

Section 3 Financial intermediary information

Please use this section to designate financial intermediary and financial representative information on your Putnam account. A financial intermediary is the broker-dealer, bank, or other financial institution through which you purchase shares of the Putnam Funds. The financial representative is the person associated with the financial intermediary who is assisting you with your investments. You may designate a financial intermediary at any time by returning a signed Financial intermediary change request to Putnam Investor Services. Franklin Distributors, LLC ("FD") will be designated as the default broker-dealer of record on your account(s) and will retain all applicable sales charges if any of the following apply:

- You do not designate a financial intermediary below.
- The financial intermediary you designate does not have a selling agreement with FD.

Please note that FD is not a full service broker-dealer and does not provide investment advice. As default broker-dealer, FD cannot assist you with financial planning or provide recommendations, services that are provided by a financial intermediary. If you wish to receive such services, you must designate a financial intermediary.

Note: Please refer to <https://www.finra.org> for assistance in locating the Central Registration Depository (CRD) number for the financial intermediary.

Financial institution ID

Branch office ID

Financial representative ID

CRD number

Financial intermediary

Financial representative name(s) exactly as it appears on firm's registration

Financial representative's phone number

Branch office street address

City

State

ZIP code

Section 4 Select your funds

Please use the Putnam Fund Guide (<https://www.franklintempleton.com/forms-literature/download/PFGUD-FORM>) to select your investment. You must enter the fund name and number for the corresponding share class you wish to establish. For additional fund elections, please attach a separate sheet of paper with fund number, fund name and percentage.

- For new investments made to Putnam: If no class of shares is indicated, class A shares will be purchased and any unallocated assets will be invested into Money Market A.
- Investments made through payroll deduction contributions will be applied for the year received.
- Investment percentages must be in whole number.

Fund number

Fund name

Percentage

%

%

%

%

%

100%

Section 5 Designate your beneficiary(ies)

Complete Sections 5A and 5B to designate primary and contingent beneficiaries respectively for assets payable upon your death. To update beneficiaries on existing accounts, please use the IRA/403(b) Designation of beneficiary form.

For each beneficiary, Putnam Fiduciary Trust Company, LLC (PFTC) requires the full name, tax identification number, and date of birth. If you name multiple primary or contingent beneficiaries, please specify the percentage each is to receive. If no percentage is specified, your account will be divided among your surviving primary beneficiaries in substantially equal amounts. If no primary beneficiaries survive you, your account will be divided among your surviving contingent beneficiaries. If none of your designated beneficiaries survive you, your account will be distributed according to the provisions of the IRA plan and disclosure statement.

Important:

- PFTC does not accept customized beneficiary designations (for example, designations which involve multiple contingencies within a primary or contingent beneficiary category) or "per stirpes" designations. All beneficiaries must be designated as either primary or contingent and must include all identifying information referenced above. PFTC generally cannot accept beneficiary designations from attorneys-in-fact, conservators, or guardians. PFTC will not accept beneficiary designations from a parent/guardian on the minor's behalf. If the designated beneficiaries are not accepted by PFTC the provisions of the IRA plan disclosure statement will be in effect.
- Do not list both primary and contingent beneficiary designations on the same page.** If you wish to designate more than four primary beneficiaries and/or more than four contingent beneficiaries, you must include a separate sheet of paper with the additional designation. The separate sheet of paper must be signed, dated, indicate whether the designation is for a **primary** or **contingent** beneficiary, and include all required beneficiary information (full name, Social Security/Tax ID number, date of birth/date of trust, and allocated percentage).

Section 5A - Primary beneficiary(ies): Percentages for primary beneficiaries must equal 100%.

