

Please complete this application and the attached Certificate of beneficial owners form to establish an account for a legal entity such as a corporation, partnership, limited liability company, or non-profit foundation.* **Both forms must be completed.**

The authorized signer must include proof of their authorization and must sign in both of the following locations:

- Section 8 of the Putnam mutual fund account application for legal entities
- Section 5 of the Certification of beneficial owners form

Available registration types and considerations

Please consult your financial advisor to determine eligibility rules and requirements.

Corporation: A corporation is a legal entity chartered by the state that acts as a unit to buy, sell, and inherit property. It is controlled by the officers and/or directors named in the corporate documents. Please indicate in Section 2 below the tax treatment for this account by checking the appropriate box. If you are not sure, please consult your financial or tax advisor. In addition, you must provide one or more of the following documents to verify the existence of the entity and the capacity of the person signing this application on behalf of the corporation:

- Copy of Bylaws extract
- Copy of articles of incorporation filed with the Secretary of State or other appropriate state agency
- Certificate of good standing issued by the Secretary of State or other appropriate state agency
- Copy of employer identification number (EIN) assignment letter from the IRS
- Certificate of incumbency for the authorized signer**
- Corporate resolution**
- Resolution of governing body**

Partnership (including a Limited Liability Partnership): A partnership is an organization consisting of two or more partners. You must provide one or more of the following documents to verify the existence of the partnership and the capacity of the person signing this application on behalf of the partnership:

- Copy of Partnership agreement
- Certificate of good standing issued by the Secretary of State or other appropriate state agency
- Copy of employer identification number (EIN) assignment letter from the IRS
- Certificate of incumbency for the authorized signer**

Limited Liability Company (LLC): A LLC is an entity organized under state law that may consist of one or more members. LLC's may elect to be treated for tax purposes as a partnership, C-Corp, or S-Corp. Please indicate in Section 2 below the tax treatment for this account by checking the appropriate box. If you are not sure, please consult your financial or tax advisor. In addition, you must provide one or more of the following documents to verify the existence of the LLC and the capacity of the person signing this application on behalf of the LLC:

- Copy of articles of incorporation filed with the Secretary of State or other appropriate state agency
- Certificate of good standing issued by the Secretary of State or other appropriate state agency
- Copy of employer identification number (EIN) assignment letter from the IRS
- Certificate of incumbency for the authorized signer**

Non-profit foundation: A group of people organized for a specific charitable purpose. You must provide one or more of the following documents to verify the existence of the entity and the capacity of the person signing this application on behalf of the entity:

- Copy of Bylaws extract
- Copy of articles of incorporation filed with the Secretary of State or other appropriate state agency
- Certificate of good standing issued by the Secretary of State or other appropriate state agency
- Copy of employer identification number (EIN) assignment letter from the IRS
- Certificate of incumbency for the authorized signer**
- Resolution of governing body**

* Other entities such as sole proprietorships and unincorporated associations should complete a different form. Call Investor Services at 1-800-225-1581 for more information.

Original or a copy certified by either (1) an attorney on the attorney's letterhead, by the clerk of the court if filed in court, or by the appropriate state agency if filed with that agency **within 120 days of receipt or (2) by a Medallion guarantee stamp.

For additional registrations types please see Putnam's mutual fund account application.

Putnam mutual fund account application for legal entities

**Return by mail:**

Putnam Investments
PO Box 219697
Kansas City, MO 64121-9697

Return by express delivery:

Putnam Investments
430 W 7th Street Suite 219697
Kansas City, MO 64105-1407

For more information:

Putnam Investments
1-800-225-1581
www.putnam.com

Please make checks
payable to The Putnam
Funds



Section 1 Name of registered account owner and type of entity

Please select only one entity type below. **All information is required.**

- Corporation Partnership LLC Non-profit foundation

Name of legal entity

Tax identification number

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Section 2 Select your tax status (only for corporations and LLCs)

Select the appropriate tax status for a corporation or LLC. If no tax status is indicated then Putnam will default to a status of S-Corp. If you selected either a partnership or non-profit foundation in Section 1, skip to Section 3.

