

Pioneer Emerging Markets VCT Portfolio

A portfolio of Pioneer Variable Contracts Trust

Class II Shares Prospectus

May 1, 2009

Introduction

Pioneer Variable Contracts Trust is an open-end management investment company consisting of distinct investment portfolios. Pioneer Investment Management, Inc. (Pioneer) is the investment adviser to each portfolio. Class II shares of Pioneer Emerging Markets VCT Portfolio are offered through this prospectus. Shares of the portfolios are offered to insurance companies to fund the benefits under variable annuity and variable life insurance contracts (Variable Contracts) issued by their companies and are additionally offered to qualified pension and retirement plans (Qualified Plans). You may obtain certain tax benefits by purchasing a Variable Contract.

The portfolio has its own distinct investment objective and policies. In striving to meet its objective, the portfolio will face the challenges of changing business, economic and market conditions. The risks of investing in the portfolio are discussed in the description of the portfolio.

No single portfolio constitutes a complete investment plan. The portfolio's share price, yield and total return will fluctuate and an investment in the portfolio may be worth more or less than the original cost when shares are redeemed.

The portfolio complies with various insurance regulations. Please read your insurance company's separate account prospectus for more specific information relating to insurance regulations and instructions on how to invest in the portfolio through a Variable Contract.

Portfolio

Strategic focus

Pioneer Emerging Markets VCT Portfolio invests primarily in emerging market issuers for long-term growth of capital.

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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.

Neither the Securities and Exchange Commission nor any state securities agency has approved or disapproved the portfolio's shares or determined whether this prospectus is accurate or complete. Any representation to the contrary is a crime.

Basic information about Pioneer Emerging Markets VCT Portfolio

Investment objective

Long-term growth of capital.

Principal investment strategies

The portfolio invests primarily in securities of emerging market issuers. Although the portfolio invests in both equity and debt securities, it normally emphasizes equity securities in its portfolio. Normally, the portfolio invests at least 80% of its total assets in the securities of emerging market corporate and government issuers. The portfolio considers emerging market issuers to include: issuers organized under the laws of an emerging market country, issuers with a principal office in an emerging market country, issuers that derive at least 50% of their gross revenues or profits from goods or services produced in emerging markets or sales made in emerging markets, and emerging market governmental issuers.

The portfolio will provide written notice to shareholders at least 60 days prior to any change to its policy to invest at least 80% of its assets in securities of emerging market issuers.

The portfolio invests in at least six emerging markets. The portfolio considers any market that is not developed to be an emerging market. The portfolio does not allocate more than 25% of its total assets to any one country but can invest more than 25% of its total assets in a particular region. Currently, emerging countries include: Algeria, Argentina, Bangladesh, Brazil, Bulgaria, Chile, China, Colombia, Costa Rica, Czech Republic, Ecuador, Egypt, Ghana, Greece, Hong Kong, Hungary, India, Indonesia, Israel, Jamaica, Jordan, Kenya, Kuwait, Malaysia, Mexico, Morocco, Nigeria, Pakistan, Peru, the Philippines, Poland, Russia, Singapore, South Africa, South Korea, Sri Lanka, Taiwan, Thailand, Turkey, Uruguay, Venezuela, Vietnam and Zimbabwe. At Pioneer's discretion, the portfolio may invest in other emerging countries.

For purposes of the portfolio's investment policies, equity securities include common stocks, debt convertible to equity securities and securities with common stock characteristics, such as exchange-traded funds (ETFs) that invest primarily in equity securities, equity interests in real estate investment trusts (REITs), preferred stocks, depositary receipts, warrants and rights. The portfolio may also purchase and sell forward foreign currency exchange contracts in non-U.S. currencies in connection with its investments.

The portfolio may invest up to 20% of its total assets in equity and debt securities of corporate or government issuers in any developed country (other than the U.S.).

Pioneer, the portfolio's investment adviser, uses a value approach to select the portfolio's investments. Using this investment style, Pioneer seeks securities selling at reasonable prices or substantial discounts to their underlying values and then generally holds these securities until the market values reflect their intrinsic values. Pioneer evaluates a security's potential value, including the attractiveness of its market valuation, based on the company's assets and prospects for long-term revenue, earnings and cash flow growth. Pioneer employs qualitative analysis, quantitative techniques, fundamental research and an evaluation of the issuer based on its financial statements and operations. In addition to analyzing specific securities, Pioneer determines the relative attractiveness of investing in different emerging markets. In assessing the investment potential of each country, Pioneer considers economic growth prospects, monetary conditions, political risks, currency risk, capital flows and other factors. Pioneer relies on the knowledge, experience and judgment of its staff and the staff of its affiliates who have access to a wide variety of research. Pioneer focuses on the quality and price of individual issuers and securities, not on market-timing strategies. Factors Pioneer looks for in selecting investments include:

- Issuers in countries expected to have economic and market environments that will be positive
- Favorable expected returns relative to perceived risk
- Companies expected to benefit from long-term trends in the economy
- Low market valuations relative to expected earnings, assets, cash flow and revenues
- Turnaround potential for companies that have been through difficult periods
- Management with demonstrated ability and commitment to the company
- Issuer's industry has strong fundamentals, such as increasing or sustainable demand and barriers to entry

