

Pioneer Bond VCT Portfolio

Summary Prospectus | May 1, 2023

Class I Shares

Class II Shares

Before you invest, you may want to review the portfolio's prospectus, which contains more information about the portfolio and its risks. You can find the portfolio's prospectus, statement of additional information, reports to shareholders, and other information about the portfolio online at <https://www.amundi.com/usinvestors/Resources/Download-Literature>. You also can obtain this information at no cost by calling 1-800-225-6292 or by sending an email request to US.AskAmundiUS@amundi.com. The portfolio's current prospectus and statement of additional information, dated May 1, 2023, the independent registered public accounting firm's report and financial statements in the portfolio's annual report to shareholders dated December 31, 2022, are incorporated by reference into this summary prospectus.

Summary Prospectus

Portfolio summary

Investment objectives

The portfolio seeks current income and total return.

Fees and expenses

This table describes the fees and expenses that you may pay if you buy, hold and sell shares of the portfolio. **Your costs would be higher if fees or sales charges imposed by a Variable Contract for which the portfolio is an investment option were included.** Please consult your insurance company's separate account prospectus or disclosure document for more information.

Annual portfolio operating expenses

(expenses that you pay each year as a percentage of the value of your investment)

| | Class I | Class II |
|---|---------|----------|
| Management Fees | 0.40% | 0.40% |
| Distribution and Service (12b-1) Fees | 0.00% | 0.25% |
| Other Expenses | 0.12% | 0.12% |
| Acquired Fund Fees and Expenses ¹ | 0.03% | 0.03% |
| Total Annual Portfolio Operating Expenses Plus Acquired Fund Fees and Expenses ¹ | 0.55% | 0.80% |

- 1 Total annual portfolio operating expenses in the table are higher than the corresponding ratios of expenses to average net assets shown in the "Financial Highlights" section, which do not include acquired fund fees and expenses.

Example

This example is intended to help you compare the cost of investing in the portfolio with the cost of investing in other mutual funds. The example assumes that you invest \$10,000 in the portfolio for the time periods shown and then redeem all of your shares at the end of those periods. It also assumes that (a) your investment has a 5% return each year and (b) the portfolio's total annual operating expenses remain the same. This example does not reflect any fees or sales charges imposed by a Variable Contract for which the portfolio is an investment option. If they were included, your costs would be higher.

Although your actual costs may be higher or lower, based on these assumptions your costs would be:

| | Number of years you own your shares (with or without redemption) | | | |
|----------|---|-------|-------|-------|
| | 1 | 3 | 5 | 10 |
| Class I | \$56 | \$176 | \$307 | \$689 |
| Class II | \$82 | \$255 | \$444 | \$990 |

Portfolio turnover

The portfolio pays transaction costs, such as commissions, when it buys and sells securities (or "turns over" its portfolio). A higher portfolio turnover rate may indicate higher transaction costs. These costs, which are not reflected in annual portfolio operating expenses or in the example, affect the portfolio's performance. During the most recent fiscal year, the portfolio turnover rate was 65% of the average value of the portfolio.

Principal investment strategies

Normally, the portfolio invests at least 80% of its net assets (plus the amount of borrowings, if any, for investment purposes) in debt securities issued or guaranteed by the U.S. government, its agencies and instrumentalities, investment grade debt securities (including convertible debt) of corporate or other issuers and cash, cash equivalents and other short-term holdings. Derivative instruments that provide exposure to such securities or have similar economic characteristics may be used to satisfy the portfolio's 80% policy.

The portfolio may invest a substantial portion of its assets in mortgage-related securities, including commercial mortgage-backed securities, collateralized mortgage obligations, credit risk transfer securities and “sub-prime” mortgages; and asset-backed securities. The portfolio’s investments in mortgage-related and asset-backed securities include securities issued by private issuers. The portfolio’s investments in mortgage-related securities may include instruments, the underlying assets of which allow for balloon payments (where a substantial portion of a mortgage loan balance is paid at maturity, which can shorten the average life of the mortgage-backed instrument) or negative amortization payments (where as a result of a payment cap, payments on a mortgage loan are less than the amount of principal and interest owed, with excess amounts added to the outstanding principal balance, which can extend the average life of the mortgage-backed instrument).

The portfolio also may invest a portion of its assets in subordinated debt securities, municipal securities, preferred securities, Treasury Inflation Protected Securities (“TIPS”) and other inflation-linked debt securities, floating-rate loans and insurance-linked securities. The portfolio also may enter into mortgage dollar roll transactions.

The portfolio may invest up to 20% of its net assets in debt securities rated below investment grade or, if unrated, of equivalent credit quality as determined by the adviser (known as “junk bonds”), including securities that are in default. The portfolio may invest up to 15% of its total assets in securities of non-U.S. issuers, including up to 5% of its total assets in securities of emerging market issuers.

The portfolio may invest in securities of any maturity, and maintains an average portfolio maturity which varies based upon the judgment of the portfolio's adviser. The maturity of a fixed income security is a measure of the time remaining until final payment on the security is due. The portfolio's investments may have fixed or variable principal payments and all types of interest rate payment and reset terms, including fixed rate, floating rate, inverse floating rate, zero coupon, when-issued, delayed delivery, to be announced and forward commitment, contingent, deferred and payment in kind and auction rate features.