Name of individual (First, MI, Last, Suffix)/Full name of entity/trust (required)	Relationship			Percentage
	Spouse	Other	Entity/Trust	
Social Security/Tax ID number (required)	Date of birth (mm/dd/yyyy; required for an individual)		Date of trust (mm/dd/yyyy; required for a trust)	%
Residential address (street, city, state, ZIP code)				

Name of individual (First, MI, Last, Suffix)/Full name of entity/trust (required)	Relationship			Percentage
	Spouse	Other	Entity/Trust	
Social Security/Tax ID number (required)	Date of birth (mm/dd/yyyy; required for an individual)		Date of trust (mm/dd/yyyy; required for a trust)	%
Residential address (street, city, state, ZIP code)				

Name of individual (First, MI, Last, Suffix)/Full name of entity/trust (required)	Relationship			Percentage
	Spouse	Other	Entity/Trust	
Social Security/Tax ID number (required)	Date of birth (mm/dd/yyyy; required for an individual)		Date of trust (mm/dd/yyyy; required for a trust)	%
Residential address (street, city, state, ZIP code)				

Name of individual (First, MI, Last, Suffix)/Full name of entity/trust (required)	Relationship			Percentage
	Spouse	Other	Entity/Trust	
Social Security/Tax ID number (required)	Date of birth (mm/dd/yyyy; required for an individual)		Date of trust (mm/dd/yyyy; required for a trust)	%
Residential address (street, city, state, ZIP code)				

Total primary allocations must equal 100%

100.00%

Section 5 Designate your beneficiary(ies) (continued)

Section 5B - Contingent beneficiary(ies): Percentages for contingent beneficiaries must equal 100%.

Name of individual (First, MI, Last, Suffix)/Full name of entity/trust (required)	Relationship			Percentage
	Spouse	Other	Entity/Trust	
Social Security/Tax ID number (required)	Date of birth (mm/dd/yyyy; required for an individual)	Date of trust (mm/dd/yyyy; required for a trust)		%
Residential address (street, city, state, ZIP code)				

Name of individual (First, MI, Last, Suffix)/Full name of entity/trust (required)	Relationship			Percentage
	Spouse	Other	Entity/Trust	
Social Security/Tax ID number (required)	Date of birth (mm/dd/yyyy; required for an individual)	Date of trust (mm/dd/yyyy; required for a trust)		%
Residential address (street, city, state, ZIP code)				

Name of individual (First, MI, Last, Suffix)/Full name of entity/trust (required)	Relationship			Percentage
	Spouse	Other	Entity/Trust	
Social Security/Tax ID number (required)	Date of birth (mm/dd/yyyy; required for an individual)	Date of trust (mm/dd/yyyy; required for a trust)		%
Residential address (street, city, state, ZIP code)				

Name of individual (First, MI, Last, Suffix)/Full name of entity/trust (required)	Relationship			Percentage
	Spouse	Other	Entity/Trust	
Social Security/Tax ID number (required)	Date of birth (mm/dd/yyyy; required for an individual)	Date of trust (mm/dd/yyyy; required for a trust)		%
Residential address (street, city, state, ZIP code)				

Total contingent allocations must equal 100%

100.00%

Section 5C - Signature of IRA owner's spouse (if applicable)

If you are married to the IRA owner and they have designated a beneficiary(ies) other than you, please consult your financial representative about the state law and tax law implications of this beneficiary designation, including the need for your consent. By signing below you indicate that you are the spouse of the individual named in Section 2 and that you consent to the designated beneficiary(ies). PFTC is not responsible for determining whether an account owner is married and is a resident of a jurisdiction in which community property rules apply.

Signature of spouse

Current date (mm/dd/yyyy)

Print name of signer

Section 6 Authorization

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

Unless I have checked the box above, Putnam Investor Services, Inc. is authorized to act upon redemption instructions 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. Redemption proceeds of up to \$250,000 will be sent to me at an address on record with Putnam for at least 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, Inc. 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, Inc. 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.

I acknowledge that Putnam's privacy policy is available for viewing and printing at <https://www.franklintempleton.com/help/privacy-policy>.