Principal risks of investing in the portfolio

An investment in the portfolio involves a substantial degree of risk

- You could lose money on your investment in the portfolio. The ongoing global financial crisis has caused a significant decline in the value of many securities, including securities owned by the portfolio, and the continuation or further deterioration of market conditions could lead to additional losses of value
- The values of securities held by the portfolio may fall due to general market conditions, such as real or perceived adverse economic, political, or regulatory conditions, inflation, changes in interest or currency rates or adverse investor sentiment. Adverse market conditions may be prolonged and may not have the same impact on all types of securities. The values of securities may fall due to factors affecting a particular issuer or the securities market as a whole
- Stock markets of emerging market countries go down or perform poorly relative to other investments (this risk may be greater in the short term)
- Securities of emerging market issuers fall out of favor with investors
- Value stocks fall out of favor with investors
- The portfolio's investments remain undervalued or do not have the potential value initially expected
- Pioneer's judgment about the attractiveness, growth potential or potential appreciation of a particular sector, security, or investment strategy proves to be incorrect

Risks of non-U.S. investments

Investing in non-U.S. issuers 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:

- Less information about emerging market issuers or markets may be available due to less rigorous disclosure or accounting standards or regulatory practices
- Many emerging markets are smaller, less liquid and more volatile than developed markets. In a changing market, Pioneer may not be able to sell the portfolio's portfolio securities at times, in amounts and at prices it considers reasonable
- The possibility that a counterparty may not complete a currency or securities transaction
- Adverse effect of currency exchange rates or controls on the value of the portfolio's investments
- The economies of emerging market countries may grow at slower rates than expected or may experience a downturn or recession
- Economic, political, regulatory and social developments or uncertainties may adversely affect securities markets
- Emerging market countries may experience rising interest rates, or, more significantly, rapid inflation or hyperinflation
- The portfolio could experience a loss from settlement and custody practices in some emerging markets
- Withholding and other non-U.S. taxes may decrease the portfolio's return

Forward foreign currency transactions risk

To the extent that the portfolio enters into forward foreign currency transactions, it may not fully benefit from or may lose money on the transactions if changes in currency rates do not occur as anticipated or do not correspond accurately to changes in the value of the portfolio's holdings, or if the counterparty defaults. Such transactions may also prevent the fund from realizing profits on favorable movements in exchange rates. The portfolio's ability to use forward foreign currency transactions successfully depends on a number of factors, including the forward foreign currency transactions being available at prices that are not too costly, the availability of liquid markets, and Pioneer's judgment about the direction of changes in currency exchange rates.

Market segment risks

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 the industries in that segment, and may experience greater market fluctuation, than a fund without the same focus. For example, industries in the financial segment, such as banks, insurance companies, broker-dealers and real estate investment trusts (REITs), may be sensitive to changes in interest rates and general economic activity and are generally subject to extensive government regulation. Industries in the technology segment, such as information technology, communications equipment, computer hardware and software, and office and scientific equipment, are generally subject to risks of rapidly evolving technology, short product lives, rates of corporate expenditures, falling prices and profits, competition from new market entrants, and general economic conditions.

Industries in the energy segment, such as those engaged in the development, production and distribution of energy resources, can be significantly affected by supply and demand both for their specific product or service and for energy products in general. The price of oil, gas and other consumable fuels, exploration and production spending, government regulation, world events and economic conditions likewise will affect the performance of companies in these industries.

The portfolio's past performance

The bar chart and table indicate the risks of investing in the portfolio by showing how the portfolio has performed in the past. The portfolio's performance will vary from year to year.

The performance of Class II shares for the period prior to the commencement of operations of Class II shares on May 1, 2000 is based on the performance of Class I shares, reduced to reflect the higher distribution fee of Class II shares. For the period after May 1, 2000, the actual performance of Class II shares is reflected.

The 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.

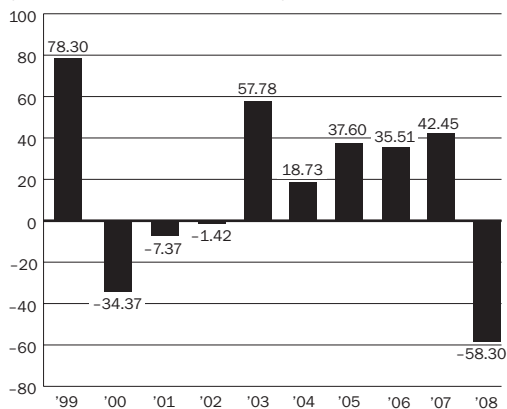
The portfolio's past performance does not necessarily indicate how it will perform in the future. As a shareowner, you may lose or make money on your investment.

Portfolio performance

The chart shows the year-by-year performance of the portfolio's Class II shares.