The portfolio may, but is not required to, use derivatives, such as credit default swaps and credit default swap index products (“CDX”) (swaps based on a portfolio of credit default swaps with similar characteristics, such as credit default swaps on high-yield bonds). The portfolio may use derivatives for a variety of purposes, including: in an attempt to hedge against adverse changes in the market price of securities, interest rates or currency exchange rates; as a substitute for purchasing or selling securities; to attempt to increase the portfolio's return as a non-hedging strategy that may be considered speculative; to manage portfolio characteristics; and as a cash flow management technique. The portfolio may choose not to make use of derivatives for a variety of reasons, and any use may be limited by applicable law and regulations. The portfolio may hold cash or other short-term investments.

The adviser considers both broad economic and issuer specific factors in selecting investments. In assessing the appropriate maturity, credit quality and sector weighting of the portfolio's portfolio, the adviser considers a variety of factors that are expected to influence economic activity and interest rates. The adviser selects individual securities to buy and sell based upon such factors as a security’s yield, liquidity and rating, an assessment of credit quality, and sector and issuer diversification.

The adviser integrates environmental, social and corporate governance (ESG) considerations into its investment research process by evaluating the business models and practices of issuers and their ESG-related risks. The adviser believes ESG analysis is a meaningful facet of fundamental research, the process of evaluating an issuer based on its financial position, business operations, competitive standing and management. This process considers ESG information, where available, in assessing an investment’s performance potential. The adviser generally considers ESG information in the context of an issuer’s respective sector or industry. The adviser may consider ESG ratings provided by third parties or internal sources, as well as issuer disclosures and public information, in evaluating issuers. ESG considerations are not a primary focus of the portfolio, and the weight given by the adviser to ESG considerations in making investment decisions will vary and, for any specific decision, they may be given little or no weight. Notwithstanding the foregoing, the adviser generally will not invest portfolio assets in (i) companies that the adviser determines have significant involvement in the manufacturing of complete tobacco products, (ii) companies engaged in the production, sale, storage of, or providing services for, certain controversial weapons, including chemical, biological and depleted uranium weapons and certain antipersonnel mines and cluster bombs, or (iii) companies with involvement in the production or sale of nuclear weapons.

Summary Prospectus

Principal risks of investing in the portfolio

You could lose money on your investment in the portfolio. As with any mutual fund, there is no guarantee that the portfolio will achieve its objectives.

Market risk. The market prices of securities or other assets held by the portfolio may go up or down, sometimes rapidly or unpredictably, due to general market conditions, such as real or perceived adverse economic, political, or regulatory conditions, political instability, recessions, inflation, changes in interest or currency rates, lack of liquidity in the bond markets, the spread of infectious illness or other public health issues, armed conflict, market disruptions caused by tariffs, trade disputes, sanctions or other government actions, or other factors or adverse investor sentiment. If the market prices of the portfolio's securities and assets fall, the value of your investment will go down. A change in financial condition or other event affecting a single issuer or market may adversely impact securities markets as a whole.

In the past decade, financial markets throughout the world have experienced increased volatility, depressed valuations, decreased liquidity and heightened uncertainty. Governmental and non-governmental issuers have defaulted on, or been forced to restructure, their debts. These conditions may continue, recur, worsen or spread. Events that have contributed to these market conditions include, but are not limited to, major cybersecurity events; geopolitical events (including wars, terror attacks and economic sanctions); measures to address budget deficits; downgrading of sovereign debt; changes in oil and commodity prices; dramatic changes in currency exchange rates; global pandemics; and public sentiment. The fallout from the COVID-19 pandemic and subsequent variants of COVID-19, and the long-term impact on economies, markets, industries and individual issuers, are not known. Some sectors of the economy and individual issuers have experienced or may experience particularly large losses. Periods of extreme volatility in the financial markets; reduced liquidity of many instruments; and disruptions to supply chains, consumer demand and employee availability, may continue for some time.

Raising the ceiling on U.S. government debt has become increasingly politicized. Any failure to increase the total amount that the U.S. government is authorized to borrow could lead to a default on U.S. government obligations, with unpredictable consequences for economies and markets in the U.S. and elsewhere. Recently, inflation and interest rates have increased and may rise further. These circumstances could adversely affect the value and liquidity of the portfolio's investments, impair the portfolio's ability to satisfy redemption requests, and negatively impact the portfolio's performance. Following Russia's invasion of Ukraine, Russian securities have lost all, or nearly all, their market value. Other securities or markets could be similarly affected by past or future political, geopolitical or other events or conditions.

Governments and central banks, including the U.S. Federal Reserve, have taken extraordinary and unprecedented actions to support local and global economies and the financial markets. These actions have resulted in significant expansion of public debt, including in the U.S. The consequences of high public debt, including its future impact on the economy and securities markets, may not be known for some time. U.S. Federal Reserve or other U.S. or non-U.S. governmental or central bank actions, including increases or decreases in interest rates, or contrary actions by different governments, could negatively affect financial markets generally, increase market volatility and reduce the value and liquidity of securities in which the portfolio invests. Policy and legislative changes in the U.S. and in other countries are affecting many aspects of financial regulation, and these and other events affecting global markets, such as the United Kingdom's exit from the European Union (or Brexit), potential trade imbalances with China or other countries or sanctions or other government actions against Russia, other nations or individuals or companies (or their countermeasures), may contribute to decreased liquidity and increased volatility in the financial markets. The impact of these changes on the markets, and the implications for market participants, may not be fully known for some time.