If applicable, the Parent/Guardian named in Section 1 represents that he or she is the parent or legal guardian of the property of the Owner/Minor indicated above. Notwithstanding any provision of the Adoption Agreement or Plan, PFTC, LLC may rely on instructions of the Parent/Guardian with respect to the administration, investment and distribution of the Account until the Owner/Minor reaches the age of majority in his or her State of residence. The Parent/Guardian agrees that he or she shall cease to have any authority or control with respect to the Account upon attainment of the age of majority by the Owner/Minor. Thereafter, the Owner/Minor shall be treated as the Owner for all purposes under the Adoption Agreement and Plan. Notwithstanding the foregoing, the Parent/Guardian agrees that Putnam Fiduciary Trust Company, LLC ("PFTC, LLC") shall have no responsibility or obligation to determine whether the Owner/Minor has attained the age of majority. Prior to executing any direction or request made by the Parent/Guardian or the Owner/Minor, PFTC, LLC may require the Parent/Guardian or the Owner/Minor to demonstrate in a manner satisfactory to PFTC, LLC whether the Owner/Minor has attained the age of majority. The Parent/Guardian hereby agrees to indemnify and hold harmless Putnam Fiduciary Trust Company, LLC, Putnam Investor Services, and their respective affiliates, agents, directors, officers, and employees (collectively, "Putnam"), from and against any loss, damage, liability, claim, cost or expense, including legal fees, which Putnam incurs as a result of, or in connection with, any actual or attempted disaffirmance, voiding, reversal, unenforceability, cancellation or limitation of any purchase, exchange, transfer or redemption of assets held in the Account by reason of, or in connection with, the Owner/Minor's status as a minor or the Parent/Guardian's status as a person other than the Owner/Minor's parent or legal guardian. This agreement is binding on the Parent/Guardian and his or her executors, beneficiaries, heirs, administrators, legal representatives and assigns, and will inure to the benefit of Putnam and its successors and assigns. This agreement shall survive termination of the Adoption Agreement.

I (i) adopt the Putnam Traditional Individual Retirement Account Plan (the "Plan") as an individual retirement account under Sections 408(a) and 408(k) of the Internal Revenue Code of 1986, as amended; (ii) acknowledge receipt of the Plan and Disclosure Statement; (iii) have received and read a current prospectus of any fund and description of any investment option selected; (iv) appoint Putnam Fiduciary Trust Company, LLC as Trustee; (v) acknowledge that the terms in the Agreement mean the same as in the Plan; and (vi) agree that an annual maintenance fee of \$25 will automatically be deducted from the account in accordance with Putnam's annual maintenance fee policy for accounts with a balance below \$50,000 on the day the fee is scheduled to be taken. I also acknowledge that Putnam's annual maintenance fee policy is subject to change. I also certify under the penalties of perjury that the Social Security number set forth in Section 1 is true, correct, and complete.

In accordance with federal law, the Putnam funds are required to obtain my name, residential address, Social Security number, and date of birth in order to verify my identity. The information I provide may be shared with third parties for the purpose of verification subject to the terms of Putnam's privacy policy. The funds are unable to accept this new IRA account if any required information is not provided. If the funds are unable to verify my identity, this IRA account will be closed and the assets in the account will be distributed to me at the then-current NAV. With respect to any such distribution, I elect that no amount be withheld for federal income tax. I understand that I am liable for any federal income taxes due on the taxable part of any such distribution, and I can incur penalties if my withholding or estimated tax payments for the year are not sufficient. I further understand that under federal tax law I will have 60 days from date of receipt by me to roll over such distribution to another IRA or eligible retirement plan that will accept it. I will consult my professional tax advisor if I have any questions about the tax consequences of any such distribution.

The information you provide may be shared with third parties for the purpose of verification subject to the terms of Putnam's privacy policy.

Signature of Putnam account owner (required)

Signature of owner/parent/guardian/authorized signer

Current date (mm/dd/yyyy)

Print name of signer