Annual return Class II shares (%)

(Year ended December 31)



For the period covered by the bar chart:

The highest calendar quarterly return was 51.98% (10/01/1999 to 12/31/1999)

The lowest calendar quarterly return was -32.03% (10/01/2008 to 12/31/2008)

Comparison with the Morgan Stanley Capital International Emerging Markets Free Index

The table shows the average annual total returns for Class II shares of the portfolio over time and compares these returns to the returns of the Morgan Stanley Capital International Emerging Markets Free Index. This index measures the performance of emerging market stocks.

Unlike the portfolio, the index is not managed and does not incur fees or expenses. You cannot invest directly in the index. The table assumes:

- The sale of the shares at the end of the period
- Reinvestment of all dividends and distributions

Average annual total return (%) (for periods ended December 31, 2008)

| | 1 Year | 5 Years | 10 Years | Since Inception | Inception Date# |
|--|--------|---------|----------|-----------------|------------------|
| Class II | -58.30 | 5.63 | 8.29 | 8.65 | October 30, 1998 |
| Morgan Stanley Capital International Emerging Markets Free Index | -53.18 | 8.02 | 9.31 | 9.85 | |

Inception date of the portfolio's Class I shares. Class II shares commenced operations on May 1, 2000.

Fees and expenses

These are the fees and expenses that you may pay if you invest in the portfolio. **These fees and expenses do not include 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.** You should consult your insurance company's separate account prospectus or disclosure document for more information.

Annual portfolio operating expenses paid from the assets of the portfolio as a percentage of average daily net assets

| | Class II |
|--|----------|
| Management Fee | 1.15% |
| Distribution and Service (12b-1) Fee | 0.25% |
| Other Expenses | 0.36% |
| Total Annual Portfolio Operating Expenses ¹ | 1.76% |

1 Total annual portfolio operating expenses reflect amounts incurred by the portfolio during its most recent fiscal year. Expenses will vary based on changes in the portfolio's net asset levels.

Example

This example helps you compare the cost of investing in the portfolio with the cost of investing in other mutual funds. It assumes that: a) you invest \$10,000 in the portfolio for the time periods shown, b) you reinvest all dividends and distributions, c) your investment has a 5% return each year and d) the portfolio's 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, under these assumptions your costs would be:

| | Number of years you own your shares | | | |
|----------|-------------------------------------|-------|-------|---------|
| | 1 | 3 | 5 | 10 |
| Class II | \$179 | \$554 | \$954 | \$2,073 |

Additional information about investment strategies and risks

The following sections provide additional information about the portfolio's investment strategies and risks. To learn more about these investments and risks, you should obtain and read the statement of additional information (SAI). The portfolio's investment objective and strategies may be changed without shareholder approval.

Debt securities

The portfolio may invest in debt securities of any quality or maturity. The portfolio may not invest more than 10% of its net assets in debt securities rated below investment grade (known as "junk bonds"), including below investment grade convertible debt securities, or in unrated securities of comparable quality. The portfolio invests in debt securities when Pioneer believes they are consistent with the portfolio's investment objective of long-term growth of capital, to diversify the portfolio's portfolio or for greater liquidity. The portfolio may invest in Brady bonds, which are restructured debt of governmental issuers of emerging market countries.

Debt securities are subject to the risk of an issuer's inability to meet principal or interest payments on its obligations. Factors that could contribute to a decline in the market value of debt securities in the portfolio's portfolio include rising interest rates, if the issuer or other obligor of a security held by the portfolio fails to pay principal and/or interest, otherwise defaults or has its credit rating downgraded or is perceived to be less creditworthy, or the credit quality or value of any underlying asset declines. The portfolio may incur expenses to protect the portfolio's interest in securities experiencing these events. If the portfolio invests in securities that are subordinated to other securities, or which represent interests in pools of such subordinated securities, those investments may be disproportionately affected by a default or even a perceived decline in creditworthiness of the issuer. A debt security is investment grade if it is rated in one of the top four categories by a nationally recognized statistical rating organization or determined to be of equivalent credit quality by Pioneer. Debt securities rated below investment grade are considered speculative. Below investment grade debt securities involve greater risk of loss, are subject to greater price volatility and are less liquid, especially during periods of economic uncertainty or change, than higher quality debt securities. The portfolio may invest in debt securities rated "D" or better, or comparable unrated securities.

Derivatives

The portfolio may, but is not required to, use futures and options on securities, indices and currencies, forward foreign currency exchange contracts and other derivatives. A derivative is a security or instrument whose value is determined by reference to the value or the change in value of one or more securities, currencies, indices or other financial instruments. Although there is no specific limitation on investing in derivatives, the portfolio does not use derivatives as a primary investment technique and generally limits their use to hedging. However, the portfolio may use derivatives for a variety of purposes, including:

- As a hedge against adverse changes in the market prices of securities, interest rates or currency exchange rates
- As a substitute for purchasing or selling securities
- To increase the portfolio's return as a non-hedging strategy that may be considered speculative

Derivatives may be subject to market risk, interest rate risk and credit risk. The portfolio's use of certain derivatives may, in some cases, involve forms of financial leverage, which involves risk and may increase the volatility of the portfolio's net asset value. Even a small investment in derivatives can have a significant impact on the portfolio's exposure to the market prices of securities, interest rates or currency exchange rates. Therefore, using derivatives can disproportionately increase losses and reduce opportunities for gain. If changes in a derivative's value do not correspond to changes in the value of the portfolio's other investments or do not correlate well with the underlying asset, rate or index, the portfolio may not fully benefit from or could lose money on the derivative position.