The U.S. and other countries are periodically involved in disputes over trade and other matters, which may result in tariffs, investment restrictions and adverse impacts on affected companies and securities. For example, the U.S. has imposed tariffs and other trade barriers on Chinese exports, has restricted sales of certain categories of goods to China, and has established barriers to investments in China. Trade disputes may adversely affect the economies of the U.S. and its trading partners, as well as companies directly or indirectly affected and financial markets generally. The U.S. government has prohibited U.S. persons, such as the portfolio, from investing in Chinese companies designated as related to the Chinese military. These and possible future restrictions could limit the portfolio's opportunities for investment and require the sale of securities at a loss or make them illiquid. Moreover, the Chinese government is involved in a longstanding dispute with Taiwan that has included threats of invasion. If the political climate between the U.S. and China does not

improve or continues to deteriorate, if China were to attempt unification of Taiwan by force, or if other geopolitical conflicts develop or get worse, economies, markets and individual securities may be severely affected both regionally and globally, and the value of the portfolio's assets may go down.

Economies and financial markets throughout the world are increasingly interconnected. Economic, financial or political events, trading and tariff arrangements, armed conflict including Russia's military invasion of Ukraine, terrorism, natural disasters, infectious illness or public health issues, cybersecurity events, supply chain disruptions, sanctions against Russia, other nations or individuals or companies and possible countermeasures, and other circumstances in one country or region could have profound impacts on other countries or regions and on global economies or markets. As a result, whether or not the portfolio invests in securities of issuers located in or with significant exposure to the countries or regions directly affected, the value and liquidity of the portfolio's investments may be negatively affected. The portfolio may experience a substantial or complete loss on any security or derivative position.

The portfolio's investments, payment obligations and financing terms may be based on floating rates, such as LIBOR (London Interbank Offered Rate) or Secured Overnight Financing Rate (SOFR). ICE Benchmark Administration, the administrator of LIBOR, ceased publication of most LIBOR settings on a representative basis at the end of 2021 and is expected to cease publication of a majority of U.S. dollar LIBOR settings on a representative basis after June 30, 2023. In addition, global regulators have announced that, with limited exceptions, no new LIBOR-based contracts should be entered into after 2021. The transition away from LIBOR may lead to increased volatility and illiquidity in markets that currently rely on LIBOR and may adversely affect the portfolio's performance. The transition may also result in a reduction in the value of certain LIBOR-based investments held by the portfolio or reduce the effectiveness of related transactions such as hedges.

Interest rate risk. The market prices of the portfolio's fixed income securities may fluctuate significantly when interest rates change. The value of your investment will generally go down when interest rates rise. A rise in rates tends to have a greater impact on the prices of longer term or duration securities. For example, if interest rates increase by 1%, the value of a fund's portfolio with a portfolio duration of ten years would be expected to decrease by 10%, all other things being equal. In recent years, interest rates and credit spreads in the U.S. have been at historic lows. The U.S. Federal Reserve has raised certain interest rates, and interest rates may continue to go up. A general rise in interest rates could adversely affect the price and liquidity of fixed income securities and could also result in increased redemptions from the portfolio. The maturity of a security may be significantly longer than its effective duration. A security's maturity and other features may be more relevant than its effective duration in determining the security's sensitivity to other factors affecting the issuer or markets generally, such as changes in credit quality or in the yield premium that the market may establish for certain types of securities (sometimes called "credit spread"). In general, the longer its maturity the more a security may be susceptible to these factors. When the credit spread for a fixed income security goes up or "widens," the value of the security will generally go down.

Credit risk. If an issuer or guarantor of a security held by the portfolio or a counterparty to a financial contract with the portfolio defaults on its obligation to pay principal and/or interest, has its credit rating downgraded or is perceived to be less creditworthy, or the credit quality or value of any underlying assets declines, the value of your investment will typically decline. Changes in actual or perceived creditworthiness may occur quickly. The portfolio could be delayed or hindered in its enforcement of rights against an issuer, guarantor or counterparty.

Prepayment or call risk. Many issuers have a right to prepay their securities. If interest rates fall, an issuer may exercise this right. If this happens, the portfolio will not benefit from the rise in market price that normally accompanies a decline in interest rates, and will be forced to reinvest prepayment proceeds at a time when yields on securities available in the market are lower than the yield on the prepaid security. The portfolio also may lose any premium it paid on the security.

Extension risk. During periods of rising interest rates, the average life of certain types of securities may be extended because of slower than expected principal payments. This may lock in a below market interest rate, increase the security's duration and reduce the value of the security.

