Simplified employee pension plan IRA adoption agreement

Return by mail:

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

Return by express delivery:

Putnam Investments 801 Pennsylvania Ave Suite 219697 Kansas City, MO 64105-1307

For more information:

Putnam Investments 1-800-662-0019 www.putnam.com



Use this form to open a new Putnam Simplified Employee Pension Plan (SEP) IRA under your employer's existing Simplified Employee Pension Plan (SEP). Please confirm that your employer has established a SEP Prototype agreement with Putnam before returning your application.

Please return all pages. The full legal name, Social Security number, date of birth, and residential address are required for the account owner.

If you wish to designate a beneficiary, Putnam Fiduciary Trust Company, LLC (PFTC) requires the full name, tax identification number, and date of birth for each beneficiary. 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.

All references herein to the singular (i.e., "I" or "my") include the plural as applicable. The account owner and **all owners of the bank account** provided in Section 7 (if applicable), must provide their authorization in Section 8.

Section 1 Plan type

Select the account type you want to establish.

SEP IRA SEP IRA for a minor

Section 2 Account owner information

Name of account owner First	MI	Last	Suffix	Social Security number	Date of bir	rth (mm/dd/yyyy)
Name of parent/guardian (required First	l only if y MI	vou are opening an IRA for a minor) Last	Suffix	Social Security number	Date of bir	rth (mm/dd/yyyy)
Contact phone number	E-mo	ail address				
Note: Providing a phone number or e-mail address above will replace the current contact information on file with Putnam (if applicable). If you are enrolled in elec- tronic delivery, all notifications will be sent to the e-mail address listed above.						
Residential street address of account	owner	(cannot be a P.O. Box or c/o address)	City		State	ZIP code
Mailing address for account (if differe	nt from	residential address)	City		State	ZIP code

Section 3 Provide employer information

Indicate whether the employer is a sole proprietor:		
The employer is not a sole proprietor (default)		
The employer is a sole proprietor		
Name of company		Company number
Company street address	City	State ZIP code

Section 4 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.

Financial representative ID

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 intermediary

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

Financial representative's phone number

ZIP code

CRD number

State

Branch office street address

City

Section 5 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	
	0
	0
	0
	0
	0
100%	

Section 6 Designate your beneficiary(ies)

Complete Sections 6A and 6B 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 6A - 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; red	quired for an indi	vidual)	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; red	quired for an indi	vidual)	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; red	quired for an indi	vidual)	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	
	Relationship Spouse	Other	Percentage Entity/Trust	%
	Spouse		5	

Total primary allocations must equal 100%

10000%

Section 6B - Contingent beneficiary(ies): Percentag	• • • •		6.		
Name of individual (First, MI, Last, Suffix)/Full name of e	ntity/trust (required)	Relationship		Percentage	
		Spouse	Other	Entity/Trust	0⁄0
Social Security/Tax ID number (required)	Date of birth (mm/dd/yy	<i>ı</i> y; required for an indiv	idual)	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 e	ntity/trust (required)	Relationship		Percentage	
		Spouse	Other	Entity/Trust	%
Social Security/Tax ID number (required)	Date of birth (mm/dd/yy)	<i>y</i> ; required for an indiv	idual)	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 e	ntity/trust (required)	Relationship		Percentage	
		Spouse	Other	Entity/Trust	%
Social Security/Tax ID number (required)	Date of birth (mm/dd/yy	ıy; required for an indiv	idual)	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 e	ntity/trust (required)	Relationship		Percentage	
		Spouse	Other	Entity/Trust	%
Social Security/Tax ID number (required)	Date of birth (mm/dd/yy	/y; required for an indiv	idual)	Date of trust (mm/dd/yyyy; required for a trust)	
Residential address (street, city, state, ZIP code)					

Total contingent allocations must equal 100%

Section 6 Designate your beneficiary (ies) (continued)

10000%

Section 6C - 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 7 Select your account features (for Sole Proprietor only)

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 below to purchase shares by phone, web, or systematic investment plan. All individuals named on the bank account registration must authorize the use of the bank account to purchase shares by signing in Section 8. If you wish to add telephone redemption options via Federal bank wire and/or ACH to a bank within the United States, please complete Putnam's Add or change bank account information form with the applicable signature authentication stamp.

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.

Indicate the type of 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.

Bank ABA routing number Bank account number

Section 7B - Systematic investment plan

Complete this section to establish a new systematic investment plan using the bank account information provided above. Investments will be made into the same share class selected in Section 4 unless otherwise indicated (systematic investments will always be coded for the current contribution year). Putnam requests the draft from your bank account on the business day prior to the investment date.