Derivatives involve risk of loss if the issuer of the derivative defaults on its obligation. Certain derivatives may be less liquid, which may reduce the returns of the portfolio if it cannot sell or terminate the derivative at an advantageous time or price. Some derivatives may involve the risk of improper valuation. The portfolio will only invest in derivatives to the extent Pioneer believes these investments are consistent with the portfolio's investment objective, but derivatives may not perform as intended. Suitable derivatives may not be available in all circumstances or at reasonable prices and may not be used by the portfolio for a variety of reasons.

Cash management and temporary investments

Normally, the portfolio invests substantially all of its assets to meet its investment objective. The portfolio may invest the remainder of its assets in securities with remaining maturities of less than one year or cash equivalents, or may hold cash. For temporary defensive purposes, including during periods of unusual cash flows, the portfolio may depart from its principal investment strategies and invest part or all of its assets in these securities or may hold cash. To the extent that the portfolio has any uninvested cash, the portfolio would also be subject to risk with respect to the depository institution holding the cash. During such periods, it may be more difficult for the portfolio to achieve its investment objective. The portfolio may adopt a defensive strategy when Pioneer believes securities in which the portfolio normally invests have special or unusual risks or are less attractive due to adverse market, economic, political or other conditions.

Securities lending

The portfolio may lend securities in its portfolio to certain broker-dealers or other institutional investors under agreements which require that the loans be secured continuously by collateral, typically cash, which the portfolio will invest during the term of the loan. The portfolio will continue to have market risk and other risks associated with owning the securities on loan, as well as the risks associated with the investment of the cash collateral received in connection with the loan. Securities lending also is subject to other risks, including the risk that the borrower fails to return a loaned security, and/or there is a shortfall on the collateral to be returned to the borrower, and the risk that the portfolio is unable to recall a security in time to exercise valuable rights or sell the security.

Reverse repurchase agreements and borrowing

The portfolio may enter into reverse repurchase agreements pursuant to which the portfolio transfers securities to a counterparty in return for cash, and the portfolio agrees to repurchase the securities at a later date and for a higher price. Reverse repurchase agreements are treated as borrowings by the portfolio, are a form of leverage and may make the value of an investment in the portfolio more volatile and increase the risks of investing in the portfolio. This is because leverage generally magnifies the effect of any increase or decrease in the value of the portfolio's underlying assets or creates investment risk with respect to a larger pool of assets than the portfolio would otherwise have. The portfolio also may borrow money from banks or other lenders for temporary purposes. Entering into reverse repurchase agreements and other borrowing transactions may cause the portfolio to liquidate positions when it may not be advantageous to do so in order to satisfy its obligations or meet segregation requirements.

Short-term trading

The portfolio usually does not trade for short-term profits. The portfolio will sell an investment, however, even if it has only been held for a short time, if it no longer meets the portfolio's investment criteria. If the portfolio does a lot of trading, it may incur additional operating expenses, which would reduce performance.

See "Financial highlights" for actual annual turnover rates.

Disclosure of portfolio holdings

The portfolio's policies and procedures with respect to disclosure of the portfolio's securities are described in the statement of additional information.

Management

Pioneer, the portfolio's investment adviser, selects the portfolio's investments and oversees the portfolio's operations.

Pioneer is an indirect, wholly owned subsidiary of UniCredit S.p.A., one of the largest banking groups in Italy. Pioneer is part of the global asset management group providing investment management and financial services to mutual funds, institutional and other clients. As of March 31, 2009, assets under management were approximately \$205 billion worldwide, including over \$44 billion in assets under management by Pioneer.

Investment adviser

Pioneer's main office is at 60 State Street, Boston, Massachusetts 02109. The firm's U.S. mutual fund investment history includes creating in 1928 one of the first mutual funds.

Pioneer has received an order from the Securities and Exchange Commission that permits Pioneer, subject to the approval of the portfolio's Board of Trustees, to hire and terminate a subadviser or to materially modify an existing subadvisory contract for the portfolio without shareholder approval. Pioneer retains the ultimate responsibility to oversee and recommend the hiring, termination and replacement of any subadviser. To the extent that the Securities and Exchange Commission adopts a rule that would supersede the order, or would provide greater flexibility than the order, Pioneer and the portfolio intend to rely on such rule to permit Pioneer, subject to the approval of the portfolio's Board of Trustees and any other applicable conditions of the rule, to hire and terminate a subadviser or to materially modify an existing subadvisory contract for the portfolio without shareholder approval.

Portfolio management

Day-to-day management of the portfolio's portfolio is the responsibility of Christopher Smart. Mr. Smart is supported by a team of portfolio managers and analysts. Members of this team manage other Pioneer funds investing primarily in emerging market equity securities. The portfolio manager and the team also may draw upon the research and investment management expertise of the global research teams, which provide fundamental and quantitative research on companies and buy and sell recommendations on equity securities and include members from Pioneer's affiliate, Pioneer Investment Management Limited. Mr. Smart, senior vice president and director of international investments, joined Pioneer in 1995 as director of research of Pioneer First Investments, Moscow, Russia.