Liquidity risk. Some securities and derivatives held by the portfolio may be or become impossible or difficult to purchase, sell or unwind, particularly during times of market turmoil. An instrument's liquidity may be affected by reduced trading volume, a relative lack of market makers or legal restrictions, and illiquid securities and derivatives also may be difficult

Summary Prospectus

to value. Liquidity risk may be magnified in an environment of rising interest rates or widening credit spreads. During times of market turmoil, there have been, and may be, no buyers or sellers for securities in entire asset classes. If the portfolio is forced to sell an illiquid asset or unwind a derivative position to meet redemption requests or other cash needs, or to try to limit losses, the portfolio may be forced to sell at a substantial loss or may not be able to sell at all. The portfolio may not receive its proceeds from the sale of certain securities for an extended period (for example, several weeks or even longer). In extreme cases, this may constrain the portfolio's ability to meet its obligations (including obligations to redeeming shareholders).

Portfolio selection risk. The adviser's judgment about the quality, relative yield, relative value or market trends affecting a particular sector or region, market segment, security, industry or about interest rates or other market factors may prove to be incorrect or may not produce the desired results, or there may be imperfections, errors or limitations in the models, tools and information used by the adviser.

ESG risk. The portfolio's adviser may consider ESG information in its investment research process. This may mean forgoing some investment opportunities available to funds that do not consider ESG information. In considering ESG information, the adviser may use third party ESG ratings information that it believes to be reliable, but such information may not be accurate or complete, or may be biased. ESG considerations are not a primary focus of the portfolio, and the weight given by the adviser to ESG considerations in making investment decisions will vary and, for any specific decision, they may be given little or no weight.

U.S. Treasury obligations risk. The market value of direct obligations of the U.S. Treasury may vary due to changes in interest rates. In addition, changes to the financial condition or credit rating of the U.S. government may cause the value of the portfolio's investments in obligations issued by the U.S. Treasury to decline.

U.S. government agency obligations risk. The portfolio invests in obligations issued by agencies and instrumentalities of the U.S. government. Government-sponsored entities such as the Federal National Mortgage Association (FNMA), the Federal Home Loan Mortgage Corporation (FHLMC) and the Federal Home Loan Banks (FHLBs), although chartered or sponsored by Congress, are not funded by congressional appropriations and the debt and mortgage-backed securities issued by them are neither guaranteed nor issued by the U.S. government. The maximum potential liability of the issuers of some U.S. government obligations may greatly exceed their current resources, including any legal right to support from the U.S. government. Such debt and mortgage-backed securities are subject to the risk of default on the payment of interest and/or principal, similar to debt of private issuers. Although the U.S. government has provided financial support to FNMA and FHLMC in the past, there can be no assurance that it will support these or other government-sponsored entities in the future.

Mortgage-related and asset-backed securities risk. The value of mortgage-related securities, including commercial mortgage-backed securities, collateralized mortgage-backed securities, credit risk transfer securities, and asset-backed securities, will be influenced by factors affecting the assets underlying such securities. As a result, during periods of declining asset value, difficult or frozen credit markets, swings in interest rates, or deteriorating economic conditions, mortgage-related and asset-backed securities may decline in value, face valuation difficulties, become more volatile and/or become illiquid. Mortgage-backed securities tend to be more sensitive to changes in interest rates than other types of debt securities. These securities are also subject to interest rate, prepayment and extension risks. Some of these securities may receive little or no collateral protection from the underlying assets and are thus subject to the risk of default. The risk of such defaults is generally higher in the case of mortgage-backed investments offered by non-governmental issuers and those that include so-called "sub-prime" mortgages. The structure of some of these securities may be complex and there may be less available information than for other types of debt securities. Upon the occurrence of certain triggering events or defaults, the portfolio may become the holder of underlying assets at a time when those assets may be difficult to sell or may be sold only at a loss.

Risks of instruments that allow for balloon payments or negative amortization payments. Certain debt instruments allow for balloon payments or negative amortization payments. Such instruments permit the borrower to avoid paying currently a portion of the interest accruing on the instrument. While these features make the debt instrument more affordable to the borrower in the near term, they increase the risk that the borrower will be unable to make the resulting higher payment or payments that become due at the maturity of the loan.

High yield or “junk” bond risk. Debt securities that are below investment grade, called “junk bonds,” are speculative, have a higher risk of default or are already in default, tend to be less liquid and are more difficult to value than higher grade securities. Junk bonds tend to be volatile and more susceptible to adverse events and negative sentiments. These risks are more pronounced for securities that are already in default.

Risks of investing in loans. Floating rate loans and similar investments may be illiquid or less liquid than other investments and difficult to value. The value of collateral, if any, securing a floating rate loan can decline or may be insufficient to meet the issuer’s obligations or may be difficult to liquidate. Market quotations for these securities may be volatile and/or subject to large spreads between bid and ask prices. No active trading market may exist for many floating rate loans, and many loans are subject to restrictions on resale. Any secondary market may be subject to irregular trading activity and extended trade settlement periods. In particular, loans may take longer than seven days to settle, potentially leading to the sale proceeds of loans not being available to meet redemptions for a substantial period of time after the sale of the loans. To the extent that sale proceeds of loans are not available, the portfolio may sell securities that have shorter settlement periods or may access other sources of liquidity to meet redemption requests. There is less readily available, reliable information about most senior loans than is the case for many other types of securities. The adviser’s decision not to receive material, non-public information about an issuer of a loan either held by, or considered for investment by, the portfolio, under normal circumstances could place it at a disadvantage, relative to other loan investors, in assessing a loan or the loan’s issuer, and adversely affect the portfolio’s investment performance. Loans may not be considered “securities,” and purchasers, such as the portfolio, therefore may not be entitled to rely on the anti-fraud protections afforded by federal securities laws.

