МЕЃУНАРОДЕН ЦЕНТАР ЗА СЛАВЈАНСКА ПРОСВЕТА - СВЕТИ НИКОЛЕ

«МЕЃУНАРОДЕН ДИЈАЛОГ: ИСТОК - ЗАПАД»
(ЕКОНОМИЈА, БЕЗБЕДНОСНО ИНЖЕНЕРСТВО, ИНФОРМАТИКА)

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ИСТОК - ЗАПАД

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THEORY AND PRACTICE OF CORPORATE BONDS IN THE US AND EUROPE

ABSTRACT: The purpose of this paper is to examine the corporate bonds in the USA and Europe. Corporate bond portfolios concentrate on investment-grade bonds issued by corporations which tend to have more credit risk than government or agency-backed bonds. Corporate bond returns consist of two distinct components: an interest rate component, which is default-free and anti-cyclical, and a credit spread component, which is default risky and pro-cyclical. These components are mutually negatively correlated and their relative importance varies with credit quality. Furthermore, it shows that corporate bond returns have significant exposures to fluctuations in treasury bond liquidity and equity market liquidity. Moreover, this liquidity risk is a priced factor for the expected returns on corporate bonds, and the associated liquidity risk premium help to explain the credit spread puzzle. In terms of expected returns, the total estimated liquidity risk premium is around 0.6% per annum for US long-maturity investment grade bonds. For speculative grade bonds, which have higher exposures to the liquidity factors, the liquidity risk premium is around 1.5% per annum. There is very similar evidence for the liquidity risk exposure of corporate bonds for a sample of European corporate bond prices. Corporate bonds as a source of financing of companies are more used in USA, than in Europe, where companies use more traditional forms as a bank loans.

KEYWORDS: corporate bonds, USA, Europe, financing, size, low-risk, value

INTRODUCTION

In the theory and practice the bond is a debt obligation in form of a formal document acknowledging debt. Investors who buy corporate bonds are lending money to the company issuing the bond. In return, the company makes a legal commitment to pay interest on the principal and, in most cases, to return the principal when the bond comes due, or matures.

It is well-documented that corporate bond returns are driven by both interest rate and credit spread variations, bur the vast majority of the corporate bond literature does not separate these two components. This is an important oversight, because the nature of the two return components is very different: the interest rate component is default-free and anti-cyclical, whereas the credit spread component is default-risky and pro-cyclical. The differences in nature of the two return components imply that they are likely to be driven by different factors or that factors that are positively related to one return component are negatively correlated to the other (Farina, 2019). Furthermore, depending on the credit quality of the company, either the interest rate or the credit spread component will be the dominant source of return variations. Since investment grade corporate bond returns are primarily driven by interest rate variations and to a lesser extent by credit spread variations, many studies on corporate bond predictability

primarily found predictors of interest rate returns when analyzing investment grade bonds. Previous studies often found inconsistent results between investment grade and high yield corporate bonds, because unlike for investment grade, for high yield the credit spread component is the dominant driver of return variations.

Very often when people buy a share of common stock, they own equity in the company and will receive any dividends declared and paid by the company. When people buy a corporate bond, they don't own equity in the company. They will receive only the interest and principal on the bond, no matter how profitable the company becomes or how high its stock price climbs. Even if the company runs into financial problems, it still has a legal obligation to make timely payments of interest and principal. Opposing, the company has no similar obligation to pay dividends to shareholders (Gresham, 2021). When case of bankruptcy happens, bond investors have priority over shareholders in claims on the company's resources and funds.

Bonds also carry risks as any other investments. Possible key risk to a bondholder is that the company may fail to make timely payments of interest, principal or both. In that case, the company will default on its bonds. This "default risk" makes the solvency of the company—that is, its ability to pay its debt obligations on time which is an important concern to bondholders and investors.

Today, the bonds in USA may arise in many different shapes and sizes. They include government and municipals securities, mortgage and asset-backed, foreign bonds, and corporate bonds. In a well-diversified investment portfolio, highly-rated corporate bonds with short, mid, and long-term maturity can benefit investors to accumulate their assets for reserve in emergencies or expenses in the future. Bonds issuing is a way for companies to access liquidity and cash without diluting ownership through additional stock issues or by going to a traditional lender and taking out a loan (Liodis, 2021). Bond issues can be either publicly traded or private and can use the money from bond sales for different reasons like buying new assets or facilities, financing export activities, investment in research and development, refinancing, funding mergers and acquisitions, or even funding human capital development.