Corporation tax status:

- C-Corp S-Corp

LLC tax status:

- C-Corp S-Corp Partnership

Section 3 Provide your address and contact information

Provide the address and contact information for the legal entity listed in Section 1. Providing an e-mail address and/or phone number below will replace the current contact information on file with Putnam (if applicable). No changes will be made for fields that are left blank.

Mailing address (street, city, state, ZIP code; **required**)

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Business address (street, city, state, ZIP code; **required if the mailing address is a P.O. Box or c/o address**)

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Contact phone number

E-mail address

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Section 4 Provide information about your financial advisor

Dealer number	Branch office number	Financial advisor number	Central Registration Depository (CRD) number
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Financial advisor name(s) exactly as it appears on firm's registration			
<input type="text"/>			
Financial advisor's firm		Financial advisor's contact phone number	
<input type="text"/>		<input type="text"/>	
Branch office street address			
<input type="text"/>			
City	State	ZIP code	
<input type="text"/>	<input type="text"/>	<input type="text"/>	

Note: If you do not designate a financial advisor, or if the broker-dealer firm you designate does not have a selling agreement with the distributor, Putnam Retail Management Limited Partnership ("PRM") will be designated as the default broker-dealer firm of record on your account and will retain all applicable sales charges. You may designate another broker-dealer firm at any time by returning a signed Change of financial advisor form to Putnam Investor Services.

Section 5 Investment instructions

Please indicate how you wish to fund your account. Select all that apply.

- A check is enclosed** / **A check is en route** (make checks payable to Putnam Investments)
- Draft a one-time debit from my checking or savings account for:

\$ (indicate investment elections in Section 6 and bank account information in Section 7)

Note: The one-time debit will be initiated on the date the account is established.

- Draft systematic investments from my checking or savings account (Complete Section 7)
- Transfer assets from an existing Putnam account (additional documentation must be included)

Section 6 Select your funds

Use the Putnam Fund Guide (<https://www.putnam.com/literature/pdf/FM103.pdf>) to select your investment. You must enter the fund name and number for the corresponding share class you wish to establish. If no class of shares is indicated, class A shares will be purchased. Indicate the amount of your initial investment in each fund. For additional fund elections, please attach a separate sheet of paper with fund number, fund name, and dollar amount or percentage. Please make checks payable to The Putnam Funds. If you are moving assets held in Putnam funds to a new registration with Putnam, fund allocations will remain consistent with the originating Putnam account(s) unless otherwise indicated. In addition, the share class must remain consistent with the originating Putnam account(s).

Fund number	Fund name	Dollar amount	Percentage
<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	or <input type="text"/> %
<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	or <input type="text"/> %
<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	or <input type="text"/> %
<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	or <input type="text"/> %
<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	or <input type="text"/> %
<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	or <input type="text"/> %
			<u>100%</u>

Section 7 Select your account features (optional)

Section 7A — Bank account information (You must provide a voided check or deposit slip; please do not staple)

Note: Starter checks, brokerage checks and checkwriting checks will not be accepted.

Please provide your bank information to allow subsequent purchases to be sent from your bank account. The bank account must be registered in the name of the legal entity that is the registered owner of the fund account.

Attach a preprinted or web-generated voided check/deposit slip or a signed letter from the bank on bank letterhead below. Each of these documents must include: bank name, name(s) as registered on the bank account, routing number and account number.

Check the bank account you would like to use: Checking account Savings account

Please use my enclosed investment check to establish bank account options on my account in lieu of other acceptable documents named above.

tape your document here

Name _____ DATE _____
 Address _____
 City, State, ZIP _____

PAY TO THE ORDER OF _____ \$ _____
 _____ DOLLARS

memo: _____

|: 123456789 |: 000123456789 |: 101

ABA routing number of financial institution

Bank account number

Name(s) of all bank account owner(s)

Section 7B — Systematic investment plan

Complete this section to establish a new systematic investment plan using the bank account information provided in Section 7A. Please indicate the fund number, fund name, dollar amount, frequency and date for your investments below. Investments will be made into the same share class selected in Section 6 unless otherwise indicated. Putnam requests the draft from your bank account on the business day prior to the investment date. If no date is selected, Putnam will default to the 15th. If the investment date falls on a weekend or a holiday, the investment will be made the next business day. If the investment date falls on a date that does not occur within a particular month (29th-31st), the investment will be made the prior day, unless this day falls on a weekend or holiday then the investment will be made the next business day.

