PICTET 1805

General description of risks pertaining to financial instruments

1 INTRODUCTION

1.1 This Brochure is provided to you as a retail client of the bank. It contains two parts: the first deals with risks involved in a portfolio and their influence on performance; the second contains warnings about the nature and risks associated with different types of investment, in compliance with the Bank's duties to provide information under investor protection rules.

1.2 This Brochure does not disclose all possible risks or all different types of investment. It is intended to cover only the main risks which may be relevant to your portfolio and the risks involved in dealing with such products. The different kinds of financial instrument are explained in part 2, whereas details regarding the types of risk are given in part 3.

2 RISK ISSUES IN A PORTFOLIO

2.1 There is a fundamental rule in finance: higher risk should be compensated by a higher return over the long term.

Returns on government bonds are regarded as risk-free and are used as the starting point for calculating any kind of financial return. These risk-free interest rates may come with various additional returns (*risk premia*) that investors can expect to receive when investing in assets that integrate the corresponding risks.

Return on a risky asset = Risk-free return + Return from various risk premia

Historical returns:	**Causes:**
– Long-term return on US equities: 9.5% in USD	– Volatility of the economic cycle
– Long-term return on US government bonds: 3,5% in USD	– Risk of total loss of capital
– Risk premium for US equities over the long term: 6%	– Fundamental risks associated with the companies
	– Risks connected to financial markets

2.2 Performance et risk

For example, the annual return from the US equity market over a period of nearly 200 years works out at around 9% in USD. This is 6 percentage points higher than the return on US government bonds. This premium is the additional compensation for taking on a higher risk: equities go through pronounced cycles of optimism and pessimism, during which annual returns can swing between -60% and +150%.
Unfortunately, these risk premia are neither fixed nor guaranteed. The 6% risk premium for US equities is therefore a historical average. The first decade of the 21st century demonstrated that it is possible to endure several years of hefty losses despite a largely positive long-term risk premium. The Dow Jones Total Return index[1] fell by 56% between October 2007 and March 2009, and then took nearly five years to regain its former level.

The return on investment is not guaranteed over the long term either: there is a real risk of extreme drawdowns[2] on equities. Some major markets have suddenly closed down completely in the aftermath of a change in political regime: Russia when Communism arrived in the early 20th century; China and the Shanghai market when the Mao government took over; the Cairo stock exchange when Nasser came to power in the 1950s; the Tehran stock exchange. On each occasion, investors saw the value of their stocks slashed to nothing from one day to the next.

[1] US index of the 30 biggest US stocks including dividend payments.
[2] Drawdown: peak-to-trough decline of an investment or fund over a given period.

The existence of risk premia therefore shows that a certain degree of uncertainty regarding future returns has to be lived with, but, if we take a market as a whole over a relatively long investment horizon, these historical risk premia are quite likely to provide a reliable indication of the additional returns that can be expected from investing in a financial asset.

2.3 Risk factors

A company's size, for example, is a risk factor. Historically, US market performance has exceeded 10% for investors buying into funds indexed on small caps i.e. companies with relatively small capitalisations (the market value of their outstanding shares). These investors have been compensated for the additional risk connected with this market segment, in which the companies are more vulnerable to a head-on attack by an industry giant, while also being less inclined to communicate and usually covered by a smaller number of analysts.

Numerous factors are involved: more can be earned by investing in a heavily indebted company, a company with little liquidity or one subject to highly cyclical final demand, such as the paper industry. Over 200 systematic risk factors[3] have been identified that deliver better returns than the market in exchange for higher risk.

2.4 Classification of risk factors

There is no official classification, because research on the subject began comparatively recently. To make classification easier, we distinguish between two main categories:

a. Risk associated with the investment itself (***underlying risk***): If an investor acquires a corporate bond in the paper sector, he will mainly be exposed to the paper cycle with its very volatile margins, as well as to the risk associated with the quality of the strategy adopted by the company's management and the degree of prudence with which the latter manages the company's balance sheet.

1. Fundamental risk: this is the risk stemming from economic activity.

- Risk connected with economic cycles[4]
  - The magnitude of economic cycles may lead to sizeable losses, or even to the company going bankrupt if the recession continues for too long.
  - This risk may also be connected with the product cycle. It may be because technology has become obsolete as new ways of doing things are developed.
- Governance and information risk[5]
  - Agency theory[6] states that the interests of shareholders and management should be aligned; experience shows that this alignment does not necessarily occur.
  - The company may communicate inadequately or ineptly and the information it supplies may be misunderstood by investors.

