

March 29, 2012

Form ADV Part 2

# Putnam Investment Management, LLC

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This brochure provides information about the qualifications and business practices of Putnam Investment Management, LLC. If you have any questions about the contents of this brochure, please contact Robert Leveille, Chief Compliance Officer, at [robert\\_levaille@putnam.com](mailto:robert_levaille@putnam.com). The information in this brochure has not been approved or verified by the United States Securities and Exchange Commission ("SEC") or by any state securities authority. Additional information about Putnam Investment Management, LLC also is available on the SEC's website at [www.adviserinfo.sec.gov](http://www.adviserinfo.sec.gov). Clients should note that SEC registration does not imply a certain level of skill or training.

**A world of investing.™**



## Item 2: Material Changes

This Item provides clients with a summary of specific material changes that have been made to our brochure since the last update, March 30, 2011. Some of the changes since last year's brochure include:

- Item 12 includes additional information on foreign exchange trading by Putnam.
- Item 14 includes additional information on Putnam's relationships with investment consultants.

Putnam does not consider these changes material.

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# Item 4: Advisory Business

## *Introduction to Putnam*

Putnam Investment Management, LLC ("PIM") has been registered with the Securities and Exchange Commission as an investment adviser since 1971. Putnam Investments, LLC ("Putnam" or "Putnam Investments"), a broad-based, dedicated asset manager whose history reaches back to 1937, wholly owns PIM through various subsidiaries. Putnam is an active asset manager providing investment advice across all asset classes to individuals and institutions worldwide through separately-managed accounts and pooled investment funds. Based in Boston, Putnam also has offices in Europe, Asia and Australia.

Putnam is an indirect subsidiary of Great-West Lifeco Inc. Great-West Lifeco Inc., a member of the Power Financial Corporation group in Canada, is a financial services holding company with operations in Canada, the United States and Europe. Power Financial Corporation, a global company with interests in the financial services industry, is a subsidiary of Power Corporation of Canada, a financial, industrial, and communications holding company. Although Putnam Investments itself is not a public company, the parent companies named above are traded on the Toronto Stock Exchange.

PIM primarily manages Putnam's open-end and closed-end registered investment companies (the "Putnam Funds") and Putnam 529 for America,<sup>SM</sup> a Section 529 college savings plan. PIM also sub-advises other financial firms' registered investment companies and provides investment advice as a non-discretionary portfolio manager in "UMA" (unified managed account) programs. PIM is affiliated, through common ownership by Putnam, with:

- ◆ Putnam Fiduciary Trust Company ("PFTC"), a New Hampshire non-depository trust company that manages assets and provides trustee and custodial services pursuant to its banking and fiduciary powers (including to defined contribution plans administered by Putnam),
- ◆ The Putnam Advisory Company, LLC ("PAC"), a registered investment adviser that manages assets for institutional and international clients. PAC also manages various pooled investment funds, such as limited liability companies, limited partnerships, and non-US funds, and also sub-advises some Putnam Funds, and
- ◆ Putnam Investments Limited ("PIL"), a registered investment adviser that manages assets for non-U.S. institutional clients, subadvises some PAC and PIM client portfolios, and promotes Putnam products and services in Europe, the Middle East and Africa and some other non-U.S. countries.

These four Putnam management companies generally market their services together (depending on the type of client involved) under the Putnam brand, and share a common platform of trading, compliance, risk systems, and policies and procedures. They are sometimes called "Putnam," the "Putnam Advisers," or simply "We" in this brochure.

## *Investment Management Services*

Putnam offers professional, active investment management across a broad range of asset classes, including traditional long-only equity, fixed income, absolute return, alternative, and multi-asset class strategies.

Putnam is primarily a discretionary asset manager, and does not routinely provide general investment advice or planning services to its clients. As of December 31, 2011, PIM has \$60,561,904,656 in discretionary net assets under management<sup>1</sup>, and no non-discretionary assets under management.

PIM manages the Putnam Funds in accordance with their written investment objectives, strategies and guidelines, as disclosed in their SEC registration statements. The investment program of a Putnam Fund cannot be tailored to the individual needs of any particular investor. Investment in a Putnam Fund does not create an advisory client relationship between the investor and Putnam. Therefore, investors should consider whether a Putnam Fund meets their investment objectives and risk tolerance prior to investing.

PIM manages other discretionary advisory clients' assets based on the individual needs of the client, which are stated in the written objectives and guidelines of the client's account. In a typical discretionary relationship, the client authorizes PIM to supervise, manage and direct the investment of the assets of the portfolio without prior consultation with the client.

PIM also provides non-discretionary investment management services through wrap fee programs such as Unified Managed Account ("UMA") programs or other programs, where PIM generally provides ongoing investment recommendations through one or more "model" portfolios, and the UMA sponsor, rather than PIM, makes investment decisions and executes trades on behalf of its underlying clients. The sponsor decides in its discretion whether to make any changes to the model that PIM recommends, and is also solely responsible for determining the suitability of the strategy and investments for each client that participates. All management and support of underlying client accounts, such as investment allocation, restrictions, or tax harvesting, is also the responsibility of the sponsor or any overlay manager selected by the sponsor. Because PIM does not provide continuous investment advice or effect transactions for client accounts in model provider programs, their assets are not counted as assets under management in the information above in this item.

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<sup>1</sup> Regulatory assets under management reported in Item 5 of Form ADV Part 1 are required to be calculated gross of fees and other liabilities, so they will differ from the net asset numbers stated in this brochure or in other sources.

# Item 5: Fees and Compensation

Putnam's management fees are set forth in the client's investment management agreement. Putnam generally charges management fees to its discretionary account clients in accordance with its standard fee schedules in effect when the management agreement is signed. Management fees are negotiated with some clients, so fees may vary from the standard schedules. Because Putnam will be delivering this brochure only to "qualified purchasers" as defined in section 2(a)(51)(A) of the Investment Company Act of 1940, SEC rules do not require us to include our standard fee schedules in this brochure. Other investment advisers may charge higher or lower fees for comparable services than Putnam charges.

Generally, management fees are collected through deduction from the net asset value of PIM's fund clients. For separate account clients, fees are billed and payable quarterly in arrears. Putnam does not require prepayment of management fees.

Putnam must comply with SEC rules about "custody" of client assets (which can include automatic billing arrangements). Clients other than registered investment companies who prefer that Putnam deduct fees directly from their account will be required to make specific arrangements with a qualified custodian and to provide Putnam with additional information (including confirmation that the custodian provides the client with required account statements).

Fees, minimum account sizes, and fee breakpoints may be negotiated or modified in Putnam's discretion based on factors such as asset class, pre-existing fee schedules, account size and overall size of the client relationship, portfolio complexity and customization requests (such as specific investment restrictions requested by the client that cause the account to differ from similar accounts managed at Putnam), service requirements (such as reporting and information requests), or other factors. Putnam may also choose to waive all or a portion of negotiated fees for a period.

## *Putnam Fund and 529 Plan Fees*

PIM's fees under its investment management agreements with respect to the Putnam Funds and other registered investment company clients are shown in the funds' registration statements, on file with the SEC.

Fees for Putnam 529 for America<sup>SM</sup> are described in the offering documents for the program.

Investors should note that the fees for fund (and 529 plan) investing can differ from the fees for separate account investing in several ways.

First, a separate account client arranges for custody, recordkeeping and other service providers for its portfolio on its own (and pays for these services separately). In contrast, Putnam Funds and 529 plan portfolios hire their own service providers, and pay the related operating costs. Depending on the fund and account documentation, in some cases, Putnam may bear some or all of these expenses. For details, please refer to the specific fund's or portfolio's offering documents.

In addition, the management fees on a fund may also differ from the fees for similar separate accounts depending, for example, on the specific services provided and Putnam's related costs.

## *UMA and other Wrap Program Fees*

PIM receives fees quarterly in arrears based on a percentage of the aggregate or average asset value of all UMA program assets managed by the sponsor in accordance with PIM's model portfolios. This fee is negotiated with and paid by the sponsor. Advisory fees paid by the client to the sponsor in order to

participate in these programs are established by the sponsor; PIM does not negotiate advisory fees with a UMA client. Each client should evaluate whether a particular UMA program is suitable for his or her needs, including the fees charged and services provided. Please see your sponsor's wrap fee program brochure for additional fee information and disclosures.

#### *Performance fees*

Some Putnam clients, including some investment funds, pay performance-based fees. For more information on these fees, please read Item 6 of this brochure.

#### *Non-Discretionary Advice*

In addition to discretionary asset management, Putnam may sometimes agree to provide non-discretionary advice for a specific client portfolio in a particular asset class. Putnam does not act as general investment counsel for these accounts, but instead makes specific, security-level recommendations for the client to implement in its discretion. The fees for these services, or for any additional services such as unusual reporting needs or other client-specific requirements, are determined on a case by case basis.

#### *Account Termination*

The terms and conditions of PIM's services are specified in an investment management agreement between PIM and the client. The management agreement generally allows either the client or PIM to terminate it at any time on written notice (typically, of not less than 60 days).

#### *Other Third Party Fees and Expenses*

In addition to Putnam's management fee, clients are responsible for other charges imposed by third parties other than Putnam. Investment in a portfolio of securities and other investments involves various costs, such as commissions, taxes, and custody and accounting charges. For separate account clients, the custodian or administrator, not Putnam, charges each of these expenses (other than commissions) directly to the portfolio, and, in many cases, Putnam does not know the amounts of these expenses. For more information, clients may contact their service providers directly. For fund investors, the fund generally bears these expenses, which reduce the return on an investor's investment.

*Commissions and Transaction Costs:* The rate of commissions and level of transaction costs will vary, and, for fixed-income securities, commissions may not be separately stated, but implicit in the spread paid on the trade. Please see Item 12 for more information.

*Taxes:* Withholding taxes and/or other taxes may be applicable to some investments (such as securities of non-U.S. issuers).

*Custody and Accounting Charges:* These charges (including ongoing fees as well as transaction specific fees and charges for portfolio trades) are charged by the custodian and accounting agent/record keeper for the portfolio.

*Fund expenses.* The Putnam Funds also bear other ongoing expenses, such as SEC fees and audit fees. Accounts that invest in mutual funds or other funds will bear those funds' expenses and any associated management fees.

#### *Valuation of Portfolio Assets in Calculating Fees*

Putnam's management fees are based on the value and performance of the assets held in the client account. Putnam generally does not act as official record keeper or pricing agent for its client accounts. However, if the investment management agreement provides that fees will be based on Putnam's calculation of the

portfolio's net assets or performance, or in the case of an investment fund managed by Putnam, Putnam's valuation of securities may determine the fees that a client or fund investor pays. Although most investment types are valued based on publicly available prices (such as equity closing prices), third party pricing sources, or broker dealer prices, Putnam does have a role in determining asset values in some asset classes and circumstances. For example, Putnam may be required to price a portfolio holding when a market price is not readily available or when Putnam has reason to believe that the market price is inaccurate. To the extent Putnam's fees are based on the value or performance of client accounts, Putnam may benefit by receiving a fee based on the impact, if any, of the increased value of assets in an account. Putnam has adopted detailed pricing procedures and related oversight controls to assist in proper valuation of client investments.