As an example of a European specificity is the financing practice of the companies in Germany which changed significantly in recent decades continuing persistent as a result of the government debt crises. There is a growing tendency from previous main borrowing from the company's traditional bank towards more capital market-oriented alternative forms of raising capital as bonds. Under those trends, corporate bond issues are among an increasingly important instruments in Germany. Corporate bonds offer companies seeking to raise capital increased flexibility for adjusting to their financing needs and can be tailored to meet the requirements of specific categories of investors without making changes in the shareholder's positions.

Bond issues in Germany are not subject to a specific law, very similar as in the USA. Bonds are fixed-income securities that require the issuer to make regular interest payments and to return the capital provided by the investor. Germany corporate bonds issued by mid-sized companies are generally repaid at maturity at their nominal value. In many cases, by issuing bonds, sometimes by an intermediary bank, German companies can attract a large public and funds. The bond terms usually exclude an ordinary termination by the bondholder and could be traded on the secondary market, mainly stock exchange. This feature of corporate bonds, arising of their structure as securities, increases their attractiveness and when private investors are targeted this aspect may be crucial.

1. LITERATURE REVIEW

Most of the academic literature investigated returns over the risk-free rate, which still includes an interest rate component. Early work by Keim and Stambaugh (1986) found the past equity return to be a significant predictor of investment grade returns, but not of high yield returns besides Fama and French (1989), Fuller and Kling (1994) and Sangvinatsos (2005) who documented predictability using the dividend yield, the term premium and the default premium, but the latter only worked for investment grade. Clinebell et al. (1996) analyzed predictability of excess returns over Treasury bonds, hence analyzing the credit spread component, just like this paper. The study we confirm the predictive power of variable for the credit spread component by itself, as well as for the sum of the interest rate and credit spread components. A related literature aims to find market-timing variables for the decision whether to invest in corporate bonds or in Treasury bonds, for example Fridson and Bersh (1994), Boyd and Mercer (2010) and Van Luu and Yu (2011). These studies used excess returns of corporate bonds over Treasury bonds and they did not make sure that the durations of the Treasury bonds and the corporate bonds were properly matched, so that their return differential may still be driven by interest rate variations. These studies analyzed only one predictor variable and lacked the statistical tests. Later literature on the predictability of equity returns, as Campbell and Thompson (2008) and Goyal and Welch (2008) by comparing the return forecasts to those of the historical are using statistical models.

An important moment of the turmoil in the euro-area sovereign debt market was the transmission of the crisis to the corporate bond market. The banks but also other financial institutions were involved in the crisis, experiencing a deterioration of their funding abilities (Bedendo and Colla 2015). This deterioration was unequal across countries and led to an increasing market fragmentation and segmentation along national borders. Corporate risk premium soon reached unprecedented levels and the heterogeneity across countries increased significantly leading to widening in the yield spreads between bonds issued by corporations headquartered in the countries most involved in the crisis and those issued by corporations headquartered in countries with sounder public finances. This market evolution, together with diverging banks' lending rates, was connecting with the smooth transmission of the common monetary policy. Thus eliminating financial fragmentation was at the base of the interventions of the ECB in 2012, often via non-conventional monetary policy measures (Durrf et al. 2013) However, the empirical literature has almost entirely focused on the fragmentation in the sovereign debt market neglecting the corporate segment of the bond market while the role of banks has been extensively investigated as a link in the transmission of fragmentation from the sovereign to the real economy (CGFS 2011, van Rixtel and Gasperini 2013, Angelini et al. 2014) or even as a direct cause of fragmentation, when providing funds at diverging rates to non-fnancial corporations and households (Giannetti and Laeven 2012, Albertazzi et al. 2014, Popov and Van Horen 2015), it has been overlooked when they were funding themselves on the bond market as any other corporation. Three recent contributions have tackled the issue of estimating the degree of fragmentation across bonds issued by euro-area non-financial corporations (De Santis 2016; Horny et al. 2016, Zaghini 2016).