Risks of investing in insurance-linked securities. The portfolio could lose a portion or all of the principal it has invested in an insurance-linked security, and the right to additional interest and/or dividend payments with respect to the security, upon the occurrence of one or more trigger events, as defined within the terms of an insurance-linked security. Trigger events may include natural or other perils of a specific size or magnitude that occur in a designated geographic region during a specified time period, and/or that involve losses or other metrics that exceed a specific amount. The portfolio may also invest in insurance-linked securities that are subject to “indemnity triggers.” An indemnity trigger is a trigger based on the actual losses of the ceding sponsor (i.e., the party seeking reinsurance). Insurance-linked securities subject to indemnity triggers are often regarded as being subject to potential moral hazard, since such insurance-linked securities are triggered by actual losses of the ceding sponsor and the ceding sponsor may have an incentive to take actions and/or risks that would have an adverse effect on the portfolio. There is no way to accurately predict whether a trigger event will occur and, accordingly, insurance-linked securities carry significant risk. In addition to the specified trigger events, insurance-linked securities may expose the portfolio to other risks, including but not limited to issuer (credit) default, adverse regulatory or jurisdictional interpretations and adverse tax consequences. Certain insurance-linked securities may have limited liquidity, or may be illiquid. The portfolio has limited transparency into the individual contracts underlying certain insurance-linked securities, which may make the risk assessment of such securities more difficult. Certain insurance-linked securities may be difficult to value.

Inflation-linked securities risk. The principal or interest of inflation-linked securities such as TIPS is adjusted periodically to a specified rate of inflation. The inflation index used may not accurately measure the real rate of inflation. Inflation-linked securities may lose value or interest payments on such securities may decline in the event that the actual rate of inflation is different than the rate of the inflation index, and losses may exceed those experienced by other debt securities with similar durations. The values of inflation-linked securities may not be directly correlated to changes in interest rates, for example if interest rates rise for reasons other than inflation.

Risks of subordinated securities. A holder of securities that are subordinated or “junior” to more senior securities of an issuer is entitled to payment after holders of more senior securities of the issuer. Subordinated securities are more likely to suffer a credit loss than non-subordinated securities of the same issuer, any loss incurred by the subordinated securities is likely to be proportionately greater, and any recovery of interest or principal may take more time. As a result, even a perceived decline in creditworthiness of the issuer is likely to have a greater impact on subordinated securities than more senior securities.

Summary Prospectus

Municipal securities risk. The municipal bond market can be susceptible to unusual volatility, particularly for lower-rated and unrated securities. Liquidity can be reduced unpredictably in response to overall economic conditions or credit tightening. Municipal issuers may be adversely affected by rising health care costs, increasing unfunded pension liabilities, and by the phasing out of federal programs providing financial support. Unfavorable conditions and developments relating to projects financed with municipal securities can result in lower revenues to issuers of municipal securities, potentially resulting in defaults. Issuers often depend on revenues from these projects to make principal and interest payments. The value of municipal securities can also be adversely affected by changes in the financial condition of one or more individual municipal issuers or insurers of municipal issuers, regulatory and political developments, tax law changes or other legislative actions, and by uncertainties and public perceptions concerning these and other factors. Municipal issuers may be more susceptible to downgrades or defaults during recessions or similar periods of economic stress. Financial difficulties of municipal issuers may continue or get worse, particularly in the event of political, economic or market turmoil or a recession. To the extent the portfolio invests significantly in a single state, city, territory (including Puerto Rico), or region, or in securities the payments on which are dependent upon a single project or source of revenues, or that relate to a sector or industry, the portfolio will be more susceptible to associated risks and developments.

Risks of zero coupon bonds, payment in kind, deferred and contingent payment securities. These securities may be more speculative and may fluctuate more in value than securities which pay income periodically and in cash. In addition, although the portfolio receives no periodic cash payments on such securities, the portfolio is deemed for tax purposes to receive income from such securities, which applicable tax rules require the portfolio to distribute to shareholders. Such distributions may be taxable when distributed to taxable shareholders.

Risks of investing in when-issued, delayed delivery, to be announced and forward commitment transactions. The market value of these transactions may increase or decrease as a result of changes in interest rates. These transactions involve risk of loss if the value of the underlying security changes unfavorably before the settlement date or if the assets set aside to pay for these securities decline in value prior to the settlement date. Therefore, these transactions may have a leveraging effect on the portfolio, making the value of an investment in the portfolio more volatile and increasing the portfolio's overall investment exposure. There is also a risk that the security will not be issued or that the other party to the transaction will default on its obligation to purchase or sell the security, which may result in the portfolio missing the opportunity to obtain a favorable price or yield elsewhere.