2. Credit risk: this is the risk of losing all or part of the investment because of excessive use of borrowing. Debt is the most frequently used method of increasing returns on equity, but, in exchange, the leverage effect creates a balance-sheet risk, which is essentially the risk of default through excessive borrowing[7].

b. Risk associated with framework conditions for the investment (***financial market risk***): A corporate bond in the paper sector is not the only security traded on financial markets. Investors have an extremely broad range of investment opportunities available to them, and they may weigh up one return against another in terms of market opportunities and the risk associated with these investments. Central banks play an important role by setting short-term interest rates, while the optimism or pessimism of investors will account for the shape of the rest of the yield curve. Governments of the countries where securities are listed show a varying degree of political and regulatory openness towards foreign investors.

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[3] This number is no doubt exaggerated because it includes factors that are statistically unreliable, since the statistical calculations used in finance are unfortunately less rigorous than those used in exact sciences like chemistry or physics.

[4] One could also include risks relating to raw materials, those relating to insufficient size of the business or insufficient diversification of types of business, which exposes the company to a specific shock, etc.

[5] One could also include specific risks connected with the equity class (dividend risk, reinvestment risk) or connected with the real estate cycle [special taxes, determination of net asset values of real estate investment trusts (REITs) or real estate companies].

[6] Agency theory goes back a long way, since Adam Smith was already writing about it in the 18th century. It shows the sometimes divergent interests between principal and agent.

[7] Other risks: counterparty risk [guarantee, risks relating to undertakings for collective investment in transferable securities (UCITS), etc.].

1. Risks connected with the framework conditions of the economy

- Interest-rate risk[8]
- Policy on budgetary deficits on the part of governments, giving rise to fears of future tax rises
- The central bank's monetary policy is not adequate to deal with price rises (if inflation rates are too high) or the unemployment rate (if real interest rates are too high)
- Risks connected with the length of the investment: time has a value in finance (known as the *time value of money*). Longer-term investments should earn higher returns over a complete economic cycle.
- Risk connected with the yield curve: investing in a 5-year maturity rather than a 2-year maturity exposes the investor to inflation risk for a longer period. The current yield to maturity may be insufficient to compensate for this risk at maturity.
- Risk connected with the passage of time: option-selling strategies see the option price decline with every day that passes, especially as the maturity date approaches. By contrast, certain strategies see their risk decline with the passage of time: these include 'buy & hold' strategies, which benefit from reduction in volatility historically observed in relation to equities as the time horizon lengthens.

2. Political[9] and regulatory risk

- Relative taxation of labour and capital
- Measures that restrict free trade
- Companies forced to accept greater responsibility for environmental damage or harm caused by their products
- Restricted access to certain sectors of activity
- Restrictions on right to private property (nationalisation).

3. Risks connected with the organisation of financial markets

- Risks connected with price setting[10]: the market is a place where investors can trade their investments as efficiently as possible and set prices that are as close as possible to intrinsic values. A market needs to be as liquid as possible in order to facilitate these exchanges. However, the 2008 crisis showed that too much worldwide uncertainty can upset these price-setting mechanisms. In bear markets in particular, the price of different assets tends to decrease simultaneously, thus reducing the benefits of diversified portfolios.
- Risk of lack of liquidity: this is the risk of not being able to sell the investment on the market instantly when there is no continuous listing. These illiquid investments therefore receive greater compensation: private equity, hedge funds.
- Risks connected with volatility: volatility is the 'fear index' *par excellence* which reacts to the lack of visibility over the investments. Options are the assets which allow investors to manipulate this risk most directly, along with derivative instruments and structured products.
- Counterparty risks connected with the soundness of the financial intermediary[11] providing the product (bankruptcy, execution, securities lending, etc.).

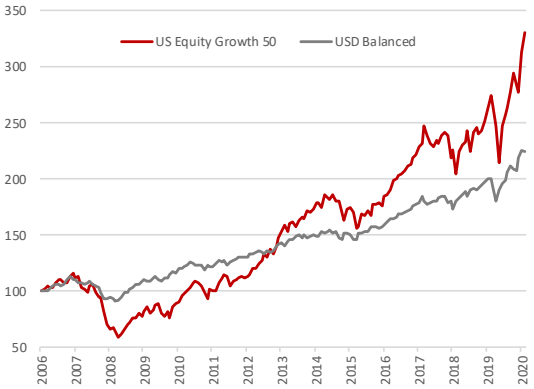
2.5 Diversification risk

Let us now take a more detailed look at the **risk of insufficient diversification**, one of the risks associated with financial markets. Products connected to an asset class enable investors to use diversification to avoid the risk of the portfolio becoming too concentrated. The volatility of a portfolio of 50 securities will thus be lower than the volatility of a portfolio comprising a single company. This is because the 50 companies operate in different, uncorrelated sectors, so they will not all be affected equally if there is an economic crisis, for example. Generally, it is estimated that 25 to 50 securities from different sectors are enough to reduce the market volatility of a portfolio substantially.