De Santis (2016) expands the excess bond premium (EBP) measure to include the market risks relying on the work for the US bond market by Gilchrist and Zakrajsek (2012), who introduced the concept of EBP as the difference between the duration

adjusted credit spread and the spread justified by observable credit risk. Relying on 2,345 bonds issued by non-financial corporations from 9 euro-area countries in the period 1999 - 2015 he proposes as a measure of fragmentation the degree of dispersion across countries of domestic EBP values. He founds that fragmentation was very large till 2003, especially for high-yield bonds, declining just before the burst of the global financial crisis, and then showing two peaks of almost identical size in the period immediately after the Lehman Brothers default and in the most acute phase of the sovereign debt crisis in 2011-2012, while significantly declining at the beginning of 2015 and onwards.

Focusing of non-financial corporation bonds with 2.434 primary issues from 9 euro-area countries), Zaghini (2016) introduces country false variables in a standard model of risk-premium determinants. He refers to the sum of the dummy coefficients as the measure of market fragmentation only when the joint coefficient estimate is significantly different from zero. Results itself suggest that, despite a certain degree of volatility in country-specific effects, the overall integration of the euro-area bond market was not affected by the first wave of the financial crisis in 2008-2009. Instead, in the four years from 2010 to 2013 fragmentation was detected and the joint estimate of country coefficient was highly significantly different from zero.

Zaghini (2016) and Horny et al. (2016) focus on country figures to assess the degree of market fragmentation. In particular, their econometric approach is based on regressions for three main drivers: the countries fixed effect; the bond rating; and the slope of the term structure. By looking over the period from 2005 to early 2015 at the secondary market pricing of 735 bonds issued by non-financial corporations headquartered in Germany, France, Italy and Spain, they show that the spread to German bonds is hardly ever significantly different.

2. CORPORATE BONDS IN USA

Usually corporate bonds suggest a higher yield than some other fixed-income investments, but for a price in terms of added risk. Most corporate bonds are debentures, meaning they are not secured by collateral. Investors in such bonds must assume not only interest rate risk but also credit risk, the chance that the corporate issuer will default on its debt obligations.

Yield curve is a leading indicator and that certain movements in shape are signals of bad news to come. Yield is referring how much an investor is being paid from their investments as a percentage of the holdings value. Traders often look at the bond market for clues on how the U.S. economy will perform, specifically the yield curve. Yield curve is showing the relationship between short term and long-term interest rates of U.S. Treasury notes (De Jong, Driessen, 2007). Usually the short-term rate is lower than the long term. But, if someone is lending money to the federal government, which is essentially what happens when buys a Treasure note, meaning that someone is taking bigger risk by letting the government have his/her money for a longer period of time. So, this person is going to want a higher interest rate to compensate for taking on that risk. But, sometimes this relationship changes if the two rates start getting closer together that's called a flattening yield curve. But, if the long-term rate dips below the short-term rate, that's what is called an inverted yield curve. And the market is concerned about it. The yield curve predictive power has made it crucial metric for investors and policymakers alike. Every time that yield curve has inverted, the economy eventually has gone into a recession. That predictive power is shown

on the chart Figure 1. This chart shows the difference between 10- year treasury rate minus 3 months' treasury rate.

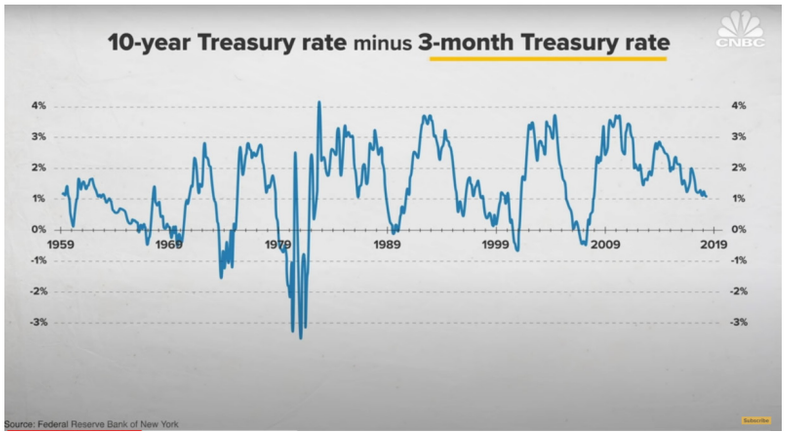

Figure 1: Difference between 10-year treasury rate minus 3 months' treasury rate (%)
Source: Federal Reserve Bank of New York

According to the Merton framework from 1974, a corporate bond can be decomposed into a default-free bond and a default-risky component. So, the excess return ERcf of a corporate bond over the risk-free rate can be written as:

$$ERcf = ERtf + ERc,t$$

where

ERtf f is the excess return of a treasury bond that matches the corporate bond's duration over the risk-free return; and

ERc,t is the excess return of the corporate bond over the treasury bond.