Step 1: Investment frequency

Please indicate a start month, start year, frequency, and investment date for your systematic investment plan. If the investment date falls on a date which does not occur within a particular month (29th-31st), the investment will be made on the prior day, unless the day falls on a weekend or a holiday, then the investment will be made in the next business day.

- If no start month is indicated, distributions will begin in the next available month.
- If no start year is indicated, investments will begin in the current year. If there are no investment dates remaining for the current year, then the program will • begin the following year.
- If no frequency is selected investments will take place monthly.
- If no investment date is selected, investments will take place on the 15th.
- Any investments designated for a date which has already occurred will not be processed until the next investment date indicated.

Start month	Start year	Frequency (check one)		Investment date		
		Monthly Quarterly	Semiannually Annually	1st 5th	10th 15th	20th 25th

Step 2: Investment allocation(s)

Please indicate the fund number, fund name, and dollar amount for each investment.

Fund number Fund name



Section 7 Select your account features (if applicable)(continued)

Section 7C - Reduced sales charge

If you already own shares of another Putnam fund, or if you agree to invest a certain amount, you may be able to reduce the sales charge you pay. Shares that have not been assessed a sales charge will not count towards your Cumulative Discount or Letter of Intent. This includes commissionable shares of the Putnam Money Market Fund, the Putnam Government Money Market Fund, and the Ultra Short Duration Income Fund, as well as closed end funds and Putnam class Y shares.

Cumulative discount

To qualify for sales charge discounts on class A shares, list the account number(s) of other Putnam fund(s) that you or your family (spouse and/or children under age 21) own. Please contact Putnam for requirements related to linking external accounts invested in Putnam funds.

Fund number	Account number	Fund number	Account number

Letter of intent

A letter of intent allows you to receive a reduced sales charge by committing to invest a minimum of \$50,000 with Putnam over a 13-month time frame as disclosed in the Statement of additional information.

- To receive a reduced sales charge through a new letter of intent, complete Putnam's Letter of intent to purchase form. The form must be included with this application or on file with Putnam prior to the investment to qualify for a reduced sales charge.
- To receive a reduced sales charge through an active letter of intent in your name, provide your existing fund and account number below:

Fund number Account number

Notes:

- The 13-month time frame will continue to elapse based on the original request for the letter of intent.
- If you do not have an active letter of intent, your investments will incur the applicable sales charge.

Section 8 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 I have completed the bank account information in Section 7, 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 hereby acknowledge that the initiation of an ACH transaction through Putnam is to purchase securities, and accordingly any transaction requested by me/us through the ACH system is irrevocable. I authorize Putnam to make a follow-up attempt in retrieving those monies which are denied due to insufficient funds (i.e. systematic purchase bounce). I agree to indemnify and hold harmless my 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 which 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/us at any time by written notification to Putnam Investor Services, with reasonable time given to implement my request. Putnam Investor Services may amend or terminate this agreement at any time. You will be notified before any such changes go into effect. For bank account information (Section 7), 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.

Section 8 Authorization (continued)

If applicable, the Parent/Guardian named in Section 2 represents that they are the parent or legal guardian of the property of the Owner/Minor indicated above. Notwithstanding any provision of the Adoption Agreement or Plan, PFTC 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 they 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 PFTC 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 may require the Parent/Guardian hereby agrees to indemnify and hold harmless PFTC, 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 hereby (I) adopt The Putnam Individual Retirement Account Plan (the "Plan") as an individual retirement account under Section 408(a) of the Internal Revenue Code of 1986, as amended, on behalf of the above-named Beneficiary; (II) acknowledge receipt of the Plan and Disclosure Statement; (III) have received and have 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 this 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 taxpayer identification number (Social Security number) set forth in Section 2 is true, correct, and complete.

In accordance with federal law, the Putnam funds are required to obtain the name, residential or business address, Social Security or tax identification number, and date of birth for each registered owner in order to verify their identities. For certain entities such as trusts, estates, corporations, partnerships, or other organizations, additional documentation may be required (see the following terms and conditions or call Putnam at 1-800-225-1581). The funds are unable to accept new accounts if any required information is not provided. If the funds are unable to verify your identity, 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. With respect to any such distribution, I elect that no amount be withheld for federal income taxes due on the taxable part of any such distribution, and I acknowledge that 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 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

All individuals named on the bank account registration in Section 7 who did not already sign above as a Putnam account owner must sign below to authorize the use of the bank account to purchase shares. By signing below, each bank account owner authorizes purchases to be made from their bank account.

Signature of bank account owner(s) (required if different from the Putnam account owner)

Signature of bank account owner

Current date (mm/dd/yyyy)

Print name of signer

Signature of bank account owner

Current date (mm/dd/yyyy)

Print name of signer