[8] These different policies have an impact on the exchange rates used to convert the investment currency.
[9] The emerging markets entail specific risks because they joined the financial markets more recently.
[10] Other risks connected with financial products: prepayment risk, liquidation risk.
[11] Financial intermediaries are subject to specific risks, such as potential conflicts of interest, the risk connected with the safekeeping of securities, operational risks, etc.

By the same reasoning, a portfolio composed of a single asset class will not be as diversified as a balanced portfolio and will carry a greater risk of drawdowns and volatility. As a general rule, the risk of a product connected to a single asset class is therefore situated between the risk connected with a portfolio consisting of a single security and that of a balanced portfolio invested in several uncorrelated asset classes.

This chart, for example, illustrates the historic behaviour of an US Equity Growth 50[12] mandate compared with a balanced portfolio in USD. Between 30 September 2007 and 28 February 2009, the US Equity Growth 50 mandate experienced a drawdown of 47.7% compared with 32% for a USD portfolio, along with annual volatility of 14.6% for the US Equity Growth 50 as opposed to 6.5% for the USD portfolio.



2.6 The two aspects of risk

We have thus considered the two aspects of risk:

- A negative aspect: the occurrence of risk is never pleasant, and the aim of compliance and regulation is to make investors aware of these risks. An investor should never be able to say: "I didn't know that".
- A positive aspect: the investor receives an additional risk premium as compensation for a potential disadvantage.

3 DETAILED DEFINITIONS OF GENERAL RISKS RELATED TO UNDERLYING AND FINANCIAL MARKETS

3.1 Credit risk

Credit risk is the risk due to uncertainty in the counterparty's ability to fulfil their obligations. As there are many types of counterparties, ranging from individuals to sovereign governments, as well as many different types of obligations, ranging from car loans to derivatives transactions, credit risk takes many forms (for example, the risk of bankruptcy, the risk of not meeting a margin call). Institutions manage credit risk in many different ways.

You should be aware that the credit risk of a counterparty is closely linked to that counterparty's default probability, credit exposure and recovery rate.

The credit risk of institutions that issue financial instruments is analysed by so-called 'rating agencies' (Moody's, Standard & Poor's, Fitch, etc.). These assign a certain score or 'rating' to institutions, based on their analysis of the issuer's capacity to meet their financial commitments. As a result, a AAA rating is considered as the safest, whereas a D rating indicates that the issuer is in default of honouring its financial obligations.

[12] This mandate invests in 50 US companies regarded as undervalued for no fundamental reason.

Some credit rating scales:

	S&P	Fitch	Moody's	
↑ Less risky	AAA	AAA	Aaa	Prime
	AA+	AA+	Aa1	High
	AA	AA	Aa2	
	AA-	AA-	Aa3	
	A+	A+	A1	Average superior
	A	A	A2	
	A-	A-	A3	
	BBB+	BBB+	Baa1	Middle inferior
	BBB	BBB	Baa2	
	BBB-	BBB-	Baa3	
	BB+	BB+	Ba1	Speculative
	BB	BB	Ba2	
	BB-	BB-	Ba3	
	B+	B+	B1	Very speculative
	B	B	B2	
	B-	B-	B3	
More risky ↓	CCC+	CCC	Caa1	Important Risks
	CCC		Caa2	Highly speculative
	CCC-	DDD	Caa3	Default

Sources: Standard & Poor's, Fitch and Moody's websites

3.2 Interest-rate risk

Interest-rate risk is a risk to which the earnings or market value of an investment are exposed on account of fluctuating interest rates. Interest rates can go up or down and may not work in your favour. Generally, bonds and securities are exposed to this risk. When you invest in securities and bonds, it is important to be aware of this risk to enable you to take appropriate action should future interest rates not be in your favour.

A classic example is the effect of an interest-rate cut on the value of a bond. If an existing bond offers an interest rate of 3% and new bonds only offer 2%, then the existing bond will increase in value. The opposite will, of course, happen if rates go up.

3.3 Currency risk

Currency risk exists when you invest in a currency different from your reference currency. If you are a European resident and you buy shares in USD, the performance of your investment is not only linked to the share price, but also to the fluctuation of the USD against the euro or Swiss franc.

Currency risk may even exist for financial instruments (for example structured products) that are quoted in euros or Swiss francs, as they can be linked to an underlying instrument in another currency.

3.4 Inflation risk

Inflation can be defined as an increase in the general level of prices of certain basic consumer goods, such as food, beverages, energy, etc. The consequence of such an increase in prices is that the same amount of money will enable you to buy fewer goods than before the increase in prices.