The Putnam Funds have adopted their own pricing procedures; however, these procedures may also call for Putnam to provide input on the value of some investments.



## Item 6: Performance-Based Fees and Side-By-Side Management

Most Putnam management fees are asset-based. However, for some clients, the management fee includes a performance component in which Putnam is paid either based upon a fulcrum fee, or is paid additional amounts to the extent the account's performance exceeds a specific performance benchmark. In addition to these more traditional performance fees, Putnam also manages some institutional accounts and funds that pay performance based fees of 5% to 30% of investment gains (or of outperformance over an agreed-upon benchmark, such as a securities index or a cash measure such as LIBOR or the return on Treasury bills) in addition to a base fee. In some cases, these performance fees may be subject to a high-water mark or other provisions intended to ensure that prior losses are recouped before Putnam earns any performance fees. Other accounts and funds may have periodic or cumulative performance hurdles that must be achieved before Putnam receives a performance fee. The periods used to measure the performance are specified in the management agreement and will typically be at least a twelve-month period.

Performance fee accounts can generate significant fees. While performance fees are intended to reward Putnam for the successful pursuit of client investment goals, they could create an incentive for portfolio managers to take risks in managing client assets that they would not otherwise take. In addition, the management of performance fee accounts alongside non-performance fee accounts raises potential conflicts of interest, such as:

- ◆ The most attractive investments could be allocated to performance fee accounts.
- ◆ The trading of performance fee accounts could be favored as to timing and execution price.
- ◆ The trading of other accounts could be used to benefit performance fee accounts (front running).
- ◆ Portfolio managers could focus primarily on performance fee accounts due to their personal stake in compensation.

Putnam attempts to address these potential conflicts of interest through compliance policies that are generally intended to place all accounts, regardless of fee structure, on the same footing for investment management purposes. For example, under Putnam's policies:

- ◆ Performance fee accounts must be included in all standard trading and allocation procedures with all other accounts.
- ◆ All accounts must be assigned to a specific category of account and trade together with allocations of similar accounts in their categories based on the procedures generally applicable to all accounts in those categories (such as based on relative risk budgets of accounts).
- ◆ All trading must be effected through Putnam's trading desks and normal queues and procedures must be followed (that is, no special treatment is permitted for performance fee accounts or higher-fee accounts based on account fee structure).
- ◆ Front running is prohibited.

As part of these policies, Putnam has also implemented trade oversight and review procedures in order to monitor whether particular accounts (including higher-fee accounts, performance fee accounts and affiliated accounts) are being favored over time.

Although Putnam believes our policies and procedures are reasonably designed, it is not possible to eliminate all the potential risks of these conflicts. For more information about other potential conflicts of interest in trading and managing client accounts, see Item 11.

## Item 7: Types of Clients

PIM primarily manages the Putnam Funds and the Putnam 529 for AmericaSM college savings plan. PIM also sub-advises other financial firms' registered investment companies and provides investment advice as a non-discretionary portfolio manager in UMA or other "wrap fee" programs. Minimum account sizes depend on the type of client relationship and asset class.

# Item 8: Methods of Analysis, Investment Strategies and Risk of Loss

## *Methods of Analysis*

Putnam is an active, long-term investment manager across the major asset classes.

Our analysis of the financial markets is generally based on fundamental analysis and research, but also includes quantitative elements. Fundamental analysis attempts to measure the intrinsic value of a security by looking at economic and financial factors (including the overall economy, industry conditions, and the financial condition and management of the company itself) in order to determine if the company is underpriced or overpriced. Quantitative analysis applies concepts of fundamental valuation and security selection via computer models. These computer-based models are designed to analyze a variety of financial data from various sources and generate investment selections.

Generally, Putnam research is focused on developing both a top-down view of broader market performance and a bottom-up outlook for individual securities. Putnam relies significantly on research generated in-house which is tailored to the precise needs of our investment professionals. External research is also used - for example, to evaluate consensus views and to augment the research process. For more information, see Item 12 of this brochure.

## *Investment Strategies*

Putnam offers a wide variety of investment strategies to its clients. In managing assets, Putnam has the flexibility to invest in securities and other financial instruments of almost any type (including both cash securities, such as stocks and bonds, and derivative instruments, such as swaps, futures, forwards, and options). This flexibility is subject to the investment objectives and guidelines of each account, as agreed with the client.

## *Equity Mandates*

Putnam's equity mandates typically seek superior results over time, backed by original, fundamental research on a global scale. Putnam seeks to generate alpha through a bottom-up approach to investing, seeking to identify the most attractive investment opportunities based on valuation and perceived quality while considering overall portfolio construction. Portfolios are designed in an attempt to maximize alpha from stock selection, and while individual portfolios may vary, holdings tend to be broad based, which can help dampen volatility over time, although there can be no guarantee of investment results. We employ global sector coverage, with each team having extensive experience in researching their sectors.

Putnam offers a variety of equity strategies, including various Putnam Funds. Equity investing involves many risks. See the "Risk of Loss" section below for more information.

## *Fixed Income Mandates*

Putnam's fixed income portfolios generally seek above average total returns relative to an agreed benchmark with low relative volatility by investing in a diversified portfolio of fixed income securities. Our fixed income strategies are managed in a holistic fashion that seeks to combine specialist investment insights upon a common platform of disciplined portfolio construction and risk management techniques. We believe that fixed income markets are inefficient at pricing the risk of various securities, and that active management can help add value to client portfolios by exploiting these inefficiencies through the disciplined and systematic

application of a well-defined, robust investment process. Of course, there can be no guarantee of investment results.

Understanding the dynamics of fixed income markets and individual securities is a complex, technical area with vast volumes of information. We believe that opportunities are most effectively exploited by dedicated sector specialist teams. Our top-down view is based on ongoing market discussion among the group's portfolio managers. The group reviews internal and external market data, including proprietary forecasting models. Based on fundamental credit research performed by the analysts, the portfolio managers determine which securities of an issuer to own and in what amount. This decision incorporates a relative value decision across industries and within an issuer's capital structure, and is aided by quantitative tools. The security selection process also factors in considerations such as liquidity, market technicals, market opportunities and, most importantly, our top-down portfolio strategy.

Putnam offers a variety of fixed-income strategies, including various Putnam Funds. Fixed-income investing involves many risks. See the "Risk of Loss" section below for more information.

#### *Global Asset Allocation Mandates*

Putnam's Global Asset Allocation Team believes that traditional beta and alpha-only investment approaches are not always sufficient to achieve a client's investment objectives; instead, the modern investing landscape, in our view, requires a team of professionals with the breadth and skill to exploit the full spectrum of available investment opportunities in a portfolio featuring diversification across asset classes and active strategies. The Global Asset Allocation Team's products combine equity, fixed-income, and other asset classes in order to seek particular client goals, such as total return, although there can be no guarantee of investment results.

Putnam offers a variety of Global Asset Allocation strategies, including various Putnam Funds managed by the Global Asset Allocation team offering asset allocation, absolute return, and target date strategies. Investing in a diversified portfolio of equity and fixed-income instruments involves many risks. See the "Risk of Loss" section below for more information.

#### *Risk of Loss*

While Putnam seeks to achieve a client's stated investment objective, there is no guarantee that we will succeed. All investments involve risk of loss. Our accounts may not perform as well as accounts managed by others or as well as their benchmarks.

This section gives more information on the material risks that may apply to a client portfolio depending on the asset class or classes in which it invests. These descriptions cover our most significant strategies, and they focus on risks that are shared by most portfolios in a given asset class (such as equities or fixed-income). Some specialized portfolios may be subject to additional risks. For example, our Capital Spectrum and Equity Spectrum strategies may sell securities short and invest in leveraged companies, and our regional or sector strategies, such as Europe Equity, will be subject to risks associated with focusing in one geographic region or sector.

Of course, this section does not cover every possible risk, and Putnam may sometimes buy investments that we do not describe below. In addition, each specific account's guidelines and strategy will determine the risks that apply. For example, if you invest in a portfolio of mostly large-cap equities, the risks of small-cap investing may not be significant. If you invest in a high yield bond portfolio, credit risk may be significant, but prepayment risk may not be. If your account does not permit the use of derivatives, derivatives risks will not apply. For more detailed information about your portfolio's risks, please contact Putnam. Fund investors should also refer to their fund's offering materials.

## Fixed-Income Investments

»**Interest rate risk.** The values of bonds and other debt instruments usually rise and fall in response to changes in interest rates. Declining interest rates generally increase the value of existing debt instruments, and rising interest rates generally decrease the value of existing debt instruments. Changes in a debt instrument's value usually will not affect the amount of interest income paid to a portfolio, but will affect the value of the portfolio. Interest rate risk is generally greater for investments with longer maturities.

Some investments give the issuer the option to call or redeem an investment before its maturity date. If an issuer calls or redeems an investment during a time of declining interest rates, we might have to reinvest the proceeds in an investment offering a lower yield, and therefore might not benefit from any increase in value as a result of declining interest rates.

»**Credit risk.** Investors normally expect to be compensated in proportion to the risk they are assuming. Thus, debt of issuers with poor credit prospects usually offers higher yields than debt of issuers with more secure credit. Higher-rated investments generally have lower credit risk.

Where a portfolio's investment guidelines permit, we may invest in higher-yield, higher-risk debt investments that are below investment grade. Investments rated below BBB or its equivalent are below investment-grade. This rating reflects a greater possibility that the issuers may be unable to make timely payments of interest and principal and thus default. If this happens, or is perceived as likely to happen, the values of those investments will usually be more volatile and are likely to fall. A default or expected default could also make it difficult for us to sell the investments at prices approximating the values we had previously placed on them. Lower-rated debt usually has a more limited market than higher-rated debt, which may at times make it difficult for us to buy or sell some debt instruments or to establish their fair value. Credit risk is generally greater for zero coupon bonds and other investments that are issued at less than their face value and that are required to make interest payments only at maturity rather than at intervals during the life of the investment.

Credit ratings are based largely on the issuer's historical financial condition and the rating agencies' investment analysis at the time of rating. The rating assigned to any particular investment does not necessarily reflect the issuer's current financial condition, and does not reflect an assessment of an investment's volatility or liquidity. Although we consider credit ratings in making investment decisions, we perform our own investment analysis and do not rely only on ratings assigned by the rating agencies. Our success in achieving a portfolio's investment objective may depend more on our own credit analysis when we buy lower quality bonds than when we buy higher quality bonds. We may have to participate in legal proceedings involving the issuer. This could increase a portfolio's operating expenses and decrease its value.