Risks of non-U.S. investments. Investing in non-U.S. issuers, or in U.S. issuers that have significant exposure to foreign markets, may involve unique risks compared to investing in securities of U.S. issuers. These risks are more pronounced for issuers in emerging markets or to the extent that the portfolio invests significantly in one region or country. These risks may include different financial reporting practices and regulatory standards, less liquid trading markets, extreme price volatility, currency risks, changes in economic, political, regulatory and social conditions, military conflicts and sanctions, terrorism, sustained economic downturns, financial instability, reduction of government or central bank support, inadequate accounting standards, tariffs, tax disputes or other tax burdens, nationalization or expropriation of assets, arbitrary application of laws and regulations or lack of rule of law, and investment and repatriation restrictions. Lack of information and less market regulation also may affect the value of these securities. Withholding and other non-U.S. taxes may decrease the portfolio's return. Non-U.S. issuers may be located in parts of the world that have historically been prone to natural disasters. Emerging market economies tend to be less diversified than those of more developed countries. They typically have fewer medical and economic resources than more developed countries and thus they may be less able to control or mitigate the effects of a pandemic. Investing in depositary receipts is subject to many of the same risks as investing directly in non-U.S. issuers. Depositary receipts may involve higher expenses and may trade at a discount (or premium) to the underlying security.

A number of countries in the European Union (EU) have experienced, and may continue to experience, severe economic and financial difficulties. In addition, the United Kingdom has withdrawn from the EU (commonly known as "Brexit"). The range and potential implications of possible political, regulatory, economic, and market outcomes of Brexit cannot be fully known but could be significant, potentially resulting in increased volatility, illiquidity and potentially lower economic growth in the affected markets, which will adversely affect the portfolio's investments.

If one or more stockholders of a supranational entity such as the World Bank fail to make necessary additional capital contributions, the entity may be unable to pay interest or repay principal on its debt securities.

Sanctions or other government actions against certain countries could negatively impact the portfolio's investments in securities that have exposure to those countries. Circumstances that impact one country could have profound impacts on other countries and on global economies or markets. China and other developing market countries may be subject to considerable degrees of economic, political and social instability. The U.S. government has imposed restrictions on U.S. investor participation in certain Chinese investments. These matters could adversely affect China's economy. In addition, China's long-running conflict over Taiwan's sovereignty, border disputes with many neighbors and historically strained relations with other Asian countries could result in military conflict that could adversely impact the economies of China and other Asian countries, disrupt supply chains, and severely affect global economies and markets.

Russia launched a large-scale invasion of Ukraine on February 24, 2022. In response to the military action by Russia, various countries, including the U.S., the United Kingdom, and European Union, issued broad-ranging economic sanctions against Russia and Belarus and certain companies and individuals. Russia has taken retaliatory actions, including preventing repatriation of capital by U.S. and other investors. Since then, Russian securities have lost all, or nearly all, their market value, and many other issuers, securities and markets have been adversely affected. The ongoing conflict has resulted in significant market disruptions, including in certain markets, industries and sectors, such as the oil and natural gas markets, and negatively affected global supply chains, food supplies, inflation and global growth. The U.S. and other countries may impose sanctions on other countries, companies and individuals in light of Russia's military invasion. The extent and duration of the military action or future escalation of such hostilities, the extent and impact of existing and future sanctions, market disruptions and volatility, and the result of any diplomatic negotiations cannot be predicted. These and any related events could have a significant impact on the value and liquidity of certain portfolio investments, on portfolio performance and the value of an investment in the portfolio.

Risks of convertible securities. The market values of convertible securities tend to decline as interest rates increase and, conversely, to increase as interest rates decline. A downturn in equity markets may cause the price of convertible securities to decrease relative to other fixed income securities.

Preferred stocks risk. Preferred stocks may pay fixed or adjustable rates of return. Preferred stocks are subject to issuer-specific and market risks applicable generally to equity securities. In addition, a company's preferred stocks generally pay dividends only after the company makes required payments to holders of its bonds and other debt. Thus, the value of preferred stocks will usually react more strongly than bonds and other debt to actual or perceived changes in the company's financial condition or prospects. The market value of preferred stocks generally decreases when interest rates rise. Also, the market prices of preferred stocks are more sensitive to changes in the issuer's creditworthiness than are the prices of debt securities. Generally, under normal circumstances, preferred stocks do not carry voting rights. Preferred stocks may trade less frequently and in a more limited volume and may be subject to more abrupt or erratic price movements than other securities. Preferred stocks of smaller companies may be more vulnerable to adverse developments than preferred stocks of larger companies.

Mortgage dollar roll transactions risk. The benefits to the portfolio from mortgage dollar roll transactions depend upon the adviser's ability to forecast mortgage prepayment patterns on different mortgage pools. The portfolio may lose money if, during the period between the time it agrees to the forward purchase of the mortgage securities and the settlement date, these securities decline in value due to market conditions or prepayments on the underlying mortgages.

Risks of investment in other funds. Investing in other investment companies, including other funds managed by the adviser, subjects the portfolio to the risks of investing in the underlying securities or assets held by those funds. When investing in another fund, the portfolio will bear a pro rata portion of the underlying fund's expenses, including management fees, in addition to its own expenses. ETFs and closed-end funds are bought and sold based on market prices and can trade at a premium or a discount to the ETF's or closed-end fund's net asset value. Such funds may trade at a discount for an extended period and may not ever realize their net asset value.