Inflation risk is the risk that the inflation rate is higher than the yield (or interest rate) you receive on a given investment, resulting in a loss in value of the capital initially invested.

3.5 Regulatory and legal risk

This is the risk that a change in laws or regulations will have a material impact on a security and investments in a given sector or market. A change in laws or regulations made by the government or a regulatory body can increase the costs of operating a business, reduce the attractiveness of investment and/or change the competitive landscape, and, as such, alter the profit potential of an investment.

This risk is unpredictable and may vary from market to market. In emerging markets, such risk may be higher than in more developed markets. For example in emerging markets, the inadequacy or absence of regulatory measures can give rise to increased danger of market manipulation or insider trading, while the absence of financial market supervision can affect the enforceability of legal rights.

3.6 Market risk

Markets can be developed in many different ways, so the pricing of investments in each market is dependent on a range of factors, such as supply and demand, and other economic influences. In emerging markets, social, economic and political changes can also influence these factors and, as such, the profitability of any investment in this market.

You should also be aware that trading conditions may differ in every market. Under certain trading conditions, it may be difficult or impossible to liquidate a position. This may occur, for example, at times of rapid price movement if the price rises or falls in one trading session to such an extent that, under the rules of the relevant exchange, trading is suspended or restricted.

Placing a stop-loss order or limit order are well-known steps geared towards limiting risks, but they will not necessarily limit your losses to the intended amounts, because market conditions may make it impossible to execute such an order at the stipulated price.

If a so-called 'market disruption event' (for example the issuer of a financial instrument defaulting on payments) were to happen, this may have significant consequences for structured products linked to this instrument. As a result, structured products are often reimbursed before maturity in case a market disruption event occurs, but generally not at par.

3.7 Liquidity risk

Liquidity risk is the risk that you will not always be able to obtain an appropriate price for your investment when you sell it due to lack of demand on the relevant market. When certain securities and derivatives are impossible to sell or can only be sold with difficulty and at a steeply reduced price, the market is said to be 'illiquid'.

Liquidity risk occurs especially with shares in unlisted or poorly capitalised companies, investments with sale restrictions and certain structured products.

3.8 Clearing house protections

On many exchanges, the performance of a transaction by the bank (or a third party with whom we are dealing on your behalf) is 'guaranteed' by the exchange or clearing house.

However, this guarantee is unlikely in most circumstances to cover you and may not protect you if we, or another party, were to default on obligations owed to you.

3.9 Settlement risk

The risk is that one party may fulfil its obligation on settlement of a financial instrument, but the other might not, leaving the non-defaulting party in the position of having paid out under the contract and received nothing in return.

This arises mainly in transactions where there is a time-lag between the parties fulfilling their obligations under the contract. The most common example is in foreign exchange markets because each currency must be delivered in its home country. Due to time zone differences, several hours can elapse between a payment being made in one currency and the offsetting payment being made in another currency.

3.10 Insolvency risk

A credit institution's insolvency or that of any other brokers involved in the transaction may lead to positions being liquidated or closed out without your consent. In certain circumstances, you may not get back the actual assets which you lodged as collateral and may have to accept any available payments in cash.

3.11 Contingent liability risk

Contingent liability transactions, which are margined, require you to make a series of payments against the purchase price, instead of paying the whole purchase price immediately. If you trade in future contracts for difference (CFDs) or sell options, you may sustain total loss of the margin you deposit with your firm to establish

or maintain a position. If the market moves against you, you may be called upon to pay substantial additional margin at short notice to maintain the position. If you fail to do so within the time required, your position may be liquidated at a loss, and you will be responsible for the resulting deficit.

Even if a transaction is not margined, it may still carry an obligation to make further payments in certain circumstances over and above any amount paid when you entered into the contract.

4 RISKS RELATED TO FINANCIAL PRODUCTS

The risk factors described in the preceding pages are present to varying degrees in financial products intended for investors.

4.1 Money-market instruments

Money market instruments are financial instruments that make short-term (maximum 397 days) cash or bond investments with banks, governments or corporates. They often take the form of an investment fund or a certificate.

As the objective of these instruments is to be a short-term and low-risk investment, returns and the level of risk are in principle close to those of cash investments.

Main risks:

– Credit risk

– Interest-rate risk

– Inflation risk

4.2 Bonds

A bond is a financial instrument that represents a loan to an entity such as a company, a government or even a supranational entity. When you buy or subscribe to bonds, you become a creditor of the issuer of the bonds. Generally, interest is paid to you as lender, and the amount of the loan is repaid at term. Some bonds generate a return linked to the performance of a real or notional pool of underlying assets. In such circumstances, the return you receive will depend how the underlying pool performs.

Bonds have a nominal or par value, which will be returned to you when the bond matures at term. However, because bonds are traded on bond markets, the price you pay for a bond on the so-called 'secondary' market may be more or less than the nominal/par value.