The portfolio's statement of additional information provides additional information about the portfolio manager's compensation, other accounts managed by the portfolio manager, and the portfolio manager's ownership of shares of the portfolio.

Management fee

The portfolio pays Pioneer a fee for managing the portfolio and to cover the cost of providing certain services to the portfolio. Pioneer's annual fee is equal to 1.15% of the portfolio's average daily net assets. The fee is normally computed daily and paid monthly.

For the fiscal year ended December 31, 2008, the portfolio paid management fees equivalent to 1.15% of the portfolio's average daily net assets.

A discussion regarding the basis for the Board of Trustees' approval of the management contract is available in the portfolio's semiannual report to shareholders, dated June 30, 2008.

Distributor and transfer agent

Pioneer Funds Distributor, Inc. is the portfolio's distributor. Pioneer Investment Management Shareholder Services, Inc. is the portfolio's transfer agent. The portfolio compensates the distributor and transfer agent for their services. The distributor and the transfer agent are affiliates of Pioneer.

Distribution plan

The portfolio has adopted a distribution plan for Class II shares in accordance with Rule 12b-1 under the Investment Company Act of 1940. Under the plan, the portfolio pays to Pioneer Funds Distributor, Inc. a distribution fee of 0.25% of the average daily net assets attributable to Class II shares. Because these fees are an ongoing expense, over time they increase the cost of an investment and the shares may cost more than shares that are subject to other types of sales charges.

Shareholder Information

Net asset value

The portfolio's net asset value is the value of its securities plus any other assets minus its accrued operating expenses and other liabilities. The portfolio calculates a net asset value for each class of shares every day the New York Stock Exchange is open when regular trading closes (normally 4:00 p.m. Eastern time).

The portfolio generally values its securities using closing market prices, or readily available market quotations, or, when closing market prices or market quotations are not available or are considered by Pioneer to be unreliable, the portfolio uses fair value methods pursuant to procedures adopted by the Board of Trustees. Valuing securities using fair value methods may cause the net asset value of the portfolio's shares to differ from the net asset value that would be calculated only using market prices. For market prices and quotations, as well as for some fair value methods, the portfolio relies upon securities prices provided by pricing services.

The portfolio primarily invests in securities of non-U.S. issuers and the markets for these securities generally close prior to the time the portfolio determines its net asset value. However, the value of these securities continues to be influenced by changes in the global markets. Consequently, the portfolio's trustees have determined to use the fair value of these securities as of the time the portfolio determines its net asset value, based upon data from a pricing service. On a daily basis, the pricing service recommends changes, based upon a proprietary model, to the closing market prices of each non-U.S. security held by the portfolio to reflect the security's fair value at the time the portfolio determines its net asset value. The portfolio applies these recommendations in accordance with procedures approved by the trustees. A security's fair value determined in this manner may differ from the security's closing market price on the date the portfolio determines its net asset value or the opening price of the security on the next business day. The portfolio's use of this method may significantly affect its net asset value compared to the net asset value that would have been determined using closing market prices. The portfolio also may take other factors influencing specific markets or issuers into consideration in determining the fair value of a non-U.S. security. The use of this method is intended to reduce the opportunities for market timers who seek to take advantage of time zone differences between the U.S. and non-U.S. markets. International securities markets may be open on days when the U.S. markets are closed. For this reason, the values of any international securities owned by the portfolio could change on a day you cannot buy or sell shares of the portfolio.

Certain types of securities, including those discussed in this paragraph, are priced using fair value pricing methods

Share price

The net asset value per share calculated on the day of your transaction.

rather than market prices. The portfolio uses a pricing matrix to determine the value of fixed income securities that may not trade daily. A pricing matrix is a means of valuing a debt security on the basis of current market prices for other debt securities and historical trading patterns in the market for fixed income securities. The portfolio values cash equivalent securities with remaining maturities of 60 days or less at amortized cost. Certain securities may trade in relatively thin markets and/or in

markets that experience significant volatility. The prices used by the portfolio to value its securities may differ from the amounts that would be realized if these securities were sold and these differences could be significant. To the extent that the portfolio invests in the shares of other registered open-end investment companies that are not traded on an exchange (mutual funds), such shares are valued at their published net asset values per share as reported by the funds. The prospectuses of these funds explain the circumstances under which the funds will use fair value pricing methods to value their securities and the effects of using the fair value methodology.

Payments to intermediaries

Pioneer and its affiliates may make payments to your financial intermediary in addition to other forms of compensation it may receive. These payments by Pioneer may provide your financial intermediary with an incentive to favor the portfolio over other funds or assist the distributor in its efforts to promote the sale of the portfolio's shares, including through Variable Contracts and Qualified Plans. Financial intermediaries include broker-dealers, banks (including bank trust departments), insurance companies, registered investment advisers, financial planners, retirement plan administrators and other types of intermediaries.