Hence, the excess return of a corporate bond over the risk-free rate contains two components: a default-free part ERtf and a default-risky part ERc,t. The nature of the two components is very different. The first component, ERtf, can be recognized as the term premium, which is the compensation for taking interest rate risk. This part is driven by changes in treasury yields. The nature of this component is anti-cyclical (see for example Ludvigson and Ng, 2009): excess treasury bond returns tend to be positive when the economy heads into a recession and economic growth is low or negative; they are negative in expansions, when the economy is growing and inflation is emerging.

The second component of corporate bond returns, ERc,t can be interpreted as the default premium, which is the compensation for exposure to default risk. This part is driven by changes in credit spreads. Contrary to the first component, this second component is pro-cyclical: it correlates positively to growth. Positive excess returns of BBB-rated corporate bonds over treasury bonds during recoveries and expansions and negative excess returns during slowdowns and recessions (Luu and Yu, 2011) are documented.

Depending on the relative importance of the default-free component and the default-risky component, corporate bond returns will be predominantly driven by changes in interest rates or by changes in credit spreads. For high-quality firms with investment grade (BBB and over) default is relatively remote; therefore ERc,t is relatively

unimportant and that ERtf will be the dominant driver of returns. On the other hand, for low-quality firms ERc,t is expected to be more dominant than ERtf.

A stock is defined to be liquid if large volumes can be traded without generating much price impact. Amihud (2002) suggests to estimate the price impact by the ratio of the absolute daily price change and the daily absolute trading volume, averaged over a number of days. This so-called ILLIQ measure for stock i in month t is estimated as follows:

$$\mathrm{I\,LLIQ}_{i,t} = \frac{1}{Dt} \sum_{d=1}^{Dt} \frac{\|r_{i,t}^{d}}{\|V_{i,t}^{d}}$$

where
Dt denotes the number of trading days in month t,
r_(i,t)^d denotes the return on stock i in the d^{th} day of month t, and
V_(i,t)^d denotes the dollar trading volume for stock i in the d^{th} day of month t, as a percentage of the dollar market capitalization of the stock.

ILLIQ measures the price impact of trade using daily return and volume data. In the empirical analysis is considered a price impact measure based on intraday data. Hasbrouck (2006) constructs monthly estimates for this price impact using intraday data from the TAQ database for 1993-2003, which are available on his website. Each year, he randomly selects 250 stocks for which he estimates the price impact coefficient from a regression of the change in the log quote midpoint on the cumulative signed order flow in a 5-minute interval. The monthly change in this median is what is used as measure for liquidity risk.

Fleming (2003) compares several liquidity proxies, such as trade size, quote size, the on-the-run/off-the-run spread, and the quoted bid-ask spread, and concludes that for government bonds the bid-ask spread is the most useful commonly available measure for assessing and tracking liquidity. In particular, spread is highly correlated with a more sophisticated price-impact measure (which is similar to the ILLIQ measure). Fleming (2001) reports bid-ask spreads for several treasury bonds.

2.1. Corporate Bond Spreads during the pandemic

The pandemic has caused significant disruption in economic activity across the globe. Financial markets have experienced surges in volatility that had not been seen since the 2007-09 financial crisis. The Federal Reserve has returned to its financial crisis toolkit by creating facilities to purchase asset-backed securities (such as mortgage-backed securities) and other types of securities (such as corporate debt).

Figure 2 below plots the median value for our measure of credit spreads the difference between a corporate bond's yield and a benchmark interest rate on U.S. government securities at the daily frequency, since the beginning of the year.