Derivatives risk. Using swaps, futures and other derivatives can increase portfolio losses and reduce opportunities for gains when market prices, interest rates, currencies or the derivative instruments themselves behave in a way not anticipated by the portfolio. Using derivatives may increase the volatility of the portfolio's net asset value and may not provide the result intended. Derivatives may have a leveraging effect on the portfolio. Some derivatives have the potential for unlimited loss, regardless of the size of the portfolio's initial investment. Derivatives are generally subject to the risks applicable to the assets, rates, indices or other indicators underlying the derivative. Changes in a derivative's value may not correlate

Summary Prospectus

well with the referenced asset or metric. The portfolio also may have to sell assets at inopportune times to satisfy its obligations. Derivatives may be difficult to sell, unwind or value, and the counterparty may default on its obligations to the portfolio. Use of derivatives may have different tax consequences for the portfolio than an investment in the underlying security, and such differences may affect the amount, timing and character of income distributed to shareholders. The U.S. government and foreign governments have adopted and implemented or are in the process of adopting and implementing regulations governing derivatives markets, including mandatory clearing of certain derivatives, margin and reporting requirements. The ultimate impact of the regulations remains unclear. Additional regulation of derivatives may make them more costly, limit their availability or utility, otherwise adversely affect their performance or disrupt markets.

Credit default swap risk. Credit default swap contracts, a type of derivative instrument, involve special risks and may result in losses to the portfolio. Credit default swaps may in some cases be illiquid, and they increase credit risk since the portfolio has exposure to the issuer of the referenced obligation and either the counterparty to the credit default swap or, if it is a cleared transaction, the brokerage firm through which the trade was cleared and the clearing organization that is the counterparty to that trade.

Credit default swap index risk. The portfolio may invest in credit default swap index products (“CDX”) (swaps based on a portfolio of credit default swaps with similar characteristics, such as credit default swaps on high-yield bonds) in an effort to obtain exposure to a diversified portfolio of credits or to hedge against existing credit risks. CDX have similar risks as other credit default swaps contracts. The use of CDX is subject to the risk that the portfolio’s counterparty will default on its obligations. Investments in CDX are also subject to credit risk with respect to the issuers of the underlying reference obligations in the index, liquidity risk and operational risks. The portfolio will also normally indirectly bear its proportionate share of any expenses paid by a CDX in addition to the expenses of the portfolio.

Risks of investing in inverse floating rate obligations. The interest rate on inverse floating rate obligations will generally decrease as short-term interest rates increase, and increase as short-term rates decrease. Due to their leveraged structure, the sensitivity of the market value of an inverse floating rate obligation to changes in interest rates is generally greater than a comparable long-term bond issued by the same issuer and with similar credit quality, redemption and maturity provisions. Inverse floating rate obligations may be volatile and involve leverage risk.

Leveraging risk. The value of your investment may be more volatile and other risks tend to be compounded if the portfolio borrows or uses derivatives or other investments, such as ETFs, that have embedded leverage. Leverage generally magnifies the effect of any increase or decrease in the value of the portfolio’s underlying assets and creates a risk of loss of value on a larger pool of assets than the portfolio would otherwise have, potentially resulting in the loss of all assets. Engaging in such transactions may cause the portfolio to liquidate positions when it may not be advantageous to do so to satisfy its obligations. New derivatives regulations require the portfolio, to the extent it uses derivatives to a material extent, to, among other things, comply with certain overall limits on leverage. These regulations may limit the ability of the portfolio to pursue its investment strategies and may not be effective to mitigate the portfolio’s risk of loss from derivatives.

Market segment risk. To the extent the portfolio emphasizes, from time to time, investments in a market segment, the portfolio will be subject to a greater degree to the risks particular to that segment, and may experience greater market fluctuation than a portfolio without the same focus.

Valuation risk. Nearly all of the portfolio’s investments are valued using a fair value methodology. The sales price the portfolio could receive for any particular portfolio investment may differ from the portfolio’s valuation of the investment, particularly for illiquid securities and securities that trade in thin or volatile markets. These differences may increase significantly and affect portfolio investments more broadly during periods of market volatility. Investors who purchase or redeem portfolio shares may receive fewer or more shares or lower or higher redemption proceeds than they would have received if the securities had not been fair-valued or if a different valuation methodology had been used. The portfolio’s ability to value its investments may also be impacted by technological issues and/or errors by pricing services or other third party service providers.

Redemption risk. The portfolio may experience heavy redemptions that could cause the portfolio to liquidate its assets at inopportune times or at a loss or depressed value, or accelerate taxable gains or transaction costs, which could cause the value of your investment to decline.

Cybersecurity risk. Cybersecurity failures by and breaches of the portfolio’s adviser, transfer agent, distributor, custodian, fund accounting agent or other service providers may disrupt portfolio operations, interfere with the portfolio’s ability to calculate its NAV, prevent portfolio shareholders from purchasing, redeeming or exchanging shares or receiving distributions or receiving timely information regarding the portfolio or their investment in the portfolio, cause loss of or unauthorized access to private shareholder information, and result in financial losses to the portfolio and its shareholders, regulatory fines, penalties, reputational damage, or additional compliance costs.