Pioneer makes these additional payments (sometimes referred to as "revenue sharing") to financial intermediaries out of its own assets, which may include profits derived from services provided to the portfolio. Revenue sharing is

not an expense of the portfolio. Pioneer may base these payments on a variety of criteria, such as the amount of sales or assets of the Pioneer funds (including the portfolio) attributable to the financial intermediary.

Not all financial intermediaries receive additional compensation and the amount of compensation paid varies for each financial intermediary. In certain cases, these payments may be significant. Pioneer determines which firms to support and the extent of the payments it is willing to make, generally choosing firms that have a strong capability to effectively distribute shares of the Pioneer funds and that are willing to cooperate with Pioneer's promotional efforts. To the extent intermediaries sell more shares of the Pioneer funds or retain shares of the Pioneer funds in their clients' accounts, Pioneer receives greater management and other fees due to the increase in the Pioneer funds' assets.

In addition to these payments, Pioneer may compensate financial intermediaries, including insurance companies that sponsor Variable Contracts, for providing certain administrative and other services. Although an intermediary may request additional compensation from Pioneer to offset costs incurred by the financial intermediary in providing these services, the intermediary may earn a profit on these payments, if the amount of the payment exceeds the intermediary's costs.

The compensation that Pioneer pays to financial intermediaries is discussed in more detail in the portfolio's statement of additional information. Intermediaries may categorize and disclose these arrangements differently than the discussion above and in the statement of additional information. In addition to the payments by Pioneer, the insurance company sponsors of Variable Contracts that invest in the portfolio similarly may compensate financial intermediaries out of their own resources. You can ask your financial intermediary about any payments it receives, as well as about fees and/or commissions it charges.

Investments in shares of the portfolio

The portfolio may sell its shares directly to separate accounts established and maintained by insurance companies

Since you may not directly purchase shares of the portfolio, you should read the prospectus for your insurance company's Variable Contract to learn how to purchase a Variable Contract based on the portfolio.

for the purpose of funding Variable Contracts and to Qualified Plans. Shares of the portfolio are sold at net asset value. Investments in the portfolio are expressed in terms of the full and fractional shares of the portfolio purchased. Investments in the portfolio are credited to an insurance company's separate account or Qualified Plan account immediately upon acceptance of the investment by the portfolio. Investments will be processed at the next net asset value calculated after an order is received and accepted by the portfolio. The offering of shares of the portfolio may be suspended for a period of time and the portfolio reserves the right to reject any specific purchase order. Purchase orders may be refused if, in Pioneer's opinion, they are of a size or frequency that would disrupt the management of the portfolio.

The interests of Variable Contracts and Qualified Plans investing in the portfolio could conflict due to differences of tax treatment and other considerations. The portfolio currently does not foresee any disadvantages to investors arising out of the fact that the portfolio may offer its shares to insurance company separate accounts that serve as the investment mediums for their Variable Contracts or that the portfolio may offer its shares to Qualified Plans. Nevertheless, the portfolio's Board of Trustees intends to monitor events in order to identify any material irreconcilable conflicts which may possibly arise and to determine what action, if any, should be taken in response to such conflicts. If such a conflict were to occur, one or more insurance companies' separate accounts or Qualified Plans might be required to withdraw their investments in the portfolio and shares of another portfolio may be substituted. This might force the portfolio to sell securities at disadvantageous prices. In addition, the Board of Trustees may refuse to sell shares of the portfolio to any separate account or Qualified Plan or may suspend or terminate the offering of shares of the portfolio if such action is required by law or regulatory authority or is in the best interests of the shareholders of the portfolio.

Insurance companies and plan fiduciaries are required to notify the portfolio if the tax status of their separate account or Qualified Plan is revoked or challenged by the Internal Revenue Service. The portfolio may redeem any account of any shareholder whose qualification as a diversified segregated asset account or a Qualified Plan satisfying the requirements of Treasury Regulation §1.817-5 is revoked or challenged. The portfolio will not treat an investor as a Qualified Plan for this purpose unless the investor is among the categories specifically enumerated in Revenue Ruling 94-62, 1994-2 C.B. 164. An insurance company separate account or Qualified Plan whose tax status is revoked or challenged by the Internal Revenue Service may be liable to the portfolio or Pioneer for losses incurred by the portfolio or Pioneer as a result of such action.

Selling

Shares of the portfolio may be sold on any business day. Portfolio shares are sold at net asset value next determined after receipt by the portfolio of a redemption request in good order. Sale proceeds will normally be forwarded by bank wire to the selling insurance company or Qualified Plan on the next business day after receipt of the sales instructions by the portfolio but in no event later than 7 days following receipt of instructions. The portfolio may suspend transactions in shares or postpone payment dates when trading on the New York Stock Exchange is closed or restricted, or when the Securities and Exchange Commission determines an emergency or other circumstances exist that make it impracticable for the portfolio to sell or value its investments.