Although investment-grade investments generally have lower credit risk, they may share some of the risks of lower-rated investments.

»**Prepayment risk.** Traditional debt investments typically pay a fixed rate of interest until maturity, when the entire principal amount is due. By contrast, payments on securitized debt instruments, including mortgage-backed and asset-backed investments, typically include both interest and partial payment of principal. Principal may also be prepaid voluntarily, or as a result of refinancing or foreclosure. We may have to invest the proceeds from prepaid investments in other investments with less attractive terms and yields. Compared to debt that cannot be prepaid, mortgage-backed investments are less likely to increase in value during periods of declining interest rates and have a higher risk of decline in value during periods of rising interest rates. They may increase the volatility of the portfolio. Some mortgage-backed investments receive only the interest portion or the principal portion of payments on the underlying mortgages. The yields and

values of these investments are extremely sensitive to changes in interest rates and in the rate of principal payments on the underlying mortgages. The market for these investments may be volatile and limited, which may make them difficult to buy or sell. Asset-backed securities, which are subject to risks similar to those of mortgage-backed securities, are also structured like mortgage-backed securities, but instead of mortgage loans or interests in mortgage loans, the underlying assets may include such items as motor vehicle installment sales or installment loan contracts, leases of various types of real and personal property and receivables from credit card agreements.

## **Equity Investments**

» **Common stocks.** Common stock represents an ownership interest in a company. The value of a company's stock may fall as a result of factors directly relating to that company, such as decisions made by its management or lower demand for the company's products or services. A stock's value may also fall because of factors affecting not just the company, but also companies in the same industry or in a number of different industries, such as increases in production costs. From time to time, a portfolio may invest a significant portion of its assets in companies in one or more related industries or sectors, such as the financial sector, which would make the portfolio more vulnerable to adverse developments affecting those industries or sectors. The value of a company's stock may also be affected by changes in financial markets that are relatively unrelated to the company or its industry, such as changes in interest rates or currency exchange rates. In addition, a company's stock generally pays dividends only after the company invests in its own business and makes required payments to holders of its bonds and other debt. For this reason, the value of a company's stock will usually react more strongly than its bonds and other debt to actual or perceived changes in the company's financial condition or prospects. Stocks of smaller companies may be more vulnerable to adverse developments than those of larger companies.

Growth stocks – Stocks of companies we believe are fast-growing may trade at a higher multiple of current earnings than other stocks. The values of these stocks may be more sensitive to changes in current or expected earnings than the values of other stocks. If our assessment of the prospects for a company's earnings growth is wrong, or if our judgment of how other investors will value the company's earnings growth is wrong, then the price of the company's stock may fall or not approach the value that we have placed on it. Seeking earnings growth may result in significant investments in some sectors, including the technology sector, which may be subject to greater volatility than other sectors of the economy.

Value stocks – Companies we believe are undergoing positive change and whose stock we believe is undervalued by the market may have experienced adverse business developments or may be subject to special risks that have caused their stocks to be out of favor. If our assessment of a company's prospects is wrong, or if other investors do not similarly recognize the value of the company, then the price of the company's stock may fall or may not approach the value that we have placed on it.

» **Small and midsize companies.** These companies, some of which may have a market capitalization of less than \$1 billion, are more likely than larger companies to have limited product lines, markets or financial resources, or to depend on a small, inexperienced management group. Stocks of these companies often trade less frequently and in limited volume, and their prices may fluctuate more than stocks of larger companies. Stocks of small and midsize companies may therefore be more vulnerable to adverse developments than those of larger companies.

## **Non-U.S. Investments**

Non-U.S. investments (whether equities or fixed-income investments) involve special risks, including:

» Unfavorable changes in currency exchange rates: Non-U.S. investments are typically issued and traded in non-U.S. currencies. As a result, their values may be affected by changes in exchange rates.

- » Political and economic developments: Non-U.S. investments may be subject to the risks of seizure by a non-U.S. government, direct or indirect impact of sovereign debt default, imposition of restrictions on the exchange or export of non-U.S. currency, and tax increases.
- » Unreliable or untimely information: There may be less information publicly available about a non-U.S. company, and non-U.S. companies are usually not subject to accounting, auditing and financial reporting standards and practices as stringent as those applicable to U.S. issuers.
- » Limited legal recourse: Legal remedies for investors may be more limited than the remedies available for investors in U.S. companies.
- » Limited markets: Some non-U.S. investments may be less liquid (harder to buy and sell) and more volatile, which means we may at times be unable to sell these non-U.S. investments at desirable prices. For the same reason, we may at times find it difficult to value the portfolio's non-U.S. investments.
- » Trading practices: Brokerage commissions and other fees are generally higher for non-U.S. investments than for U.S. investments. The procedures and rules governing non-U.S. transactions and custody may also involve delays in payment, delivery or recovery of money or investments.

The risks of non-U.S. investments are typically increased in less developed countries, which are sometimes referred to as emerging markets. For example, political and economic structures in these countries may be changing rapidly, which can cause instability. These countries are also more likely to experience high levels of inflation, deflation or currency devaluation, which could hurt their economies and securities markets. For these and other reasons, investments in emerging markets are often considered speculative.

Some of these risks may also apply to some extent to U.S. investments that are denominated in non-U.S. currencies, investments in U.S. companies that are traded in non-U.S. markets or investments in U.S. companies that have significant non-U.S. operations.

## **Derivatives Investments**

We may engage in a variety of transactions involving derivatives, such as futures, options, warrants and swap contracts. Derivatives are financial instruments whose value depends upon, or is derived from, the value of something else, such as one or more underlying investments, pools of investments, indexes or currencies. We may make use of "short" derivatives positions, the values of which move in the opposite direction from the price of the underlying investment, pool of investments, index or currency. The risk of loss from some short derivatives positions is theoretically unlimited. We may use derivatives both for hedging and non-hedging purposes. For example, we may use foreign currency transactions to increase or decrease a portfolio's exposure to a particular currency or group of currencies. We may also use derivatives as a substitute for a direct investment in the securities of one or more issuers. However, we may also choose not to use derivatives, based on our evaluation of market conditions or the availability of suitable derivatives.

Derivatives involve special risks and may result in losses. The successful use of derivatives depends on our ability to manage these sophisticated instruments. Some derivatives are "leveraged," which means that they provide a portfolio with investment exposure greater than the value of the portfolio's investment in the derivatives. As a result, these derivatives may magnify or otherwise increase investment losses to the portfolio. The prices of derivatives may move in unexpected ways due to the use of leverage or other factors, especially in unusual market conditions, and may result in increased volatility.

Other risks arise from the potential inability to terminate or sell derivatives positions. A liquid secondary market may not always exist for the portfolio derivatives positions at any time. In fact, many over-the-counter instruments (investments not traded on an exchange) will not be liquid. Over-the-counter

instruments also involve the risk that the other party to the derivative transaction will not meet its obligations.

**Turnover**

A client account pays transaction-related costs when Putnam buys and sells securities (or “turns over” the portfolio). A higher turnover rate may indicate higher brokerage commissions, transaction costs and taxes, which affect performance. The turnover for Putnam client accounts varies widely among strategies and portfolio managers and, even within a single account, will be higher or lower at different times depending on Putnam’s view of market opportunities. While Putnam generally seeks long-term outperformance rather than short-term opportunity, some Putnam client portfolios may have relatively high turnover.



## Item 9: Disciplinary Information

On November 13, 2003, the SEC entered an order making findings and imposing partial relief, including a final censure, remedial undertakings and a cease and desist order pursuant to sections 203(e) and 203(k) of the Investment Advisers Act of 1940 (the "Advisers Act") and 9(b) and 9(f) of the Investment Company Act of 1940 (the "1940 Act"). The SEC found that PIM violated sections 203(e)(6), 206(1), 206(2) and 204A of the Advisers Act and rule 17j-1(c) under the 1940 Act in connection with the personal trading of employees who allegedly engaged in excessive short-term trading (sometimes referred to as "market timing") of Putnam mutual funds, and PIM's failure to reasonably supervise its employees or to properly disclose these actions. Four of the individuals traded in mutual funds over which they had investment authority. In connection with this order, PIM agreed to make corporate governance, compliance, and ethics reforms. On April 8, 2004, PIM entered into an agreement with the SEC settling charges connected with excessive short-term trading by Putnam employees. Under the settlement agreement, PIM agreed to pay a total of \$193.5 million in penalties and restitution, with \$153.5 million (plus interest) being paid to shareholders and the funds. The restitution amount was paid to shareholders in accordance with a plan developed by an independent consultant.

On April 8, 2004, the Commonwealth of Massachusetts entered into a consent order with PIM pursuant to an offer of settlement. The consent order found that PIM violated sections 101 and 102 of the Massachusetts Uniform Securities Act. In connection with the consent order, PIM admitted certain facts solely for the purpose of resolving the administrative proceeding. In accordance with the consent order, PIM agreed to pay the same amounts in penalties and restitution that are described in the preceding paragraph with respect to the simultaneous SEC settlement agreement.

On March 23, 2005, PIM entered into a settlement agreement with the SEC regarding the SEC's inquiry concerning PIM's alleged failure to adequately disclose certain brokerage practices. These practices involved the allocation of brokerage to broker-dealers who sold shares of Putnam mutual funds. The settlement order stated that PIM failed to fully and effectively disclose to the board of trustees and to shareholders of the Putnam funds the specifics of its preferred marketing arrangement with certain brokerage firms selling shares of Putnam funds. PIM ceased directing brokerage to broker-dealers in connection with the sale of fund shares as of January 1, 2004. Under the settlement, PIM paid a civil penalty in the amount of \$40 million and disgorgement in the amount of \$1. The total amount of the payment was paid to certain Putnam funds. As part of the settlement, PIM neither admitted nor denied any wrongdoing.

On September 7, 2006, the SEC entered an order making findings and imposing relief including censure, remedial sanctions and a cease and desist order pursuant to sections 203(e) and 203(k) of the Advisers Act. The SEC found that PIM violated section 205(a) of the Advisers Act by entering into an advisory contract with the Putnam Research Fund (the "Research Fund"), a registered investment company, which provided for performance based compensation to be computed based on the Research Fund's daily net asset value over the quarter rather than based on the average net asset value for the 36 month performance period used for calculating the fee, as required by rule 205 under the Advisers Act. Following notification by the SEC staff that the performance fee for the Research Fund did not comply with section 205 of the Advisers Act, PIM discontinued the method and reimbursed the Research Fund excess fees in the amount of \$1,307,482 with interest of \$343,119, for a total payment of \$1,650,601. The SEC order censured PIM and ordered it to cease and desist from committing or causing violations of Section 205(A) but the order did not impose any additional monetary penalties. PIM neither admitted nor denied the findings in the SEC order.