Expense risk. Your actual costs of investing in the portfolio may be higher than the expenses shown in “Annual portfolio operating expenses” for a variety of reasons. For example, expense ratios may be higher than those shown if overall net assets decrease. Net assets are more likely to decrease and portfolio expense ratios are more likely to increase when markets are volatile.

Please note that there are many other factors that could adversely affect your investment and that could prevent the portfolio from achieving its goals.

An investment in the portfolio is not a bank deposit and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency.

The portfolio’s past performance

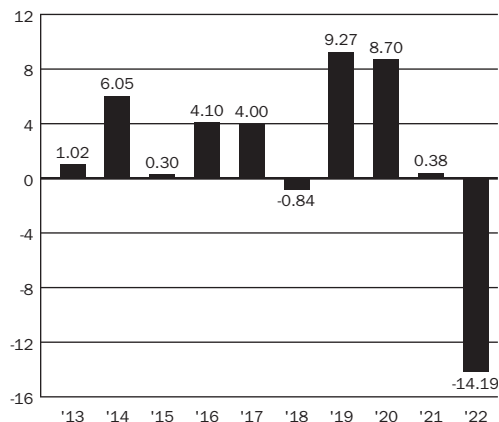
The bar chart and table indicate the risks and volatility of an investment in the portfolio by showing how the portfolio has performed in the past. The bar chart shows changes in the performance of the portfolio's Class I shares from calendar year to calendar year. The table shows the average annual total returns for Class I and Class II shares of the portfolio over time and compares these returns to the returns of the Bloomberg U.S. Aggregate Bond Index, a broad-based measure of market performance that has characteristics relevant to the portfolio’s investment strategies.

The portfolio acquired all of the assets and those liabilities reflected in the net asset value of the Safeco RST Bond Portfolio (the predecessor portfolio) on December 10, 2004. The performance shown for Class I shares of the portfolio reflects the performance of the predecessor portfolio prior to the reorganization. Prior to August 2, 2004, Safeco Asset Management, Inc. served as the predecessor portfolio’s investment adviser.

The bar chart and table do not reflect any fees or expenses payable with respect to a Variable Contract. Such fees and expenses will reduce your return.

The portfolio's past performance does not necessarily indicate how it will perform in the future.

Annual return Class I Shares (%)
(Year ended December 31)



Summary Prospectus

For the period covered by the bar chart:

| | Returns | Period Beginning | Period Ending |
|--------------------------|---------|------------------|---------------|
| Highest Calendar Quarter | 8.77% | 04/01/2020 to | 06/30/2020 |
| Lowest Calendar Quarter | -5.90% | 01/01/2022 to | 03/31/2022 |

Average annual total return (%)
(for periods ended December 31, 2022)

| | 1 Year | 5 Years | 10 Years | Since Inception | Inception Date |
|---|--------|---------|----------|-----------------|----------------|
| Class I | -14.19 | 0.29 | 1.67 | 5.28 | 07/21/1987 |
| Class II | -14.45 | 0.04 | 1.43 | 3.53 | 11/09/2007 |
| Bloomberg U.S. Aggregate Bond Index (reflects no deduction for fees, expenses or taxes) | -13.01 | 0.02 | 1.06 | 5.45 | 07/21/1987 |

Management

Investment adviser

Amundi Asset Management US, Inc. (“Amundi US”)

Portfolio management

Kenneth J. Taubes, Executive Vice President and Chief Investment Officer, U.S. of Amundi US (portfolio manager of the portfolio since 2004); Brad Komenda, Managing Director and Director of Investment Grade Corporates of Amundi US (portfolio manager of the portfolio since 2018); Timothy Rowe, Managing Director and Director of Multi-Sector Fixed Income of Amundi US (portfolio manager of the portfolio since 2018); and Jonathan Scott, Senior Vice President and Deputy Director of Multi-Sector Fixed Income of Amundi US (portfolio manager of the portfolio since 2021)

Tax information

Shares of the portfolio are held by life insurance company separate accounts that fund the benefits under variable annuity and variable life insurance contracts (Variable Contracts) issued by their companies and by certain qualified pension and retirement plans (Qualified Plans). Owners of Variable Contracts should read the prospectus of their insurance company’s Variable Contract for a discussion of the tax status of a Variable Contract, including the tax consequences of withdrawals or other payments. Participants in a Qualified Plan should consult their tax advisers regarding the tax consequences of participating in and receiving distributions or other payments relating to such plans.

Payments to broker-dealers and other financial intermediaries

If you purchase the portfolio through a broker-dealer or other financial intermediary (such as a bank), the portfolio and its related companies may pay the intermediary for the sale of portfolio shares and related services. These payments may create a conflict of interest by influencing the broker-dealer or other intermediary and your salesperson or investment professional to recommend the portfolio over another investment. Ask your salesperson or investment professional or visit your financial intermediary’s website for more information.

In addition, shares of the portfolio are offered to insurance companies to fund the benefits under Variable Contracts issued by their companies and are additionally offered to Qualified Plans. The portfolio and its related companies may pay the sponsoring insurance companies and their affiliated broker-dealers and service providers for the sale of portfolio shares and related services. These payments may create a conflict of interest by influencing insurance companies to recommend the portfolio over another investment. Your insurance company’s separate account prospectus or disclosure document may contain additional information about these payments.