Excessive trading

Frequent trading into and out of the portfolio can disrupt portfolio management strategies, harm portfolio performance by forcing the portfolio to hold excess cash or to liquidate certain portfolio securities prematurely and increase expenses for all investors, including long-term investors who do not generate these costs. An investor may use short-term trading as a strategy, for example, if the investor believes that the valuation of the portfolio's securities for purposes of calculating its net asset value does not fully reflect the then-current fair market value of those holdings. The portfolio discourages, and does not take any intentional action to accommodate, excessive and short-term trading practices, such as market timing. Although there is no generally applied standard in the marketplace as to what level of trading activity is excessive, we may consider trading in the portfolio's shares to be excessive for a variety of reasons, such as if a Variable Contract owner or plan participant provides instructions to the insurance company or plan administrator for:

- The sale of shares of the portfolio within a short period of time after the shares were purchased;
- Two or more purchases and redemptions within a short period of time; or
- A series of transactions that indicate a timing pattern or strategy.

The portfolio's Board of Trustees has adopted policies and procedures with respect to frequent purchases and redemptions of portfolio shares by investors. Because the insurance company aggregates the trading by Variable Contract owners, we are not able to monitor trading at the Variable Contract owner level. If we are advised by an insurance company that a Variable Contract owner, initiating transactions in the portfolio through a separate account that is the owner of record, has engaged in excessive short-term trading that we believe may be harmful to the portfolio, we will ask the insurance company to restrict the Variable Contract owner from placing further purchase orders in the portfolio. We may seek limitations on trading activity by Qualified Plans investing in the portfolio in similar circumstances. In determining whether to take such action, we seek to act in a manner that is consistent with the best interests of the portfolio's shareholders. In order to prevent short-term trading in portfolios that primarily invest in non-U.S. securities, these portfolios use a fair value pricing service, as discussed under "Net asset value" in this prospectus.

While we use efforts that we believe are reasonable under the circumstances to detect excessive trading activity, there can be no assurance that our efforts will be successful or that market timers will not employ tactics designed to evade detection. If we are not successful, the return of an investor in a portfolio may be adversely affected. Because the portfolio may invest a significant portion of its assets in securities that are valued using fair value pricing methods, this risk may be greater. However, we are dependent upon the insurance companies that offer Variable Contracts and the administrators of the Qualified Plans that invest in the portfolios to monitor and restrict such activities. Consequently, an investment in the portfolio may involve the risk that certain investors will engage in short-term or excessive trading.

The portfolio may reject any purchases or exchange order before its acceptance or the issuance of shares, or request that the insurance company or plan administrator restrict transaction activity by a Variable Contract owner, for any reason, without prior notice, including transactions that the portfolio believes are requested on behalf of market timers. The portfolio reserves the right to reject any purchase request by a Qualified Plan or insurance company if the portfolio believes that any combination of trading activity in the account or related accounts is potentially disruptive to the portfolio. A prospective investor whose purchase order is rejected will not achieve the investment results, whether gain or loss, that would have been realized if the order were accepted and an investment made in the portfolio. The portfolio and its shareholders do not incur any gain or loss as a result of a rejected order. The portfolio may impose further restrictions on trading activities by market timers in the future.

Distributions and taxes

Shares of the portfolio are held by life insurance company separate accounts that fund Variable Contracts or by certain 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, and should keep all statements received from the insurance company or the portfolio to assist in personal recordkeeping. Participants in a Qualified Plan should consult their tax advisers regarding the tax consequences of owning and receiving distributions or other payments relating to such plans.

The portfolio is treated as a separate entity for U.S. federal income tax purposes. The portfolio has elected to be treated, and has qualified and intends to continue to qualify each year, as a regulated investment company under Subchapter M of the Internal Revenue Code of 1986, as amended (the "Code"). In order to so qualify, the portfolio must satisfy certain requirements relating to the sources of its income and the diversification of its assets. If a portfolio qualifies as a regulated investment company and meets certain distribution requirements, that portfolio generally will not be subject to federal income tax on any net investment income and net realized capital gains that are distributed to its shareholders.

Under the Code, the portfolio's dividends and distributions of ordinary income or of net short-term capital gain that are paid to insurance company separate accounts or to Qualified Plans are generally treated as ordinary income; distributions of net long-term capital gain in excess of net short-term capital loss are generally treated as long-term capital gain. Dividends and capital gain distributions are treated as received by the insurance company or Qualified Plan rather than by the owner of the Variable Contract or the plan participant. Insurance companies and Qualified Plans should consult their own tax advisers regarding the tax treatment of dividends or capital gain distributions they receive from the portfolio.

In addition to satisfying the requirements applicable to regulated investment companies described above, the portfolio also intends to satisfy the diversification requirements applicable to separate accounts of insurance companies. If the portfolio qualifies as a regulated investment company and only sells its shares to separate accounts and to certain other permitted investors, including Qualified Plans, then the separate accounts invested in the portfolio will be allowed to look through to the portfolio's investments in testing their compliance with the diversification requirements. If the portfolio fails to meet the diversification requirements applicable to separate accounts or fails to qualify as a regulated investment company, or if the portfolio's shares are sold to any investor other than certain permitted investors, then separate accounts invested in the portfolio might fail to satisfy the diversification requirements, and Variable Contracts invested in those separate accounts might not qualify for their expected federal income tax treatment. More specific information on these diversification requirements is contained in the insurance company's separate account prospectus and in the SAI.