On September 28, 2007, the SEC entered an order making findings and imposing remedial sanctions and a cease and desist order pursuant to section 203(e) of the Adviser Act and Sections 9(b) and 9(f) of the 1940 Act. The SEC found that PIM violated sections 19(a) and rule 19a-1 of the 1940 Act in connection with

certain notices for shareholder distributions for four closed end investment companies: The Putnam Master Intermediate Income Trust, Putnam Premier Income Trust, Putnam Master Income Trust, and Putnam Managed High Yield Trust. The settlement order stated that during the period from August 1, 2000 through May 31, 2002 these funds made distributions to shareholders partly funded from shareholder capital and that although PIM, as administrator to the funds, sent written notices with these distributions, the notices did not contain the information required by rule 19a-1 under the 1940 Act.

# Item 10: Other Financial Industry Activities and Affiliations

## *Other Putnam companies*

PIM is wholly owned by Putnam Investments, which also owns the other Putnam Advisers described in Item 4 of this brochure. The Putnam Advisers share portfolio management personnel and securities research and trading facilities, and allocate the costs among themselves. Other Putnam Advisers subadvise some PIM client accounts. Client fees do not change when one Putnam Adviser acts as subadviser to another. Instead, other Putnam companies compensate the subadviser through subadvisory fees or the allocation of related costs and revenue. Any subadvisory relationship is subject to client approval (which Putnam may obtain through the initial investment management agreement or other account documents, or at a later time).

Putnam also owns other related financial companies in the United States, including:

- ◆ Putnam Investor Services, Inc., a registered transfer agent which serves as the transfer agent to the Putnam Funds and some other clients and also provides recordkeeping for defined contribution plans; and
- ◆ Putnam Retail Management Limited Partnership (“PRM”), a registered broker/dealer which is the principal underwriter for the open-end Putnam Funds and distributor of Putnam 529 for America<sup>SM</sup>. PRM and its personnel also offer some other Putnam investment funds to U.S. investors, and may be compensated by other Putnam companies for these services. Some of PIM’s senior executives are registered representatives of PRM.

Outside the United States, Putnam also owns the registered investment adviser PIL, as well as:

- ◆ Putnam Investments (Ireland) Limited, an Irish UCITS management company that primarily manages various UCITS investment funds that are available to non-U.S. investors;
- ◆ Putnam Investments Inc., an Ontario company with various provincial securities licenses in Canada that manages Canadian separate accounts and investment funds;
- ◆ Putnam Investments Australia Pty Limited, an Australia financial services license holder that promotes Putnam products and services; and
- ◆ Putnam Investments Securities Co, Ltd., a Japanese Type I Financial Instruments license holder that handles the private placement of Putnam funds and provides reporting and related services in connection with Putnam’s business in Japan.

These firms may promote Putnam products and services outside the United States and/or hire one or more of the Putnam Advisers to subadvise non-U.S. client portfolios.

## *Affiliated Funds*

Putnam also manages various affiliated funds, as described in Item 4. Putnam does not invest the assets of its discretionary client accounts or Putnam funds in other funds managed by Putnam without consent of the client or fund (which may, in some cases, be obtained through disclosure in the investment management agreement or a fund’s offering documents). Subject to these requirements and any other applicable law, Putnam may use affiliated funds to manage portfolio cash efficiently, or for other purposes.

### *Putnam Distribution Firms and Sales Personnel*

In general, PRM and other Putnam sales organizations and personnel are a dedicated sales force offering only Putnam products and services. Putnam companies do not generally offer advisory clients or prospects traditional financial planning or brokerage services (except in the context of IRA rollover business), general investment advice, or recommendations or advice about other financial firms' products. Clients and potential clients should be aware, in choosing to begin a client relationship with a Putnam Adviser or invest in an investment fund offered by Putnam, that Putnam sales personnel and various Putnam companies are compensated by other Putnam companies for their distribution activities. Compensation may include commissions based on the successful sale of particular Putnam funds or strategies/services. Accordingly, Putnam personnel have an incentive to sell Putnam products and services.

### *Other, Separate Affiliates*

In addition to its own, Putnam-branded business, Putnam also owns an approximately 80% interest in PanAgora Asset Management, Inc. ("PanAgora"), a quantitatively-oriented firm which provides investment management primarily to institutional clients. PanAgora is a registered investment adviser, a commodity pool operator and commodity trading adviser registered with the Commodity Futures Trading Commission ("CFTC"), and a member organization of the National Futures Association. PanAgora's services are marketed separately from those of Putnam; however, PanAgora acts as a subadviser for some Putnam client accounts. PanAgora maintains its own separate investment operations and policies and procedures. Trades made by PanAgora for its clients are not aggregated with those made by the Putnam Advisers for their clients. For more information on PanAgora, please refer to its separate Form ADV Part 2 brochure, which is available from PanAgora (SEC File number 801-35497).

Putnam's indirect parent company, Power Financial Corporation ("Power"), also owns other insurance, investment management, brokerage and other financial businesses with which Putnam may do business. Power's financial subsidiaries include U.S. registered investment advisers and broker-dealers as well as non-U.S. investment advisers, broker-dealers, fund management companies, and insurance companies. Business activities between Putnam and its Power affiliates include providing subadvisory services to Power affiliates' portfolios, seeking to include Putnam fund products on affiliates' distribution platforms, and partnering in the design, servicing and promotion of packaged retirement solutions. In addition, Power and its management, as corporate owners of Putnam Investments, may provide general assistance in the promotion and marketing of Putnam and its products and services.

### *Separation of Investment Operations*

While Putnam does business with Power companies, some core aspects of our business are kept strictly separate. The investment management and trading functions at the Putnam Advisers are autonomous and operate separately from those at both PanAgora and the other Power investment management subsidiaries. These functions include all decision-making on what, how and when to buy, sell or hold specific securities in client portfolios and the trading related to implementation of these decisions. Information barrier policies are intended to permit the investment management and trading functions of each firm to operate without regard to or interference from the others and to provide reasonable assurances that sensitive investment management and trading information will not be shared between Putnam and other Power companies (including PanAgora).

### *Conflicts of Interest*

Doing business with our affiliates could involve conflicts of interest if, for example, we use affiliated products and services when those products and services are not in our clients' best interests. Many U.S. and non-U.S. laws aim at limiting these conflicts of interests – for example, by preventing a money manager from entering

into trades between its clients and its affiliates where the client might be disadvantaged. We have policies and procedures designed to comply with these laws. In addition, we believe that our business relationships with our affiliates are carried out on market terms. In some key areas where potential conflicts may arise, we do not currently deal with our affiliates. For example, Putnam currently does not execute portfolio transactions for client accounts with any affiliated broker-dealers, and we do not generally invest in the stocks of our corporate affiliates that are public companies.

# Item 11: Code of Ethics, Participation or Interest in Client Transactions and Personal Trading

## *Personal Trading*

Putnam and the Putnam Advisers maintain a Code of Ethics, which applies to all employees of Putnam and the Putnam Advisers. The Code of Ethics regulates the personal securities trading activities of these employees and the trading activity of some family members and entities (such as corporations, trusts, or partnerships) that employees may be deemed to control or influence. A copy of Putnam's Code of Ethics is available on request.

The Code of Ethics imposes limits on activities of employees where the activity may conflict with the interests of their clients. These include:

- ◆ pre-clearance requirements for personal securities transactions,
- ◆ personal trading restrictions, and
- ◆ prohibitions against the buying and selling of any security while Putnam or the employee possesses material, non-public information (inside information) about the security.

As a condition of employment, every employee accepts the obligation to comply with the letter and the spirit of the Code of Ethics.

Employees are required to provide confirmations and statements for their personal securities transactions, including transactions of immediate family members living in their household and accounts over which the employee has investment discretion, to the Code of Ethics department. Employees may not buy or sell any security for their own account without clearing the proposed transaction in advance (some securities, such as open-end mutual funds, are exempted from this pre-clearance requirement).

In general, the Code of Ethics prohibits excessive personal trading by employees as well as the short selling of any security, whether or not it is held in a client portfolio (short selling against broad market indexes and “against the box” are permitted). All employees are prohibited from making more than 10 trades in individual securities in any given quarter. Putnam employees are also subject to a minimum 90-day holding period for holding shares of open-end Putnam Funds (other than money market funds). Employees in the investment division, who have sole or shared supervisory responsibility, or portfolio management responsibility, have a one year holding requirement with respect to the open-end funds (including sub-advised funds) for which they have management responsibility.

Access Persons are subject to additional requirements under the Code of Ethics. Access Persons include:

- ◆ Employees who have access to non-public information about a client's purchase or sale of securities, or
- ◆ Employees who have access to information about recommendations with respect to such purchases or sales, or
- ◆ Employees who have access to non-public information about the portfolio holdings of any Putnam Fund or mutual fund subadvised by Putnam.

Access Persons are required to report all their personal securities transactions in each calendar quarter to the Code of Ethics department and are subject to additional restrictions, such as:

- ◆ Access Persons may not sell a security at a profit within 60 days of purchasing it or buy a security at a price below which he or she sold it within the past 60 days.
- ◆ Before a Portfolio Manager places an order to buy a security, or related derivative security, for any Putnam client portfolio they manage, they must sell that security or related derivative from his or her personal account if they purchased it within the preceding seven calendar days. Before a Portfolio Manager places an order to sell a security or related derivative security for any Putnam client portfolio they manage, they must disgorge any losses avoided if they sold that security, or related derivative, from his or her personal account within the preceding seven calendar days.
- ◆ No Portfolio Manager may buy any security or related derivative security for their personal account until seven calendar days have passed since the most recent sale of that security or related derivative security by any portfolio he or she manages.
- ◆ No Portfolio Manager may sell a security or related derivative security until 7 days has passed from the most recent purchase of that security by a client portfolio they manage. Similar rules apply to analysts with regard to stock recommendations.
- ◆ No Portfolio Manager may sell out of his or her personal account any security or related derivative security that is held in any portfolio he or she manages unless he or she has received the written approval of the Chief Investment Officer and the Code of Ethics Officer.
- ◆ No Portfolio Manager may cause a client to take action for the Portfolio Manager's own personal benefit.

Putnam imposes sanctions for violations of the Code of Ethics. Sanctions may include bans on personal trading, reductions of salary increases or bonuses, monetary sanctions, disgorgement of trading profits, suspension of employment, and/or termination of employment.

#### *Affiliated Accounts*

Putnam sometimes creates “seed” or “incubator” funds and accounts in order to develop a performance track record in new investment products and strategies before offering them to clients. Putnam or a related company funds these portfolios. Putnam employees may also invest in some seed portfolios. Putnam and its related companies and employees may also invest in registered investment companies and other investment funds that are offered to clients immediately from inception. Putnam and any investing employees will benefit from the investment performance of seed portfolios and other Putnam portfolios in which they invest. These two kinds of portfolios are called “affiliated accounts” below.