Step 1: Investment allocation

Fund number	Fund name	Dollar amount
_____	_____	\$ _____
_____	_____	\$ _____
_____	_____	\$ _____
_____	_____	\$ _____

Step 2: Option frequency

Choose a frequency below. Putnam will default to once per month if no option is selected:

Frequency: Invest every month or Invest in the month(s) chosen below:

Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec

Indicate investment date(s):

Investment date:
(MM/DD)

Additional investment date: (use if you wish to invest multiple times within a month)
(DD)

_____|_____|_____|_____|_____|

_____|_____|

Section 8 Authorize Putnam to open your account

I do not authorize telephone redemptions. Accept only written instructions signed by me.

Unless I have checked the box above, Putnam Investor Services is authorized to act upon redemption instructions up to \$100,000 received by telephone from me or any other person claiming to act as my representative who can provide Putnam with my account registration and address as it appears on Putnam's records. For eligible redemptions without a medallion guarantee, the address on record must be maintained at Putnam for a minimum of 15 days. Putnam will not be liable for unauthorized transactions if it employs reasonable procedures to confirm that instructions received by telephone are genuine. I agree to indemnify and hold harmless Putnam Investor Services and any Putnam funds that may be involved in transactions authorized by telephone against any claim or loss in connection with any telephone transaction effected on my account.

I do not authorize the mailing of only one shareholder report, one prospectus, or one set of proxy materials if there are multiple accounts in a Putnam fund at my address. Send a separate copy for every account.

Unless I have checked the box above, Putnam Investor Services is authorized to send only one shareholder report, one prospectus, or one set of proxy materials for **all** accounts in any Putnam fund at my address.

Important notice regarding Putnam's privacy policy: By signing this application, I acknowledge that Putnam's privacy policy is available for viewing and printing via Putnam's website at <https://www.putnam.com/policies/>

Federal law requires the Putnam funds to obtain the full legal name, business address, and tax identification number for the registered owner opening a new account in order to verify its identity. In addition, the funds must verify the identities of certain beneficial owners and/or control persons, including their name, residential address, Social Security number (or foreign identification number), and date of birth. The funds are unable to accept new accounts if any required information is not provided. If the funds are unable to verify the identity of the entity or any beneficial owner(s) and/or control persons, your account will be closed at the then-current NAV, which may be more or less than your original investment, and the proceeds will be sent to you, net of any applicable sales charges. The information you provide may be shared with third parties for the purpose of verification subject to the terms of Putnam's privacy policy.

If I have completed the bank account information in Section 7A, I authorize my bank/credit union to accept debit/credit entries initiated by Putnam Investor Services to my account and to debit/credit, as requested, the same to my account, without responsibility for correctness thereof or for the existence of any further authorization relating thereto. I authorize Putnam to make a follow-up attempt in retrieving any monies that are denied due to insufficient funds (i.e., systematic purchase bounce). I agree to indemnify and hold harmless my/our bank/credit union, the Putnam funds, and Putnam Investor Services for any loss, liability, or expense incurred from acting on these instructions. I also agree to waive any right under the NACHA Rules to rescind any instruction for ACH transactions that have already occurred at the time of the attempt to rescind. This waiver of the rescission right applies to both ACH investments in and ACH redemptions from the Putnam funds. This authorization may be terminated by me at any time by written notification to Putnam Investor Services, with reasonable time given to implement my/our request.