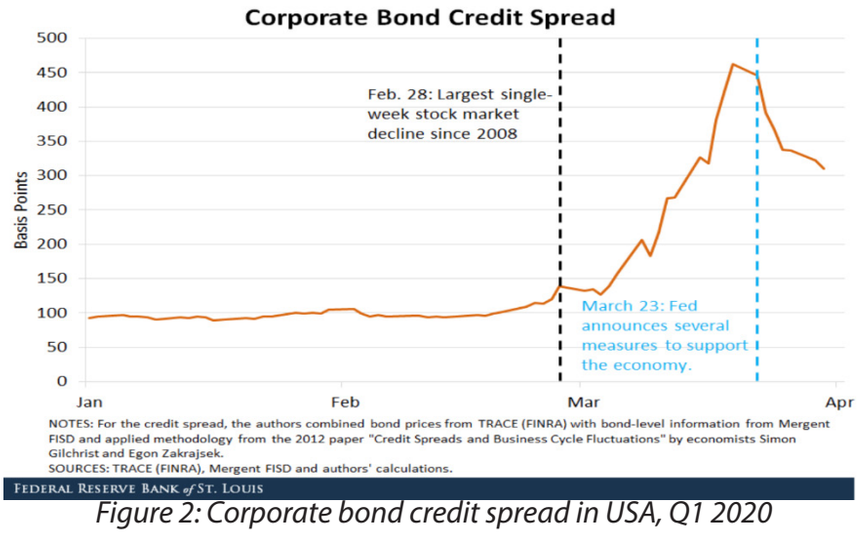

Figure 2: Corporate bond credit spread in USA, Q1 2020
Source: Federal Reserve Bank of St. Luis

The figure highlights two important dates. The first one is Feb. 28, when stock markets experienced the largest single week declines since the 2008 financial crisis. While the median spread had been stable at around 100 basis points since the beginning of the year, it started rising around this date, as financial market turmoil became more evident. The second line corresponds to March 23, the day when the Fed announced a series of new measures to support the economy. The curve shows the median behavior of borrowing costs, but it hides a substantial amount of heterogeneity in the bond market. In practice, the borrowing costs of some firms went up by a lot, while the costs for other firms may not have increased by as much. One potential explanation is that firms with low credit ratings are all affected by an aggregate factor, so the dispersion across firms does not change much. On the other hand, firms in the middle category may have heterogeneous exposures to the ongoing economic disruption, which generates a larger increase in the cross-sectional dispersion.

3. CORPORATE BONDS IN EUROPE

Corporate bonds in Europe play a kind of a subordinated role compared to other ways of debt financing. The amount of issued bonds increased drastically during the last years but the total volume of outstanding debt issued as corporate bonds is fairly low compared to other economies. In Germany, as example, corporations still prefer borrowing capital in the traditional way, i.e. directly from their house bank instead of raising funds through capital markets. Several reasons justify this typical German behavior and tradition: firstly, companies often fear the relatively high costs and efforts that are connected with the issuance of bonds, such as legal advisory, commissions for the under-writing syndicate, costs for rating-agencies and disclosure requirements. This high amount of fixed costs discourages many companies issuing bonds. More importantly, the German economy is dominated by the broad "Mittelstand" which means that there is a large base of medium sized companies, whose scale and capital demand is too small to make a public issuance reasonable. This general lack of marketability was and still is the main reason of the relatively low importance of corporate bonds in Germany.

The Europeans economies are as well. The number of corporations which have been tapping the bond market over the sample period goes from 100 in France to 12 in Portugal (Bedendo and Colla, 2015). At the same time the largest number of bonds issued by a single country is Germany with 2,787. The maturity at issue suggests that Belgian and French corporations are used to place bonds with longer redemption horizons with the average being over seven years, whereas Spanish, Irish and Finnish issuers prefer to place bond with shorter maturities at the average being below six years. As for the volume of the initial placement, corporations from just three countries - Spain, Portugal and Ireland place bond tranches with an average value above 600 million euros, while German corporations exhibit the smallest value of 296 million euros. Given the striking heterogeneity even in the bond basic characteristics as maturity and volume, it is not surprising that the spread paid by issuers headquartered in different euro-area countries shows a broad range: from 70 basis points in Germany to 252 in Ireland. It is clear that during the sovereign debt crisis of 2009 the financial turmoil was felt in a very different way across the euro area. The countries most involved in the crisis Ireland, Italy, Portugal and Spain saw a further significant increase in the cost of issuance for both banks and firms, whereas the countries less involved faced in many instances just mild adjustments for firms in Austria, Belgium and Germany the actual cost at issuance even declined.