If you choose to invest in bonds, there is a risk you will lose some or all of the money invested. The value of your investment may be diminished by a number of factors, including rising interest rates, inflation, a worsening credit rating or even default by the bond issuer.

Bonds can be bought and sold in the market (listed or 'over the counter'), with their prices varying from day to day. A rise or fall in the market price of a bond does not always affect what you will receive if you hold the bond until it matures. You will only receive the nominal/par value of the bond (plus any coupon payment to which you have been entitled during your ownership of the bond), irrespective of what you paid for it.

Different types of bonds exist:

- **Zero-coupon bonds** to which no interest coupon is attached. Instead, these are issued at a discount to their nominal/par value and redeemed on maturity 'at par' (= 100%). For example, a zero-coupon bond is issued at 80% and reimbursed 5 years later at 100%.
- **Floating-rate bonds** whose interest rate can move as a function of certain predetermined criteria. For example, the rate is linked to the annual rate of inflation.
- **Convertible bonds/cum warrants** where the investor has the choice, at maturity, to be redeemed either in cash or in a predetermined number of shares.
- **Subordinated bonds** are subordinated to ordinary bonds in the event of any failure to pay or bankruptcy.

Main risks:

– Credit risk

– Interest-rate risk

– Inflation risk

– Liquidity risk

4.3 Equities

A share is an instrument representing a shareholder's rights in a company. Shares may carry fixed, variable or no entitlement to a dividend. The extent of a shareholder's ownership in a company depends on the number of shares owned in relation to the total number of outstanding shares. Shareholders become co-owners of the company and participate in the company's development as well as in opportunities for profit and losses.

Some shares are bought on stock exchanges. Their values can go down as well as up in line with market conditions. These shares are termed 'quoted' or 'listed'. As for unlisted shares or shares in small companies, there is an additional risk of losing money when such shares are bought and sold due to possible low liquidity.

Shares have exposure to all major risk types listed below, and share prices may undergo unforeseeable price fluctuations, causing a risk of loss. Investing in shares concentrated in a specific sector is considered to be a higher-risk strategy due to concentrated exposure to the market sector in question.

Shares in companies incorporated in emerging markets may be harder to buy and sell than shares in companies in more developed markets. Moreover, such companies may also not be regulated as strictly as in more developed markets.

If a company goes into liquidation, its shareholders rank behind the company's creditors (including its subordinated creditors) in the event of realisation and distribution of the company's assets. This means that a shareholder will normally only receive money from the liquidator if there are any liquidation proceeds remaining once all the company's creditors have been paid in full.

Certain specific types of share or equity-like instruments:

- **Private equity**: non-listed shares or instruments used to finance new companies/activities. These types of investment are often limited to certain (professional) investors, as they are relatively risky and illiquid.
- **Depository receipts** ('Global Depositary Receipts', 'American Depositary Receipts', etc.): generally speaking, these instruments can be defined as giving the right to a certain number of foreign shares which the issuer of the receipt holds on behalf of the holder of the receipt itself. These are normally traded in the same way as shares, but on a foreign market or execution venue. Their price is linked to the price of the underlying shares. In principle, they have a right to a dividend, but no voting right.
- **Preference shares**: these have certain special privileges as regards dividends (for example a fixed dividend), but, as such, they often have no voting rights.

Main risks:

– Market risk

– Currency risk

– Insolvency risk

– Liquidity risk

4.4 Reverse convertibles

Reverse convertibles can be considered as hybrid instruments between a (high-)yield investment and a derivative (short put). They have a nominal value with a predefined interest rate. However, the interest payments and/or final reimbursement depend on the performance of an underlying instrument, such as a stock index or a share. So, if the underlying performs well, the investor will normally receive a cash reimbursement. However, if the underlying does not perform well, the investor will receive either a number of shares or a reduced amount of cash, resulting in a capital loss.

Main risks:

– Credit risk

– Interest-rate risk

– Market risk

– Liquidity risk

4.5 Warrants

A warrant is a negotiable instrument that confers on its holder, for a predetermined period of time and for a predetermined price, a contractual right (but not an obligation) to subscribe to securities, usually of the issuer, or, in the case of an issue by a finance subsidiary, its parent. The securities subject to the right may be equity shares, in which case the warrants are known as 'equity warrants', or other debt securities, known as 'debt warrants'. Relatively small movements in the underlying security result in disproportionately large movements, either unfavourable or favourable, in the warrant's price.

You should understand that the subscription right which a warrant confers is invariably limited in time, with the consequence that, if the investor fails to exercise this right within the predetermined time-scale, the investment becomes worthless.

