

XVI. PUTNAM INVESTMENTS BUSINESS RESILIENCY PLAN

Consistent with Putnam's commitment to providing the highest quality of service to its clients, and to protect its employees, subsidiaries of Putnam Investments LLC such as Putnam Investor Services, Inc., which serves as transfer agent to the Putnam mutual funds, and Putnam Retail Management Limited Partnership, which serves as the principal underwriter and distributor of the Putnam Funds (collectively "Putnam"), have developed a comprehensive approach in preparing for potential disruptions to our critical business operations. Putnam's Business Resiliency Plan (Business Continuity and Disaster Recovery) addresses safeguarding our employees and property; prompt recovery and resumption of our business operations; and ensuring that our customers have access to their funds and securities. Putnam's Business Resiliency Plan addresses: data backup and recovery; all mission critical systems; financial and operational assessments; alternative communications with employees, customers, and regulators; alternate physical location of employees; regulatory reporting; and assuring our customers prompt access to their funds. In the event of a significant business interruption in our primary data center, we will recover all our critical applications in our secondary backup data center.

Customer Communications

Putnam has developed ongoing communication processes with its customers in the event of an emergency. We will re-route our toll-free investor call center telephone numbers to alternate sites in the event of a significant business interruption. Our website (www.putnam.com) may also be used to communicate to our employees and our customers. Status messages can be placed on the website indicating to customers, for example, the nature of the emergency or the status of our service to customers.

Access to Funds

A significant business disruption should not impact a customer's ability to access to available funds because our Business Resiliency Plan is designed to ensure sustained service. We have multiple locations throughout the Greater Boston area and expect to continue our business by using the systems available in those various geographic locations. However, market events beyond our control may have an impact on the ability to trade securities. In creating our Business Resiliency Plan, we have assumed that the designated alternate and out-of-region backup data center locations are available; that we have sufficient personnel; and that external organizations, such as government agencies and market systems, are operational. If any of these assumptions is invalid, our business could be disrupted until such are resolved. While no contingency plan can eliminate all risk of service interruption or temporarily impeded account access, we continually assess and maintain our plans to mitigate all reasonable risk.

This Disclosure is Subject to Change

Our Business Resiliency Plan is regularly tested to help ensure its adequacy and effectiveness, and is subject to modification depending on technology, business, or regulatory changes. We recommend that you review this notice periodically for changes. For

Additional Information

If you have any questions about our Business Resiliency Plan or if you would like to obtain a current written copy of this notice, you can write to us at Putnam Investments, P.O. Box 219697, Kansas City, MO 64121-9697; email us; call us at 1-800-225-1581; or visit our website and print this notice.

Last modified December 2022. The Putnam funds are distributed by Putnam Retail Management Limited Partnership.