Similar to the US when companies or governments need to raise money in Europe, they have two options. Government can issue bonds and companies can on top of that also issue shares to investors. The bonds in Germany are a form of debt that can last over different periods of time, from a few weeks to a several decades. The issuers of the bonds make regular interest payments to those that hold them over their lifespan. This fixed rate of return investors receive on a bond is called the coupon. And on top of this there is an extra component, this payment as a proportion of the price is called the yield. If the price of the bond changes so does the yield. The lower the price goes, the higher the yield rises, and the higher the price goes the lower the yield falls. Negative yield means that investors are receiving less money than they originally paid.

The case of Germany is interesting. Sometimes investors are buying bonds at a loss so that means that they are essentially paying Germany for the opportunity to lend it money. In the last decade Germany have suffered from low growth and low inflation. So, to encourage people to spend more money central bank has been reducing the interest rates and injecting money in the economy through quantitative easing, or QE to make individuals spend their money or put in riskier assets. The European Central bank (ECB) charges other European banks nearly half a per cent interest to hold their money in their deposits. The ECB wants banks to lend their capital out into the economy. Recently Germany has issued five-year bonds with a negative yield and it's sold 3.3 billion euros of debt at a rate of negative -0.08% according to the country's central bank. Which is amazing phenomenon. Although this is a vote of confidence in the German economy it also represents low investor confidence in the Eurozone overall. Inflation in Europe has been arising lately and there is a fear that the economies could face long-term instability which could lead to a recession. Investors seem to be hoping that the value of German bonds will fall slower than other investments. In 2015 the European central bank unveiled a plan to pump cash into Europe's economy by buying 60 billion euros a month in government debt. This plan could increase the price of the European bonds. The New York Times reports that "Investors can potentially sell those bonds for a gain in the short term if corporate and government spending takes off in Europe". According to

the documentation the first country who was selling its debt on a negative yield, in 2015 was Finland which became the first Eurozone country to do that.

Bond prices have been skyrocketing. And this is happening because investors still see bonds as some of the safest assets when the economic outlook is poor. As the bonds get more expensive the returns become much lower. The prices are now so high the yield have gone below zero. So investors are certain to get back less than they paid if they hold the bond to maturity. In this situation issues of debt are now being paid by borrow and the investors or buyers of bonds are paying cash to these borrowers, companies, and governments instead of receiving an interest payment. (Figure 3). Bonds are safest investment on the market because their returns have been very reliable. Also, the owners of the bonds can buy or sell them in what is called a secondary market. This makes these bonds very liquid. Bonds are only safe investments if their rates are positive and above the rate of inflation. Otherwise investors won't be earning any money, as is happening with the negative yields. Some investors can refuse to own negative yielding debt. But, for really big investors such as banks, insurance companies, and pension funds- they have no choice. They have to own bonds, even if the financial return is negative. This is because they have to make sure their funds are liquid. And when borrowing, they can also pledge bonds as collateral. Furthermore, if low growth, trade tensions and political uncertainty continue investors are likely to continue to flock to safer assets, like government bonds, thereby driving up prices and keeping yields on the negative.

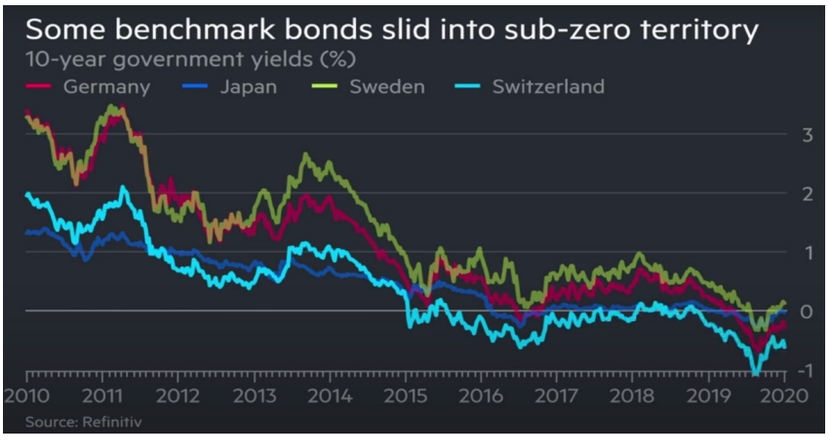

Figure 3: 10-year government bonds yields in Europe and Japan 2010 – 2020 (in %)

In fact, the volume of negative yielding bonds has started to fall and this could least until final end of the pandemic. about a fifth of sovereign bonds will have a negative yield. In the short term, it seems that still negative yields can actually get the economy moving. But over the long term, negative yields could mean lower returns on pension funds, meaning workers could be forced to save more and work longer.