Distributions

The portfolio generally pays any distributions of net short- and long-term capital gains in June. The portfolio generally pays dividends from any net investment income in December. The portfolio may also pay dividend and capital gain distributions at other times if necessary for the portfolio to avoid federal income or excise tax.

Financial Highlights

The financial highlights table helps you understand the portfolio's financial performance. Certain information reflects financial results for a single share of the portfolio. The total returns in the table represent the rate that you would have earned on an investment in the portfolio (assuming reinvestment of all dividends and distributions). The information below has been audited by Ernst & Young LLP, the portfolio's independent registered public accounting firm, whose report is included in the portfolio's annual report along with the portfolio's financial statements. The annual report is available upon request.

Class II

| | For the Year Ended December 31, | | | | |
|---|--|-------------|-------------|-------------|-------------|
| | 2008 | 2007 | 2006 | 2005 | 2004 |
| Net asset value, beginning of period | \$ 43.32 | \$ 33.92 | \$ 27.84 | \$ 20.33 | \$ 17.26 |
| Increase (decrease) from investment operations: | | | | | |
| Net investment income | \$ 0.31 | \$ 0.10 | \$ 0.17 | \$ 0.15 | \$ 0.16 |
| Net realized and unrealized gain (loss) on investments and foreign currency transactions | (22.80) | 13.58 | 8.79 | 7.46 | 3.04 |
| Net increase (decrease) from investment operations | \$ (22.49) | \$ 13.68 | \$ 8.96 | \$ 7.61 | \$ 3.20 |
| Distributions to shareowners: | | | | | |
| Net investment income | (0.03) | (0.14) | (0.11) | (0.10) | (0.13) |
| Net realized gain | (5.18) | (4.14) | (2.77) | — | — |
| Total Distributions | \$ (5.21) | \$ (4.28) | \$ (2.88) | \$ (0.10) | \$ (0.13) |
| Redemption Fee | \$ — | \$ — | \$ 0.00(a) | \$ — | \$ — |
| Net increase (decrease) in net asset value | \$ (27.70) | \$ 9.40 | \$ 6.08 | \$ 7.51 | \$ 3.07 |
| Net asset value, end of period | \$ 15.62 | \$ 43.32 | \$ 33.92 | \$ 27.84 | \$ 20.33 |
| Total return* | (58.30)% | 42.45% | 35.51% | 37.60% | 18.73% |
| Ratio of net expenses to average net assets† | 1.76% | 1.64% | 1.75% | 1.97% | 1.99% |
| Ratio of net investment income to average net assets† | 1.24% | 0.31% | 0.57% | 0.70% | 0.88% |
| Portfolio turnover rate | 65% | 54% | 49% | 74% | 66% |
| Net assets, end of period (in thousands) | \$38,143 | \$85,981 | \$58,130 | \$44,026 | \$30,347 |
| Ratios with no waiver of management fees and assumption of expenses by the Adviser and no reduction for fees paid indirectly: | | | | | |
| Net expenses | 1.76% | 1.64% | 1.75% | 1.99% | 2.11% |
| Net investment income | 1.24% | 0.31% | 0.57% | 0.68% | 0.76% |

(a) Amount rounds to less than one cent per share.

* Assumes initial investment at net asset value at the beginning of each period, reinvestment of all distributions and the complete redemption of the investment at net asset value at the end of each period.

† Ratios with no reduction for fees paid indirectly.

NOTE: The above financial highlights do not reflect the deduction of non-fund expenses associated with variable insurance products, such as mortality and expense risk charges, separate account charges, and sales charges.

Notes

Pioneer Variable Contracts Trust

Pioneer Emerging Markets VCT Portfolio Class II Shares

You can obtain more free information about the portfolio by writing to Pioneer Investment Management Shareholder Services, Inc., 60 State Street, Boston, Massachusetts 02109. You may also call **1-800-225-6292**. The portfolio's statement of additional information and shareowner reports are not available on the Pioneer website, as such information is exclusively provided by the insurance companies and is also available on the Securities and Exchange Commission's EDGAR database on the Internet (<http://www.sec.gov>).

Shareowner reports

Annual and semiannual reports to shareowners, and quarterly reports filed with the Securities and Exchange Commission, provide information about the portfolio's investments. The annual report discusses market conditions and investment strategies that significantly affected the portfolio's performance during its last fiscal year.

Statement of additional information

The statement of additional information provides more detailed information about the portfolio. It is incorporated by reference into this prospectus.

You can also review and copy the portfolio's shareowner reports, prospectus and statement of additional information at the Securities and Exchange Commission's Public Reference Room in Washington, D.C. Call 1-202-551-8090 for information. The Commission charges a fee for copies. You can get the same information free from the Commission's EDGAR database on the Internet (<http://www.sec.gov>). You may also e-mail requests for these documents to publicinfo@sec.gov or make a request in writing to the Commission's Public Reference Section, Washington, D.C. 20549-0102.

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