spring 2023: German economy stagnating*. München. Retrieved on 27. 03 2023 [https://www.ifo.de/fakten/2023-
03-15/ifo-konjunkturprognose-fruehjahr-2023-deutsche-wirtschaft-stagniert](https://www.ifo.de/fakten/2023-03-15/ifo-konjunkturprognose-fruehjahr-2023-deutsche-wirtschaft-stagniert)

- Koenen, M., Kunath, G., & Obst, T. (2022). *Europa an der Schwelle zur Rezession? - Wirtschaftliche Auswirkungen der Corona-Pandemie*. Köln: Institut der deutschen Wirtschaft Köln e. V.
- Mbah, R. E. (2022). *Russian-Ukraine 2022 War: A Review of the Economic Impact of*. Advances in Social Sciences Research Journal.
- Obst, T. (2023). *Stress im Finanzsystem - Wirtschaftliche Auswirkungen einer Bankenkrise*. IW-Kurzbericht 25/2023. Retrieved on 03.04.2023 <https://www.iwkoeln.de/studien/thomas-obst-stress-im-finanzsystem-wirtschaftliche-auswirkungen-einer-bankenkrise.html>
- Panagiotidis, E. (27. 03 2023). *Kollaps der Silicon Valley Bank: First Citizens Bank kauft kollabierte SVB*. Neue Zürcher Zeitung. Retrieved on 27. 03 2023 von <https://www.nzz.ch/finanzen/kollaps-der-silicon-valley-bank-ld.1730117>
- Random, J. (2017). *Europe's QE Quandary*. Bloomberg. Retrieved on 13. 03 2023 von <https://www.bloomberg.com/quicktake/europes-qe-quandary?leadSource=uverify%20wall>
- Ritter, J. (1. 03 2023). *Der tiefe Fall der Credit Suisse*. Frankfurter Allgemeine Zeitung. Retrieved on 27. 03 2023 von <https://www.faz.net/aktuell/politik/ausland/credit-suisse-uebernahme-durch-die-ubs-ist-nicht-ohne-ironie-18763121-p2.html>
- Statista. (29. 03 2023). *Bestand des erweiterten Anleihekaufprogramms der EZB von März 2015 bis Dezember 2022*. Retrieved on 10.05.2023 <https://de.statista.com/statistik/daten/studie/427660/umfrage/bestand-des-erweiterten-anleihekaufprogramms-der-ezb/>
- Tepper, T. (22. 03 2023). *Federal Funds Rate History 1990 to 2023*. Forbes. Retrieved on 29. 03 2023 von <https://www.forbes.com/advisor/investing/fed-funds-rate-history/>
- Van Der Heijden, M. C. (2018). *'Whatever it takes' and the role of Eurozone news*. Applied Economics Letters, 25(16).