Affiliated accounts often invest in the same securities, at or around the same time, as client accounts. Putnam's policy is to allocate trades to affiliated accounts in the same way as client accounts – neither favoring nor disfavoring them except where legally required. Affiliated accounts are normally included in Putnam's daily block trades to the same extent as client accounts, except that seed accounts do not participate in initial public offerings. For more information, please read “Potential Conflicts of Interest in Trading and Management” below.

Some of Putnam's Great-West Lifeco Inc. affiliates have invested in a private equity firm, Thomas H. Lee Partners (“TH Lee”). These affiliates and some Putnam affiliated employees securities companies make principal investments in portfolio companies invested in by some funds sponsored by TH Lee. Where legally permitted, Putnam may purchase securities issued by the same portfolio companies on behalf of client accounts.

Putnam employees may also invest in the Putnam Funds in accordance with the terms of the prospectus.

Where appropriate, Putnam or an affiliate may recommend to its clients that they invest in investment funds for which a Putnam Adviser acts as an investment adviser and/or managing member/general partner or trustee.

### *Potential Conflicts of Interest in Trading and Management*

Like other investment firms with multiple clients, Putnam may face potential conflicts of interest when managing and trading on behalf of multiple client accounts. This section describes some of these potential conflicts, which Putnam believes impact most major financial firms. It is not a complete description of every conflict that could exist. Clients and prospective clients should also read the discussions of potential conflicts in proxy voting, brokerage allocation, and personal trading described in this brochure. In addition, while Putnam's procedures are designed to address potential conflicts of interest, Putnam believes that all risks of these potential conflicts cannot be fully eliminated.

### *Differences in Account Fees and Affiliated Accounts*

The management of accounts with different management fee rates and/or fee structures, including accounts with performance fees, may raise potential conflicts of interest by creating an incentive to favor higher-fee or performance fee accounts. Similar conflicts may also apply to accounts in which Putnam companies or employees have proprietary or personal investments (regardless of such accounts' fee structures). Putnam attempts to address these potential conflicts of interest through various compliance policies that are generally intended to place all accounts, regardless of fee structure, on the same footing for investment management purposes.

For more information about these accounts and Putnam's approach to related potential conflicts of interest, please read Item 6 and the paragraphs about "Affiliated Accounts" above.

### *Client Trading and Guidelines*

Other potential conflicts of interest may arise when various client accounts purchase or sell the same securities or other investments. Trade aggregation may create the potential for unfairness to client accounts if one account is favored over another— for example, by allocating a disproportionate amount of a security that is likely to increase in value to a favored account. As part of Putnam's trade oversight procedures, trade allocations are sampled on a regular basis for consistency with Putnam's policies in an attempt to ensure fairness over time across accounts.

Another potential conflict of interest may arise based on the different investment objectives and strategies of various Putnam client accounts. For example, different accounts may have different investment horizons, objectives, policies or restrictions. Depending on each account's objectives or other factors, Putnam may make different investment decisions for different accounts. In addition, investment decisions are the product of many factors in addition to basic suitability for the particular account involved. As a result, Putnam may buy or sell a particular security for some accounts even though it could have bought or sold it for other accounts at the same time. More rarely, Putnam may buy a particular security for some accounts when it is selling the security for other accounts. The market impact of client trading on other clients' holdings is impossible to predict; it may increase or reduce the price received or paid by clients. There may be circumstances when purchases or sales of portfolio securities for one or more accounts may have an adverse effect on other accounts. As noted above, Putnam has implemented trade oversight and review procedures to monitor whether any account is systematically favored over time; however, there is no way for an asset manager to eliminate completely the potential impact of one client's trading on another client.

### *Short Sales*

Some Putnam client accounts may sell stocks or other investments short. Short selling may give rise to potential conflicts of interest if, for example, Putnam buys a particular security for some accounts when other accounts are selling the security short. In an attempt to mitigate these potential conflicts, Putnam has implemented policies and procedures designed to promote equitable treatment and fair dealing among accounts with similar mandates. For example, trade allocations are sampled on a regular basis as part of



Putnam's trade oversight procedures in an attempt to ensure fairness over time across accounts. In addition, Putnam has implemented specific restrictions (with limited exceptions) on the use of long and short positions on the same security within a group of similarly managed accounts.

### *Cross Trading*

Where legally permitted, Putnam may seek to transfer a security from one client to another directly through a "cross" trade, which can save commissions and other transaction costs for both clients. Cross trades could involve a potential conflict of interest if, for example, one account is permitted to sell a security to another account at a higher price than an independent third party would pay, or if cross trades result in more attractive investments being allocated to higher-fee or performance fee accounts. To mitigate these potential conflicts, Putnam engages in cross trades only when the portfolio manager believes they would benefit each participating account. Cross trades are typically carried out in accordance with the provisions of Rule 17a-7 of the Investment Company Act of 1940 (in addition to any other applicable law) at an independent current market price, and typically do not involve a commission or sales charge (although customary transaction fees such as custody charges may apply).

# Item 12: Brokerage Practices

## *Selection of Broker Dealers*

Putnam places orders for the purchase and sale of portfolio investments for its client accounts through a substantial number of brokers and dealers. In seeking the best execution reasonably available under the circumstances, Putnam, having in mind its clients' best interests, selects broker-dealers to execute trades considering all factors it believes to be relevant. These can include factors such as:

- ◆ transaction price
- ◆ the size and type of the transaction
- ◆ the nature of the market for the security or other investment
- ◆ the amount of the commission
- ◆ research and brokerage products and services provided by a broker-dealer
- ◆ the timing of the transaction (taking into account market prices and trends, the reputation, experience and financial stability of the broker-dealer involved)
- ◆ the benefit of any capital committed by a broker or dealer to facilitate the efficient execution of the transaction, and
- ◆ the quality of service rendered by the broker-dealer in other transactions.

Putnam currently does not execute portfolio transactions for client accounts with any affiliated broker-dealers.

Transactions on global stock exchanges, commodities markets and futures markets and other agency transactions involve the payment of negotiated brokerage commissions. Commissions vary among different brokers and different trading platforms. A particular broker may charge different commissions according to factors such as the difficulty and size of the transaction and the trading venue. Although client accounts do not typically pay commissions for principal transactions in the over-the-counter markets, including the markets for most fixed income securities and some derivatives, an undisclosed amount of profit or "mark-up" is included in the price the client pays. In underwritten offerings, the price paid by the client includes a disclosed, fixed commission or discount retained by the underwriter or dealer.

In general, and for purposes of obtaining brokerage and research products and services, Putnam places orders to purchase and sell securities on an aggregated basis for all clients of the Putnam Advisers. Client account trades may also be aggregated with trades for Putnam affiliated accounts on terms no less advantageous than those of the affiliated accounts or other Putnam clients.

## *Soft Dollars*

Subject to the overriding requirements to seek best execution under the circumstances, Putnam receives brokerage and research products and services from broker dealers, including both the broker dealers with which Putnam places its clients' portfolio transactions and other third parties, which may include other broker-dealers. These products and services are sometimes called "soft dollar" purchases. Research products and services received from executing broker-dealers are sometimes called "proprietary research." Putnam may also allocate equity trades to generate "soft dollar credits" used to pay for brokerage services and trading systems and investment research reports and other research products and services from third-party providers when, in Putnam's judgment, trading through the firm generating the research would not be feasible (for instance, where the firm is not a broker-dealer) or in the account's best interest (for instance, where the firm has not satisfied Putnam's internal eligibility criteria for trading counterparties). Such products and services are referred to as "third-party research" or "third-party brokerage." In addition to generating soft-dollar credits to pay for third-party services, Putnam may instruct executing brokers to "step

out” a portion of the trades placed with them to other broker-dealers providing brokerage and research services.

The proprietary and third-party products and services that Putnam may receive in connection with client portfolio transactions include, among others:

- ◆ trading systems and other brokerage services
- ◆ economic and political analysis
- ◆ market data and statistical information, including benchmark data and trade data
- ◆ fundamental and macro investment research
- ◆ industry and company reviews
- ◆ evaluations of investments, strategies, markets and trading venues
- ◆ recommendations as to the purchase and sale of investments
- ◆ performance measurement services
- ◆ meetings with management of current or prospective portfolio companies

Some of these products and services obtained through soft dollar credits are “mixed-use;” i.e., they may be used both for investment / brokerage and non-investment / brokerage -related purposes. In these cases, Putnam will use its own resources to pay for that portion of the mixed-use product or service that in its good-faith judgment does not relate to investment or brokerage purposes.

Use of soft dollars, while common in the asset management industry, may involve potential conflicts of interest. Research products and services provided by broker-dealers are supplemental to Putnam’s own research efforts and relieve Putnam of the possible expense of generating the research internally. Management fees paid by clients are not reduced because Putnam receives brokerage and research products and services, even though Putnam might otherwise be required to purchase some of these products and services for cash. Putnam may have an incentive to select or recommend a broker-dealer based on its interest in receiving the research or other products or services, rather than on its clients’ interest in paying the lowest commission.

Because of the nature of Putnam’s trading process, it is not possible to trace trades in any account to specific products and services. An aggregated trade with a broker-dealer providing proprietary research or a trade that generates soft dollar credits by its nature represents commissions of multiple clients. These trades will in turn be aggregated with other trades for various mixes of clients participating for the purposes of obtaining proprietary research or calculating soft dollar credits. Brokerage and research products and services acquired will be paid out of this aggregate of soft dollar credits. Clients do not receive a direct monetary benefit from brokerage and research products and services; however, these products and services may be useful to Putnam in providing investment advice to all its clients. Likewise, research products and services made available to Putnam from brokerage firms effecting securities transactions for a client may be utilized by Putnam in managing the accounts of other clients. Some of these brokerage and research products and services are of value to Putnam and its affiliates in advising multiple clients, although not all of these services are necessarily useful and of value in managing any particular account. There may be no correlation between the amount of brokerage commissions generated by a particular client and the indirect benefits received by that client.

Due in part to United Kingdom regulatory requirements, Putnam receives no brokerage and research products and services in connection with brokerage transactions placed on behalf of PIL clients. In addition, Putnam may negotiate prohibitions or limitations on the use of soft dollars at the request of other clients. Research and brokerage products and services may be used to benefit all clients, including PIL clients and other clients that prohibit Putnam from using, or limit Putnam’s use of, brokerage commissions generated from such clients’ trades to purchase brokerage and research products and services.