For bank account information (Section 7A), Putnam does not assess a fee for federal bank wire and/or ACH transactions on your account(s). Some banks/credit unions may not offer ACH transactions or may charge a fee to conduct such transactions. Please check with your financial institution for information regarding eligibility, fees and applicable routing number(s) for federal bank wire and/or ACH transactions.

If I have completed a Letter of Intent (LOI) in Section 7C, I agree that the minimum initial investment, which will be held in escrow until the full LOI amount is purchased, is 5% of the amount checked. If I invest less than the LOI amount, shares may be redeemed from my account to cover the higher sales charge. If I invest more, the sales charge will only be adjusted when and if my dealer refunds Putnam its portion of the adjustment. I will not receive LOI credit for shares purchased by dividend reinvestment.

By signing below on behalf of the legal entity customer, I certify under penalties of perjury that:

- 1. The number shown on this form is the legal entity customer's correct taxpayer identification number**
- 2. The legal entity customer is not subject to backup withholding because:**
 - a. The legal entity customer is exempt from backup withholding or**
 - b. The legal entity customer has not been notified by the Internal Revenue Service (IRS) that it is subject to backup withholding as a result of a failure to report all interest or dividends (cross out (b) if the legal entity customer has been notified by the IRS that it is currently subject to backup withholding), or**
 - c. The IRS has notified the legal entity customer that it is no longer subject to backup withholding**
- 3. The legal entity customer is a U.S. person. For federal tax purposes, a legal entity customer is considered a U.S. person if it is one of the following entities created or organized in the United States or under the laws of the United States:**
 - a. Corporation**
 - b. Partnership**
 - c. LLC**
 - d. Non-profit foundation**
- 4. The legal entity customer is exempt from FATCA reporting**

The Internal Revenue Service does not require your consent to any provision of this document other than the certifications required to avoid backup withholding.

My signature below indicates that I have read the fund prospectus(es) and agree to the terms therein and herein, and agree to receive a copy of Putnam's privacy notice with the confirmation of my investment.

Signature of authorized signer (required)

Date (mm/dd/yyyy)

Print name of signature above

Certification regarding beneficial owners of legal entity customers for new accounts

GENERAL INSTRUCTIONS

What is this form?

To help the government fight financial crime, Federal regulation requires certain financial institutions to obtain, verify, and record information about the beneficial owners of legal entity customers. Legal entities can be abused to disguise involvement in terrorist financing, money laundering, tax evasion, corruption, fraud, and other financial crimes. Requiring the disclosure of key individuals who own or control a legal entity helps law enforcement investigate and prosecute these crimes.

Who has to complete this form?

This form must be completed by the person opening a new account on behalf of a legal entity with any of the following U.S. financial institutions: (i) a bank or credit union; (ii) a broker or dealer in securities; (iii) a mutual fund; (iv) a futures commission merchant; or (v) an introducing broker in commodities.

For the purposes of this form, a legal entity includes a corporation, limited liability company, or other entity that is created by a filing of a public document with a Secretary of State or similar office, a general partnership, and any similar business entity formed in the United States or a foreign country. Legal entity does not include sole proprietorships, unincorporated associations, or natural persons opening accounts on their own behalf.

What information do I have to provide?

This form requires you to provide the name, address, date of birth and Social Security number (or passport number or other similar information, in the case of foreign persons) for the following individuals:

- (i) Each individual (“Beneficial Owner”), if any, who owns, directly or indirectly, 25 percent or more of the equity interests of the legal entity customer (e.g., each natural person that owns 25 percent or more of the shares of a corporation); and
- (ii) An individual with significant responsibility (a “Control Person”) for managing the legal entity customer (e.g., a Chief Executive Officer, Chief Financial Officer, Chief Operating Officer, Managing Member, General Partner, President, Vice President, or Treasurer).

The number of individuals that satisfy this definition of “Beneficial Owner” may vary. Under section (i), depending on the factual circumstances, up to four individuals (but as few as zero) may need to be identified. Regardless of the number of individuals identified under section (i), you must provide the identifying information of one individual under section (ii). It is possible that in some circumstances the same individual might be identified under both sections (e.g., the President of Acme, Inc. who also holds a 30 percent equity interest). Thus, a completed form will contain the identifying information of at least one individual (under section (ii)), and up to five individuals (i.e., one individual under section (ii) and four 25 percent equity holders under section (i)). The financial institution may also ask to see a copy of a driver’s license or other identifying document for each beneficial owner listed on this form.