In recent times, bond financing is no longer limited only to large industrial companies. Even mid-sized companies are increasingly using bonds as a refinancing tool. The recent strong growth in bond issues has even already prompted the creation of specific exchange segments especially for mid cap bonds. Corporate bonds offer numerous advantages over pure credit financing:

» The issuer can reduce its dependency on conventional types of financing and, thereby, counteract the banks' increasing reluctance to grant credits.

- When structuring interest rates, the issuer can benefit from the currently low interest environment. Although mid cap bonds usually have fixed interest rates, even instruments with flexible interest rates are conceivable. While the former offers the advantage of predictable cash flows, the latter provides increased flexibility to changing general conditions during the term of the bond. In such case, the interest rate to be paid is linked to a reference rate like EURIBOR.
- An issue of corporate bonds can generally be a good way of diversifying the refinancing sources already in use and may even be an alternative to an IPO.
- Moreover, as bonds are generally not collateralized, existing loan collaterals may be used for other purposes.

As corporate bonds are typically divided into so-called partial debentures, varying investment sums may be allocated making corporate bonds attractive to both major and small investors. For the same reason, bonds allow for a broad diversification of an investor portfolio and thereby allow for a very individual form of risk spreading. This is one of the main reasons why investors' interest in bonds is constantly growing: bonds promise higher interest than bank deposits and, from this point of view, also offer an alternative to government bonds.

Current market statistics illustrate that particularly during the last months the amount of issued convertible securities increased dramatically, especially in Germany. In general, convertibles are bonds with an embedded option which gives the investor the right to convert the bond into a pre-specified number of shares of the issuing company. Consequently, debt can be converted into equity by the investor which makes sense if the underlying share price is higher than the contracted "conversion price" which is comparable to the strike price of a normal option. Thus, a convertible is an ordinary straight bond plus a call option to exchange the bond into shares. Investors typically "pay" for this right by accepting a lower coupon compared to straight bonds of the same issuer or risk class respectively. This is the most important advantage and a common argument for the issuer, who benefits from significant lower interest costs of the convertible. Besides, normally the debt agreements or "covenants" are less restrictive relative to a non-convertible bond issue which finally offers more possibilities and a higher flexibility to the issuer. Moreover, because of the conversion, temporarily granted debt might be changed into equity which is not redeemed.

CONCLUSION

Companies finance their activities in many different ways. One of the most important is by issuing debt, or borrowing. Most borrowing is done from a single lender as a bank loan, a group of lenders (as a syndicated loan or from financial markets. Companies borrow from financial market participants by issuing bonds. The yield (or interest rate) at which those bonds are issued and traded is a direct measure of how expensive it is for the firm to borrow. If it becomes too expensive for a firm to borrow, that firm may invest less, create less jobs or even be forced to reduce its number of workers. The yield at which a company's bonds are traded is therefore very important for a company's performance and ability to hire and retain new workers.

The USA and Europe have very similar politics in buying and selling bonds. The bond market is more susceptible to volatility than is the stock market. One reason is that most bonds are still bought and sold the old-fashioned way. Dealers

call their clients to offer individual bonds. This adds to the cost of bond trading, especially for small investors.

When the economy is strong, the demand for money is higher, since greater spending activity means that there is more of a need for cash to finance projects. Higher demand, in turn, drives up costs, and in this case, interest rates. The result for CB treasuries is that stronger growth typically results in higher yields and lower prices since they move in opposite directions.

In an inflationary environment, bonds suffer because their future cash flows will have less value than the same cash received today. The higher the inflation, whether today or in the future, the more risk investors take by tying up their money in bonds. This loss of value causes investors to demand a higher interest rate, or yield, to compensate them for this additional risk. The US government borrows using debt with a wide range of maturities, from one-month bills to 30-year bonds. Different kinds of bonds have different buyers with different financial objectives, and some of those bonds play a crucial role in determining the costs of borrowing for corporations and consumers. The rates for a 30-year mortgage, for example, are heavily influenced by yields on treasury notes. Similar is in Europe.

As the coronavirus spread around the world, and stock markets plunged, bond yields sank to record lows.

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