You should not buy a warrant unless you are prepared to sustain a total loss of the money you have invested plus any commission or other transaction charges. Some other instruments are also called warrants, but these are actually options (for example a right to acquire securities exercisable against someone other than the original issuer of the securities, often called a 'covered warrant').

Main risks:

– Credit risk

– Market risk

– Liquidity risk

4.6 Collective investment products

Collective investment products, often referred to as 'investment funds', can take several legal forms. They can be either open-ended (when they continuously offer their shares for sale or purchase to investors, based on their net asset value) or closed-ended (when there are a fixed number of shares that cannot be redeemed as easily as open-ended funds). Such products include 'mutual funds', 'investment trusts', 'unit trusts', 'investment companies with variable capital' (SICAVs), 'undertakings for collective investments in transferable securities' (UCITS), 'exchange-traded funds' (ETFs), 'real estate investment trusts' (REITs) and 'hedge funds'. These are all investment vehicles that invest their assets in the securities of other issuers or in cash, in accordance with their own internal rules or 'investment policy'.

The value of an investment in a collective investment product is determined by the value of the underlying investment made by the product's managers [its net asset value (NAV), which is usually but not always calculated on a daily basis]. As such, any income received from investing in a collective investment scheme may vary with the dividends or interest paid by the underlying investments, which means it could fall as well as rise. In the case of

certain specific funds, such as hedge funds[13], there may be limits to the ability to redeem units, and such funds may also engage in shorting or leveraging techniques. Collective investment products that focus on a country, sector or market index may exhibit greater volatility than the wider market; as such, they should be considered as higher risk than more widely invested collective investment products. It may not be possible to trade units or shares in collective investment products if there is no liquid market.

You should be aware that, as an investor in a collective investment vehicle, you will often have none of the rights connected with direct individual investment within the investment vehicle (for example, discounts on the issuer's products and the right to attend the company's annual general meeting and vote on important matters).

In the case of exchange-traded funds (ETFs), which often have the characteristic of tracking an underlying index, prices can vary during the day, as ETFs are traded on a stock exchange in the same way as shares.

Main risks:

– Interest-rate risk

– Market risk

– Liquidity risk

– Currency risk

4.7 Structured products

Structured products are packaged pursuant to a certain investment strategy and are composed of several financial instruments, often a zero-coupon bond or money-market instrument, together with a derivative instrument. They can, among other things, take the form of a so-called 'euro medium-term note' (EMTN), which have a nominal value and interest or bonus payments (if any) expressed as a percentage, like bonds.

Many varieties exist, such as products linked to a specific index, a basket of shares or even oil certificates.

Generally speaking, structured products can be divided between those offering capital protection at maturity and those that do not offer any capital protection.

For those offering capital protection, it is important to note that this protection only exists at maturity and provided that neither the issuer nor guarantor is in a situation of payment default.

Furthermore, due to the important number of varieties of structured product that exist, it is important that you carefully read the information specific to each product you may wish to invest in, as risks and characteristics differ for each type.

Lastly, it is important to bear in mind that, during the life of a structured product, its value on the secondary market may be below 100% ('below par'), even for those offering capital protection at maturity.

Main risks:

– Credit risk

– Interest-rate risk

– Market risk

– Liquidity risk

– Currency risk

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[13] See also paragraph 4.8 for a general description of other derivatives.

4.8 Derivatives

A derivative is a financial instrument, the value of which is derived from the value of an underlying asset. Rather than trade or exchange the asset itself, an agreement is entered into to exchange money, assets or some other value at or before a future date and at a predetermined price, based on the underlying asset. A premium may also be payable to acquire the derivative.

There are many types of derivative, but options, futures and swaps are among the most common. An investor in derivatives often assumes a high level of risk, so investments in derivatives should be made with caution, especially for less experienced investors or investors with a limited amount of capital to invest. Derivatives usually have a high risk associated with them, predominantly as there is a reliance on how the underlying assets perform.

Options or futures can allow a person to pay only a premium to have exposure to the performance of an underlying asset. While this can often lead to handsome returns if the investor has made correct assumptions about performance, it can also lead to a 100% loss (the premium paid) if incorrect. Options or futures sold 'short' or uncovered (i.e. without the seller owning the asset at the time of the sale) may lead to losses that are higher than the invested amount if, depending on the nature of the derivative, the price of the underlying asset falls or rises significantly.

If a derivative transaction is particularly large or if the relevant market is illiquid (as may be the case with many privately negotiated off-exchange derivatives), it may not be possible to initiate a transaction or liquidate a position at an advantageous price.