Important: You must provide all information for each Beneficial Owner listed in Section 3 and a Control Person listed in Section 4 in order for the form to be accepted.

Certification of beneficial owners for new accounts

**Return by mail:**

Putnam Investments
PO Box 219697
Kansas City, MO 64121-9697

Return by express delivery:

Putnam Investments
430 W 7th Street Suite 219697
Kansas City, MO 64105-1407

For more information:

Putnam Investments
1-800-225-1581
www.putnam.com

Please make checks
payable to The Putnam Funds

Section 1 Name and title of natural person completing this form

The person signing this form must provide the following information.

Name of natural person acting on the account

First MI Last Suffix Title of natural person acting on the account

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Section 2 Name and address of legal entity

Name of legal entity

Tax identification number

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Address of legal entity (street, city, state, ZIP code)

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Section 3 Beneficial Owner information

Provide the following information for each individual, if any, who, directly or indirectly, through any contract, arrangement, understanding, relationship or otherwise, owns 25 percent or more of the equity interests of the legal entity listed above.

- For all U.S. persons:** The full name, Social Security number, date of birth, and residential address are required.
- For all foreign persons:** The full name, passport number, country of passport issuance, date of birth, and residential address are required. In lieu of a passport number, foreign persons may also provide an alien identification card number, or number and country of issuance of any other government-issued document evidencing nationality or residence and bearing a photograph or similar safeguard. A copy of the passport, alien identification card, or other government-issued identification document must be enclosed with this form.

Important: If no individual meets this definition you must check “Not applicable” below and proceed to Section 4.

Not applicable (no individual owns, directly or indirectly, 25 percent or more of the equity interests of the legal entity)

First MI Last Suffix Social Security / Passport number Date of birth (mm/dd/yyyy)

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Residential or business street address (street, city, state, ZIP code)

Passport country of issuance

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First MI Last Suffix Social Security / Passport number Date of birth (mm/dd/yyyy)

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Residential or business street address (street, city, state, ZIP code)

Passport country of issuance

--	--

First MI Last Suffix Social Security / Passport number Date of birth (mm/dd/yyyy)

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Residential or business street address (street, city, state, ZIP code)

Passport country of issuance

--	--

First MI Last Suffix Social Security / Passport number Date of birth (mm/dd/yyyy)

--	--	--	--	--	--

Residential or business street address (street, city, state, ZIP code)

Passport country of issuance

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Section 4 Control Person

Provide the following information for one individual with significant responsibility for managing the legal entity listed above, such as:

- An executive officer or senior manager (e.g., Chief Executive Officer, Chief Financial Officer, Chief Operating Officer, Managing Member, General Partner, President, Vice President, Treasurer); or
- Any other individual who regularly performs similar functions. (If appropriate, an individual listed in Section 3 above may also be listed in this section).

First	MI	Last	Suffix	Social Security / Passport number	Date of birth (mm/dd/yyyy)
Residential or business street address (street, city, state, ZIP code)					Passport country of issuance

Section 5 Certification

I hereby certify, to the best of my knowledge, that the information provided above is complete and correct.

Signature of natural person acting on the account

Date (mm/dd/yyyy)

Print name of signature above

Legal Entity Identifier (Optional)

Important: You must provide either an original or certified copy of one of the following documents appropriate to the legal entity in Section 2 to verify your capacity to act on behalf of the entity (see certification requirements below):

- Certificate of incumbency for the authorized signer
- Corporate Resolution
- Resolution of governing body
- Other

Certification may be obtained via a Medallion guarantee stamp or by an attorney or the attorney's letterhead, by the clerk of the court if filed in court, or the appropriate state agency if filed with that agency, **dated within 120 days of receipt.**