Senior investment personnel of Putnam determine Putnam's commission allocation policies, the brokerage and research products and services to be obtained, and the amount of commissions appropriate to allocate to the acquisition of these products and services. For brokerage and research products and services other than market data, these determinations are generally based on a voting process in which investment personnel identify products and services for purchase with soft dollars. In addition, Putnam's Soft Dollar Oversight Committee, which reports to Putnam's Trade Management Oversight Committee, approves all soft dollar purchases of market data, soft-dollar purchases made other than through the voting process and mixed-use allocations and monitors compliance with annual soft dollar and market data budgets.

In the case of a broker-dealer that provides to Putnam any "brokerage and research services" as defined in Section 28(e) of the Securities Exchange Act of 1934 (the "1934 Act"), Putnam may cause the client to pay a broker-dealer an amount of disclosed commission for effecting agency transactions (on stock exchanges or otherwise) even though the commission is in excess of the commission another broker-dealer would have charged for effecting the transaction. To the extent that Putnam may so cause the client to pay any such greater commissions, it will do so only when the safe-harbor of Section 28(e) of the 1934 Act applies. It is the position of the staff of the SEC that Section 28(e) of the 1934 Act does not apply to the payment of such greater commissions in "principal" transactions.

#### *Other Products and Services*

Putnam may receive products and services from broker-dealers other than brokerage and research services at reduced prices or for free. Putnam will not receive such products or services using commissions from client portfolio transactions or otherwise in connection with particular client trades or a commitment to direct client trades to the broker-dealer. These products and services may include analytical software for portfolio modeling; quotations and other pricing information for securities held in Putnam client portfolios; and risk and security analyses and databases. Putnam may also use its own resources to acquire any of these products and services, as well as research and brokerage products and services eligible for purchase with soft dollars.

#### *Directed Brokerage*

Clients may request that Putnam execute transactions through a specified broker-dealer in order to recapture commissions or obtain other products or services for their accounts. This kind of direction ("directed brokerage") is subject to best execution. As a condition to accepting direction from a client, Putnam generally requires assurances that the client is receiving services of value and a description of such services. Consistent with SEC guidelines, Putnam may disaggregate directed brokerage trades from the trades for our other client accounts when Putnam believes disaggregation is necessary or advisable to avoid disadvantaging other clients. Disaggregated trades may be transacted after other client trades in a specific security and executed at prices and for commission rates that may be less advantageous than those of aggregated trades.

#### *Equity Allocation Policies*

As a general policy, if the orders of all Putnam clients seeking to participate in an underwritten offering of equity securities cannot be satisfied by the total allocation made available to Putnam clients by the underwriters, shares will be allocated among the Putnam clients based on their total assets (the "General Policy"), subject to the following exceptions:

Putnam's policy on the allocation of interests in public offerings of equity securities is to allocate shares pro rata in relative proportion to the size of client accounts. This general policy is modified in the case of regional or specialty funds in offerings of securities which fall within the special focus of those funds. In those cases, the specialty funds will be weighted at 150% of assets for purposes of the allocation, provided that the allocations to those funds may not be increased above 50% of the amount allocated to Putnam by the incremental weighting. A specialty or regional account is one that focuses on a relatively narrow area of the

overall securities markets. For example, a European equity fund is a specialty account as to equities of European corporations and a utilities fund is a specialty account for offerings of utilities companies. The Putnam Trading Department, with the approval of the Compliance Department, approves categories of specialty accounts.

In some circumstances, exceptions may be made to these policies to permit Putnam clients with relatively smaller total assets to participate more meaningfully in underwritten offerings of equity securities. Before an exception is made, Putnam will ensure that the exception will produce an allocation that is fair and equitable to the Putnam client accounts seeking to participate in the offering, taking into consideration the portfolio composition of such accounts, allocation of previous offerings, and other relevant factors. If an exception is made, some accounts participating in the offering may receive a smaller allocation of securities than they would have otherwise.

Underwritten offerings of convertible fixed income instruments (convertible bonds and preferred shares) are subject to the same procedures as equities unless the only accounts participating in the offering are convertible and high yield fixed income accounts. In that case, allocation of convertible instruments is subject to the fixed income allocation procedures described below.

In secondary offerings of equity securities, Putnam may allocate securities among participating client accounts of a portfolio manager so that each account holds as close to the same relative amount of the security as a percentage of net assets as possible. Putnam will first calculate the number of shares to which the participating client accounts of the portfolio manager would be entitled based upon the offering allocation policies described above (the "allotted shares"). Putnam will then allocate the allotted shares among participating client accounts of the portfolio manager so that, to the extent possible, each of the participating client accounts would hold the same relative amount of the security as a percentage of total assets.

In general, Putnam allocates market equity trades pro rata among clients based on the relative size of orders for a security placed by portfolio managers for each account. The Trading Department manages the flow of orders to the securities markets with the objective of minimizing market impact. Subject to specific client instructions or portfolio needs, the Trading Department may choose to take several days to implement an order. All clients trading a security in any day will normally receive the average price received or paid by all Putnam clients for the day. Putnam maintains different "Program" and "Block trading" desks for equities. Block trading represents normal trading within the equity marketplace. Program trades are typically highly structured trades of a large number of transactions at one time, supported by broker capital positions. These desks normally operate independently. In some circumstances, the same security may be traded on the Program and Block trading desks on the same day at a different price. Generally, if the Trading Department believes that the securities in a Program trade are material to the Block trade, securities in the Program trade will be withdrawn from the Program trade and included in the Block trade.

Smaller trades for a client account, which the Trading Department believes will not have a significant market impact or otherwise materially affect execution, are not subject to these procedures. These smaller trades may be executed independently of the Trading Department's primary trading desk, or, if executed through the primary trading desk, may receive varying allocations intended to reduce the administrative burden on Putnam and its clients' custodian banks.

As a non-discretionary adviser to wrap fee "model provider" programs, PIM will release its model portfolio holdings information to the sponsor consistent with sponsor procedures. In some cases, PIM provides information on its model portfolio holdings on a daily basis. PIM communicates changes to the model portfolios to the sponsor or overlay managers and the sponsor or overlay manager is solely responsible for adjusting existing model provider program accounts to conform to model portfolio changes. All trades within the model provider program are executed by the sponsor or overlay manager, as the case may be,

with the broker dealer of their choice, based on their judgment. As such, the sponsor or overlay manager has sole responsibility for pursuing best execution for wrap fee accounts.

At times, some sponsors or overlay managers may place transactions pursuant to PIM's model portfolio recommendations prior to, after, or at the same time that PIM places the same or a similar transaction as a discretionary investment manager, for the benefit of its Putnam client accounts. This process could result in varying levels of execution for wrap fee accounts versus other clients and could lead to competing orders for the same security in the market, potentially harming execution quality. This may also have an adverse effect on the prices paid or received in the market for such transactions and, as a result, some accounts may experience a short-term benefit or detriment. The actual percentage weighting of each holding in a model may vary from the percentage weighting held by accounts managed in accordance with that model.

To address conflicts between wrap fee and other client accounts when recommendations are to be provided to the sponsor or overlay manager and there are pending orders for other Putnam accounts, Putnam will delay the communication of recommendations to the sponsor or overlay manager when the order is considered material under standards that Putnam has developed. In the instance of portfolios investing in less liquid securities, such as small capitalization equities, all or substantially all trades could be considered material and thus the communication to buy or sell such securities for wrap fee clients will normally be deferred. For more liquid securities, delays in the communication of buy or sell signals for wrap fee accounts will likely occur less frequently. Delays in execution could adversely affect wrap fee client account performance.

Putnam has adopted procedures to manage trading in derivatives whose underlying security is also currently being traded. When derivatives trading is both regarded as significant by the Trading Department and is in the same direction as the securities trading, (for example, both are going "long" or trading to gain exposure to an issuer), trading activity is allocated between securities and derivatives trading based on the ratio of the size of the securities trade pending to the notional value of the derivatives trade adjusted by the latter's "delta" (the relationship of the value of the option or other derivative to movements in the underlying security's price). The Trading Department will normally alternate between the securities and derivatives desks (with the larger order trading first), completing a portion of one desk's trades and then permitting the completion of an equal percentage of the second desk's trades.

#### *Fixed Income Allocation Policies*

Putnam's fixed income allocation procedures are designed to ensure fairness and objectivity across all funds and accounts while recognizing differences in objectives, cash flows, and investment guidelines. The allocation procedures generally require clients within an "investment mandate" to receive ratable allocations, based on their respective assets, of securities in each trade in which those accounts participate, taking into consideration the accounts' respective investment objectives, benchmarks, risk profiles, guideline restrictions, current holdings, sizes and cash flows. Accounts or dedicated portions of accounts with broadly similar investment objectives, policies, risk profiles and benchmarks are grouped together as having the same investment mandate. A mandate may consist of only one account. Typically, the portfolio managers for the accounts comprising an investment mandate will determine a target weight for a security to be purchased or sold, meaning that the managers determine a percentage of the accounts' assets that the security should represent. Target weights for a particular security may be set for more than one investment mandate. If the target weight for a security exceeds the amount of the security available for purchase, the amount purchased will normally be allocated *pro rata* among the participating accounts, regardless of which investment mandate the accounts are in, based on the accounts' respective target weights. Where the portfolio managers are unable to sell sufficient amounts of a security to achieve the target weight, pro-ratio across participating investment mandates, and among the accounts in an investment mandate, will be effected in a similar fashion.

Target weights for a security may vary from mandate to mandate and allocations will normally reflect these varying target weights and any client limitations and guidelines. Participating accounts that have a specialized

investment strategy may be given priority in the allocation process, which is reflected in their target weights, with respect to some securities that are included in their investment mandate. Tactical (or opportunistic) trades, which result from the identification of an attractive bid or offer, are allocated pro rata based on assets (for purchases) and pro rata based on holdings (for sales) across appropriate portfolios, rather than to a specific target weight.

There may be times when some accounts do not participate in trades due to guideline constraints, account or transaction size, risk tolerance, or cash flow considerations. A portfolio manager may allocate a security only to clients in one investment mandate if the portfolio manager believes that, as an investment matter, the security should only be allocated to clients in that mandate. In addition, if the allocation process results in a very small allocation (generally less than \$5,000 par) to one or more accounts, in order to save administrative expense and avoid charges for tiny positions, these small amounts can be reallocated to other clients. Putnam's Compliance Department monitors trading activity for client accounts for consistency with Putnam's allocation procedures.

Derivative instruments and their underlying securities may be used to manage target weights for portfolio characteristics such as duration, for hedging strategies, as a substitute for cash investments, or for other investment purposes.

Any of the foregoing procedures could in some circumstances adversely affect the price we pay or receive or the size of the position we purchase or sell (including prohibiting us from purchasing a position) or may limit the rights that we may exercise with respect to an investment.