'On-exchange derivatives' are subject, in addition, to the risks of exchange trading generally, including potentially the requirement to provide margin. 'Off-exchange derivatives' may take the form of unlisted transferable securities or bilateral over-the-counter (OTC) contracts. Although these forms of derivative may be treated differently, both arrangements may be subject to credit risk of the issuer (if transferable securities) or the counterparty (if OTCs), and, like any contract, they are also subject to the particular terms of the contract (whether a one-off transferable security or OTC, or a master agreement), as well as the risks identified below. In particular, with an OTC contract, the counterparty may not be bound to close out or liquidate this position, so it may not be possible to terminate a loss-making contract.

Derivatives can be used for speculative purposes or as hedges to manage other investment risks. In all cases, the suitability of the transaction for the particular investor should be very carefully considered. You are therefore advised to ask about the terms and conditions of the specific derivatives and associated obligations (e.g. the circumstances under which you may become obligated to make or take delivery of an underlying asset and, in respect of options, expiration dates and restrictions on the time for exercise). Under certain circumstances, the specifications of outstanding contracts (including the strike price of an option) may be modified by the exchange or clearing house to reflect changes in the underlying assets.

Normal pricing relationships between the underlying asset and the derivative may not exist in all cases. The absence of an underlying reference price may make it difficult to assess fair value.

Main risks:

– Credit risk (mainly in the case of OTC derivatives)

– Interest-rate risk

– Market risk

– Liquidity risk

– Currency risk

– Settlement risk (mainly in the case of OTC derivatives)

– Insolvency risk (mainly in the case of OTC derivatives)

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5 SUSTAINABILITY RISK

Sustainability risk is the risk arising from any environmental, social or governance events or conditions that, were they to occur, could cause a material negative impact on the value of the investment. Specific sustainability risks will vary for each investment, and include but are not limited to the following:

Environmental risk:

The risk posed by the exposure to issuers that may potentially be causing or affected by environmental degradation and/or depletion of natural resources. Environmental risk may result from air pollution, water pollution, waste generation, depletion of freshwater and marine resources, loss of biodiversity or damages to ecosystems. Environmental risks may negatively affect the value of investments by impairing assets, productivity or revenues, or by increasing liabilities, capital expenditures or operating and financing costs.

Transition risk:

The risk posed by the exposure to issuers that may potentially be negatively affected by the transition to a low carbon economy due to their involvement in exploration, production, processing, trading and sale of fossil fuels, or their dependency upon carbon intensive materials, processes, products and services. Transition risk may result from several factors, including rising costs and/or limitation of greenhouse gas emissions, energy-efficiency requirements, reduction in fossil fuel demand or shift to alternative energy sources, due to policy, regulatory, technological and market demand changes. Transition risks may negatively affect the value of investments by impairing assets or revenues, or by increasing liabilities, capital expenditures or operating and financing costs.

Physical risk:

The risk posed by the exposure to issuers that may potentially be negatively affected by the physical impacts of climate change. Physical risk includes acute risks arising from extreme weather events such as storms, floods, droughts, fires or heatwaves, and chronic risks arising from gradual changes in the climate, such as changing rainfall patterns, rising sea levels, ocean acidification, and biodiversity loss. Physical risks may negatively affect the value of investments by impairing assets, productivity or revenues, or by increasing liabilities, capital expenditures or operating and financing costs.

Social risk:

The risk posed by the exposure to issuers that may potentially be negatively affected by social factors such as poor labour standards, human rights violations, damages to public health, data privacy breaches, or increased inequalities. Social risks may negatively affect the value of investments by impairing assets, productivity or revenues, or by increasing liabilities, capital expenditures or operating and financing costs.

Governance risk:

The risk posed by the exposure to issuers that may potentially be negatively affected by weak governance structures. For companies, governance risk may result from malfunctioning boards, inadequate remuneration structures, abuses of minority shareholders or bondholders' rights, deficient controls, aggressive tax planning and accounting practices, or lack of business ethics. For countries, governance risk may include governmental instability, bribery and corruption, privacy breaches and lack of judicial independence. Governance risk may negatively affect the value of investments due to poor strategic decisions, conflicts of interest, reputational damages, increased liabilities or loss of investor confidence.

Our investments take into account sustainability risks, by integrating in the investment process Environmental Social and Corporate Governance (ESG) factors, based on proprietary and third-party research, to evaluate both investment risks and opportunities.

Consequent impacts to the occurrence of sustainability risks can be many and varied according to a specific risk, region or asset class. Generally, when a sustainability risk occurs for an asset, there will be a negative impact and potentially a partial or total loss of its value. However, the integration of sustainability risk analysis should mitigate the impact of such risks on the value of the investments and could help enhance long-term risk adjusted returns for investors.

6 A CASE STUDY

Let us look at an example in order to summarise risk premia. In this case study, a financial management consultant suggests that his clients invest in 10-year US government bonds with a yield to maturity of 3%, a 30-year BBB bond issued by Petrobras in Brazilian reals, and Petrobras shares. We wish to identify the risk premia for these various investments.

