

2. Checkwriting Signature(s) for Additional Parties (optional)

The following named person(s) is/are currently authorized to sign checks. All individuals must sign below **exactly** as the check will be signed.

Name of Authorized Signatory (first, middle initial, last) and Title

Date (month, day, year)

Signature

Name of Authorized Signatory (first, middle initial, last) and Title

Date (month, day, year)

Signature

Name of Authorized Signatory (first, middle initial, last) and Title

Date (month, day, year)

Signature

3. Authorized Signature(s)

I authorize Vanguard's custodian bank to honor checks drawn by me on my Vanguard fund account and to effect a redemption of sufficient shares in the account to cover payment of such checks. I understand that (1) this privilege may be amended or terminated at any time by the fund or the bank, and neither shall incur any liability to me for such amendment or termination, or for honoring such checks, or for effecting redemptions to pay such checks, or for returning checks that have not been accepted; (2) checks drawn on an account will require the signature of one registered owner unless indicated otherwise; (3) no checks shall be issued or honored, or redemption effected, for any amounts represented by shares unless payment for such shares has been made in full and any checks given in such payment have been collected through normal banking channels; and (4) this privilege is subject to all the terms and conditions of the Vanguard fund's prospectus.

Number of signature(s) required for checkwriting is indicated on the Vanguard Institutional Certificate of Authority for Retirement Plans or Vanguard Institutional Asset Management/Financial Advisor Services Organization Resolution.

Name of Authorized Signatory (first, middle initial, last) and Title

Signature

Date (month, day, year)

Name of Authorized Signatory (first, middle initial, last) and Title

Signature

Date (month, day, year)