#### *Foreign Currency Transactions*

Accounts that invest outside their base currency (such as Putnam Funds that invest outside the U.S.) require the execution of foreign currency exchange (FX) transactions. Putnam executes most material FX transactions, including trades required to complete security purchases and sales as well as standalone FX trades, with third party brokers through its currency desk. These trades are subject to Putnam's best execution policies, which are described in this Item 12. In some circumstances described below, Putnam does not perform FX trading due to practical and legal impediments. First, local currency controls or other regulations in some countries, primarily in emerging markets, permit only a locally licensed firm such as a local sub-custodial bank to execute FX transactions, or otherwise make it impracticable for Putnam to execute FX transactions. In these countries, Putnam does not provide FX trading of any kind. Instead, the client's or fund's custodial bank (through a sub-custodial affiliate or third party sub-custodian) generally executes the necessary FX transactions.

Second, for operational and administrative reasons, Putnam will direct a client's custodian bank to repatriate all non-US dollar portfolio income (such as dividends or bond interest payments), regardless of the country or market of origin, to the operating currency of the account. Income transactions are typically not material to a client account, and these transactions may as a general matter benefit from aggregation with other small transactions by a custodial bank.

Putnam seeks to monitor execution levels on foreign currency transactions performed in the situations described above by State Street Bank and Trust Company, the custodian/sub-custodian for the Putnam Funds, Putnam 529 for America, and some other Putnam clients. For other clients, because the counterparty executing FX trades is the client's custodian, the client generally negotiates fees/commission rates on transactions executed by such custodian. Unless otherwise discussed and agreed with the client, Putnam does not evaluate the FX execution services provided by the custodian to its client.

### *Currency Allocation Policies*

To ensure that all accounts with an active currency management strategy are treated fairly, all trades that share a common currency and direction are traded as a block regardless of account strategy or base currency of the account. Typically, allocations are based on the initial client order. A general exception to block trading occurs in the instance of particular accounts that have restrictions in place limiting trading activity to specific counterparties. In general, the largest trading block, which is comprised of accounts with no counterparty restrictions, is traded first. Smaller blocks which are comprised of accounts that cannot trade with the large block counterparty but are allowed to trade with multiple counterparties, are traded second. The final accounts to be traded are those restricted to a single counterparty. These single counterparty accounts are rotated in order of execution on a best efforts basis.

### *Futures Allocation Policies*

Under CFTC rules, Putnam maintains procedures and policies on allocation of bunched orders for futures. When Putnam wishes to place parallel futures transactions for multiple clients, Putnam normally submits combined or “bunched” orders instead of separate orders on behalf of each client. Doing so generally increases the efficiency and timeliness of order placement, thereby facilitating best execution.

Putnam’s procedures are designed to ensure that no eligible client account is favored over any other client. Putnam allocates any purchases or sales in a bunched order on a pro-rata basis to the client accounts in proportion to the size of the order placed for each account. If more than one execution is required, it may be possible to average price the fills. If the fills are average priced, each account participating in the order will receive the same price for the day. If it is not possible to average price, Putnam allocates the fills pro-rata to ensure equitable distribution of prices.

Trades are allocated at Putnam at the time of execution. Putnam submits the specific allocation to the futures commission merchant clearing trades by the end of the day.

In accordance with applicable CFTC regulations permitting post execution notification to the futures commission merchant of allocation of bunched orders, clients whose accounts use futures are entitled to review summary or composite data to compare a client’s results on bunched order transactions with those of other clients participating in such transactions. This information is available to clients upon request.



# Item 13: Review of Accounts

Putnam's portfolio managers generally review client portfolios daily with the assistance of portfolio associates/trading assistants who review and coordinate portfolio trading. These investment professionals use computer analyses which are prepared daily to monitor portfolio composition. Any material issues identified during the portfolio review are addressed by the portfolio manager and escalated to their group head or the Chief Investment Officer, as appropriate. The number of accounts that each portfolio manager is responsible for varies from portfolio manager to portfolio manager. For most accounts, analysis of portfolio risk and attribution is also run daily. In addition, the Putnam Compliance Department tests each portfolio daily for compliance with various investment guidelines and restrictions.

Portfolio Managers and senior investment personnel provide periodic reports to the Putnam Funds' Trustees, who meet frequently throughout the year. With respect to the review of the portfolios with subadvisory clients, formal client meetings generally are held on a face-to-face basis or by telephone annually, or more frequently at the request of clients. These meetings are attended by the portfolio manager, the account manager or senior investment or management personnel, as appropriate. Further, informal meetings and telephone discussions may also take place. In addition, Putnam client service managers are assigned to meet the individual reporting and administration requirements of each subadvisory client. Client service managers work with account managers and relevant internal experts to provide additional attention and responsiveness to client requests.

Putnam supplies the Trustees of the Putnam Funds with periodic reports covering such subjects as portfolio structure and performance data, and such other information as the Trustees may reasonably require. Putnam also meets frequently with the Trustees of the Putnam Funds, or committees of the Trustees, to review portfolio performance, compliance and regulatory matters, and other matters of interest to the Trustees.

529 Plan clients and investment company clients for whom PIM serves as sub-adviser typically receive a comprehensive client communication package, which is generally mailed by the 15th business day after quarter-end. PIM client communication packages typically include the following information:

- ◆ **Portfolio Commentary** for each portfolio managed, discussing market events during the quarter, investment strategy, performance highlights, and portfolio outlook and positioning.
- ◆ **Account Appraisal**, including quarterly portfolio performance, portfolio holdings at quarter-end, and transactions booked during the period. Cost and market values of quarter-end holdings as well as the period's accrued income are also reported, and gains or losses are detailed for each portfolio transaction.
- ◆ **Capital Markets Outlook**, a quarterly market commentary from our Global Asset Allocation team.

Specific preliminary information, such as performance returns and portfolio holdings, is also available via a client-specific (secure) website within the first five days after month-end. Other reporting requests are discussed with the client during the funding process.

## Item 14: Client Referrals and Other Compensation

Putnam Retail Management Limited Partnership will from time to time, at its expense, provide additional promotional incentives or payments to dealers that sell shares of the Putnam Funds. Among other payments explicitly set forth in the prospectuses and SAs of the Putnam Funds, these incentives or payments may include payments for travel expenses, including lodging, incurred in connection with trips taken by invited registered representatives for meetings or seminars of a business nature. In some instances, these incentives or payments may be offered only to certain dealers who have sold significant amounts of shares.

Putnam Retail Management Limited Partnership also compensates its wholesalers for mutual fund sales attributable to sales in their territories.

As noted in Item 10, some Putnam Investments sales personnel are eligible to receive a bonus reward for referrals which result in new business. The bonus rewards are generally a specified percentage of revenues received by Putnam from a new account or from additional capital contributed to an existing account. Commission payments are generally spread out over several years.

Putnam employees, including portfolio managers, may receive limited gifts and entertainment from third parties. Under Putnam's policies and procedures, any gifts and entertainment must be of a reasonable value so they do not influence the nature of the investment advice given to clients, the selection of broker-dealers to execute portfolio trades, or other business decisions.

PIM does not currently have in place any third party solicitation arrangements under Rule 206(4)-3 of the Investment Advisers Act of 1940.

Like other money managers, Putnam has multi-faceted relationships with a variety of investment consulting firms that may from time to time recommend or introduce Putnam to their clients. These consultants, acting as their clients' agents, perform due diligence, product analysis, and other manager review and selection services on Putnam and its competitors. Investment consultants are typically paid by their clients, not by Putnam, and they do not act as "solicitors" under Rule 206(4)-3. However, Putnam may from time to time separately purchase various products and services from the consultants (such as research, access to competitive universe databases, manager performance analytics, access to investment conferences/forums, and business or product consulting engagements), which could be deemed to create a conflict of interest for the consultants. For more information, speak with your Putnam account manager.

See also "Other Products and Services" in Item 12 regarding other services received from broker-dealers.

## Item 15: Custody

The overwhelming majority of Putnam's separate account clients and investment funds maintain custody arrangements with independent qualified custodians to safeguard their funds and securities. However, PIM may sometimes have "custody" (as defined in Rule 206(4)-2 under the Investment Advisers Act of 1940) of client funds and securities, even though it does not actually maintain them.

For example, PIM has "custody" of the Putnam 529 for America<sup>SM</sup> plan because its fees are paid directly from the assets of the plan's investment options and PFTC, an affiliated trust company, serves as named custodian to the plan.

To help ensure the safekeeping of clients' assets for these accounts, Putnam or the client retains independent, qualified custodians or sub-custodians to hold client funds and securities.

Where Putnam has "custody" of a separate account (based, for example, on automatic billing practices or the use of PFTC as custodian), it will seek to confirm that the client receives required account statements at least quarterly directly from its qualified custodian. As described in Item 13, Putnam itself also sends clients an account appraisal, which includes quarterly portfolio performance, portfolio holdings, and transactions booked during the period. Cost and market values of quarter-end holdings as well as the period's accrued income are also reported, and gains or losses are detailed for each portfolio transaction. Clients should carefully review and compare the account statement from the custodian and the Putnam account appraisal.

## Item 16: Investment Discretion

Putnam typically has discretionary authority to manage client accounts on a continuous basis. As described in Item 4, a separate account client may impose any reasonable limitations or restrictions regarding the management of its portfolio by agreeing on specific requirements with Putnam in writing. In contrast, the investment program of a pooled investment fund cannot be tailored to the individual needs of any particular investor.

In order to trade and manage a client's separate account at an outside custodian, Putnam must be granted written authorization by the client. This authorization is included in the investment management agreement, and Putnam does not typically require that clients enter into a separate power of attorney in order for Putnam to manage their assets. For accounts that include some kinds of derivative instruments, Putnam generally requests that clients execute some investment documentation directly (for instance, when the documents require specific confirmations about the client's tax status or other detailed information). In addition, Putnam may occasionally request that clients execute a limited power of attorney or trading authorization when additional evidence of Putnam's authority to act on behalf of the client is required (for example, in dealing with the bankruptcy of the issuer of a portfolio security or a counterparty or when trading in derivative instruments under the client's investment documentation). For more information, please contact Putnam.

PIM's management of the Putnam Funds is subject to the ongoing oversight of the Putnam Funds' Trustees, including policies that they may from time to time establish. PIM consults with the Trustees on a variety of significant matters relating to the Putnam Funds, including some strategic investment matters. In addition, the Trustees have adopted a voting program specifically for the Putnam Funds, and PIM is not responsible for this aspect of the Putnam Funds' investment activities.

# Item 17: Voting Client Securities

## *Summary of Proxy Voting Guidelines and Procedures*

Many of Putnam's investment management clients (other than the Putnam Funds) have delegated to Putnam the authority to vote proxies for shares held in the client accounts Putnam manages. Putnam believes that the voting of proxies can be an important tool for institutional investors to promote best practices in corporate governance and votes all proxies in the best interests of its clients as investors. In Putnam's view, strong corporate governance policies, most notably oversight of management by an independent board of qualified directors, best serve investors' interests. Putnam will vote proxies and maintain records of voting of shares for which Putnam has proxy-voting authority in accordance with its fiduciary obligations and applicable law.