6.1 Credit risk

Compensates for investment in a diversified portfolio of BBB corporate bonds in USD with a 10-year yield to maturity of 4.7%. In addition to the previous compensation of 3%, we have:

- a premium of 1.3%, which is compensation for the balance-sheet risk
- a premium of 0.4%, which is compensation for the AAA-BBB balance-sheet spread rating.

These spreads vary according to the monetary policies of the central banks and investors' risk appetite. The table below shows the ratings awarded by the main agencies.

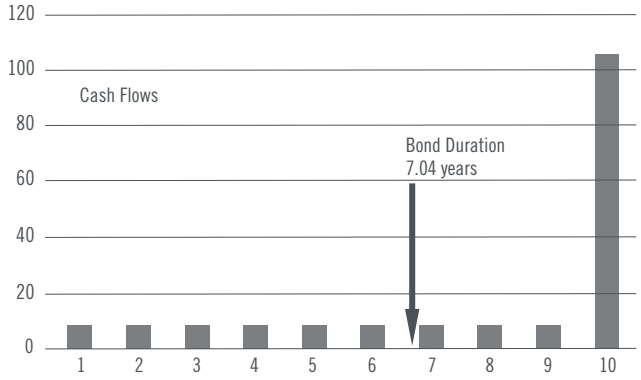
6.2 Inflation risk and exchange-rate risk

Compensates for the currency risk by taking an identical BBB bond (but this time *in Brazilian reals*) with a yield to maturity of 5.4%, i.e. an additional premium of 0.7% for the 10-year inflation differential between Brazil and the United States (it is assumed that this differential accounts fully for the exchange rate).

6.3 Time value of money

Investing in a 30-year US government bond gives a return of 3.5%. The extra 0.5% compensates for the 30-year inflation risk compared with the previous 10 years. By definition, 30-year bonds are more sensitive to rate movements because of the weighting of the latest cash flow in the calculation of the bond's value. This is known as 'duration risk'.

The table below illustrates the duration calculation for a bond with a maturity of 10 years.



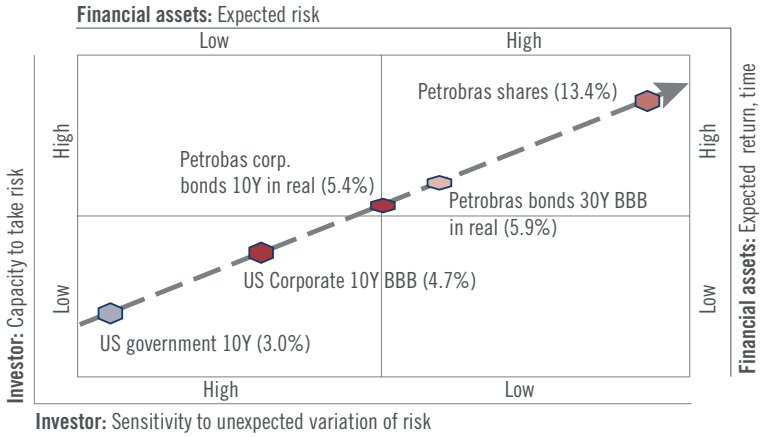
This example assumes that Petrobras issues 30-year corporate bonds and that the term premium is fixed for all bond categories.

6.4 Equity risk

Compensates for the higher risk incurred by shareholders as compared with bondholders in the event of default. The cost of equity of Petrobras is estimated at 13.4%.

The expected returns will increase on a straight line assuming that arbitrage is linked to market efficiency: any additional risk unit will earn an identical additional return. This assumption is useful if a long-term horizon is under consideration.

Below is a table showing the respective principal risk premia for Petrobras shares and 30-year corporate bonds issued by the same company in Brazilian reals for an investor based in USD. Prices and expected returns are stable.



Some premia are linked: the risk premium connected with equities, for example, covers the default risk to which a bondholder is subject, but the volatility risk for equity returns has no counterpart for bonds. The expected return of 13.4% on Petrobras shares is therefore considerably higher than the initial proposal of 3% for US 10Y government bonds, but the risks are also much higher.

	Equities	Bonds	
US risk-free rates	3,0%	3,0%	US risk-free rates
Risk currencies/inflation in Brazil (emerging markets)	0,7%	0,7%	Risk currencies/inflation in Brazil (emerging markets)
Equity risk premium in Brazil	8,8%	1,3%	Balance sheet/AAA Rating risks
		0,5%	30Y term premium
Risk premium related to Petrobas (activity, balance sheet, beta = 1.1)	0,9%	0,4%	Spread rating AAA-BBB
	13,4%	5,9%	