In order to implement these objectives, Putnam has adopted a set of procedures and guidelines which are summarized below. The guidelines and procedures cover all accounts for which Putnam has proxy voting authority. Putnam does not have voting authority for the Putnam Funds, which maintain their own separate proxy procedures and guidelines.

## *Procedures*

Putnam has a Proxy Committee composed of senior investment professionals. The Proxy Committee is responsible for setting general policy as to proxy voting. The Committee reviews procedures and the guidelines annually, approves any amendments considered to be advisable and considers special proxy issues as they may from time to time arise. The proxy guidelines and procedures are administered through a proxy-voting manager in Putnam's Legal and Compliance Department. Under the supervision of senior members of the Legal and Compliance Department, the Proxy Manager:

- coordinates the Proxy Committee's review of any new or unusual proxy issues,
- manages the process of referring issues to portfolio managers for voting instructions,
- oversees the work of any third party vendor hired to process proxy votes,
- coordinates responses to investment professionals' questions on proxy issues and proxy policies,
- maintains required records of proxy votes on behalf of the appropriate Putnam client accounts, and
- prepares and distributes reports required by Putnam clients.

Putnam has engaged a third party service, Glass Lewis & Co. ("Glass Lewis"), to process proxy votes for its client accounts. Although Glass Lewis may supply proxy related research to Putnam, Glass Lewis does not make any decisions on how to vote client proxies.

## *Proxy Voting Guidelines*

Putnam maintains written voting guidelines ("Guidelines") setting forth voting positions determined by the Proxy Committee on those issues believed most likely to arise day to day. The Guidelines may call for votes normally to be cast in favor of or opposed to a matter or may deem the matter an item to be referred to investment professionals on a case by case basis. The Guidelines are summarized below.

Putnam will normally vote all proxies in accordance with the Guidelines except in limited circumstances, such as when client securities are on loan under a securities lending arrangement. However, if the portfolio managers of client accounts holding the relevant stock believe that following the Guidelines in a specific case would not be in clients' best interests, they may request that the Proxy Manager not follow the Guidelines in that case. The request must be in writing and include an explanation of the rationale for doing so. The Proxy

Manager will review the request with a senior member of the Legal and Compliance Department prior to implementing it.

Some clients wish to have Putnam vote proxies under proxy guidelines which vary from the Guidelines or may wish to direct Putnam's vote in a particular solicitation. There may be legal limits on a client's ability to direct Putnam as to proxy voting and on Putnam's ability to follow such instructions. Putnam may accept instructions to vote proxies under client specific guidelines subject to review and acceptance by the portfolio management team involved and the Legal and Compliance Department.

### *Conflicts of Interest*

A potential conflict of interest may arise when voting proxies of an issuer which has a significant business relationship with Putnam. Putnam's policy is to vote proxies based solely on the investment merits of the proposal. In order to guard against conflicts Putnam has adopted a number of procedures designed to ensure that the proxy voting process is insulated from these conflicts. For example, the Proxy Committee is composed solely of professionals in Putnam's Investment Division, while proxy administration is in the Legal and Compliance Department. Neither the Investment Division nor the Legal and Compliance Department report to Putnam's marketing businesses. In addition, there are limits on the ability of non-investment professionals to contact portfolio managers voting proxies. Investment professionals responding to referral requests must disclose any contacts with third parties other than normal contact with proxy solicitation firms. The Guidelines may only be overridden with the written recommendation of the Investment Division and concurrence of the Legal and Compliance Department.

### *Summary of Proxy Voting Guidelines*

The Guidelines below summarize Putnam's positions on various issues of concern to investors and indicate how client portfolio securities will be voted on proposals dealing with a particular issue. The summary is qualified by reference to the actual procedures and Guidelines, which are available to clients from Putnam on request.

The Guidelines focus on board governance issues. Normally, if a board meets current best practices such as the maintenance of a majority of independent directors and the independence of key committees such as audit, compensation and nomination, Putnam will support the board's proposals. Boards which do not meet these standards will have their proposals subjected to higher scrutiny. There are a number of exceptions to this approach. With respect to some major business transactions such as mergers, proposals will be reviewed on a case by case basis. In a number of areas, such as the introduction of anti-takeover devices, the Guidelines will normally provide for voting against the introduction of anti-takeover devices whether or not supported by an independent board. The central provisions of the Guidelines are set forth below:

### *Board of Directors*

Proxies will normally be voted for the election of the company's nominees for directors and for board-approved proposals on other matters relating to the board of directors (provided that such nominees and other matters have been approved by an independent nominating committee), except that Putnam will withhold votes for the entire board of directors if

- The board does not have a majority of independent directors;
- The board does not have nominating, audit and compensation committees composed solely of independent directors; or
- The board has more than nineteen members or fewer than five members, absent special circumstances.

Putnam will withhold votes from incumbent nominees to the board if

- The board has not acted to implement a policy requested in a shareholder proposal that received the support of a majority of the shares of the votes actually cast on the matter at its previous two annual meetings, or
- The board adopted or renewed a shareholder rights plan (commonly referred to as a “poison pill”) without shareholder approval during the current or prior calendar year.

If the board does not meet these standards Putnam may refer items that would normally be supported for case by case review. Putnam may withhold votes for directors under other circumstances such as when a director who is considered an independent director by the company receives compensation from the company other than for service as a director (such as investment banking, consulting, legal or financial advisory fees) or when a director attends less than 75% of board and committee meetings without valid reasons for the absences (that is, illness, personal emergency, etc.). In addition, Putnam will withhold votes

- for any nominee for director of a public company (Company A) who is employed as a senior executive of another public company (Company B) if a director of Company B serves as a senior executive of Company A (these arrangements are commonly referred to as “interlocking directorates”); and
- for any nominee who is actively employed and serves on more than five (5) unaffiliated public company boards (boards of affiliated registered investment companies are counted as one board).

Board independence depends not only on its members’ individual relationships, but also the board’s overall attitude toward management. Putnam believes that independent boards generally are committed to good corporate governance practices and, by providing objective independent judgment, enhance shareholder value. Putnam may withhold votes on a case by case basis from some or all directors that, through their lack of independence, have failed to observe good corporate governance practices or, through specific corporate action, have demonstrated a disregard for the interest of shareholders.

### *Executive Compensation*

Putnam will normally vote on a case by case basis on proposals relating to executive compensation. However, where the board of directors meets appropriate independence standards, Putnam will vote for stock option and restricted stock plans that will result in an average annual dilution of 1.67% or less (based on the disclosed term of the plan and including all equity-based plans). Putnam will vote against stock option and restricted stock plans that will result in an average annual dilution of greater than 1.67% (based on the disclosed term of the plan and including all equity plans). Putnam will vote against any stock option or restricted stock plan where the company's actual grants of stock options and restricted stock under all equity-based compensation plans during the prior three (3) fiscal years have resulted in an average annual dilution of greater than 1.67%. However, whatever the composition of the board, Putnam will review proposals to reprice options on a case by case basis if specific criteria are met. Putnam will vote against stock option plans that permit replacing or repricing of underwater options, and will vote against stock option plans that permit issuance of options with an exercise price below the stock’s current market price. Putnam may vote against executive compensation proposals on a case by case basis where compensation is excessive by reasonable corporate standards, or where a company fails to provide transparent disclosure of executive compensation, or where Putnam would otherwise be withholding votes for the entire board of directors. In voting on proposals relating to executive compensation, Putnam will consider whether the proposal has been approved by an independent compensation committee of the board. Additionally, Putnam will generally vote in favor of the annual presentation of advisory votes on executive compensation and will generally vote for advisory votes on executive compensation. However, Putnam will vote against an advisory vote if the company fails to effectively link executive compensation to company performance according to benchmarking performed by the independent proxy voting service.

### *Acquisitions, Mergers and Similar Transactions*

Putnam will normally evaluate business transactions such as acquisitions, mergers, reorganizations involving business combinations, liquidations and sale of all or substantially all of a company's assets, on a case by case basis. Putnam will vote on a case by case basis on proposals seeking to change a company's state of incorporation.

### *Anti-Takeover Provisions*

Putnam will normally vote against proposals to adopt anti-takeover measures such as supermajority voting provisions, issuance of blank check preferred stock and the creation of a separate class of stock with disparate voting rights. However, Putnam will vote on a case by case basis on proposals to ratify or approve shareholder rights plans (commonly referred to as "poison pills") and on proposals to adopt fair price provisions. Putnam will normally oppose classified boards except in special circumstances where having such a board would be in shareholders' best interests.

### *Shareholder Proposals*

As noted above, the focus of Putnam's proxy voting policies is to encourage and support good corporate governance practices rather than to dictate to boards on specific business management issues. Although many shareholder proposals are intended to foster such practices, others are intended more to further a larger political or social aim rather than to directly serve shareholder interests. Accordingly, Putnam will normally vote in accordance with the recommendation of the company's board of directors on all shareholder proposals unless the proposal reflects specific policies enumerated in the Guidelines.

### *Non-US Companies*

Putnam recognizes that the laws governing non-US issuers will vary significantly from US law and from jurisdiction to jurisdiction. It may not be possible or even advisable to apply the Guidelines mechanically to non-US issuers. However, Putnam believes that shareholders of all companies are protected by the existence of a sound corporate governance and disclosure framework. Accordingly, Putnam will seek to vote proxies of non-US issuers in accordance with the Guidelines where applicable.

Many non-US jurisdictions impose significant burdens on voting proxies. For example, some jurisdictions require that shares must be frozen for specified periods of time to vote via proxy ('share blocking') or that shares must be reregistered out of the name of the local custodian or nominee into the name of the client for the meeting and then reregistered back.

Putnam's policy is to weigh the benefits to clients from voting in these jurisdictions against the detriments of doing so. For example, in a share blocking jurisdiction, it will normally not be in a client's interest to freeze shares simply to participate in a non-contested routine meeting. More specifically, Putnam will normally not vote shares in non-US jurisdictions imposing burdensome proxy voting requirements, except in significant votes (such as contested elections and major corporate transactions) where directed by portfolio managers. Putnam maintains additional policies for specific non-U.S. markets such as Japan, Korea, Hong Kong, the U.K. and Canada.

### *More Information*

Putnam will make its best efforts to vote all proxies except when impeded by circumstances that are reasonably beyond its control and responsibility. This may happen when the custodian makes an error or the client has not established robust custodial proxy voting services. Putnam also does not recall shares on loan to vote proxies.



Clients who want more information about Putnam's proxy voting policies, including a copy of the Guidelines and related policies or a statement of how proxies were voted for the client's account, should contact their Putnam account executive or client service manager.

## Item 18: Financial Information

Not applicable.